The applicability of video games in youth work

STUDY REPORT

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INTRODUCTION

As the world is becoming increasingly digital, people are seeking ways to implement innovative digital solutions in various areas of life, including youth work. Digital game-based learning has quickly become one of the most dominant learning methods in education[1], but the application of electronic games, ie video games, and their usefulness in both formal and informal education is still largely unknown. Widely available commercial video games have uses beyond just entertainment, and video games are used increasingly more in fields such as education and mental health.[2] Therefore, it is important to know which video games are best suited to develop young people's competences, improve curricula and promote youth work.

Video games have become increasingly popular in Estonia, as evidenced by the purchase statistics of video games, showing that Estonians spent around 8 million euros on video games in 2020.[3] By now, it is estimated at 10 million euros. The popularity of video games among young people is also confirmed by the health behaviour study on school-aged children, published in 2019 by the National Institute for Health Development, which shows that more than half of respondents aged 11–15 spend more than two hours on video and TV games on school days.[4] We can thus conclude that playing video games is on the rise in Estonia. Consequently, it is necessary to analyse the use of video games among young people and the possibilities for their application in youth work, and to explore ways to use them in a purposeful way, ie to develop young people's general competences. This is supported by the concept of smart youth work, which claims that due to technological developments and societal changes, the methods of youth work in Estonia must correspond to new challenges and the needs of young people and offer new attractive solutions to promote youth work.[5]

The implementation of video games in youth work provides a wide range of opportunities to expand youth work methods and tools. The results of the study on the implementation of IT solutions in youth work, conducted in Estonia in 2016, show that both youth workers and young people expect digital solutions to be used in youth work more than before.[6] For example, playing in a digital environment teaches children how to function in a digital environment later on in life, during studies or in work.[7] In addition, electronic games may stimulate people's development in all general competences, such as creativity or problem-solving skills, and support the teaching of a specific subject, such as mathematics or history.[8] The application of digital solutions in youth work provides young people with opportunities in a way that suits them and in a language they know[9], which can create a strong

[1] Liao, C.-W., Ching-Huei, C. & Sie-Jhih, S. 2019. 'The interactivity of video and collaboration for learning achievement, intrinsic motivation, cognitive load, and behavior patterns in digital game-based learning environment' *Computers and Education* 133: 43-55.

[2] Pallavicini, F., Pepe, A., Mantovani, F. 2021. 'Commercial Off-The-Self Video Games for Reducing Stress and Anxiety: Systematic Review, *JMIR Mental Health* 8(8): 1-19.

[3] Liivand, M. 2021. 'Eestlased kulutasid eelmisel aastal videomängudele üle 8 miljoni euro', 8. January, https://diktor.geenius.ee/rubriik/mangud/eestlased-kulutasid-eelmisel-aastal-videomangudele-ule-8-miljoni-euro/

[4] Oja, L., Pikksööt, J. & Rahno, J. 2019. 'Health behaviour in school-aged children. 2017/2018 academic year'. https://intra.tai.ee/images/prints/documents/155618254796_HBSC%20tabeliraamat.pdf

[5] Ministry of Education and Research & Estonian Youth Work Centre. 2017. 'The concept of smart youth work', https://www.digar.ee/arhiiv/nlib-digar:337680

[6] Institute of Baltic Studies & e-Governance Academy. 2016. 'Infotehnoloogiliste võimaluste rakendamine noorsootöös', https://www.ibs.ee/wp-content/uploads/2022/01/Infotehnoloogiliste-voimaluste-rakendamine-noorsootoos-uuringuaruanne.pdf

[7] Pelikasvatus. 2015. 'The game educator's handbook: revised international edition', https://pelikasvatus.fi/gameeducatorshandbook.pdf

[8] Pallavicini, F., Pepe, A., Mantovani, F., op. cit.

[9] Institute of Baltic Studies & e-Governance Academy, op. cit.

foundation for further communication with them. Therefore, the implementation of digital solutions, including video games, has potential in youth work, keeping up with the needs of young people and the development of society.

The 2016 study on the implementation of IT solutions in youth work also pointed out that applying digital solutions in youth work poses a number of challenges for the parties involved (specialists, employees, young people), such as lacking digital competence and the ability of youth workers to implement digital solutions in youth work.[10] Furthermore, there is widespread concern among youth workers and parents that young people spend too much time on digital devices. Nevertheless, research in Estonia[11] and elsewhere[12] shows that this concern is not always appropriate and it is important to view digital solutions as new ways to purposefully manage young people's time in the digital world. Several European countries, such as Finland, Austria and Ireland, have been using digital solutions in youth work for years and report positive trends.[13] For example, in Denmark, where young people spend a lot of time online, research shows that children are rather critical when it comes to the internet and are able to assess risks.[14] Therefore, extensive internet use may not necessarily mean that young people are isolated or uncritical. When applying digital solutions in youth work, including video games, it is important to address the related challenges and develop the digital competences and skills of all those involved in youth work.

This study focused on popular commercial video games that can be played on a computer, mobile phone, or game console. The study provides a comprehensive overview of the most popular video games played by young people aged 7–16 years old, their potential impact on the development of young people's general competences and the possibility of integrating video games into youth work in Estonia and elsewhere and makes recommendations for the application of video games in youth work.

The central methods of the study were secondary data analysis, focus group interviews with youth sector workers, individual interviews with youth aged 7–16 and an online questionnaire among both target groups (young people and youth sector workers). Combining several research methods led us to relevant research findings that allow for a more purposeful use of video games.

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[10]Institute of Baltic Studies & e-Governance Academy, op. cit.
[11]Institute of Baltic Studies & e-Governance Academy, op. cit.
[12] See: National Youth Council of Ireland. 2016. 'Using ICT, digital and social media in youth work: A review of research findings from Austria, Denmark, Finland, Northern Ireland and the Republic of Ireland', https://www.youth.ie/wp-content/uploads/2019/03/International-report-final.pdf
[13] National Youth Council of Ireland, op. cit.
[14] National Youth Council of Ireland, op. cit.

1. METHODOLOGY

This study defines video games or electronic games as any interactive commercially available game that can be played on various platforms, such as general-purpose shared or personal computers, mobile phones, and game consoles.

The study analyses:
- the use and frequency of use of video games among youth aged 7–16, including gaming platforms and various games;
- how video games support young people's general competences, as defined in section 4[15] of the national curriculum for primary schools;
- the willingness of youth sector workers to use video games in their work; and
- how video games have been used in youth work in Estonia and elsewhere.

The central methods of the study were **secondary data analysis**, **focus group interviews** with youth sector workers, **individual interviews** with young people aged 7–16 and an **online questionnaire** among target groups.

The primary **target group** of the study was **youth aged 7–16**. Considering that there were 147,551 young people aged 7–16 in Estonia in 2022[16], the planned sample for the questionnaire was a minimum of 300 young people. Although the results cannot be generalised for the youth population as a whole, the sample allows for the analysis of variation in responses by age, gender, language and region. The collected data gives a good overview of what young people play and why. The overview is sufficiently comprehensive and in depth to consider and discuss the possibilities of using video games to develop general competences. The target group of the study also included youth sector workers from all Estonian counties.

Secondary data analysis

The secondary data analysis included a review of existing data and previous research/analyses to gather data on the most popular video games, their potential impact on young people's general competences and the practice of using video games in youth work. The purpose of analysing secondary data was to provide a systematic overview of the main trends on the subject. The analysis included studies conducted in Estonia and abroad, Estonian and European Union strategic documents in the youth sector, and opinion pieces.

Interviews with youth

A total of seven individual interviews were carried out with youth aged 7–16 to prepare and refine the questionnaire. Interviews were conducted with five girls and two boys, including one interview with a native Russian speaker. The interviewees were from Harju County, Tartu and other regions of Southern Estonia. The interviewees were found using the snowball sampling method. The interviews were carried out based on a semi-structured plan approved by the client. All interviews were conducted online. Both young people and their parents were asked to verbally consent to the interview. The

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[15] National curriculum for basic schools. 2023. https://www.riigiteataja.ee/akt/108032023005
[16] Statistics Estonia dashboards, https://juhtimislauad.stat.ee/et/noorteseire-6/kogu-eesti-1

general objective of the study and the subsequent use of the data for the purposes of analysis were made clear to all interviewees. The interview questions were designed with interview ethics in mind, taking into account the age, gender and characteristics of the participants.

Detailed notes were taken during the interviews or, in their absence, they were transcribed and their content was analysed qualitatively. The data was analysed using the data analysis tool Microsoft Excel.

Questionnaire among young people

The primary data collection method was a **questionnaire among young people aged 7–16**. The aim of the questionnaire was to get an overview of the video games they play most and the frequency of playing, the assumed impact video games have on young people's general competences and the motivation of young people to use video games in youth work. The questionnaire was based on the interviews conducted with young people and the analysis of secondary data. The questionnaire inquired about the socio-demographic data of young people, such as age and gender, and, in line with the aim of the study, the frequency of gaming, their preferred gaming platforms (smartphone, computer, console) and other related data.

The questionnaire was conducted on the Alchemer survey platform and the average response time was six minutes. Stratified and snowball sampling were used to compile the sample. An invitation to the questionnaire was sent to 487 schools and it was shared on the social media channels of the Institute of Baltic Studies and in Facebook groups. **A total of 704 young people from all Estonian counties participated in the questionnaire.**

Data from the questionnaire was analysed using quantitative and qualitative methods. The quantitative part of the analysis provided a general overview of the responses of all respondents and the results were analysed according to four characteristics: gender, age, place of residence and native language. The most interesting results were visualised in figures and other findings were described in the text. For the sake of clarity, the results in the figures have been rounded to integers. Therefore, the sum of the results shown in the figures may add up to more than 100%. If some results have been added up when describing the results, the sum is based on the unrounded results, whereas the final result is rounded. The aggregated results in the text may therefore differ by a few percentage points. Where necessary, we used the chi-squared test in the analysis to show the overlap between two categorical characteristics.

Focus group interviews and questionnaires with youth sector workers

To research the willingness of youth sector workers, we collected data through focus group interviews and a short questionnaire.

The aim of the focus group interviews was to get an overview of which video games are used in youth work and in which situations, how they are used to develop young people's general competences and what are the needs and expectations of youth sector workers for the application of video games in youth work. We conducted a total of **6 focus group interviews with 15 youth sector workers** from at least 5 Estonian counties. The interviews were carried out based on a semi-structured plan approved by the client. All interviews were conducted online. The sample was put together using the snowball sampling method. Detailed notes were taken during the interviews or, in their absence, they were transcribed and their content was analysed qualitatively. The data was analysed using the data analysis tool Microsoft Excel.

In addition to focus group interviews, a questionnaire was conducted among youth sector workers to get a better overview of the applicability of video games in youth work. The questionnaire was based on the focus group interviews. The questionnaire was conducted on the Alchemer survey platform and the average response time was eight minutes. The sample was put together using the snowball sampling method and the questionnaire was distributed by contacting youth sector institutions. **56 youth workers from all Estonian counties responded** to the questionnaire. The data was treated as supplementary material to the focus group interviews, and the content of the responses was analysed qualitatively. The data was analysed using the data analysis tool Microsoft Excel.

2. THE DEFINITION AND FRAMEWORK OF VIDEO GAMES

WHAT IS A VIDEO GAME?

- e-game is a video game or electronic game or digital game
- Any interactive game or system operated by computer circuitry and an interactive image
- Can be played on various platforms: PC, mobile, console etc.
- There are many different genres and types of video games
- A video game may be created for an entertainment or educational purposes

Figure 1. What is a video game? Source: made by the authors

A video game or electronic game or digital game is any interactive game or system operated by computer circuitry and an interactive image.[17] Video games can be played on various platforms, such as general-purpose shared and personal computers, mobile phones, game consoles, TV-connected game consoles, handheld game devices (including mobile devices) and server-based networks.[18] In scientific literature, digital games have previously been understood as computer games, video games, serious games[19] and game-based learning.[20] Video games encompass a wide range of game types and genres. In a 2018 study, video games were defined as 'a rule-based formal system with a variable and quantifiable outcome, where different outcomes are assigned different values, the player exerts effort in order to influence the outcome, the player feels attached to the outcome, and the consequences of the activity are optional and negotiable.'[21] Video games are thus defined using several features and concepts. **In this study, video games are defined as interactive games or systems that are designed for commercial purposes and can be played on different digital platforms.**

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[17] Lowood, Henry E. 2021. 'Electronic game', 1 November, https://www.britannica.com/topic/electronic-game
[18] Ibid.
[19] A serious game is an application or electronic game created for educational purposes. Therefore, the primary purpose of the game is not entertainment, but education. Serious games are used in fields such as medicine, education and technology to simulate learned material.
[20] Saleme, P., Pang, P., Dietrich, T. & Parkinson, J. 2020. 'Prosocial digital games for youth: A systematic review of interventions'. *Computers in Human Behaviour Reports* 2: 1-9.
[21] Juul, J. 2018. 'The Game, the Player, the World: Looking for a Heart of Gameness', *Plurais - Revista Multidisciplinar*, *1*(2).

The most popular gaming platforms are mobile phones, the Xbox and PlayStation game consoles, and PCs.[22] In 2021 more than 83% of all internet users played video games on a variety of platforms, including 86.4% of women and 91.1% of men aged 16–24.[23] Video games are also highly popular among adolescents and basic school-aged children. For example, according to a 2021 survey carried out in the United Kingdom, 82% of children aged 12–15 played video games, such as Fortnite and Minecraft.[24] According to a 2011 study conducted in the United States, around 91% of children aged 2–17 play video games[25] and this percentage is ever increasing. The time-use survey conducted by Statistics Estonia between 2019 and 2021 revealed that boys aged 10–14 spend 131 minutes per day on various board, group, mobile, console and computer games, while girls of the same age spend 64 minutes per day.[26] It can therefore be concluded that video games are popular among young people and are freely available on various gaming platforms. Many countries have started to use video games in both education and youth work. **A more detailed list of the practices of other countries is available in Annex 1.** To the best of our knowledge, there have been no previous studies in Estonia on the applicability of video games in youth work.

Not all popular video games that are freely available today have educational value and can be used to support learning in the classroom or in youth work. Most of commercial video games currently in widespread use differ from e-learning tools designed for educational purposes in two aspects: a) video games should create intrinsic motivation in adolescents through fantasy, challenges and curiosity, and b) they should immerse players in a complex environment, allowing them to explore numerous strategies for action and make decisions to achieve increasingly difficult objectives.[27] It is also important to stress that not all video game genres may develop the cognitive performance of young people, and this effect has not been comprehensively documented for many popular video games.[28] At the same time, certain action games may have a stronger effect on a young person's cognitive performance than puzzle of role-playing games.[29] Every game type has the potential to influence young people's competences and skills. **A more detailed list of various game types and genres is available in Annex 2.**

Figure 2 shows video games mapped based on the main video game types and genres, and divided based on their level of complexity and extent of social interaction. For example, if you want to develop young people's teamwork and communication skills, but want the game to be as easy to grasp as possible, you should consider rhythm and music games. Therefore, when implementing video games in youth work, it is important to carefully consider the competences or skills you want to develop and which video game is the most appropriate based on the objectives of the youth work.

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[22] Yanev, V. 2022. 'Video Game Demographics – who plays games in 2022?', 26 November, https://techjury.net/blog/video-game-demographics/#gref

[23] Statista. 2022. 'Global gaming penetration 2021, by age and gender', 10 November, https://www.statista.com/statistics/326420/console-gamers-gender/

[24] Ibid.

[25] Granic, I., Lobel, A. & Rutger C. M. E. Engels. 2014. 'The Benefits of Playing Video Games' *American Psychologist* 69(1): 66-78.

[26] Statistics Estonia. 2023. 'Mida noored oma ajaga teevad?', 16 February , https://www.stat.ee/et/uudised/mida-noored-oma-ajaga-teevad?fbclid=IwAR3ou6iGeplkrPpmZFkKt_8OZQpyNKNQjQk2lks-6HR2-xZ9sdGauKjbUjc

[27] Brom, C., Šisler, V. & Slavík, R. 2009. 'Implementing Digital Game-Based Learning in Schools: Augmented Learning Environment of "Europe 2045"'. *Multimedia Systems* 16(1): 23-41.

[28] Granic, op. cit., p 69.
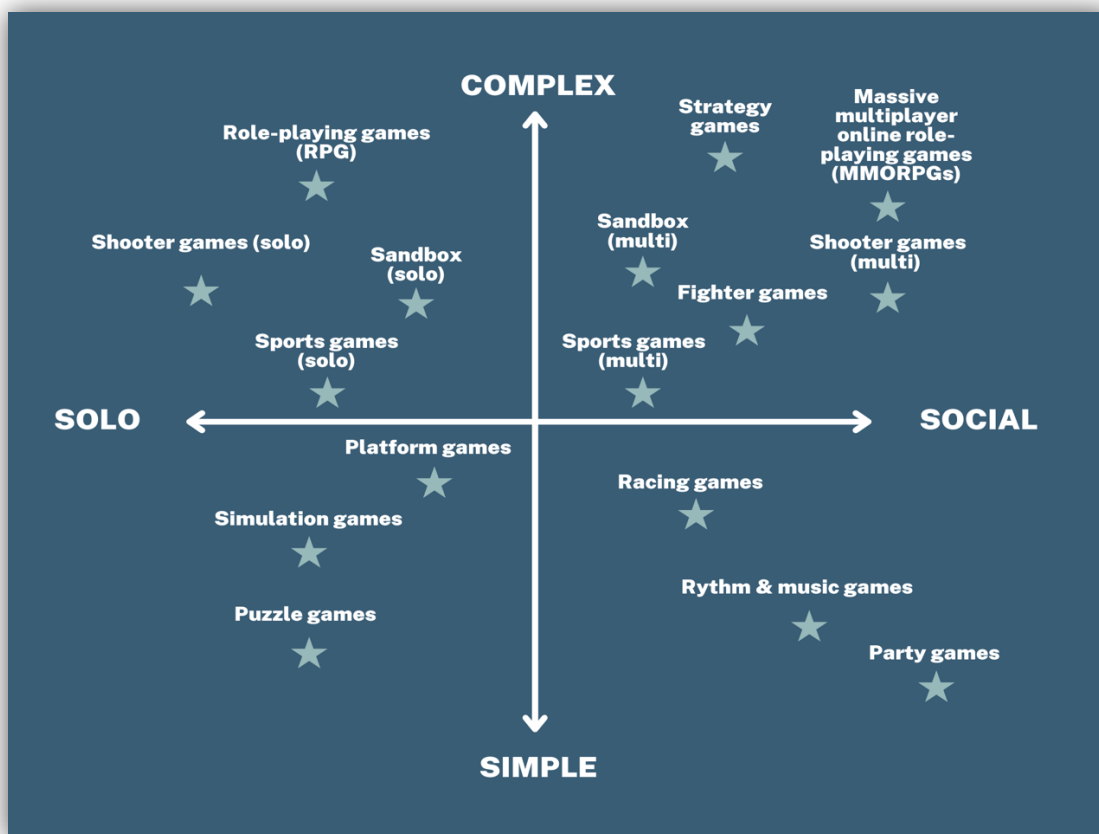
[29] Granic, op. cit., p 69.

Figure 2. A map of the main video game types and genres. Video games have been categorised by their level of complexity and extent of social interaction.[30] Source: Granic, I., Lobel, A., Engels, R. C. M. E.. 2013. 'The Benefits of Playing Video Games' American Psychologist 69(1): 66-78.

In addition to popular commercial video games, there are games that are designed to educate rather than entertain. In research, video games implemented in schoolwork are referred to as serious games.[31] Serious games are video games or game-like interactive systems developed for educational purposes using game technology and design principles.[32] Although the term has multiple definitions, serious games are considered in an educational setting as a purposeful learning environment aimed at supplementing key curriculum areas.[33] Such games differ from commercial video games primarily in their purpose and the in-game resources available to the player, which have been designed for educational purposes.[34]

In recent years, there have been increasingly more discussions about the importance of serious games in education. In Australia, game developers are creating a new generation of games that go beyond commercial video games, such as Roblox or Super Mario, and aim to promote public health messages, mental health support and awareness campaigns through gameplay.[35] At the same time, research has shown that even popular commercial video games can be useful for learning. For example, Minecraft

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[30] Granic, op. cit., p 69.

[31] Ulicsak, M. & Wright, M. 2010. 'Games in Education'. https://www.nfer.ac.uk/publications/futl60/futl60.pdf, p. 24-25.

[32] State Government of Victoria, Australia. 2017. 'Serious Games'. https://www.education.vic.gov.au/about/programs/learningdev/Pages/expired/techgames.aspx

[33] Ibid.

[34] Brom, Šisler & Slavik, op. cit., p. 25.

[35] Fitzsimmons, C.. 2022. 'We learn through play': How video games are getting serious', 10 April, https://www.smh.com.au/technology/video-games/we-learn-through-play-how-video-games-are-getting-serious-20220322-p5a6rx.html

(an adventure game) and Civilization (a strategy game), both aimed at young people, have been used to introduce socio-demographic issues.[36]

Therefore, when defining video games and establishing a framework, it is necessary to consider the functionality and purposefulness of digital solutions, including commercial computer games, mobile games and video games, in the classroom and in youth work in general. Video games used in youth work should have specific objectives for the games to have a positive and supportive effect on young people's general competences and should be an attractive way to develop these competences. The choice of video games should be based on the expected effect different game types have on the development of certain skills or competences.

Figure 3. Why video games? Source: made by the authors

Video games are an important form of entertainment and communication for today's youth. Unlike serious games, commercial video games are designed to entertain players, offering them a goal-driven environment in which they face a number of conflicts and challenges. **Research has shown that in commercial video game environments players can apply their cognitive skills in a more integrated way and are more motivated to play, therefore commercial video games have a greater potential impact on improving cognitive functions.**[37] Popular video games are more accessible to players and game creators are putting more and more focus on the potential impact of video games on players' skill development.

Many popular video games incorporate educational aspects, which has led to the discussion of their possible inclusion in formal and informal education. For example, Assassin's Creed, a video game in the action-adventure category, incorporates geography and history. In Roblox, players have to solve

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[36] Bavelier, D. & Shawn Green, C.. 2019. 'Enhancing Attentional Control: Lessons from Action Video Games' *Neuron* 104(1): 147-163.
[37] Choi, E., Ryu, J-K., Jung, K-I., Kim, S-Y., Park, M-H. 2020. 'Commercial video games and cognitive functions: video game genres and modulating factors of cognitive enhancement', *Behavioral and Brain Functioning* 16(2): 1-14.

mathematical and business problems. Furthermore, the strategy game Civilization and the social simulation game The Sims address the issues of planning and sustainability.[38] In order to enhance their interest-driven activities, young people need the support of knowledgeable peers, but also teachers, parents and other adults, to learn how to use technology for purposes other than just entertainment.[39]

As a result, the potential of video games to support learning is an increasingly popular topic of discussion, and people are looking for ways to integrate video games into formal and informal education to develop young people's general competences. However, the number of studies in the field is still low. In Estonia, the national curriculum for basic schools defines eight cross-curricular competences aimed at guiding young people in their development as people and citizens. General competences are: 1) culture and value competence; 2) social and civic competence; 3) self-management competence; 4) learning to learn competence; 5) communication competence; 6) mathematics, science and technology competence; 7) entrepreneurship competence; and 8) digital competence.[40]

There are currently no comprehensive studies on the impact of specific video games on young people's general competences, but **research shows that video games hold great potential in the development of young people's skills**. Some studies stress the potential dangers arising from the problematic use of video games or their association with poor mental health, but others show that video games are often associated with enjoyment and intrinsic motivation, making them an attractive and valuable new learning method that provides psychological support.[41] In addition, there are a number of advantages to using video games in youth work: 1) relatively inexpensive; 2) ready-to-use format; 3) advanced graphic quality; and 4) the possibility to reach a wider audience.[42] Therefore, when implementing video games in youth work it is important to understand the opportunities and potential dangers of digital solutions.

Young people have diverse competences that allow them to operate and participate in a digitalised environment, and all young people will need a flexible, agile and critical approach to digital technology in their future work and everyday lives.[43] **This means that video games are a helpful method for young people to develop the competences they have and to encourage them to take the initiative to share these competences with the older generation.** This is also confirmed by the council's conclusions on digital youth work, which states that 'youth work has a great potential to allow for experiential learning in a non-formal setting and to involve young people in activities to strengthen their digital competences and media literacy.'[44] Therefore, implementing video games in youth work is an optimistic plan, as it provides greater opportunities for cooperation between young people and youth workers. Video game application practices are described in chapter 4.

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[38] National Youth Council of Ireland. 2020. Using games in youth work for development education.
[39] Laakso, L. N., Korhonen, T. S., Hakkarainen, K. P. J. 2021. 'Developing students' digital competences through collaborative game design', *Computers & Education* 174: 1-15.
[40] National curriculum for basic schools. 2023. https://www.riigiteataja.ee/akt/108032023005
[41] Pallavicini, F., Pepe, A., Mantovani, F., op. cit.
[42] Ibid.
[43] Official Journal of the European Union. 2019. 'Conclusions of the Council and of the Representatives of the Governments of the Member States meeting within the Council on Digital Youth Work', C 414/02, https://eur-lex.europa.eu/legal-content/ET/TXT/PDF/?uri=CELEX:52019XG1210(01)&qid=1581414758803&from=EN
[44] Ibid.

3. THE IMPACT OF VIDEO GAMES ON THE DEVELOPMENT OF YOUNG PEOPLE'S GENERAL COMPETENCES

Video games have a positive effect on the development of young people's general competences. Research has found that while commercial video games may train the player's cognitive functions, even during short-term gameplay of any video game, the development of specific skills and competences depends on the genre of the video game and in-game opportunities.[45] **Research shows that video games have been found to have a positive impact on the development of all cross-sectoral general competences, including those described in the Estonian national curriculum for basic schools.** Below is a description of each competence listed in the national curriculum for basic schools and an example of the impact of video games on its development.

Culture and value competence is set out in the national curriculum for basic schools as the ability of young people to evaluate human relations and activities from the standpoint of generally accepted moral norms, to sense and value their ties with other people, cultures and society, to value creativity, to appreciate universal and societal values, and to acknowledge their own values.[46] For example, the construction and simulation game SimCity, the game platform Roblox and the adventure game Minecraft can be used to construct and plan buildings (eg youth centres or public buildings), and thus can be used to guide young people to discuss various societal challenges and needs.

Social and civic competence is the ability of young people to self-actualise, to function as an aware and conscientious citizen, to support the democratic development of society and the national independence of Estonia, to respect the rules of various environments and the diversity of society and nature, to cooperate with other people in a variety of situations and to accept and respect their values.[47] Research has shown that players who engage in games related to civil society (political simulations or games involving debates on ethical issues) are more likely to be involved in a civil movement.[48]

Self-management competence is the ability of young people to understand and evaluate themselves and their weaknesses and strengths, to analyse themselves, to behave safely and lead a healthy lifestyle, and to solve communication problems.[49] A 2023 gamer experience study revealed that when playing commercial video games, test subjects demonstrated the development of several social-emotional skills, such as social awareness, self-management, inhibitory control and relationship management.[50] In addition, commercial games allow people to increase their intrinsic motivation to acquire new in-game competences and autonomy, and to satisfy their need for entertainment, all of which correlate to emotional regulation and mental well-being.[51]

Video games may develop young people's emotional intelligence, as they allow them to experience positive and negative emotions in a controlled environment. Research has shown that when players

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[45] Choi, E., Ryu, J-K., Jung, K-I., Kim, S-Y., Park, M-H., op. cit.
[46] National curriculum for basic schools. 2023. https://www.riigiteataja.ee/akt/108032023005
[47] Ibid.
[48] Lenhart, A., Kahne, J., Middaugh, E., Macgill, A. R., Evans, C., & Vitak, J. (2008). Teens, video games, and civics: Teens' gaming experiences are diverse and include significant social interaction and civic engagement. *Pew Internet & American Life Project*.
[49] National curriculum for basic schools,op. cit.
[50] Toh, W. & Kirschner, D. 2023. 'Developing social-emotional concepts for learning with video games', *Computers & Education* (194): 1-23.
[51] Ibid.

experience fear, anxiety, anger and disappointment in a game, they can practise regulating their negative emotions, as they are learning how to recognise and manage these emotions in a safe video game environment.[52] **Therefore, when implementing video games in youth work, it is important to reflect with young people on what they have experienced in the game in order to maximise the development of skills and competences.**

Learning to learn competence is the ability of young people to organise the learning environment individually and in groups and procure the information they need from their environment, to plan studies and use what they have learned in various situations and problem-solving scenarios, to analyse their knowledge and skills, and to associate the knowledge acquired with what they have previously learned.[53] Several electronic games are designed to maintain motivation by giving constant feedback, resulting in a user experience based on a sense of accomplishment, which is highly likely to develop the player's skills and competences.[54] **Therefore, when gaming, it is always necessary to plan the activities and learning outcomes, and to use the knowledge in new situations by solving in-game problems.** Furthermore, playing video games helps players understand the link between repeated practice and success – a perspective that is important in school, at work and in everyday life.[55]

Preliminary studies have also shown the positive effect of video games on information processing and performance. This translates to the improved ability of regular gamers to distinguish important information from that which is irrelevant.[56] Such effects are associated with the rich visual imagery used in video games, the need to make quick decisions and exposure to unpredictable situations. Similar to real life, problems are solved in video games by trial and error, rather than reading specific instructions and then taking action.[57] When playing, gamers must sift through instructions to find the most important information and use it to decide on the next steps. **In order to develop skills, however, it is important to analyse the accomplishments and failures with the player.**

Communication competence is the ability of young people to express themselves clearly, politely and appropriately in both their native language and foreign languages, taking into account the situation and context, to present themselves and justify their opinions, to read and differentiate texts, and to value correct use of language and agreement-based communication.[58] Collaborative video games are likely to contribute to students' communication skills, as players must jointly reflect on in-game events and make decisions about subsequent action, which will affect the outcome of the game.[59] In addition, a large number of popular video games are in English, which helps young people practise their foreign language skills.

Mathematics, science and technology competence is the ability of young people to use the language, symbols and methods characteristic of mathematical applications at school and elsewhere, to understand the significance and limitations of these sciences, to use new technologies purposefully and to make evidence-based decisions.[60] Research shows that good spatial perception is associated with young people's performance in science, technology, mathematics and engineering, which in turn

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[52] Toh, W. & Kirschner, D., op. cit.
[53] National curriculum for basic schools, op. cit.
[54] Granic, I., Lobel, A., & Engels, R. C. M. E., op. cit.
[55] Ibid.
[56] Bavelier, D., Achtman, R. L., Mani, M., & Föcker, J. 2012. Neural bases of selective attention in action video game players. Vision Research, 61, 132–143.
[57] Granic, I., Lobel, A., & Engels, R. C. M. E., op. cit.
[58] National curriculum for basic schools, op. cit.
[59] Liao, Chen & Shih, op. cit., p 45.
[60] National curriculum for basic schools, op. cit.

is positively linked to long-term professional success.[61] Positive effects on spatial thinking have been observed in those who play the puzzle game Tetris over a long period of time, and shooter games have been observed to potentially improve spatial thinking.[62]

In a study completed in 2013, commercially available shooter games were observed to have a greater developmental effect on players' spatial skills than traditional educational activities targeting the same skills.[63] The study also revealed that the spatial skills acquired through video games transfer to other areas of life.[64] Therefore, video games have the potential to help develop young people's spatial thinking, which may improve their mathematical competence.

Entrepreneurship competence is the ability of young people to create ideas and implement them, using the acquired knowledge and skills in different areas of life, to see problems and solutions, to formulate plans and goals and to present and implement them, to organise joint activities and participate in them, and to take sensible risks.[65] The central idea of many video games is autonomy, as players must commit to a particular in-game activity to create and direct actions for a specific purpose (personal agency).[66] This means that **video games give young people the opportunity to decide which actions and moves to take to achieve their goal, and to create and implement plans to reach the desired outcome**. Over time, video game developers have expanded game designs and environments to increase the dimension of personal initiative, providing flexibility of objectives and actions, increasing in-game choices and the player's sense of freedom.[67] Therefore, video games help develop young people's entrepreneurship competence through gameplay, which may transfer into their everyday lives.

Digital competence is the ability of young people to use emerging digital technologies in a rapidly changing society, to find and store information and assess its reliability, to be aware of and know how to protect themselves against dangers in the digital environment, to communicate in the digital environment, and to follow the same morals and values in the digital environment as in everyday life.[68] A 2022 study reveals that **higher levels of digital competence are associated with a lower risk of gaming addiction**, which could lead to improved mental health in young people, while reducing the symptoms of gaming addiction.[69] It is important to encourage appropriate media use in young people and reduce the risks of addictive and risky internet behaviour.[70] Research shows that young people are more engaged in learning if they are given the opportunity to use skills and interests developed outside of formal education.[71] Video games are thus a good opportunity to reflect with young people on their in-game experiences and **broach the topic of risky internet behaviour**.

In addition to the above, it is important to keep in mind the player's own gaming-related interests and goals in order to develop particular competences. According to the digital gaming relationship theory,

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[61] Wai, J., Lubinski, D., Benbow, C. P., & Steiger, J. H. 2010. Accomplishment in science, technology, engineering, and mathematics (STEM) and its relation to STEM educational dose: A 25-year longitudinal study. Journal of Educational Psychology, 102, 860 – 871.
[62] Parong, J., Mayer, R. E., Fiorella, L., MacNamara, A., Homer, B. D., Plass, J. L., op. cit.
[63] Parong, J., Mayer, R. E., Fiorella, L., MacNamara, A., Homer, B. D., Plass, J. L., op. cit.
[64] Parong, J., Mayer, R. E., Fiorella, L., MacNamara, A., Homer, B. D., Plass, J. L., op. cit.
[65] National curriculum for basic schools, op. cit.
[66] Garcia-Fernandez, J., Medeiros, L. 2019. 'Cultural heritage and communication through simulation videogames – a validation of Minecraft', *Heritage* 2: 2262-2274.
[67] Ibid.
[68] National curriculum for basic schools, op. cit.
[69] Tso, Winnie W.Y., Reichert, F., Law, N., Fu, K. W., de la Torre, J., Rao, N., Leung, L. K., Wang, Y-L., Wong, W. H. S. & Ip, P. 2022. 'Digital competence as a protective factor against gaming addiction in children and adolescents: A cross-sectional study in Hong Kong', *The Lancet Regional Health* 20: 1-11.
[70] Ibid.
[71] Laakso, L. N., Korhonen, T. S., Hakkarainen, K. P. J. 2021. 'Developing students' digital competences through collaborative game design', *Computers & Education* 174: 1-15.

there are six dimensions that help understand personal meanings attributed to gaming and why players consider playing video games important: 1) competition and achievement; 2) enjoyment, free play and activity; 3) sociality, togetherness and communality; 4) learning, development, intellectual challenge and strategy; 5) creativity, expression, fantasy and immersion; and 6) game and genre attributes.[72] Players are also influenced by internal and external factors, such as school, friends and stereotypes, the way they play games and their level/experience of gaming.[73] **This shows that players attach importance to video gaming aspects, the development of which is also included in the Estonian national curriculum for basic schools.**

Therefore, when it comes to the impact of video games on young people's general competences, it is important to assess the big picture: young people's gaming-related interests and goals, the supportive effect of video games on the development of specific general competences, as well as broader objectives, such as the impact of video games on young people's mental and physical health.

Potential risks of playing video games

Although playing video games has a positive effect on the development of young people's general competences, potential risks must also be acknowledged. Academic research addresses the **following problems: sleep disorders, unhealthy lifestyles, social isolation (including playing video games to alleviate it), addiction and mental health problems**. Sleep disorders in young gamers have been studied using cluster analysis, in which researchers analysed the impact of young people's behavioural patterns on their sleep quality.[74] The results of the study showed that playing video games has adverse effects on sleep quality if the young person has pre-existing issues with mental health. Therefore, the results also implicitly suggest that playing video games is not a solution to mental health issues, but that video gaming is not necessarily associated with sleep disorders, regardless of the frequency and the average length of time spent playing. However, it is important to remember that the combination of frequent video gaming and poor mental health has a strong negative effect on sleep quality. This should also be taken into account when implementing video games in youth work, as some young people may have sleep disorders arising from mental health issues.

The impact of video games on the lifestyle of gamers as a whole has been researched somewhat more than, for example, the impact of video games on a specific issue, such as sleep disorders or addiction. There is also a comprehensive literature review of studies on the healthiness of the lifestyle[75], in which the authors found that video gaming is, for the most part, positively associated with higher BMI and unhealthy eating habits. At the same time, the authors mention that video gaming has no effect on the frequency of sleep disorders. These results confirm that video gaming may have adverse effects on sleep quality and probably other factors in combination with other features. Thus, research[76] results have shown **negative effects on young people's health when video games are used as a primary coping mechanism for stress**. It was found that video gaming is not a good solution to young people's

[72] Merikäinen, Mikko. 2023. 'Young People's engagement with digital gaming cultures – validating and developing the digital gaming relationship theory', *Entertainment Computing* 44: 1-9.
[73] Merikäinen, Mikko. 2023. 'Young People's engagement with digital gaming cultures – validating and developing the digital gaming relationship theory', *Entertainment Computing* 44: 1-9.
[74] Altintas, E., Karaca, Y., Hullaer, T., Tassi, P. 2019. Sleep quality and video game playing: Effect of intensity of video game playing and mental health. *Psychiatry Research, 273,* 487–492.
[75] Chan, G., Huo, Y., Kelly, S., Leung, J., Tisdale, C., Gullo, M. 2022. The impact of eSports and online video gaming on lifestyle behaviours in youth: A systematic review. *Computers in Human Behaviour, 126,* 1–16.
[76] Shi, J., Renwick, R., Turner, N. E., Kirsh, B. 2019. Understanding the lives of problem gamers: The meaning purpose, and influences of video gaming. *Computers in Human Behavior, 97,* 291–303.

problems, which is important to consider when developing the skills of youth workers, if video games are to be implemented in youth work more widely.

The negative effect of playing video games may also manifest in young people's digital addiction[77], which has led to many formal and informal educators to reduce their use in their work. It is important to note that **only around 1–3% of gamers are at risk of becoming addicted**.[78] The final report on the future scenarios of Estonia's youth sector addresses digital addiction as a potential risk for young people and the youth sector. The study reveals that there may be an increased need among youth workers for additional training on digital addiction, which would allow them to approach all digital issues in a more meaningful way, including video games.[79] At the same time, it is an important observation that **the purposeful use of electronic games as a meaningful activity helps reduce negative prejudices and contributes to young people's increased awareness of the safe practices in the virtual world**.

Overall, previous studies show the importance of the combined effect of various factors in the application of video games. Although video gaming has a positive effect on players' general competences and, for example, their emotion regulation, excessive video gaming contributes to the decline of these skills.[80] In addition, it should be noted that research and knowledge on both the positive and negative effects of video games are far from exhausted. As this is a complex issue where effects can manifest through a combination of factors, **the process of implementing video games must be agile, ie quick to adapt to changes**. This means that knowledge on the subject is constantly improving and is taken into account when preparing materials. When preparing instructions for youth workers, it is also important to bear in mind that the effects of video gaming may differ for each young person, but some trends are recurrent (eg excessive and uncontrolled video gaming to alleviate stress has adverse effects on young people's mental health).

[77] Brom, C., Sisler, V., Slavik, R., op. cit.
[78] Hopkins, Sally. 2022. 'Gaming addiction report 2022', 18 April, https://delamere.com/blog/gaming-addiction-report-2022
[79] Haugas, S., Kendrali, E. 2022. The future scenarios of Estonia's youth sector. Tallinn: Praxis think tank
[80] Villani, D., Triberti, S., Carissoli, C., Marchetti, A. 2018 Videogames for Emotion Regulation: A Systematic Review. *Games for Health Journal, 7*(2), 1–15.

4. VIDEO GAMES IN YOUTH WORK

In Estonia, the principles of youth work are set out in the Youth Work Act, which states that: 1) youth work is performed for the benefit of and together with young people by involving them in the decision making process; 2) the creation of conditions for youth work are based on the needs and interests of young people; 3) youth work is based on the participation and free will of young people; 4) youth work supports the initiative of young people; and 5) youth work proceeds from the principle of equal treatment, tolerance and partnership.[81] When implementing video games in youth work, it is important to ensure that all these principles are respected and to think about how we can use video games to support them.

In 2016 the Education and Youth Board published the concept of smart youth work, which sets out three primary focus areas: 1) activities aimed at young people; 2) the development needs of youth workers for the implementation of smart youth work; and 3) the development of the quality of youth work and a better knowledge of young people through digital tools.[82] Therefore, due to the rapid spread of video gaming among young people, we need to find ways to use video games to make youth activities more attractive, while keeping in line with the smart youth work concept. We need to establish a better connection with young people by using digital tools and find ways to train and inform youth workers to increase their digital competences. While it is important to maintain physical contact with young people when possible during the performance of youth work, youth work must include not only the public space, but also the digital space.[83]

In recent years, digital youth work has become more common in Estonia and abroad. The term 'digital youth work' is relatively new, describing areas of youth work that use new digital technologies and digital media to enhance outcome-driven youth work.[84] Digital youth work encompasses activities that may occur in face-to-face, group or social situations, but also in online environments or as a combination of both.[85] Digital youth work is important because new technologies, including video games and digital media have become mainstream in youth culture, which leads the youth to live simultaneous and seamless online and offline lives. It is therefore **important to implement digital solutions that modernise and enhance youth work practices, taking into account societal developments and young people's need to cope in a rapidly evolving environment**. Furthermore, digital youth work must encompass the entire organisation and requires an integrated approach; it should not be regarded as a specialised service or a niche area.[86]

As a result of digital youth work and the resulting new methods, youth work is more relevant and more responsive to the needs of young people. Youth workers with a flexible and critical attitude towards digital solutions are more capable of analysing the positive and negative effects of digitalisation on

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81 Youth Work Act. 2022. https://www.riigiteataja.ee/akt/NTS
82 Education and Youth Board. 2023. 'Nutikas noorsootöö'. https://harno.ee/nutikas-noorsootoo
83 National Youth Council of Ireland. 2020. 'Using games in youth work for development education.' https://www.youth.ie/wp-content/uploads/2020/11/Games-in-Youth-Work-Handbook-FINAL.pdf
84 National Youtch Council of Ireland. 2019. 'Guidance for digital youth work', https://www.youth.ie/wp-content/uploads/2019/03/Screenagers-Guidance.pdf
85 Ibid.
86 National Youtch Council of Ireland. 2019. 'Guidance for digital youth work', https://www.youth.ie/wp-content/uploads/2019/03/Screenagers-Guidance.pdf

young people as well as youth work practices and services[87], which will allow us to teach young people how to be safe and responsible in the digital world. **In addition, the use of digital tools, including video games, in youth work makes services more accessible to young people, including those who are geographically or socially isolated**.[88] Video games are therefore a way of using a popular digital tool to teach young people, in a playful way, how to function in the digital world and to include young people who have not yet found their way into youth work services.

The recommendations for digital youth work, created by the Education and Youth Board in 2021, highlight five key components of digital competence for youth workers: 1) information literacy; 2) communication and collaboration; 3) digital content creation; 4) security; and 5) problem-solving.[89] **The implementation of video games in youth work requires three of these in particular: communication and collaboration, security, and problem-solving**, as these are the key areas in video gaming and the development of various competences in youth.

It is important to include young people in youth work, making use of the environments and methods they prefer, thus making youth work activities more fun for them. Video games are attractive, diverse and facilitate interaction between various youth groups, which are significant characteristics of youth work that could be used to direct young people's time and skills.[90] In addition, video games can be used to explain major societal issues, combining learning and entertainment.[91] For example, there could be a lecture on climate change, after which young people play a game based on this topic and then have a discussion to analyse what they learned and experienced.[92] When implementing video games in youth work, it is therefore important to incorporate learning, playing and reflection to develop young people's general competences and skills in a purposeful manner.

For example, there have been several successful youth work experiments in Finland on the application of video games in the activities of youth centres. Currently, games are used in Finland as a tool and method for youth work, an operating environment, for shaping content and as a form of activity in youth centres.[93] This means that in some cases, youth work done through video games is spontaneous and casual, but video games are also a basis for a systematic and structured approach to youth work that consciously guides the development of young people's skills.[94] Furthermore, the activities encompass more than simply video gaming, but also various events, such as LAN parties, social networking and joint discussions built around a common interest – gaming. Video games thus allow young people to get involved in a variety of activities related to digital culture, including video games.

Several European countries have already implemented video games and other digital solutions in youth work.[95] The 2016 study 'Using ICT, digital and social media in youth work'[96], which covered the use of digital solutions in various European countries, revealed that the use of video games in youth

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[87] Verke. 2021. 'European Guidelines for Digital Youth Work', https://www.verke.org/uploads/2021/02/1cce7469-european-guidelines-for-digital-youth-work-aug-2019.pdf
[88] Ibid.
[89] Orunurk, op. cit.
[90] Verke. 2021. 'Digital Youth Work', https://www.verke.org/uploads/2021/01/a3f0ad24-digital-youth-work-a-finnish-perspective_verke.pdf
[91] National Youth Council of Ireland, 2019, op. cit.
[92] National Youth Council of Ireland. 2020. 'Using games in youth work for development education.' https://www.youth.ie/wp-content/uploads/2020/11/Games-in-Youth-Work-Handbook-FINAL.pdf
[93] Verke. 2021. 'Digital Youth Work', op. cit.
[94] Ibid.
[95] More about the practices of other countries in implementing video games in youth work is available in Annex 1.
[96] National Youth Council of Ireland. 2016. 'Using ICT, digital and social media in youth work', https://www.youth.ie/wp-content/uploads/2019/03/International-report-final.pdf

work is very diverse. While in Ireland and Northern Ireland less than 15% of youth workers used video games, the use of video games in youth work is very popular in Denmark and Finland, with 41% and 57% of youth workers utilising video games in their work, respectively.[97] A Finnish study found that the use of digital solutions, including video games, provides young people with new experiences, learning opportunities and the chance to experience success, while an Austrian study revealed that digital solutions facilitate interaction with young people by using modern ways that are accessible to them.[98] Thus, looking at the upward trend of video games, there is reason to believe that video games could be a way to establish (initial) contact with young people and make youth work activities more attractive.

A 2021 Finnish study on the digitalisation of youth work revealed that it is important to set specific goals when using digital solutions in youth work and to constantly evaluate their relevancy and applicability.[99] According to the survey results, municipalities that set digital youth work goals for themselves: 1) were more likely to feel that there was a shared understanding of the use of digital solutions within the work community; 2) recognised the benefits of digital youth work more often; 3) took into account digital solutions in employee job descriptions; 4) utilised information on digitalisation more often to support youth work planning; 5) used new methods and digital tools more often in youth work; and 6) paid more attention to the accessibility and risks of digital solutions.[100] It is therefore important that all parties have a common understanding of the necessity of digital solutions when implementing video games in youth work, which requires increased cooperation to find ways of implementing digital solutions in youth work based on young people's needs.

In Estonia, video games are rarely used in youth work. During the COVID-19 pandemic, youth workers had to find innovative ways to perform youth work and interact with young people using the virtual space. To that end, several youth centres utilised esports. For example, youth centres in Tallinn organised the GiTGud esports tournament[101], whose organisers have said that playing esports helps young people develop their teamwork and strategic thinking skills.[102] The tournament featured games such as CS:GO, Valorant, League of Legends and Dota 2.[103] Several youth centres in Tallinn have also organised a joint Gaming Day event, providing young people with the opportunity to compete in games such as Krunker.io, Skribbl.io, CS:GO, Call of Duty: Mobile, Minecraft and League of Legends.[104] Lasnamäe Youth Centre has organised virtual youth work using video gaming and streaming, where youth workers themselves have played with young people and also invited guests to perform virtually.[105] **However, this study revealed that most of the digital youth centres established during the pandemic are no longer an active part of the youth centre's activities**, but certain aspects, such as Discord or Facebook, are still used to communicate with young people and share information.

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[97] Ibid.

[98] Ibid.

[99] Verke. 2021. 'Digitalisation of Municipal Youth work', https://www.verke.org/uploads/2021/12/dc70bd96-digitalisation-of-municipal-youth-work-2021.pdf

[100] Ibid.

[101] Orunurk, op. cit.

[102] Tallinn.ee. 2022. 'Põhja-Tallinnas toimub e-spordi turniir.', 24 October, https://www.tallinn.ee/et/pohja/uudis/pohja-tallinnas-toimub-e-spordi-turniir

[103] Põhja-Tallinn Youth Centre. 2022. GiTGuD esports tournament https://www.facebook.com/events/5077794355682520/5077794379015851/

[104] Valdeku Youth Centre. https://www.facebook.com/valdekunoortekeskus/photos/a.766519283401467/3045628972157142/?type=3

[105] Lasnamäe Youth Centre. https://www.facebook.com/lasnamaenk/photos/a.15482709455068/4222373217796115/

However, there are many factors in the implementation of video games in youth work that can influence their effectiveness. The use of games in informal education requires youth workers to have a high level of digital competence . In the 2021 study conducted in Finland, youth workers were asked to evaluate the challenges they face in their field, revealing that insufficient digital skills of employees is one of the challenges.[106] 94% of youth workers rated their digital skills as standard and 72% of respondents were interested in additional training. Other challenges that were highlighted include a low number of employees and lack of clear field-related goals. According to managers, the largest issue was the lack of human and financial resources in the field.[107]

In addition, a 2022 German study revealed that **youth sector workers who consider video games useful are more likely to use them in teaching**.[108] Currently, both formal and informal educators have a preconception that video gaming is a purely recreational activity that encourages young people to spend even more time in the virtual world. Research shows that this negative mind-set and the lack of awareness of video games among youth workers is one of the main reasons they have been underutilised in youth work.[109] Therefore, training focused on the use of video games would provide youth workers not only with the skills to use and integrate games into their activities, but also with better knowledge of how to prevent digital addiction and support young people who have developed an addiction.[110] Additional training or information days would help youth workers better identify digital addiction and incorporate activities necessary for preventing young people from becoming (further) addicted to the digital world. Purposeful use of digital means may also help young people reduce or manage the overall amount of time they spend in the digital world for recreational purposes.

We can thus conclude that implementing video games in youth work coincides with the objectives of youth work in Estonia and is in line with the concepts of smart youth work and digital youth work. Based on other countries, we can see that using video games in youth work to develop young people's competences and skills is an optimal way to use a medium they enjoy for educational purposes. At the same time, it is important to incorporate learning, playing and reflection to maximise the benefits of video gaming.

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[106] Verke. 2021. 'Digitalisation of Municpal Youth Work in 2021', op. cit.
[107] Ibid.
[108] Ibid.
[109] Brom, C., Sisler, V., Slavik, R., op. cit.
[110] Haugas, S., Kendrali, E., op. cit.

5. THE APPLICABILITY OF VIDEO GAMES IN YOUTH WORK BASED ON THE EXAMPLE OF ESTONIA

This chapter provides an overview of the results of the questionnaires and interviews carried out as part of the study. We conducted focus group interviews with youth sector workers and individual interviews with young people aged 7–16. In addition, we conducted an online survey among young people (aged 7–16) to get an overview of which games they play and in which situations, the supportive effect of video games on young people's general competences, and young people's motivation to play video games in youth work. We also conducted a questionnaire among youth sector workers to get a broader overview of the motivation of youth workers to implement video games in youth work and how video games have been used in youth work so far.

5.1. An overview of young people's video gaming practices

A total of 988 young people responded to the questionnaire, with 704 filling in the questionnaire in full. The results analysis reflects only the responses of respondents who completed the entire questionnaire. Responses are analysed in four main categories: gender, age, place of residence and native language. Respondents are divided by gender into three groups: boys (N = 327), girls (N = 260) and respondents who did not wish to disclose their gender (N = 117).[111] Respondents were divided into three age groups based on basic school stages. Thus, the groups are: 7–9-year-olds (N = 59), 10–13-year-olds (N = 374) and 14–16-year-olds (N = 271), who could be in grades 1–3, 4–6 and 7–9 respectively. By place of residence, respondents were divided based on the administrative divisions of Estonia, with five regions in total: Northern Estonia (N = 208), Southern Estonia (N = 164), Central Estonia (N = 68), Western Estonia (N = 115) and Northeastern Estonia (N = 149). Lastly, the responses were also analysed based on the native language of respondents: Estonian (N = 398), Russian (N = 295) and other (N = 11).

The results of the questionnaire show that the majority of respondents play video games (Figure 4). The proportion of respondents who do not play video games is around 6%. The most commonly used gaming devices are mobile phones (73%) and computers (65%). Somewhat less popular are game consoles (37%) and tablets (15%). The largest difference by gender was that boys were more likely than girls to use computers (81% of boys vs 51% of girls) and game consoles (50% of boys vs 25% of girls) for gaming. The proportions were more equal for other devices. This suggests that **boys cross-use devices more than girls**, which should be taken into account when using various means in youth work. In terms of age, students aged 7–9 are less likely to play video games on a computer than older students. Computers are used to play video games by 39% of students aged 7–9, 66% of students aged 10–13 and 70% of students aged 14–16. This should also be taken into account in youth work, as **the computer skills of younger students may not be as advanced as those of older students**. There were no outstanding differences in the use of devices in terms of region and language.

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[111] The proportion of non-respondents is high due to the fact that some respondents filled in the questionnaire when their gender was not asked.
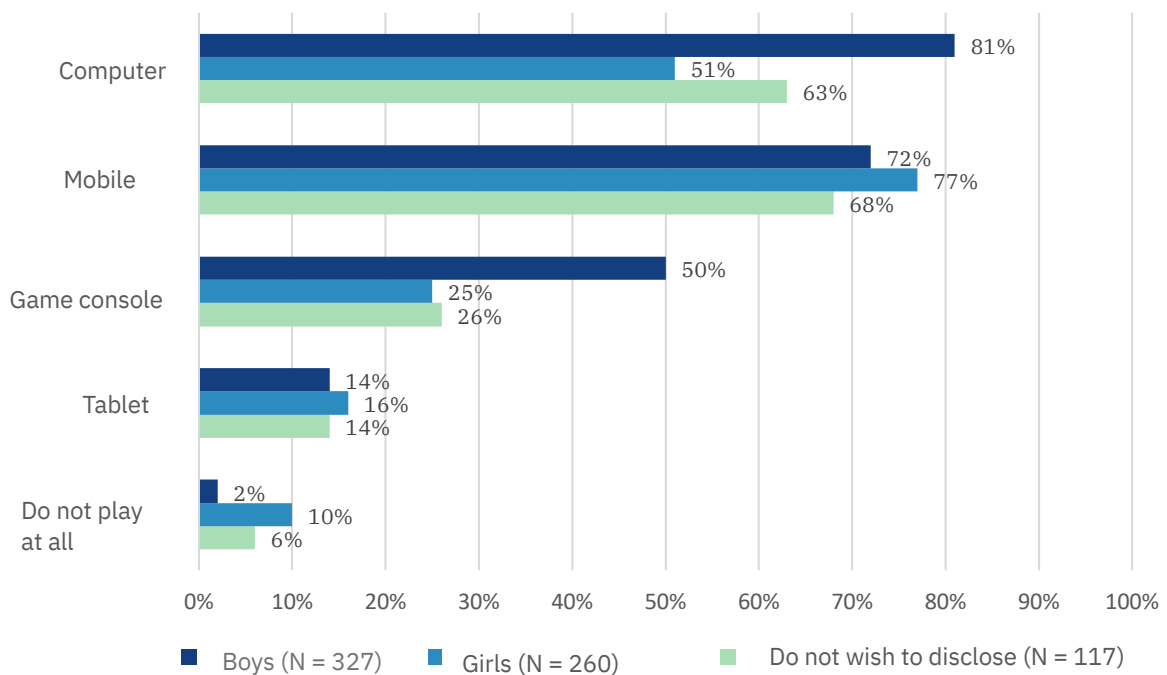
Figure 4. The most used devices for video gaming by gender (N = 704)

Across all respondents, the most played games are Roblox (59%) and Minecraft (50%). Other popular video games are GTA (27%), Counter-Strike (24%) and Fortnite (22%). In addition to these games, Figure 5 shows all other games played by at least 10% of all respondents. **Notably, boys are much more likely than girls to play games involving violence.** This is evidenced by the gender proportions of Counter-Strike (39% of boys vs 6% of girls), Fortnite (35% vs 9%) and Grand Theft Auto (41% vs 11%). This may suggest that boys look for more aggressive activities in games and find other games more boring. The proportion of young people that play violent games is also higher in certain age groups. The older the player, the more often they play violent games. For example, 32% of 14–16-year-olds, 20% of 10–13-year-olds and 7% of 7–9-year-olds play Counter-Strike.

The most notable differences were revealed in the player proportions of Dota 2 and Roblox. Dota 2 was played more often by native Russian speakers (14% vs 2%) and Roblox by native Estonian speakers (30% vs 22%). There were no major differences for other games, so the results of this study suggest that **young Estonian and Russian native speakers predominantly play the same games**. This is also confirmed by the favourite games of respondents, where there is no significant difference in the proportions of Estonian and Russian native speakers. For example, the most frequent favourite, Roblox, was marked as favourite by 23% of Estonian and 25% of Russian speakers.
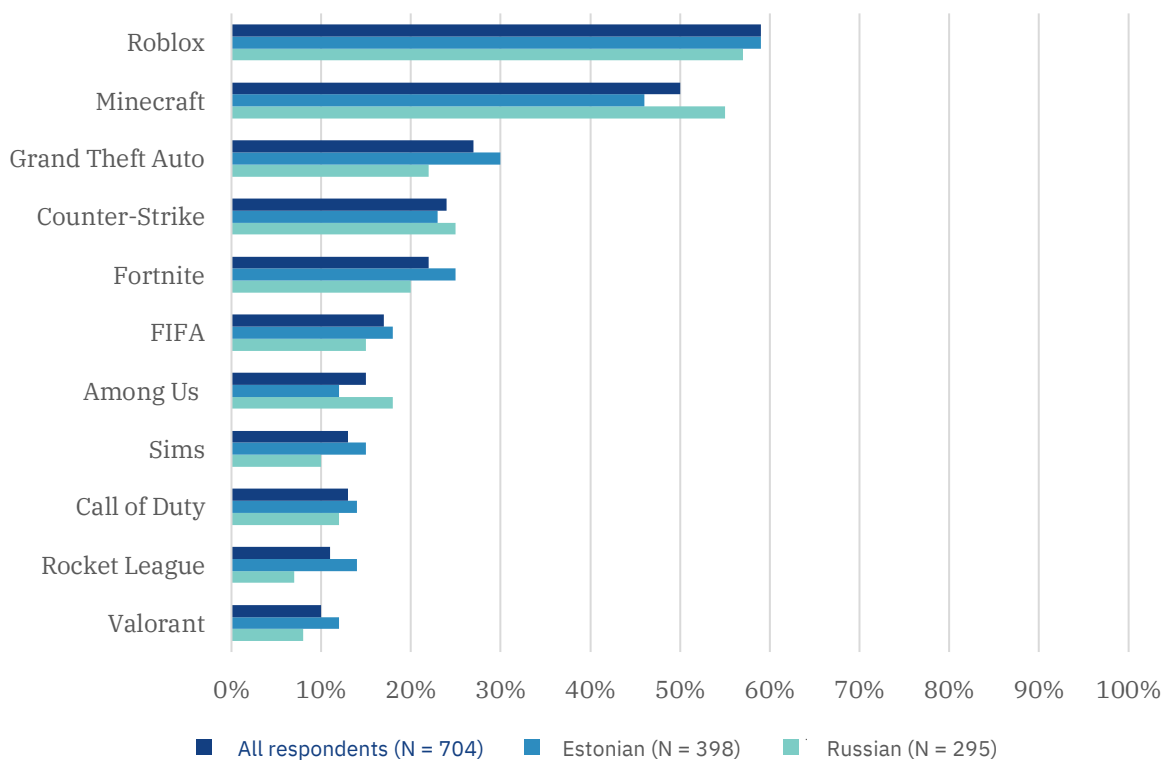
Figure 5. The most played video games (N = 704)

The questionnaire results showed that gaming forms a significant part of young people's lives: 65% of all respondents play games at least once per day or more, and 22% play at least once per week. The most common length of time spent on gaming is 1–2 hours at a time (43% of all respondents who play video games). 27% of respondents play for 3–4 hours and 18% for 5–6 hours or more. This means that **one in nine respondents play video games at least five hours per day** and almost one in three play at least three hours per day. Boys are more likely to play for longer: 22% of boys usually play for at least five consecutive hours, compared to 8% of girls. In addition, the results show that young Russian speakers are somewhat more likely to play for longer than young Estonian speakers (22% vs 15%). **We can therefore conclude that young people spend a large part of their time on gaming, and it is necessary to find ways to guide young people to spend their time in the virtual world purposefully to develop various skills.**

The online questionnaire revealed that young people play video games mostly for entertainment or to ward off boredom, but also to interact with friends, improve their imagination and escape from reality. We can therefore conclude that video games are an important form of entertainment and socialisation for young people. In the free responses, some said that they play video games because they like to kill virtual characters. In light of that, it is necessary to consider how to make video games used in youth work interesting for such students as well to **guide them towards games that develop skills and competences and to teach them how to be safe in the virtual world, so that in-game activities with a negative undertone do not transfer into the real world**.

'I live in a place where I can't really hang out with friends, so I prefer to play with my classmates and gain interesting experiences through games.' – Estonian-speaking student, aged 16

Respondents were also given a list of skills and asked to identify which ones are developed by playing video games. Figure 6 shows the six most popular skills selected by young people. Across all players, these are: English (66% believe they are developing this skill), teamwork and computer skills (58% for both), concentration (53%), and coordination and analytical skills (49% for both). There was no difference between boys and girls in the top three skills, but the fourth most selected skill by girls was creativity (50% responded 'yes'). Among boys, the proportion was similar (48%), but the proportion of girls across all skills was lower, which suggests that **boys consider computer games more developmental than girls**.

Across age groups, there was a difference in the effect gaming has on taking the lead in real life. 41% of respondents aged 7–9 believe that gaming influences their ability to take the lead. 28% of respondents aged 10–13 believe the same, with the figure increasing again in the oldest age group (36%). The change could be explained by young people's differing perceptions of what 'taking the lead' means, but the difference could also be linked to puberty, where young people may not be as comfortable being in charge.

Based on young people's views on the development of skills through video gaming, we can conclude that video games could be used in youth work to purposefully (further) develop young people's social and civic competence, self-management competence and entrepreneurship competence. It must be noted that while young people may not be aware of it, video games also develop other competences mentioned in chapter 3, and developing these skills is just as important.
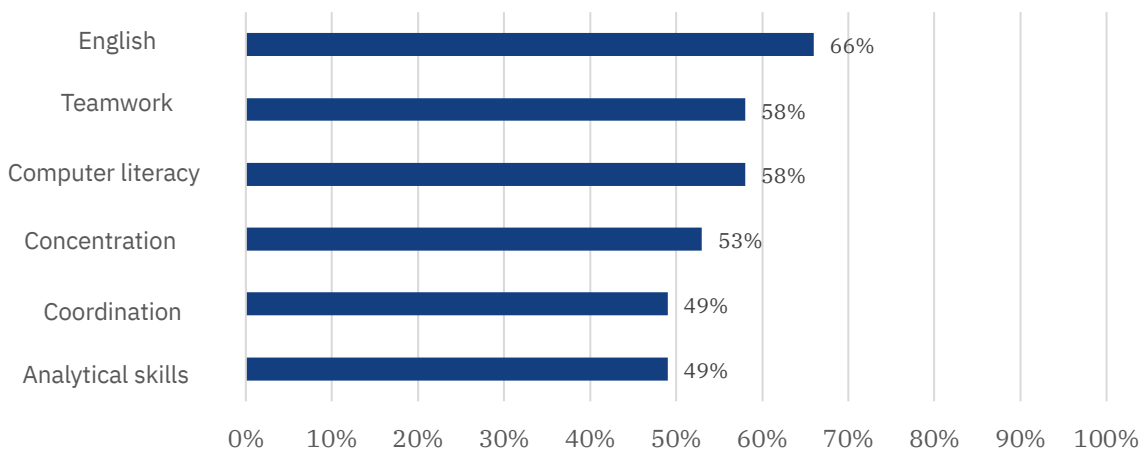

Figure 6. Assessments of skills developed by video games (6 most-selected skills by all players) (N = 655)

In order to better understand which subject's skills young people would like to develop through video games, respondents of the online questionnaire were asked which classes games could be used in (Figure 7). The most common responses were foreign language and mathematics lessons (both 39%). All other subjects were suggested in similar proportions, ranging from 21% to 30%. However, nearly a quarter of respondents said that video games should not be played at all in class.

Boys were more likely to say that video games could be used in foreign language lessons (46%). Girls, on the other hand, suggested mathematics lessons the most (44%). Young people from Northeastern and Northern Estonia stood out with their higher-than-average opinion that video games should not be played in class at all. This opinion was held by 44% of young people from Northeastern Estonia and 34% from Northern Estonia. The same trend was seen among young Estonian and Russian native speakers. While this view was expressed by 43% of native Russian speakers, only 17% of native Estonian speakers agreed.
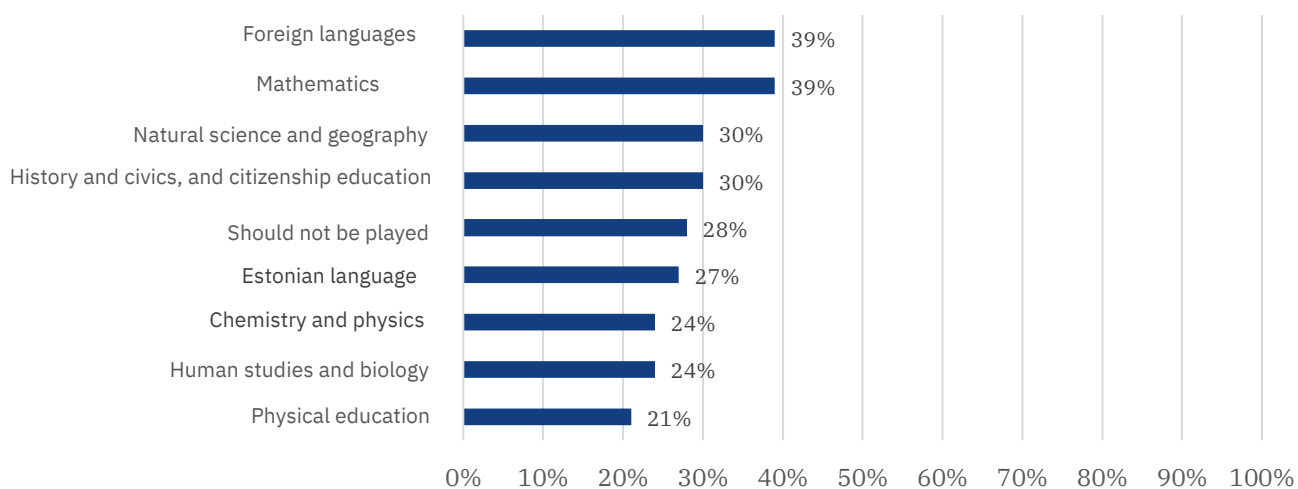
Subject	Percentage
Foreign languages	39%
Mathematics	39%
Natural science and geography	30%
History and civics, and citizenship education	30%
Should not be played	28%
Estonian language	27%
Chemistry and physics	24%
Human studies and biology	24%
Physical education	21%

Figure 7. Subjects in which video games could be used, according to young people (all respondents, N = 704)

> *'It depends on the game. In geography, we could play more games like Kahoot! In history, we could play more historical role-playing games, so you can play as someone and learn about their life. For example, you have to play as a commoner or cleric.' – Estonian-speaking boy, aged 14*

From figure 8, we learn that young people play most often online with friends (72% of respondents) and almost as frequently alone (71%). They play somewhat less frequently online with strangers (32%) or with friends in the same room (31%), and even less frequently with their parents (8%).

The difference between boys and girls was most apparent in terms of playing online with strangers, with boys being 15% more likely than girls to do so (38% vs 23%). Age was also revealed to be an important factor when it comes to playing online with strangers, meaning that older respondents were more likely to play with strangers than younger respondents. 19% of respondents aged 7–9, 24% of respondents aged 10–13 and 44% of respondents aged 14–16 play online with strangers.

Since **at least three quarters of respondents play online with friends or strangers**, it is important to know whether and how they communicate with each other. Discord was found to be the most common communication method, used by more than half (51%) of young gamers. Online calls and Snapchat were used somewhat less (both 22%). The results show that **video gaming is mostly a social activity for young people**. This suggests that these communication channels could potentially

be used in youth work to develop young people's social and communication competence. It is also important to teach young people how to safely interact with peers or strangers online.
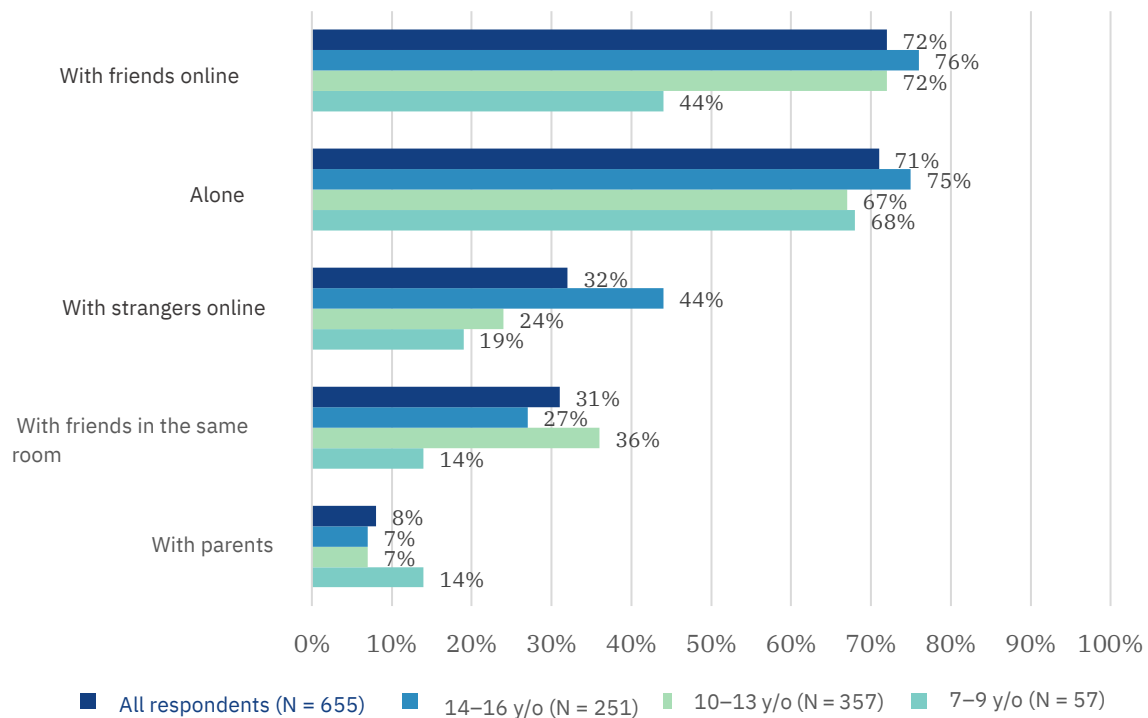

Figure 8. With whom do young people play video games? (N = 704)

How do young people perceive gaming-related risks? Respondents to the questionnaire were asked whether there were any negative aspects to video gaming, with 62% saying there were none. Respondents who thought there were negative aspects to gaming were asked to elaborate on what they are. The most cited reasons were health (eg worsening eyesight), computer addiction, time spent on gaming and becoming easily irritated. Younger respondents saw significantly fewer negative aspects to gaming. 16% of respondents aged 7–9, 38% of respondents aged 10–13 and 43% of respondents aged 14–16 said 'yes'. By region, negative aspects were most seen by young people from Central Estonia (52% said 'yes') and least by young people from Northeastern Estonia (30%), which is also illustrated by the fact that **native Russian speakers were somewhat less likely than native Estonian speakers to see any risks (33% vs 42%)**.

> *'People can waste a lot of money on a game to get certain things without thinking about the consequences, and games can make some people really angry.' – Estonian-speaking girl, aged 15*

> *'You can be really focused on a game without realising that you haven't really done anything important.' – Russian-speaking girl, aged 15*

Respondents were also asked whether their parents restrict their game time or forbid them from playing certain games. Although the results of the question regarding time restrictions seem similar to the question about negative aspects (35% said their parents restrict their game time), Pearson's chi-squared test shows no significant correlation between the two variables ($\chi2$ (df = 1) = 0.45, p > 0.05).

The most common time restrictions varied from one to four hours of game time, and the Family Link software, which allows parents to restrict the content available to their children, was also mentioned relatively often. However, significantly fewer parents forbid their children to play certain games. 16% of respondents said their parents restrict them from playing certain games. The forbidden games mentioned were mainly those involving violence, such as GTA, Fortnite and Counter-Strike. The largest differences in terms of forbidden games were found between age groups, with 51% of 7–9-year-olds, 45% of 10–13-year-olds and 17% of 14–16-year-olds being forbidden from playing certain games. The results are significant in that **nearly half of 7–13-year-olds have no restrictions on playing games**.

'When I play online, I'm not allowed to download all the games.' – Estonian-speaking girl, aged 8

Furthermore, considering that less than half of the young people participating in the study think that there are negative aspects to gaming, it is definitely necessary to consider awareness-raising activities on the subject for both young people and parents. Games sold in Europe have PEGI ratings[112], indicating which age groups the game is suitable for in terms of its theme and content. For example, games with violent content are not suitable for young people under the age of 18. The system was created to inform the public about which games are suitable for certain age groups. Therefore, when implementing video games in youth work, it is important to assess the suitability of electronic games for a specific age group in order to avoid the potential adverse effects on young people.

5.2. Young people's willingness to play video games in youth work

All young people were asked whether they had visited a youth centre. The results showed that 64% of all respondents had been to one. There were no significant differences in terms of gender. There were differences by age, but only for the youngest respondents. 44% of young people aged 7–9, 66% of young people aged 10–13 and 65% of young people aged 14–16 had visited a youth centre. Native Estonian speakers had visited youth centres somewhat more than native Russian speakers (69% vs 58%). Young people from Northeastern Estonia were the most frequent visitors (83%) and those from Northern Estonia were the least frequent (45%). This may be due to the fact that young people in Northern Estonia have access to a variety of activities (cinema, amusement parks etc), which often prevents them from visiting a youth centre.

69% of respondents who had visited a youth centre had played video games there. The most frequent players were boys (76% vs 61%) and native Estonian speakers (69% vs 57%). Young people who had visited a youth centre, but not played video games, were asked whether they would be interested in playing video games, to which a third said 'yes'. The results of this study show that **at least half of the young people questioned visit youth centres and play, or at least would like to play, video games there**. Therefore, the increased implementation of video games in youth work has a lot of potential, as young people are willing to and interested in playing them.

Young people who had played video games in a youth centre most often mentioned Roblox (50%), Minecraft (40%), FIFA and Fortnite (24% for both), and GTA[113] and Among Us (15% for both). This means that four out of the five most played video games are also the most played in youth centres.

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[112] Pan European Game Information. 2017. 'PEGI age ratings'. https://pegi.info/page/pegi-age-ratings (last accessed 23 March 2023).
[113] It is important to note that the PEGI rating of GTA is 18, meaning that the game is appropriate for those aged 18 years and older.

We can therefore conclude that in order to guide young people in the virtual world, youth centres could utilise these popular games purposefully to develop their competences and skills.

Overall, we can say that young people's willingness to play video games in youth work is rather high, and this offers a number of ways in which youth sector workers could use electronic games more in their work to develop young people's general competences and skills.

5.3. Youth workers' willingness to implement video games in youth work

This subchapter analyses the willingness of youth workers to implement video games in youth work and their thoughts on the subject. The analysis was based on information acquired from the focus group interviews and the short questionnaire. The figures reflect the results of the questionnaire. Focus group interviews were conducted with 15 youth sector workers. There were a total of 93 responses to the questionnaire, of which 56 were complete and 37 were partial. Most respondents were from Harju County and Tallinn.

Around 93% of respondents to the questionnaire believed that video games could be utilised in youth work to develop young people's skills. At the same time, interviewees were rather disinterested in using video games in youth work. The primary reasons mentioned were young people's addiction to smart devices and their interest in engaging with the physical world in youth centres and hobby groups. Despite this, interviewees acknowledged that video games have a lot of potential to develop various skills.
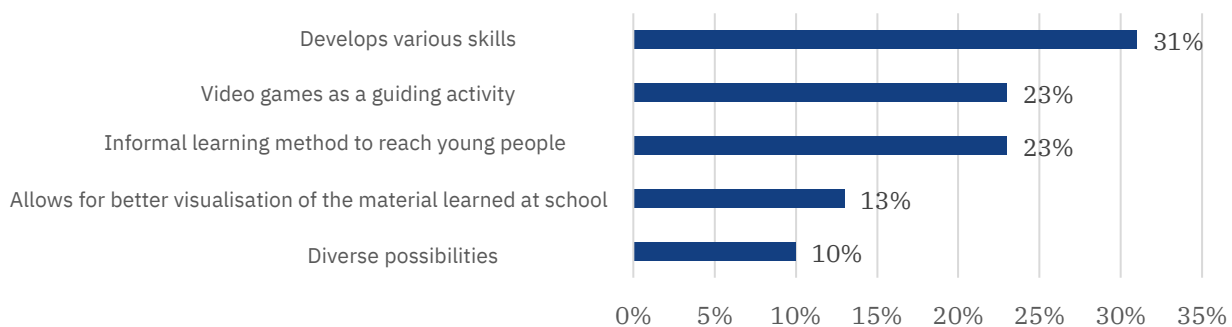

Figure 9. The opinion of youth workers on why video games could be utilised in youth work (N = 56)

Figure 9 shows that 31% of **youth workers who responded to the questionnaire think that video games could be implemented because they develop various skills, such as communication, teamwork, computer literacy and problem-solving**. 23% of youth workers said that video games could be used to guide young people to use their time in the virtual world purposefully and to direct their activities towards the development of skills. In addition, video games are seen as a potential informal learning method, which can be used to reach young people through a medium they enjoy. The ability of video games to illustrate the material learned in school and the wide range of entertainment options offered by electronic games were mentioned to a lesser extent. Those who said that video games should not be used in youth work argued that young people are already addicted to phone and computer games and would like to reduce the time spent in the virtual world. This was also mentioned in the interviews.

> *'Young people spend a lot of time on smart devices. This time could be reduced with some guidance, but at the same time we should not prohibit or restrict endlessly. Video gaming allows us to engage them in a different way and to*

educate them on cyber security. Based on my own experience, I see that video games are a way to also engage young people who do not participate in other games and activities and would rather not interact.' – Youth worker, Saare County

'Since this is something young people are exposed to every day, it could be integrated into youth work as well. It would also be a good way to introduce the world of video games to young people in a controlled and age-appropriate manner.' – Youth worker, Lääne-Viru County

'1. Young people need to learn how to use digital tools and navigate the digital world in general in a safe and responsible way. I think it's good to do this through playing games 2. It helps youth workers relate to young people. It can help young people understand that youth workers are partners who treat them as such, not stern teachers. 3. Youth workers need to keep up with what young people are doing to some extent in order to understand them, and games are a good way to do this. 4. It may increase young people's initiative. Video games are still shamefully underutilised in youth work.' – Head of child and youth work, Tallinn

The results of the questionnaire reveal that 60% of youth sector workers have used video games in their work. Video games have also been used by around the same proportion of interviewed youth workers. 40% said they have not used video games in their work, but just over half of them (54%) would like to do so in the future. **The main reason video games have not been used is that youth centres do not have enough resources or youth workers lack the ability or training to use video games purposefully.** This is also confirmed by previous studies carried out abroad. In addition, it was mentioned in both the online questionnaire and interviews that youth workers have not had time to seek new opportunities or train themselves to use video games. In the free responses, youth workers said that they do not want the youth centre to become a place where young people just sit on the phone or computer.

'The overall perception is that young people want to reduce the time spent on smart devices and engage in activities that allow this. Therefore devices are used less. I don't see the proportion increasing or that they are going to be used more.'
– Youth worker, Järva County

During the COVID-19 pandemic, several digital youth centres were created, giving young people the opportunity to spend time together virtually. 38% of the youth workers who responded to the online questionnaire said that their youth centre took the opportunity to establish an online youth centre. 40% did not take it. Today, only 28% of respondents use the online youth centre solution. They mostly use joint social networking channels established during the pandemic, such as Discord or Zoom. According to youth workers, the success/popularity of online youth centres was mixed. Initially, online youth centres were popular, but interest and participation declined rapidly. This was attributed to the fact that young people spent a lot of time on the computer for schoolwork, which led them to seek other activities to occupy their free time. It was mentioned during the interviews that various online platforms, such as Discord and Facebook, were used to interact with young people during the pandemic, but they are no longer widely used.
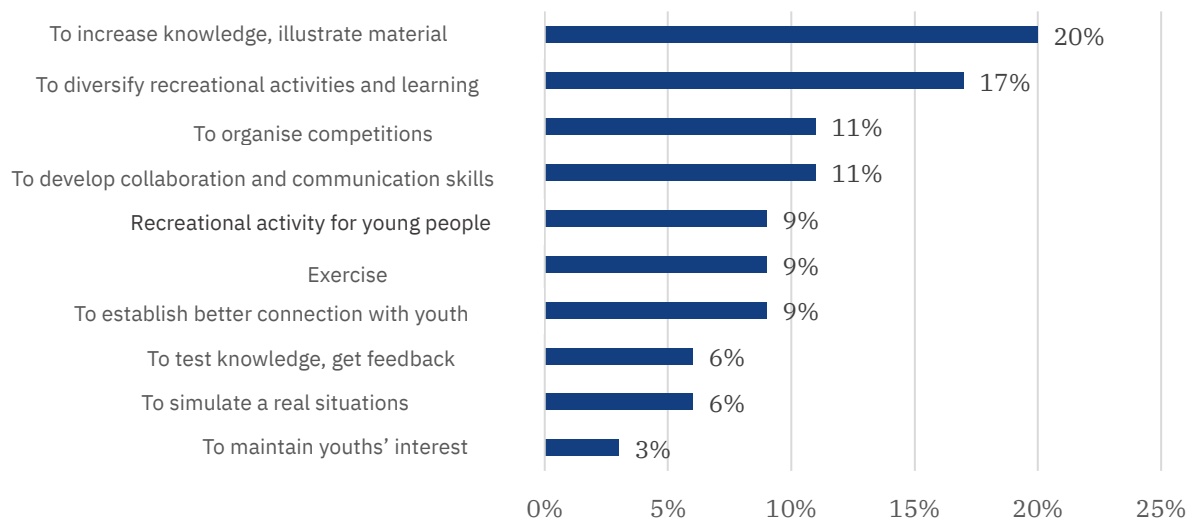
Figure 10. Reasons why video games have been used in youth work (N = 56)

The free responses of the questionnaire reveal that youth workers have used video games for a variety of reasons. Figure 10 shows that 20% of youth workers have used video games to improve knowledge or to illustrate learning material. In particular, they mentioned the development of a particular skill or knowledge, for example geography. This was also mentioned in the interviews as the main reason to use video games in youth work. For example, using GeoGuessr to explore the world, virtual reality to start a subject or Roblox to build a youth centre. 17% of respondents use video games to diversify recreational activities and daily learning. 11% use video games for competitions or cooperative gaming sessions, such as FIFA tournaments, or to specifically develop young people's collaboration and communication skills.

It is important to note that 9% use video games to increase children's physical activity. Interviewees said that they use games like Just Dance or WiiSports to provide children with an exciting and entertaining way to be more physically active. In addition, 9% of respondents said they use video games to establish a better connection or find common ground with young people. Video games are a good way to establish initial contact with young people, using a medium that they like the most.

> *'During the emergency situation, we used Minecraft to stay connected to young people. We've used VR games to explore certain topics. GeoGuessr, which is popular at the moment, has made it possible to connect with young people who don't usually interact with youth workers.' – Head of youth centre, Saare County*

> *'Careful consideration should be given to how these video games are used with young people, so they are beneficial rather than harmful; the length of game time should be restricted because they also need to engage in other activities and interact with the real world. Video games shouldn't be a taboo, but it's a crucial part of the adult's role to teach children how to play in an a beneficial way.' – Head of extracurricular activities, Lääne County*
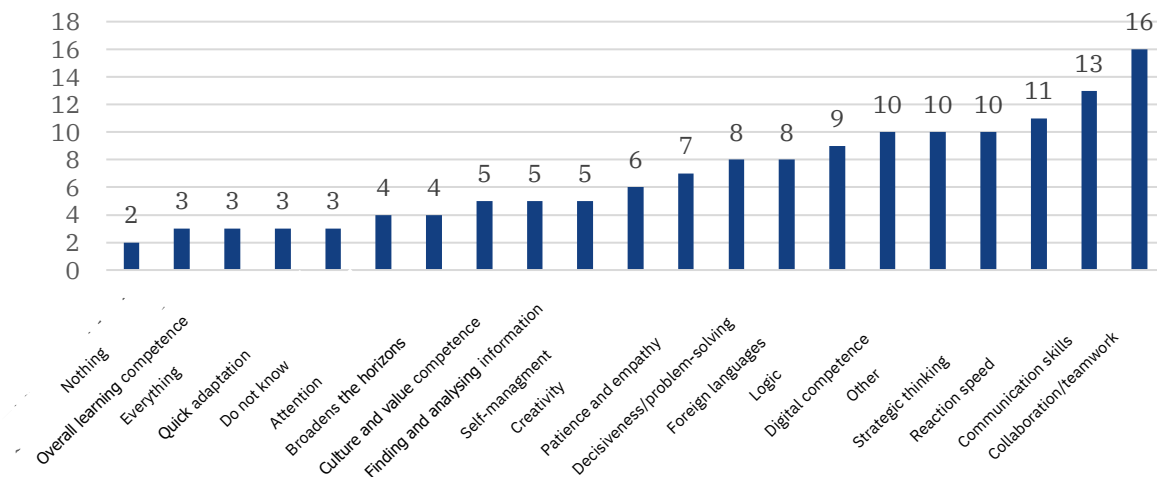
Figure 11. The opinion of youth sector workers on which competences video games teach young people (N = 56)

According to youth workers, video games teach young people a variety of competences or skills. Figure 11 shows that youth workers who responded to the questionnaire believe that video games develop young people's collaboration and communication skills the most. In 11 cases, it was said that video games improve young people's reaction speed and coordination. In 10 cases, youth workers said that video games develop young people's digital competence and strategic thinking. The improvement of logic, foreign language skills and decision-making were mentioned less often. **It is important to note that young people do not simply learn these skills by spending time in the virtual world or playing video games. The development of these skills through video games must be purposely guided.**

It can therefore be concluded that it is important to share the necessary knowledge with youth workers on how to develop these skills in young people and which video games are best suited for this. It helps youth workers make more informed choices about which games to use in a particular situation or to develop a certain skill. If youth workers believe that video games develop collaboration and communication skills, coordination, strategic thinking, logic and digital competence, then games should be chosen with the development of these skills in mind, and it is necessary to teach youth workers' how to use video games to develop these skills.

> *'The use of video games could make children realise that in addition to the abundance of so-called trash the online world has to offer, this environment can also be used to their advantage. We could help young people self-manage through video games, so they can notice the effects that online environments have on their thinking and behaviour.' – Supervisor of recreational activities, Pärnu County*

The most used video games by youth workers are Among Us (28%), Minecraft (22%), FIFA (17%) and Roblox (17%). Rocket League and Fortnite (11% for both) and Terraria, The Sims and Seterra (6%) are used less. Around half of the respondents make use of games that were not listed in the questionnaire. They mostly mentioned web applications or games such as GeoGuessr, Kahoot! and Jeopardy. Interviewees mainly mentioned Minecraft, Roblox and Fortnite. **We can therefore conclude that the most used games in youth work are popular among young people themselves.** Around 90% of youth workers take into account age restrictions when using video games.

> *'Xbox encourages young people to exercise. Older children instruct younger ones, they play together and have fun winning.' – Youth worker, Ida-Viru County*

'Video games should encourage young people to exercise (Xbox, Wii), consider their peers, safely look for information online, recognise safe communication in different environments and have the courage to ask for help if they suspect communication is not safe.' – Youth worker, Pärnu County

According to the questionnaire results, around a quarter of youth workers rarely use video games in their work, meaning that the use of electronic games depends on a number of factors, such as time, the willingness of children and youth workers, and children's motivation to play. 22% of youth workers use video games once per month or once per week. Only 8% of youth workers use video games every day. Based on the interviews, video games are generally used if the youth centre has a separate gaming area with game consoles or computers. This lets young people decide when and which game they want to play. At the same time, youth workers are trying to reduce young people's use of smart and electronic devices, and young people's time in the virtual world is limited. **We can thus conclude that video games are currently used in youth centres as a separate activity and, to a lesser extent, in a meaningful or purposeful way to develop learning competences.**

'Less so now, but I still often grab the PS4 controller or play a virtual board game with young people. We've also often played semi-virtual educational games such as Kahoot!' – Head of child and youth work, Tallinn

In the questionnaire, 78% of youth workers said that they had a discussion with young people after playing video games about what they did or experienced. The overwhelming majority, ie 68% of youth workers, said that young people's willingness to analyse their experiences after playing video game was rather good. Only 3% of respondents rated young people's willingness to analyse their experiences as very good. 23% of youth workers rated their willingness as rather poor, but no one rated it as very poor. Interviewees mainly said that they discussed general in-game activities with young people. For example, when playing Just Dance, they discussed how the game went and what their result was.

Young people's willingness to analyse their in-game experiences may depend on the game type and the specific tasks that the youth worker gave them. Young people may also find it strange to start playing video games purposefully and to analyse them later on, when previously they only played them for fun. It is therefore not possible to make fundamental conclusions about young people's willingness.

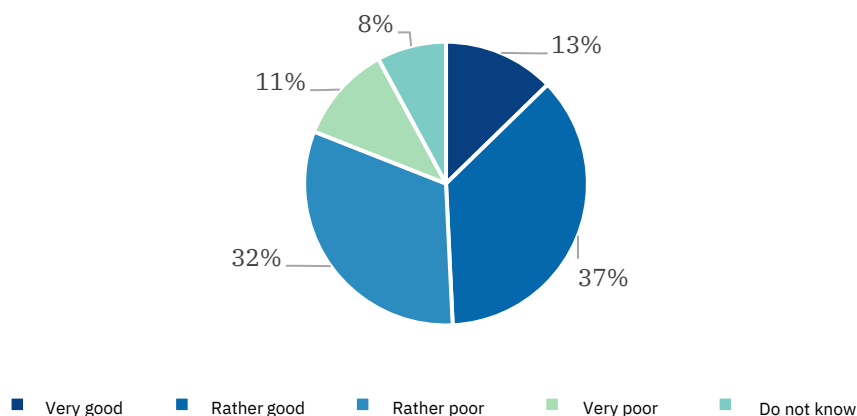Legend: Very good | Rather good | Rather poor | Very poor | Do not know

Figure 12. The assessment of youth sector workers on their ability to play video games with young people (N = 56)

Figure 12 shows that **youth workers who responded to the questionnaire rated their ability to play video games with young people as average**. Around 37% of respondents rated their ability to play electronic games with young people as rather good. 13% of youth workers, primarily from cities like Tallinn and Tartu, rated their ability as very good. 43% of respondents rated their skills as rather poor or very poor. In the free responses, they mentioned that youth workers lack experience and knowledge of specific games that are currently popular among young people and that have the potential to develop various skills in addition to being entertaining. It was also suggested that youth workers are not sufficiently aware of all the dangers young people may face in the virtual world in order to teach them how to stay safe. One interviewee pointed out that they do not have the ability or time to learn a video game in such depth that would allow them to play it with young people.

'As a teacher I'm not as competent in the virtual world. It entails a lot of responsibility and we rather try to support students to use the digital world safely. We rather acknowledge than avoid.' – Head of youth centre, Harju County

'Playing games requires time. Above all, youth workers have to learn the game. But it's also possible for young people to teach youth workers.' – Head of youth centre, Harju County

According to youth workers, the lack of knowledge and skills of employees is the greatest obstacle to implementing video games in youth work (57%). Almost all interviewees also mentioned this. We do not currently have an overview of video games that could be used purposefully in youth work or guidelines on how to use them, which makes youth workers feel insecure about implementing video games in their work. Furthermore, 41% of respondents say that their youth centre lacks the necessary means to play video games. For example, they mentioned situations where they would need to play with multiple children, but there is only one console, controller or computer. In some cases, they said that their devices are outdated or they have no resources to purchase new video games with. Around 27% of respondents said that the main obstacle is the lack of funding to pay youth workers additional wages for acquiring a new skill or to carry out projects that would allow video games to be implemented in youth work. To a lesser extent, respondents cited lack of time for preparation, licence and platform fees, and low employee interest in the implementation of video games in youth work as obstacles **We can therefore conclude that currently, the implementation of video games in youth work is primarily inhibited by the ignorance of youth workers and the lack of resources or funding.** International studies confirm this trend.

'Employee competence... and willingness. I've been a substitute in some places when their employees were ill and some do not want to use digital tools at all. One lady told me she was an old-school woman and didn't need to use them. Some employees don't consider that it can contribute to development.' – Youth worker, Lääne-Viru County

Both youth workers and youth centres need support in order to implement video games in youth work. 32% of respondents **would most like training or to acquire additional skills**. All interviewees also mentioned they would like training to get an overview of the possibilities of video games. Learning from each other and sharing experiences was also considered important. Around 20% of respondents said that in order to implement video games, they need more information about various electronic games to get an overview of the games that can be purposefully used in youth work to develop a skill or support the field. In addition, respondents requested more information on the working principles

and gameplay of video games. 14% of respondents mentioned that youth workers also need devices to play video games, citing the increased need for various consoles or computers. They also mentioned the need for new games and platform accounts. In particular, the need for devices so that all young people who visit the youth centre can play video games together was also mentioned.

> *'Personally, I see a lack of knowledge about games (because I've not played them) and, to some extent, a lack of means (newer games/devices that young people would like to use).' – Youth worker, Tallinn*

> *'The selection of multiplayer games could be broader. Also, someone should give a small introduction to the principles and gameplay of newer games, so we could share this information with young people and know what to expect.' – Youth worker, Lääne-Viru County*

Sharing experiences of video game practices in youth work with other youth workers was also considered important. One interviewee said they would like more information on how video games are played in other youth centres, which games help the learning process and which have been popular among young people.

We can therefore conclude that **when implementing video games in youth work, it is important to give enough information to youth sector workers on various video games** that can be purposefully used in youth work to develop young people's competences. It is also important to provide training and share experiences so that youth workers feel competent when using video games and can justify and explain their actions. In addition, one of the prerequisites for implementing video games is the relevance and abundance of digital tools so that all young people can play video games together.

Overall, we can conclude that youth workers are ready and willing to play video games in the context of youth work. Youth workers believe that video games primarily develop teamwork and communication skills, computer literacy and problem-solving. The primary obstacles are the lack of awareness of youth workers, the lack of funding and means, and poor video gaming skills of employees. Implementing video games in youth work requires raising awareness among youth workers and providing comprehensive training or opportunities to share experiences.

6. KEY FINDINGS AND RECOMMENDATIONS

Below are the key findings of the study on the applicability of video games in youth work. The key findings are followed by recommendations for various stakeholders to help policy-makers further develop the field. Each numbered finding corresponds to a marked recommendation.

1. When implementing video games in youth work, it is important to **combine games that interest young people with the underlying values of youth work**. This means that youth work activities should take into account the games young people play the most and use situations in these games to develop priority skills.

   Recommendation: Determine the video games that are of most interest to young people and find in-game situations that develop previously agreed upon priority skills and competences, such as communication and teamwork skills. When identifying in-game situations, it is necessary to involve young people, since they understand video games better than youth workers.

2. The implementation of video games **does not necessarily require that employees know how to play**, although gaming can also be a part of the learning process of employees. However, it is important that employees can guide players to better understand in-game situations and help them develop analytical thinking skills. Using video games requires knowledge of the virtual world and how to interact and behave responsibly in it.

   Recommendation: The Education and Youth Board as an institution needs to manage the expectations of youth workers and dispel the main stereotypes associated with video games. In managing expectations, youth workers need to develop a common understanding of the objectives and main uses of video games.

3. There are currently **three main obstacles** to the implementation of video games: employee perceptions of their ability to use video games effectively, the lack of (financial, technological or human) resources and the lack of clear goals for using video games.

   Recommendation: Youth sector workers should have information days, training or a platform to share experiences, so they can learn which video games can be used to develop young people's skills and how to use them. It is important to provide youth workers with up-to-date information, advice and tools to promote safer, more responsible and more effective use of digital solutions, including video games, among young people. Mobile youth work and mandatory information days could be used to share experiences and information, or everything related to video games could be integrated into larger youth work conferences, training or meetings.

4. **We are currently not sufficiently prepared to implement video games in youth work**: the definitions related to video games are not clear and unambiguous to all parties. In addition, there are currently no clear objectives or instructions on how to incorporate games into the learning process.

Recommendation: The Education and Youth Board needs to prepare instructions that include specific definitions and ways or methods in the form of a manual. Such instructions give youth sector workers a better overview and the confidence to implement video games in their work. Preparation can be ensured by thoroughly reviewing materials used in other countries, such as Finland and Norway, and gathering good practices on the implementation of video games.

5. **Communication is an important part of the implementation of video games** and should be given attention, both face-to-face and online. Currently, one of the most used online communication platforms is Discord, where responsible communication must be learned.

   Recommendation: Increase dialogue with young people about their internet use. Teach young people how to be safe and secure in the digital world, and to act in line with societal norms, such as polite communication. It is important for young people to be aware of their digital identity and online behaviour.

6. Video games allow **youth workers to establish a better connection with young people**, using a medium that they enjoy. Playing together brings youth workers closer to young people and forms a foundation for future conversations.

   Recommendation: In order to utilise the potential of video games to reach young people and engage with them, the Education and Youth Board needs to prepare easily accessible and compact instructions with guidelines for the implementation of video games. The material must be created in collaboration between youth sector workers, young people and representatives of the Education and Youth Board.

7. Using video games in youth work **makes it easier to adapt the learning process to the needs of young people**. For example, video games can be used to provide opportunities and services to young people in a way and language that suits them.

   Recommendation: Encourage young people and give them more opportunities for independent initiatives to organise events related to gaming culture, such as LAN parties or game discussion/support groups. The Education and Youth Board should create or channel funding measures that support the gaming initiatives and/or activities of both young people and youth workers.

8. Young people can also take the role of the teacher in gaming-related activities, **making the activities attractive and interesting for them**. Ideas developed in collaboration between young people and employees can in turn be used to direct and shape youth work activities.

   Recommendation: Youth workers must be open to learning/improving new skills related to the implementation of video games. However, video games should be chosen based on the individual youth worker's (digital) competences, the abilities of the institution and the goals of youth work. If possible, the games chosen should be social and of medium difficulty to ensure the development of young people's communication and teamwork skills.

9. Video gaming in youth work allows for the management of young people's time **in the virtual world in a conscious and purposeful manner**. Conscious video gaming is also compatible with the goals of lifelong learning and teaches both young people and youth workers how to stay safe and secure in the digital world.

Recommendation: Pilot and test the applicability of video games in some youth centres or hobby groups to test how the approach suits both youth workers and young people. Then move on to the next actions / expand the target group for implementation.

10. The practices of other countries revealed that **countries that have implemented video games successfully had cross-sectoral contacts advising youth workers**. This suggests that we need a cross-sectoral contact in Estonia as well. The adviser should, where necessary, advise youth workers on the purposeful use of digital solutions, including the implementation of video games in youth work.

    Recommendation: The Education and Youth Board needs to create a position to advise youth workers on the implementation of video games.

SUMMARY

Video games, ie electronic games, are an important form of entertainment and communication for today's youth. Many currently popular video games include educational aspects. Research has shown that in commercial video game environments players can apply their cognitive skills in a more integrated way and are more motivated to play, therefore commercial video games have a greater potential impact on improving cognitive functions. As a result, video games are increasingly being discussed for their potential to support learning, and people are looking for ways to integrate video games into youth work to develop young people's general competences. Research shows that video games have been found to have a positive impact on the development of all cross-sectoral general competences, including those described in the Estonian national curriculum for basic schools.

The aim of this study was to get an overview of the most used video games among young people aged 7–16 in Estonia, and their impact on the development of young people's general competences. In addition, we wanted to provide an overview of potential links between video games and youth work opportunities and competences in Estonia and abroad. To that end, we surveyed the opinion and willingness of youth workers to implement video games in youth work. This study focused on popular commercial video games that can be played on a computer, mobile phone or game console. The central methods of the study were secondary data analysis, focus group interviews with youth sector workers, individual interviews with young people aged 7–16 and a questionnaire among both target groups.

The results showed that 94% of young people surveyed (N = 704) play video games, with mobile phones (73%) and computers (65%) being the most commonly used devices. In terms of gender, the largest difference was that boys were more likely than girls to use computers and consoles to play video games, meaning they cross-use devices more often, which should also be borne in mind when using various devices in youth work. Across all respondents, the most played games are Roblox (59%) and Minecraft (50%). Other popular video games are GTA, Counter-Strike and Fortnite. Notably, boys are much more likely than girls to play games that involve violence. In addition, boys consider computer games more developmental than girls.

Gaming forms a significant part of young people's lives: 65% of all respondents play games at least once per day or more, and 22% play at least once per week. One in nine respondents play video games at least five hours per day and almost one in three play at least three hours per day. Young people play video games mostly for entertainment or to ward off boredom, but also to interact with friends, improve their imagination and escape from reality. The results of this study show that at least half of the young people questioned visit youth centres and play, or at least would want to play, video games there. Therefore, the increased implementation of video games in youth work has a lot of potential, as young people are willing to and interested in playing them.

Around 93% of youth sector workers who responded to the questionnaire (N = 56) believe that video games could be utilised in youth work to develop young people's skills. At the same time, interviewees (N = 15) were rather disinterested in using video games in youth work. The primary reasons mentioned were young people's addiction to smart devices and their interest in engaging with the physical world in youth centres and hobby groups. Despite this, youth workers see that video games have a lot of

potential to develop various skills, such as communication and teamwork, computer literacy and problem-solving.

According to the questionnaire results, around a quarter of youth workers rarely use video games in their work, meaning that the use of electronic games depends on a number of factors, such as time, the willingness of children and youth workers, and children's motivation to play. 22% of youth workers use video games once per month or once per week. Only 8% of youth workers use video games every day. Based on the interviews, video games are usually used if the youth centre has a separate gaming area with game consoles or computers. We can thus conclude that video games are currently used in youth centres as a separate activity and, to a lesser extent, in a meaningful or purposeful way to develop young people's competences.

Youth workers rate their ability to play video games with young people as average. Around 37% of respondents rated their ability to play electronic games with young people as rather good. 13% of youth workers, primarily from Tallinn and Tartu, rate their gaming abilities as very good. 43% of respondents rated their skills as rather poor or very poor.

60% of youth sector workers have used video games in their work. 40% said they have not used video games in their work, but just over half of them (54%) would like to do so in the future. According to youth sector workers, the primary obstacles to implementing video games in youth work are the poor knowledge and skills of employees and the lack of resources. We can therefore conclude that currently the implementation of video games in youth work is primarily inhibited by employee ignorance and the lack of resources or funding. International studies confirm this trend. What employees want the most are training/information day in order to acquire additional competences and to share experiences.

In conclusion, we can say that implementing video games in youth work coincides with the objectives of youth work in Estonia and is in line with the concepts of smart youth work and digital youth work. We can see from other countries that the utilisation of video games in youth work to develop young people's competences and skills is an optimal way to use a medium they enjoy for educational purposes. At the same time, it is important to incorporate learning, playing and reflection to maximise the benefits of video gaming. In addition, both young people and youth workers want to use video games in youth work, but it requires raising youth workers' awareness of video games and their implementation.

КРАТКОЕ СОДЕРЖАНИЕ НА РУССКОМ ЯЗЫКЕ

Видеоигры являются важной формой развлечения и общения для современной молодежи. Многие из популярных сегодня видеоигр имеют образовательные аспекты. Исследования показали, что коммерческая среда видеоигр[114] помогает игрокам применять свои когнитивные навыки более комплексно и лучше мотивирует их к игре, в результате чего коммерческие видеоигры оказывают большее потенциальное воздействие на улучшение когнитивных функций игрока. Поэтому видеоигры все чаще признаются за их потенциал для поддержки обучения, и ведется поиск путей внедрения видеоигр в молодежную работу для развития общих навыков молодых людей. Исследования показывают, что видеоигры оказывают положительное влияние на развитие всех общих компетенций, включая те, которые описаны в национальной учебной программе начальной школы Эстонии.

Целью данного исследования было получить представление о наиболее часто используемых видеоиграх в возрастной группе 7-16 лет в Эстонии и их влиянии на развитие общих навыков молодых людей. Кроме того, дать общий обзор потенциальных связей между видеоиграми и возможностями и компетенциями в молодежной работе в Эстонии и других странах. С этой целью было изучено мнение и готовность молодежных работников внедрять видеоигры в молодежную работу. В центре внимания настоящего исследования были популярные коммерческие видеоигры, в которые можно играть на компьютере, мобильном телефоне или игровой приставке. В качестве основных методов в исследовании использовались анализ вторичных источников, интервью в фокус-группах с молодежными работниками, индивидуальные интервью с молодыми людьми в возрасте 7-16 лет и анкетный опрос обеих целевых групп.

Результаты исследования показали, что 94% опрошенных молодых людей (N=704) играют в видеоигры, причем наиболее часто используемыми устройствами являются мобильные телефоны (73%) и компьютеры (65%). Основные гендерные различия заключались в том, что мальчики чаще, чем девочки, используют для игр компьютеры и игровые приставки, поэтому мальчики являются более активными пользователями различных устройств, чем девочки, что также следует учитывать при использовании различных инструментов в молодежной работе. Среди всех респондентов самыми играемыми играми являются Roblox (59%) и Minecraft (50%). GTA, Counter-Strike и Fortnite также являются популярными видеоиграми. Мальчики гораздо чаще, чем девочки, играют в игры, содержащие насилие. Кроме того, мальчики считают компьютерные игры более развивающими.

Видеоигры являются важной частью жизни молодых людей: 65% всех респондентов играют в видеоигры не реже одного раза в день, а 22% - не реже одного раза в неделю. Каждый девятый респондент играет в видеоигры не менее пяти часов в день, а почти каждый третий - не менее трех часов в день. Молодые люди играют в видеоигры в основном для развлечения или чтобы

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[114] Коммерческие игры - род игр, в которых выигрыш зависит в большей степени от умения, искусства игрока и в меньшей степени от случая. Законодательства многих стран разделяют все игры на коммерческие и азартные. Источник: https://dic.academic.ru/dic.nsf/es/79188/КОММЕРЧЕСКИЕ

развеять скуку, а также для общения с друзьями, развития воображения и ухода от реальности. Результаты данного исследования показывают, что по крайней мере половина опрошенных молодых людей посещают молодежные центры и играют или, по крайней мере, хотели бы играть в видеоигры там. Таким образом, существует потенциал для расширения использования видеоигр в молодежной работе, поскольку молодые люди хотят и стремятся играть в них.

Среди молодежных работников около 93% респондентов опросной анкеты (N=56) считают, что видеоигры могут быть использованы в молодежной работе для развития навыков молодых людей. В то же время, при проведении интервью с молодежными работниками (N=15), их интерес к использованию видеоигр в молодежной работе был довольно слабым. Основными причинами были названы зависимость молодых людей от смарт-устройств и нежелание молодых людей взаимодействовать с физическим миром в молодежных центрах и на досуговых мероприятиях. Тем не менее, молодежные работники видят в видеоиграх большой потенциал для развития различных навыков, таких как общение, работа в команде, навыки работы с компьютером и решение проблем.

По данным анкетного опроса, около четверти молодежных работников редко используют видеоигры в своей работе, что означает, что использование видеоигр зависит от различных факторов, таких как время, желание детей и молодежных работников, а также мотивация детей к игре. 22% молодежных работников используют видеоигры раз в месяц или раз в неделю. Только 8% молодежных работников используют видеоигры ежедневно. Интервью показывают, что, как правило, видеоигры используются, когда в молодежном центре есть специальный игровой уголок с игровыми приставками или компьютерами. Таким образом, можно сделать вывод, что в настоящее время видеоигры используются в молодежных центрах как самостоятельный вид деятельности, но в меньшей степени в значимой или целенаправленной форме для развития компетенций молодых людей.

Молодежные работники оценивают свое умение играть в видеоигры с молодыми людьми как среднее. Около 37% респондентов оценивают свое умение играть в видеоигры с молодежью как довольно хорошее. 13% молодежных работников, которые в основном приезжают из крупных городов, таких как Таллинн и Тарту, оценивают свое умение играть в видеоигры как очень хорошее. 43% респондентов оценивают свои навыки как скорее плохие или очень плохие.

60% молодежных работников использовали видеоигры в своей деятельности. 40% сказали, что не использовали видеоигры в своей работе, но чуть больше половины из них, 54%, хотели бы сделать это в будущем. Основными препятствиями для внедрения видеоигр в молодежную работу молодежные работники считают недостаток знаний и навыков молодежных работников и недостаток ресурсов. Таким образом, мы можем сделать вывод, что сегодня внедрению видеоигр в работу с молодежью мешает, в основном, незнание персонала и отсутствие ресурсов или финансирования. Эту же тенденцию подтверждают и международные исследования. Наиболее востребованными являются дни обучения/информации, приобретение дополнительных компетенций и обмен опытом.

В заключение следует отметить, что внедрение видеоигр в молодежную работу соответствует целям молодежной работы в Эстонии и следует концепциям "Умной молодежной работы" и "Цифровой молодежной работы". На примере других стран мы видим, что использование видеоигр в молодежной работе для развития компетенций и навыков молодых людей — это оптимальный способ использования популярного средства для обучения. Важно использовать

компоненты обучения, игры и рефлексии как единое целое, чтобы получить максимальную пользу от видеоигр. Кроме того, как молодые люди, так и молодежные работники готовы использовать видеоигры, но для этого необходимо повысить осведомленность молодежных работников о видеоиграх и о том, как внедрять их в работе.

ANNEX 1. THE PRACTICES OF OTHER COUNTRIES

A number of countries have implemented video games and assessed their impact. Most examples of the applicability of video games in youth work come from the Nordic countries, which have been using video games since the early 2000s. Below are examples of countries that have utilised video games either in youth work or education.

In **Finland**, video games have been used for educational purposes since 1990. In 2004 Finland became one of the first countries in the world to implement digital tools in youth work, and Finland has also set up a national centre of expertise for digital youth work (Verke) to promote digital youth work at the global level. Verke provides youth workers with training and materials on digital youth work and produces research on the subject.[115] Several digital youth centres have been set up in Finland, and video games are also integrated into youth work by civil society organisations. Denmark has also made use of digital youth centres.[116] The Evangelical Lutheran parishes of Tampere organise video gaming camps for boys aged 12 and older to develop a healthy and positive gaming culture among young people and support them in building better social connections. Participants mainly play multiplayer games and religious education is also integrated into camp activities. The initiative has received positive feedback from young people and parents.[117]

In 2006 **Denmark** started using the commercial simulation and strategy game The Sims 2 in the second school stage (children aged 12–13).[118] Before implementing the game, they looked into its potential positive effect on the requirements and learning competences set out in the Danish national curriculum. The game was used in 25 lessons and students had the opportunity to use the game outside of class for up to 2 hours.[119] At the end of the pilot project, the class teacher expressed great satisfaction with the level of students' motivation in lessons and considered the most important result to be the active engagement of weaker students in group work, as well as the willingness of those already familiar with the game to encourage and help their classmates to play the game.[120] Thus, this commercial video game had a surprisingly extensive impact.

In 2009 **the Czech Republic** tested a serious game called Europe 2045 in the second school stage (children aged 11–16) as a supportive learning tool for social science courses.[121] The purpose of the game was to introduce political, economic and social challenges to players both in the broader sense and in Europe, while teaching young people not only facts, but critical thinking, communication skills and the principles of teamwork.[122] This serious game gave young people a better understanding of socio-economic processes, such as immigration and economic development. The broader impact of Europe 2045 was assessed in eight schools, asking whether the game could be successfully

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[115] Siurala, Lasse. 2021. 'Youth work and techlash – What are the new challenges of digitalisation for young people?' https://pjp-eu.coe.int/documents/42128013/63918992/Techlash+LS+12-11-2020+LP.pdf/2be05469-3970-8ff8-dc2a-d8ba9eb39156

[116] Centre for Digital Paedagogik. 'Center for digital youth care.' https://cfdp.dk/english/

[117] Digital Youth Work. 'Bytecamp.' https://www.digitalyouthwork.eu/?material=bytecamp-en

[118] Wastinau, Patricia, Caroline Kearney & Wouter Van den Berghe. 2009. 'How are digital games used in schools?', May, https://www.isfe.eu/wp-content/uploads/2019/10/gis-full_report_en.pdf

[119] Ibid.

[120] Ibid.

[121] Brom, Šisler & Slavik, op. cit., p. 26.

[122] Ibid.

integrated into the formal curriculum and whether the game increased both young people's and teachers' motivation. The responses were positive and confirmed the importance of the game in achieving the learning outcomes.[123] However, no further research was conducted on whether the game contributed to increasing factual knowledge or better retention of the material.

In **Norway**, the use of video games in youth work has increased over the years. The state supports youth work through national grant schemes to promote interaction between young people in larger and smaller cities.[124] The measures are targeted, in particular, at young people with fewer opportunities. For example, in 2020 the youth club Feelgood Tananger opened three game rooms in Tananger for young people to play video games and have LAN parties.[125] The idea for the project came from 7th graders who showed great interest in it and were actively involved in the planning and various stages of the entire project.[126] When playing video games, young people follow the rules of a safe virtual space. In 2016 schools in Norway started to include esports courses in their curricula, which mainly involved playing Counter-Strike and League of Legends.[127] Most schools focused mainly on MOBA and first-person shooter games. The weekly school schedule included five hours of gaming – the equivalent of, for example, the football programme.[128] By now, esports are very popular in Norway, noticed by regional and national sports organisations and the media.[129]

Iceland has been using video games in youth work and hobby education since 2018, when the IEA (Icelandic Esports Association) was established to provide the infrastructure for the rising esports culture in the country. The aim was to create a self-sufficient ecosystem where all young people could enjoy a constructive, organised and social way of engaging in esports.[130] For example, the Reykjavík city council helps support local sports clubs in implementing esports in their activities.[131] In Iceland, negative public perceptions of video games – the major obstacle to esports activities – quickly turned positive.[132] Today, esports culture in Iceland is supported by both parents and the community. For example, more enthusiastic parents are also in favour of an esports training culture, lectures, in-game drills and goal-oriented gameplay.[133] According to 2021 sources, there are more than 1,000 children in Iceland practising esports 2–3 times per week.[134]

In 2013 the Viktor Rydberg school in Stockholm, **Sweden,** introduced the popular video game Minecraft to its curriculum to teach young people about urban planning, the impact of environmental issues and even planning for the future.[135] Around 180 students aged 12–13 took part in the gaming lessons. According to school representatives, video gaming in class is a good way to teach children in

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[123] Ibid.
[124] Kramer, M. 2020. 'Country sheet on youth work in Norway', https://pjp-eu.coe.int/documents/42128013/58820665/Youth-work-Norway-2020.pdf/0b8eaf42-834c-f05f-d622-fd5c95ec7acd?t=1590153607000
[125] Ibid.
[126] Ibid.
[127] Tjønndal, A. & Skauge, M.. 2020. 'Youth sport 2.0? The development of eSports in Norway from 2016 to 2019' *Qualitative Research in Sport, Exercise and Health* 13(1): 166-183.
[128] Ibid.
[129] Tjønndal, Anne & Skauge, Mads, op. cit. & Kramer, op. cit.
[130] Nordland, J.. 2021. 'Iceland's outsized esports aspirations', https://esportsinsider.com/2021/08/icelands-outsized-esports-aspirations
[131] Esports Insider. 2022. 'Esports around the world: Iceland', https://esportsinsider.com/2022/05/esports-around-the-world-iceland
[132] Nordland, J., op. cit.
[133] Ibid.
[134] Ibid.
[135] Gee, Oliver. 2013. 'Swedish school makes Minecraft a must', 9 January, https://www.thelocal.se/20130109/45514/#.UPU87CeEzl

a fun and purposeful way.[136] No further research has been conducted on the effect of the game on increasing young people's learning skills or factual knowledge.

In 2020 the government of **Poland** added the video game This War of Mine to the official reading list of schools.[137] The rationale for including the game in the curriculum was that video gaming helps illustrate and visualise certain events better than only reading books.[138] The game was published in 2014 and draws on several historical events, such as the Warsaw Uprising, the Chechen Wars and the Syrian Civil War, putting the player in the role of a civilian.[139] The in-game goal is to survive as a group of civilians in a city under fire.[140] No further research has been conducted on the effect the game has had on increasing young people's learning skills or factual knowledge.

In 2020 the Gaming as Youth Work project was launched in **Ireland**, with the goal of using digital youth work to reach young people who do not engage in regular youth work.[141] Get-togethers were held throughout the project, giving young people the opportunity to play video games. The activities also included group discussions, team activities and game session analyses. Young people appreciated the opportunity to make gaming a social experience, and they also highlighted that they learned how to take breaks when gaming. One young person said that the programme helped them find friends they did not have before, and many parents found that their children's lives were positively changed as a result of the programme.[142]

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[136] Ibid.
[137] Tilles, D.. 2020. 'Poland puts Computer game "This War of Mine" on school reading list', 18 June, https://notesfrompoland.com/2020/06/18/poland-puts-computer-game-this-war-of-mine-on-school-reading-list/
[138] Ibid.
[139] Williams, D.. 2020. 'Polish government to give away copies of "This is War of mine" to educate students', 30 June, https://www.nme.com/news/gaming-news/polish-government-to-give-away-copies-of-this-war-of-mine-to-educate-students-3259479
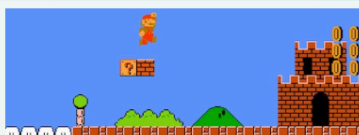[140] Ibid.
[141] Digital Youth Work. 2019. 'Gaming as youth work (EN).' https://www.digitalyouthwork.eu/?material=gaming-as-youth-work-en
[142] Ibid.

ANNEX 2. A GUIDE TO VIDEO GAMES

E-MÄNGUDE VÄLIMÄÄRAJA

Platvormimängud
- Mängija juhib enamasti ühte tegelast korraga
- Mäng koosneb ühelt platvormilt teisele hüppamisest, boonuste korjamisest ning takistuste ja vaenlaste vältimisest
- Mängud, kus hüppamine on automatiseeritud, ei kuulu platvormimängude žanri
- Enamasti 2D vaates
- Näited: Super Mario, Celeste, Little Big Planet
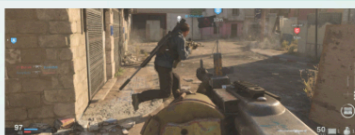
Tulistamismängud
- Enamasti läbi peategelase silmade
- Eesmärk vaenlase alistamine, kasutades mängijale antud tulirelvi või muid pikamaarelvi
- Testivad mängija ruumiteadlikkust, reflekse ja kiirust
- Tihti vägivaldse sisuga
- Populaarsed nii soolo kui *multiplayer* mänguna
- Näited: Fortnite, Call of Duty, Doom

Võitlusmängud
- Hõlmab võitlust kahe või enama tegelase vahel turniiri raames
- Keerukad liikumiskombinatsioonid
- Tegelased kasutavad käsitsivõitlust – sageli mõnda võitluskunsti vormi
- Lahingud toimuvad tavaliselt fikseeritud suurusega areenil kahemõõtmelisel tasapinnal
- Näited: Mortal Kombat, Tekken, Young Souls
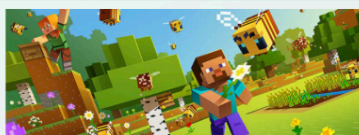
Ellujäämismängud
- Tegevus toimub tavaliselt vaenulikus, intensiivses ja avatud maailmaga keskkonnas
- Eesmärk on võimalikult kaua elus püsida
- Alamliigiks on õudus-ellujäämismängud, kus mängija on haavatav ja väheste vahenditega. Rõhk on pigem mõistatuste lahendamisel ja ohtude vältimisel kui ründaval strateegial
- Näited: Minecraft, Subnautica, Resident Evil
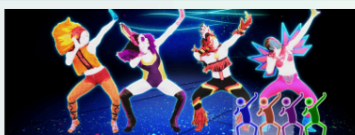
Rütmi ja muusika mängud
- Kõigist mängužanridest füüsiliselt kõige aktiivsem. Muusikal on keskne roll
- Keskenduvad tavaliselt tantsu või muusikariistade mängimise simulatsioonile
- Mängijad peavad nuppe vajutama ekraanil ette nähtud järjekorras
- Tihti vajab spetsiaalseid mängupulte
- Näited: Just Dance, Rock Band, Guitar Hero

Seiklusmängud
- Mängija võtab endale interaktiivses loos peategelase rolli, ajendatuna uurimisest ja mõistatuste lahendamisest
- Reeglina soolomängu formaadis
- Populaarne alamžanr on *action*-seiklusmäng, mis on kiirema tempoga ja hõlmab nii füüsilisi kui ka kontseptuaalseid väljakutseid
- Näited: Tomb Raider, Legend of Zelda

Simulatsioonimängud
- Kopeerib päriselu kogemust
- Tavaliselt pole mängul eesmärke ning mängijal on lubatud tegelast või keskkonda vabalt juhtida
- Läbi peategelase silmade
- Realistlik graafika
- Simulatsioonimänge leiab pea kõigist tegevusvaldkondadest

Spordimängud, Rallimängud
- Simuleerib sportimist. Loomult võistluslik
- Videomänguversiooni leiab enamus spordialadest
- Mõned mängud rõhuvad spordi tegelikule mängimisele, teised keskenduvad strateegiale ja juhtimisele
- Arvutimängude üks vanimaid žanre
- Need for Speed, FIFA, Tony Hawk's Pro Skater

Suure rahvahulgaga veebimängud (MMO)
- Tuhanded mängijad korraga samas serveris
- Enamasti avatud maailmaga keskkonnad
- Mängukeskkond on konstantselt aktiivne
- Avatud maailmaga mängukeskkond
- Mängijad saavad teha koostööd ja üksteisega konkureerida
- MMO-d hõlmavad erinevaid mängužanre.
- Näited: World of Warcraft, Final Fantasy XI

Mõistatusmängud
- Mõeldud aju stimuleerimiseks
- Eesmärk mõistatus lahendada või ellu jääda
- Panevad proovile mängija probleemide lahendamise oskused: loogika, mustrituvastus, järjestuste lahendamine ja sõnade lõpetamine
- Näited: Tetris, Candy Crush, Portal
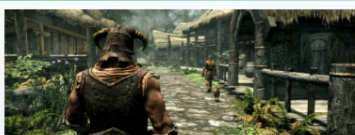
Rollimängud (RPG)
- Mängitakse kohandatava karakteriga, mis areneb mängu jooksul
- Enamasti avatud maailmaga
- Mängu eesmärk on enamasti läbi väiksemate ülesannete pikema missiooni täitmine
- Näited: Skyrim, Disco Elysium, Witcher

Strateegiamängud
- Keskendub võidu saavutamisele läbi mõtlemise ja planeerimise
- Põhirõhk on kõrgetasemelisel strateegial, logistikal ja ressursside haldamisel.
- Strateegiamängud jaotuvad käigupõhisteks (kordamööda) ja reaalaja mängudeks.
- Näited: Civilizaation V, Total War: Warhammer

Source: made by the author. Inspired by: Online Design Teacher. 2016. 'Game Genres',
https://www.onlinedesignteacher.com/2016/04/game-genre-guide.html