

EDUCATING FOR A VIDEO GAME CULTURE VOLUME 2

KEEP ON PLAYING, KEEP ON GROWING



COUNCIL OF EUROPE



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GAME CULTURE
VOLUME 2**

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E-mail: education@coe.int

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Foreword

In recent years, video games have become one of the most influential cultural environments, shaping not only how people entertain themselves but also how they learn, communicate and participate in society. As digital spaces continue to expand and evolve, it is our shared responsibility to ensure that every learner is equipped not only to navigate them safely but also to engage with them creatively, critically and responsibly.

This second volume of *Educating for a video game culture* reflects the Council of Europe's commitment to fostering digital citizenship education grounded in human rights, democracy and the rule of law. Building on the foundations laid in the first volume, this edition brings together leading researchers and practitioners to examine video games through a wider and deeper lens that spans some of the most important topics addressed by our work related to digital citizenship education: well-being, creativity, gender equality, sustainability, migration, civic engagement, consumer awareness and the ethical challenges of emerging technologies.

What emerges is clear: video games are not merely entertainment. They are complex civic, social and cultural spaces where people practise the very competences that democratic societies need: empathy, critical thinking, collaboration, participation and respect for others. Harnessing their educational potential requires an ecosystem of educators, parents, policy makers, researchers and industry working together.

I warmly thank the authors and editors for their expertise, insight and dedication. Their work provides both inspiration and practical guidance for those seeking to integrate digital citizenship into education systems and community programmes across Europe.

May this volume support all who strive to empower today's learners to grow as active, responsible and confident citizens – online, offline and in every world they inhabit.



Villano Qiriazhi
Head of the Education Department
Council of Europe



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Educating for a video game culture – Volume 2 Keep on playing, keep on growing represents the outcome of a collective scholarly endeavour, co-ordinated and edited by Alessandro Soriani, Anthony L. Brooks, Mikko Meriläinen and Alesha Serada.

Authors of the volume

Alesha Serada – Associate professor at the University of Nottingham Ningbo, China. For the last decade, Alesha's research interests have been focused on economic exploitation in games, resulting in a dissertation on the typology of value in games on blockchain. Alesha's publication record extends across the areas of game studies, blockchain studies and virtual economies, as well as weird and horror media. Currently Alesha is researching the problems of value creation, gamification and platformisation in popular music production.

Alessandro Soriani – Associate professor at the Department of Education Studies of the University of Bologna, Italy. His interests include literacy and media education, digital citizenship, pedagogical reflections on video games, the influence of technology on schools and young people, and educational inclusion, especially in contexts of international co-operation. He is a trainer, facilitator and consultant for various national and international non-governmental organisations. He serves as an educational consultant and expert on digital citizenship education for the Council of Europe.

Andrew Burn – Professor Emeritus of Media, University College London, UK. His research projects and publications have focused on media literacy, play and young people's creative work in film, animation and video games. He was project leader for a series of projects developing and using the game design software Missionmaker. He is a former member of the EC Media Literacy Expert Group.

Anthony L. Brooks – Professor Emeritus from the University of Aalborg's CREATE/Media Technology department, Anthony is acknowledged as a pioneering investigator of bespoke interactive multimedia (including video games) in (re)habilitation in institutional, school, clinical and home settings. Utilising invisible off-body, worn and hand-held sensor technologies as user-control biofeedback interfaces within his bespoke systems, Brooks' mature body of work has led to European and national funded research projects of note, patents and an industry start-up resulting in a commercial product, as well as national and international awards. More author info and publications via <https://orcid.org/0000-0003-1334-6230> and Aalborg University profile <https://vbn.aau.dk/en/persons/tb>.

Beatriz Pérez Zapata – Associate Professor at the Department of Cultural Industries, TecnoCampus (University Pompeu Fabra, Spain). Her interests are trauma studies and postcolonialism, postcolonial video games, the representations of refugees in

literature and media, the history of video games and the interconnections between literature and games. She is one of the founding members of DiGRA Spain and a member of the research project Ludomythologies: Myths and Ideology in Contemporary Videogames.

Bruno de Paula – Associate Professor in Digital Media (Game Studies), University College London, UK. His current research focuses on digital games, more specifically in decoloniality, locality and the history of games. He is also interested in platform studies, games education in postsecondary settings, identities and game production by excluded and non-mainstream groups. Previously he has published on digital games and education, multimodality, media and game literacies.

Gaia Amadori – PhD in Sociology of Media and Culture, Gaia is a postdoctoral researcher in the Department of Communication at the Catholic University of the Sacred Heart in Milan, Italy. She has contributed to international journals (*Big Data & Society*, *Games and Culture*), as well as edited volumes. Her research explores the intersections of gaming with ecological activism and sustainability education, media domestication and the application of mixed methods in media studies.

Lobna Hassan – Associate Professor (tenure-track) of sociotechnical transitions in services, at Lappeenranta-Lahti University of Technology, Finland. Dr Hassan's interests include game accessibility, gamification and inclusion of people with disabilities.

Maria Ruotsalainen – Postdoctoral researcher at the University of Jyväskylä, Finland. Her research interests include gender in game cultures and esports cultures, competitive gaming and sportification of esports.

Mikko Meriläinen – Docent in game culture studies and Academy Research Fellow at Tampere University, Finland. His current work focuses on men and masculinities in the context of game culture, and he has previously extensively studied young people's gaming as well as online gaming conduct.

Veli-Matti Karhulahti – Senior researcher at University of Jyväskylä, Finland. His work on gaming is interdisciplinary across anthropology, design and health sciences. Matti is interested in how play and technology interact with human development and, methodologically, how such questions can be studied to begin with.

Víctor Navarro-Remesal – Associate Professor at the Department of Cultural Industries, TecnoCampus (University Pompey Fabra, Spain). He is the current president and a founding member of DiGRA Spain and the co-president of the History of Games conferences. His research interests include player freedom, Zen-inspired games and slow gaming, regional game studies and game preservation. Currently, he is one of the two Principal Investigators of the project Ludomythologies: Myths and Ideology in Contemporary Videogames.

Chapter 1

Summary

Alessandro Soriani, Anthony L. Brooks, Mikko Meriläinen, Alesha Serada

Keep on playing, keep on growing: from Volume 1 to Volume 2 ...

When the Council of Europe published Volume 1 of *Educating for a video game culture – A map for teachers and parents* (Soriani 2021), that pioneering guide challenged pervasive stereotypes about games and invited educators, parents and other community stakeholders to approach video games as complex cultural artefacts worthy of critical engagement. Soriani's book was structured around the Council of Europe's 10 domains of digital citizenship education (DCE) (Council of Europe 2019) and provided practical tools for understanding games as sites of creativity, learning and social connection – while also recognising risks, such as harmful content, problematic monetisation or exclusionary community practices.

Volume 1 was deliberately introductory. The purpose was to equip adults with awareness – to demystify gaming for those without direct experience and to encourage dialogue with young people about their digital lives – by structuring the discussion into three “worlds”.

- ▶ **Understanding games and gaming culture** – whose intention was to provide readers (mainly adults active in the field of education, such as parents, teachers, educators, trainers) with a general overview about the medium, its genres, its history, the social dynamics and the technological evolution that together make video games so different from any other media and so complex.
- ▶ **Risks and challenges** – where Volume 1 aimed to give a picture of the aspects of the medium that need to be observed with more attention and that may represent a risk or a challenge to the development of a digital citizen, such as disinformation, cyberbullying, violent content, representation of otherness and dynamic of exclusion.
- ▶ **Opportunities and educational uses** – probably the most interesting part of Volume 1, this aimed to help teachers, educators and parents to understand the educational potential of the medium. Video games are a great and unique resource to foster creativity, learning, civic engagement, cultural literacy and, of course, digital citizenship education.

This second volume is a significant step forward in scope and depth. While the first volume's primary audience were educators, parents and youth workers, this

volume wishes to address a wider audience, including researchers, policy makers, curriculum designers, advanced practitioners and industry professionals. It moves from awareness raising to critical scholarly engagement, offering in-depth analyses of how video game culture intersects with the aims of digital citizenship education and democratic competence development.

The DCE framework and its relevance to video games

The Council of Europe's digital citizenship education framework defines a digital citizen as someone who uses the internet regularly and effectively, engages actively in society and politics, and respects human rights and democracy in their online and offline interactions (Richardson and Milovidov 2019; Frau-Meigs et al. 2017). The 10 domains of DCE provide the conceptual scaffolding for this vision.

- ▶ Access and Inclusion – equitable participation in digital life
- ▶ Learning and Creativity – using digital tools for knowledge creation and self-expression
- ▶ Media and Information Literacy – critical understanding and production of media
- ▶ Ethics and Empathy – acting with respect and understanding in digital spaces
- ▶ Health and Well-being – balancing mental and physical health in digital engagement
- ▶ ePresence and Communication – constructing and managing digital identity
- ▶ Active Participation – democratic and community engagement through digital tools
- ▶ Rights and Responsibilities – awareness and exercise of digital rights
- ▶ Privacy and Security – protecting personal data and ensuring safety online
- ▶ Consumer Awareness – navigating the economics of digital environments

It is clearly important to understand how video games intersect with these domains. The intention of this publication is precisely to explore deeply the possibilities that video games can offer to critically reflect on today's most important challenges – the same challenges that digital citizenship education (DCE) faces every day.

Overview of the contributions

The contributions gathered in this volume span a wide range of perspectives, but they converge on the central question of how video games can be understood through the lens of digital citizenship education. Taken together, they trace a trajectory from the intimate realm of personal well-being, through the creative and social dimensions of learning and cultural participation, to the larger political, economic and structural contexts that shape digital play.

In the opening chapter, Alessandro Soriani, Anthony L. Brooks, Mikko Meriläinen and Alesha Serada summarise the way Volume 2 has grown out of Volume 1 and they go on to examine digital citizenship education and its relevance to video games.

Chapter 2, by Andrew Burn and Bruno de Paula, explores how the act of making games can be a powerful exercise in cultural citizenship, enabling young people to rework canonical texts and popular media into interactive forms. Their case studies show how creativity and learning are inseparable, and how games can serve as bridges between established cultural traditions and contemporary identity work. This emphasis resonates strongly with DCE's commitment to learning, creativity and media literacy, positioning games as fertile ground for democratic access to cultural production.

From this focus on the creative and educational dimensions of play, Chapter 3, by Anthony L. Brooks, situates games in relation to health and well-being, offering a historical account of their use in clinical and rehabilitative settings. His pioneering work with biofeedback-driven systems and immersive environments has exemplified how play can be harnessed not only for entertainment but also as a therapeutic intervention, reinforcing the DCE framework's attention to balanced, responsible and inclusive engagement with technology. This perspective on well-being foregrounds the ways in which digital citizenship must include questions of care, access and human dignity – matters often sidelined in popular accounts of gaming culture.

Creativity is also central to Gaia Amadori's Chapter 4 on sustainability, which turns attention outward to global challenges such as climate change and biodiversity loss. By analysing titles like *Alba: a wildlife adventure* and large-scale educational uses of *Minecraft*, Amadori shows how games can model environmental stewardship, encouraging players to see their choices as part of larger ecological systems. Here, digital citizenship education extends into the realm of planetary responsibility: to be a digital citizen is also to be an environmental citizen, capable of connecting virtual play with urgent real-world concerns.

The political implications of such connections are developed further in Chapter 5, which addresses migration and refuge. Through an analysis of "refugee games" such as *Bury Me, My Love*, *Path Out* and *Not Tonight*, Beatriz Pérez Zapata and Víctor Navarro-Remesal illustrate how interactivity can cultivate empathy, critical reflection and solidarity. These games invite players to inhabit perspectives that are often marginalised in mainstream media narratives, making them powerful tools for intercultural understanding and civic education. In this sense, digital citizenship is not only about participation within one's own community but also about fostering transnational awareness and inclusivity.

Questions of inclusion also frame Maria Ruotsalainen and Mikko Meriläinen's Chapter 6 on gender in gaming culture. They argue that issues of representation and harassment, though vital, only scratch the surface of how gender shapes digital play. By examining broader structures – from in-game character design to esports participation and community dynamics – they reveal how games can reproduce, but also challenge, entrenched gender norms. Their analysis underscores DCE's emphasis on ethics, empathy and human rights, demonstrating that full citizenship in digital contexts depends on dismantling systemic barriers to equitable participation.

Chapter 7, Lobna Hassan's contribution, builds directly on these concerns with a focus on civic engagement. She explores how games can make abstract democratic principles tangible, compressing the temporal scale of political processes so that players

can see the immediate consequences of their decisions. In both formal education and informal activism, games emerge as tools for rehearsing citizenship, fostering political literacy and stimulating active participation. Yet Hassan also reminds us that games are not ideologically neutral; they can as easily propagate harmful ideologies as democratic values. This insistence on critical awareness reinforces DCE's dual emphasis on empowerment and vigilance.

Economic literacy and consumer awareness form the next step in this trajectory. In Chapter 8, Alesha Serada and Alessandro Soriani analyse how monetisation strategies – from subscription services to loot boxes and blockchain games – reshape the very conditions of play. They highlight the ethical and civic challenges posed by these models, situating consumer awareness as a crucial competence for digital citizens. In their account, to play a game today is always also to participate in a complex economic ecosystem, and responsible citizenship demands both awareness of and resistance to exploitative practices.

The volume closes with Chapter 9 and Veli-Matti Karhulahti's pragmatic history of gaming disorder. By tracing the concept's evolution from informal notions of "addiction" to its formal codification in ICD-11, Karhulahti situates gaming disorder within broader cultural negotiations about health, adaptation and technological change. His account demonstrates that diagnostic categories are never merely medical – they are social tools that reflect shifting values and anxieties. In the context of DCE, this perspective invites reflection on how societies define the boundaries of responsible engagement and how individuals can cultivate self-regulation in rapidly evolving digital environments.

Cross-cutting themes

When the individual contributions are read alongside one another, what emerges most strongly is not a set of discrete case studies but an interwoven tapestry of insights that collectively redefine how video games should be situated within digital citizenship education. Each chapter, in its own way, demonstrates that games are not isolated cultural products but living environments – social, economic and political – where questions of participation, inclusion, creativity and responsibility are continually rehearsed.

Games as civic and cultural spaces

One of the clearest threads running across the volume is the idea of games as civic and cultural spaces. From Brooks's emphasis on well-being as a precondition for meaningful engagement, through Burn and de Paula's vision of creativity as cultural citizenship, to Hassan's exploration of civic simulations, the chapters highlight the multiple ways in which players do not merely consume games but inhabit them as citizens. In these virtual environments, they negotiate rights and responsibilities, build communities and engage in practices that mirror – and sometimes anticipate – the complexities of offline democratic life.

Games as pedagogical tools

Equally important is the recognition of games as pedagogical tools, not only in formal education but also in informal and everyday contexts. Whether it is Amadori's

account of sustainability initiatives, the refugee games discussed by Zapata and Navarro-Remesal or the economic critique offered by Serada and Soriani, each contribution shows that games can create experiences of learning that are deeply affective, participatory and transformative. Digital citizenship education, in this light, is not confined to the classroom but extends to the ludic spaces where identities are shaped and worldviews are tested.

Economics and structures

The economic and structural dimensions of gaming provide another unifying theme. As Serada and Soriani remind us, every act of play is embedded in a political economy that determines what is possible, permissible or rewarded. This perspective is echoed implicitly in Ruotsalainen and Meriläinen's analysis of gender, which highlights how structural inequalities limit who can participate and how. Karhulahti's history of gaming disorder also fits here, framing diagnostic categories as societal responses to the structural consequences of technological change. Together, these accounts underline the need for digital citizens not only to exercise agency within games but also to critically interrogate the conditions under which that agency is exercised.

Health and well-being

Finally, the theme of health and well-being holds a very important role throughout the publication. It is present explicitly in Brooks's therapeutic interventions and Karhulahti's analysis of disorder, but it also resonates more subtly in the attention to inclusion, representation and empathy in the other chapters. Well-being here is not understood narrowly as the absence of harm, but more broadly as the capacity to flourish in digital environments – to participate with dignity, creativity and critical awareness. Still, concerns about wellness and mental health often linger unaddressed in digital gaming spaces, and this is where important progress can be made in future research and education.

Looking at the horizon: research and policy agendas

The convergence of these themes points to an ambitious but necessary agenda for both research and policy. If games are to be fully integrated into the project of digital citizenship education, scholars and practitioners must continue to push beyond disciplinary silos. Research on games often remains fragmented between psychology, media studies, education, sociology and computer science. What this volume demonstrates is that only by bringing these perspectives into dialogue can we adequately account for the cultural, social, economic and technological complexities of gaming. Interdisciplinary collaboration is not simply desirable; it is indispensable.

Policy frameworks, too, need to adapt to this complexity. Current debates around regulation often focus narrowly on either protection from harm (such as age ratings or loot box restrictions) or economic growth (such as supporting the creative industries), whereas a DCE perspective requires a broader vision – one that considers how games can be harnessed for democratic participation, intercultural dialogue

and civic engagement, while still addressing legitimate concerns about exploitation and exclusion. Such a vision must also be attentive to cultural diversity: the meanings and practices of gaming vary across Europe and globally, and policy must avoid standardised solutions that erase these differences.

For educators, the challenge is to translate the insights of research into practice. Volume one provided a map for teachers and parents; Volume 2 adds depth and nuance. The next step is to develop curricular frameworks that integrate game literacy across all 10 domains of DCE. This means not only using games as tools for learning in particular subjects but also treating games as cultural environments in which young people must learn to navigate issues of identity, ethics, rights and responsibilities. Teacher training programmes will be crucial in this regard, ensuring that educators are not only familiar with games but also equipped to guide critical reflection about them.

Industry stakeholders also have a role to play. As several chapters show, the design choices made by developers and publishers profoundly shape the conditions of digital citizenship. Collaborations between educators, policy makers and industry could foster games that are not only commercially successful but also civically enriching. Initiatives like the Playing for the Planet alliance or educational partnerships with platforms such as *Minecraft* demonstrate that such collaborations are possible; the challenge is to scale them up and embed them systematically.

Looking even further ahead, we must also anticipate emerging technologies and their implications for citizenship. Artificial intelligence, virtual reality, augmented reality and metaverse-like platforms will create new forms of play and social interaction that blur the boundaries between digital and physical, public and private, civic and commercial. Preparing young people for citizenship in such hybrid environments will require a forward-looking research agenda and flexible, adaptive educational practices.

In aiming to anticipate emerging technologies, this second volume does more than provide a set of scholarly insights; it lays the groundwork for future work. If the first volume invited educators and parents to enter the conversation, this one brings researchers and policy makers into play, and a potential third volume might focus on implementation and evaluation: case studies of how DCE principles can be embedded in curricula, community programmes and industry practices. Such a trajectory reflects the iterative nature of both education and citizenship: each step builds on the last, expanding the circle of dialogue and deepening the collective capacity to respond to a rapidly changing digital world.

Ultimately, what unites all these perspectives is a conviction that games matter – not just as entertainment, but as a key site where the competences of digital citizenship are learned, practised and contested. To ignore games would be to ignore one of the central cultural forms of our age. To engage with them critically, as this volume proposes, is to take a decisive step towards preparing citizens who can navigate the digital society with creativity, empathy and responsibility.

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Chapter 2

Creativity, video games and learning

Andrew Burn, Bruno de Paula

What is the connection between video games and creativity?

And how, in turn, do these two relate to learning and education? There are simple answers to such questions. Video games are often seen as a kind of art form, so the design, development and production of them clearly involves creative endeavour of some kind, whether it be collective or individual. In relation to education, just as any form of artistic creation can be echoed in the curriculum – art, music, creative writing, drama, dance – we can also expect to see there a version of the multimedia arts, and the design of video games taking its place alongside film-making, animation and other media forms.

Needless to say, the simple answers only take us so far. What exactly do we mean by creativity? What do we mean by learning, in this context? And how is video game design a distinctive form of creative activity? How does it differ from, say, film-making?

Creativity

Let's take creativity first. It has been very differently defined over history but, without getting entangled in the thorny debates that accompany such definitions, we propose these features. First, creativity grows out of play, as the Russian developmental psychologist Lev Vygotsky (2004) argued. Young children learn early, through play, how the imagination can create horses out of broomsticks, dragons out of cardboard, monsters out of old clothing. The kinds of substitution in which they learn to make something new by transforming things they have encountered in the world eventually extends to things they read about, hear about, see in films, encounter in video games. This imaginative work is common to all humans – all humans play (and not just in childhood); all humans create, in some way or another.

Second, these kinds of imaginative activity can grow into something more directed, more focused, more productive, through forms of rational organisation. The imaginary dragon can become extended by the logic of narrative; the fantasy monster can be overcome in a procedural series of challenges constructed in video game design. These forms of rational design are the kinds of activity that education is well fitted to encourage. Ideally, an educational curriculum will be built around forms of learning

development, leading students on from simpler into more complex kinds of creative work. We provide examples of such development in the next section.

Techné

The kind of creative development we envisage moves through four stages, though these may not necessarily follow in a chronological sequence. These stages are inspired by the German philosopher Martin Heidegger's essay on technology, which argues that our understanding of technology should go beyond what he calls the "instrumental": "*Techné* is the name not only for the activities and skills of the craftsman, but also for the arts of the mind and the fine arts. *Techné* belongs to bringing-forth, to *poiesis*; it is something poietic" (Heidegger 1977: 5).¹

First, creativity is about technique, the skills of an artisan, whether in traditional materials or, in the case of video games design, digital materials. Second, it is informed by some kind of knowledge – of the world, of a genre, of society. Third, it may develop a poetic quality: it will have aesthetic form and proportion, and engage the aesthetic tastes of its audience. Finally, it will lay claim to some kind of truth – truth about the world, about the person making it, about its own nature and genre. This truth claim is a kind of negotiation with the audience, who will not necessarily accept it at face value.

How do these kinds of activity – technique, knowledge, poetic shape, truth claim – relate to learning? Here we draw again on Vygotsky. He proposed a "zone of proximal development", in which the child continually moves from ideas and skills that are familiar into ones that are less familiar, encouraged both by teaching and by working with others. This kind of learning development, like the kinds of play we mentioned earlier, is enriched – indeed, depends on – social interaction, exchange and collaboration.

A higher form of play

Finally, we asked how the creation of video games might be distinctive, different from other art forms. We explore this in more detail through the case studies later in this chapter, but for the moment we will make two points.

First, unlike any other kind of artistic endeavour, video games design is about designing a form of play. In this sense, it ties creativity to play even more strongly than is the case in other domains. If creativity is a higher form of play, as we have argued, then to employ it to design play (in the form of games) generates further opportunities for both play and creativity as players engage with the dynamic structures of the game and the social and recreational interests of the potential players.

Second, to focus on the technical aspects of design – the first of our four stages – the technical toolkit is different. While it shares some tools with other art forms – visual design, script-writing, audio design – it is rooted in one particular form of composition: computer code. This code, which can appear in many forms, creates the rules

1. The spelling of "poietic" alerts us to Heidegger's emphasis on the origins of the word poetic – from the Greek *poieo*, to make. So we can imagine video games as a poetic form, from an aesthetic point of view – but also simply as something made or created.

which govern the structure of the game, the procedures which need to be undertaken for progression through the game. For this reason, the kinds of logic around which games are organised are often referred to as “procedural” (Murray 1997).

Let’s see how these ideas about creativity and learning can work in examples of video game design by young people. In both sets of case studies, the games are made using the software MissionMaker, created by our own software enterprise MAGiCAL. This software makes certain pre-designed assets – character and set models – available to users, along with a simple scripting language to create the rules which form the procedural logic of the game. The system for creating the rules which instruct the computer how to behave is not strictly a computer language, but a simple scripting system called a “rule editor”. The students working with the game-authoring software construct rules for every event in their game. A simple example might be “If the player | clicks the key | the door opens”. These rules work like computer programming – they give the computer instructions. They also operate as procedural authoring: they devise a narrative sequence which depends on the dynamic relationship between the human user and the programme. The player may choose to open or not to open the door. In either case, the narrative will take a different turn, and the programmed sequence clicks into place. To design these options successfully, the designer has to imagine the outcomes, both as code and as narrative. The algorithm, though often treated as synonymous with code, is actually conceptual: it is an act of imagination, which gives us a clue to the relation between procedural poetics and creativity.

Case study 1. Video games and Shakespeare

In this example, drawn from a research project in collaboration with Shakespeare’s Globe Theatre and a comprehensive school in Cambridge, UK, two 13-year-old girls are making a game level based on a scene from Shakespeare’s play, *Macbeth*. This level represents Macbeth’s killing of Duncan in Act 1. The following analysis considers the nature of the game’s transformation of the scene: how it shows an understanding of play and game; how it represents the sociocultural interests of the young makers; and how it relates to creativity, learning and principles of game design.

The game design described here transforms *Macbeth* using a range of multimodal resources, including 3D models, vocal performance, written language and code. These can be seen as the technical stage of creativity – the toolkit. We look more closely at this layer in the next section, to see how it leads to the layer of knowledge (of Shakespeare’s play, in this case); poetics (the shape and structure of a procedural narrative); and truth claims related to identity and cultural taste.

The transformations of *Macbeth* created by these students visualise the characters, enact the script through vocal performance and create ludo-dramatic worlds. But the progression of the narrative through the player’s actions and choices is constructed as an algorithm: a set of specified steps leading to a prescribed outcome. To see this at work, we need to look at the code underlying the girls’ game design.

Killing the king

The image in Figure 2.1 shows a screen shot from the editing interface of the software that the two girls are using to design the narrative unit in which the player, as Macbeth, is able to kill King Duncan in his bedchamber. The figure shows the design interface of the software at the point of the murder. We can see a large trigger volume, a kind of transparent column, invisible to the player, which creates an area of programmed space in the game world. The girls have programmed it to produce two outcomes when the player inadvertently walks into it: to wake Duncan from a sleeping state, and also to increase the conscience economy. The economies are three quantified components of the game, shown as coloured columns in the interface. The girls have determined that these will be “ambition”, “conscience” and “bloodthirstiness”: themes clearly related to their knowledge of the play.

We can see at the bottom a second rule specifying the function of the crown in the process of being written; and the crown, which the girls selected from a library of resources and placed on a low bench in the 3D scene.

Figure 2.1. The design interface in MissionMaker showing the design of Duncan’s murder.



In relation to our idea of creativity as a higher form of play, these girls are transforming, through an act of imagination, the words of Shakespeare’s play, in which the offstage murder of Duncan is reported but not shown.

The game-authoring program involves the use of various tools, which we can relate to the technical or artisanal stage of creativity. These are mental tools (such as how to present this climactic moment in the drama, which is also a payoff in the game’s mission) and algorithmic tools (what steps need to be specified to offer player choice while also encouraging a trajectory appropriate to Shakespeare’s script).

There are also physical tools, such as the visual assets provided by the software (character and world models, and objects such as crowns and daggers). In addition, importantly,

the creators can use the (unlimited) resources of language, in the form of their own recorded voices. This creative design is, then, multimodal, employing a range of communicative modes, including, as the next category shows, computer code (Burn 2022).

A different category of physical tools consists of the compositional tools of the software, some of which can be seen in the screenshot in Figure 2.1. The large window shows the game world in design state, with the King Duncan character model in the background. The two rules (lines of code) attached to the trigger volume specify the following:

If the Player | enters the trigger volume | King Duncan wakes up.

If the Player | enters the trigger volume | Player gets 300 Economy B points.

Economy B is specified as “Conscience”. The wakening of the King, then, pricks Macbeth’s conscience, a representation of affect positioned in dramatic tension with the next rule governing the function of the crown.

The rule editor appears on the bottom left of the image. The rule that is active in the window specifies:

If Crown’s state | becomes “owned by Player” | Player gets 600 Economy A points.

The girls have programmed Economy A to be “Ambition” so that the player gains Ambition points (represented as we have seen on a coloured meter in the player interface). In this case, then, they have created a condition specifying that Macbeth can gain the crown after killing Duncan and that this will increase his Ambition by 600 points.

This conditionality produces the procedural narrative which is characteristic of video games. The rule-governed behaviours and multiple routes through a text such as those the girls have created here are typical of procedural authoring. The creative act here is partly to do with the way in which the girls have resolved Macbeth’s situation in the play into an algorithm: a set of steps specifying how the player can accomplish the mission. In the play, he is faced with the dilemma of killing Duncan or not, and the moral consequences of his choices. In the girls’ game, these choices are hard-coded – the programming they have created triggers specific events. Most interestingly, perhaps, they have translated Macbeth’s moral character into two numerically determined economies, so that his conscience is pricked immediately before his ambition is increased by taking the crown. Other choices would result in raising or lowering his conscience or bloodthirstiness.

As in the earlier examples of the economies and the guards, the girls have had to reimagine the play, on the basis of reported actions, since this whole scene does not, of course, appear on stage in Shakespeare’s text, though it often does in film versions. This reimagining requires imaginative substitutions using available objects: daggers, crowns, character models, chambers – and then a plotting and encoding of the algorithm. The poetics of the drama are transformed, then, into the ludo-dramatic poetics of the game.

This example shows how the creative act is extended beyond the manipulation of technical tools (assets, code) into the realm of knowledge (of Shakespeare’s play), into forms of aesthetic or poetic shaping (as narrative, as game). What kind of truth

claim is made, though? In transforming the play, the girls have made various claims. First, that this Renaissance play can work as a credible video game – truth-to-genre. Second, that it can represent the agency of women. Though this is not evident in the details discussed above, the scene is introduced by Lady Macbeth, who in a sense controls the game level, since the player must return to her at the end of the mission, much as Macbeth does in the play.

More importantly, before arriving at Duncan's chamber, the player meets two of the witches from the play. These characters do not appear in this scene in the play text – the girls have imported them from the beginning of Act 1, because to them the witches hold a kind of fascination. They are the only characters who speak in the scene in the recorded voices of the girls themselves. The claim here, then, is to a truth of female agency, true for these girls, their identities and their cultural preferences.

Finally, we should remember how these truth claims are negotiated with the audience. If the game were played by other girls, they might applaud the appearance of the witches; while a Shakespeare purist might see this as a distortion of the original text.

Case study 2. Video games, identities and global cultures

As discussed earlier, creative practices – such as making games – are not just about technique, but also about knowledge, poetics and truth claims. Creativity, in the same way, is not just limited to romantic conceptions of the genius that, out of nowhere, generates new ideas. Rather, it can be linked to everyday practices, including remixes or mashups/pastiche.² In this example, we briefly examine a game produced by two young women (at the time, 14 and 15) in a game-making club at a community centre using the same authoring software, *MissionMaker*. This game, we argue, offers a significant example of how these four different dimensions of creativity are present in game-making. Unlike the previous case, in which game-makers were asked to work with a set text as a starting point, in this case the makers were free to tell their own stories.

The game analysed here demonstrates a much broader – and, we could argue, more accurate – view of creativity than conventional, limited models of artistic genius, as criticised by Ingold (2014), in the sense that their game is produced as a cohesive amalgamation of different knowledge, references and values. Like the girls re-deploying the witches in the previous example, these girls' games provide glimpses into who these game-makers were and who they wanted to be.

Their game starts with a traditional game trope: a rescue mission after your romantic interest has been kidnapped. There is a simple twist, though: rather than the traditional damsel in distress seen in multiple games we play as Baek Ma Ri, a young woman who must find and rescue her boyfriend-to-be Jung Jae Min. Here, however,

2. We are using such terms here based on Sonvilla-Weiss (2010), who considers both practices as related in that they "borrow" elements from existing cultural elements (or texts, in the semiotic sense). The main difference is related to the perception regarding the source: in a remix, there is a certain level of transformation (or a recombination) between the "original source" and the new production, whereas a mashup is closer to an emulation, when elements from the "original source" are directly "lifted" from and employed in a new production. We consider here the pastiche as a particular type of mashup, when there is a clear parodic/humorous finality.

before examining their game, it is important to reflect on who these game-makers are and how their backgrounds play a role in the creative process discussed here.

Both game-makers – like virtually all their peers in this game-making club – were young people of Latin American descent. Knowing this fact would probably generate an assumption that, due to their cultural positioning, certain aspects of their heritage would be present in their game. However, as noticed through the character naming, these are not Latin, but Korean names: as would become clear through a conversation, they were borrowed from a popular K-Drama that one of the game-makers was a fan of. Here, we have an important aspect of background and creative processes: whereas labels like “young women”, or “Latin American” or “migrant” can create assumptions about what kinds of knowledge would be recruited and/or what kind of claims about the world would be made about these game-makers, the game produced here reminds us how such processes are much ampler and complex than (stereotypical) simpler identifiers might hint at.

This does not mean, however, that such processes are simply grounded on reproduction and repetition:³ the gender reversal – with women in agentic positions, and men in minor and/or passive positions – in their game indicates a transformative relationship with the original source (the K-Drama *Orange Marmalade*) since, in that show, the male counterpart has significant agency. Here, we have a clear example of how creative practices can be used to make claims about the world, in this case making a clear point about gender equality and feminine agency.

More interesting, though, is how the game progresses, and how such feminine roles are expressed into their game. After going around mazes and fighting the main antagonist (herself a romantic competitor for your suitor), the game-makers designed a particular sequence in which they wanted the player to care for their (now amnesiac) romantic interest. Such a game passage indicates a significant confluence of aspects related to creative practice, from previous knowledge and values to technique and ways of re-factoring ideas according to the available possibilities. Let's start from the first element, though.

When asked why about their design decisions, more specifically, about the intended role to be played by the protagonist Baek Ma Ri – both a strong, independent woman and a caring partner – game-makers related that to their own experience of femininity, including of their role models (mothers, grandmothers, etc.). Being a woman, in that sense, was simultaneously about being agentic, getting ready to act if needed, but also to not measure efforts to care for your loved ones. We have here, again, an example of how creative activities can promote an important window into understanding how young people understand the world.

However, creative practices are not just about planning and designing but also implementing such ideas. In this process, when facing the software available, the game-makers demonstrated some disappointment in the options available to represent “caring for” somebody in their game. It turned out, in this case, that *MissionMaker* (the software used) was much better suited to representing actions that are common in

3. Even if, as argued by multiple authors, such as Tosca (2023), reproduction and repetition are important parts of cultures.

games, such as exploring an environment or even fighting, but there were not many options to represent, for example, emotional relations between two characters. In this case, the disappointment and the possibilities offered by the software became a creative driving force for the game-makers. Instead of representing care in an unsatisfactory way, they decided to change their ending: their romantic interest, rather than being in an amnesiac, helpless state, would now reveal a shocking secret after being rescued: he would be transformed into an alien (one of the characters available in the software) and would explain to the protagonist that he was on a mission to investigate the Earth. He would thank the protagonist for her help, and bid her farewell, making her free to live her life as she pleased.

This new ending indicates how creativity happens in the confluence between technique, values and knowledge. The game discussed here challenges limiting narratives that pigeonhole certain creators, considering that all the stories they can tell are based in a particular tradition. In the same way, it highlights how even creative practices that stem from clearly identifiable sources are often recreated and reshaped in unexpected ways, influenced both by the key values and understandings about the world that game-makers bring, as well as the material conditions they encounter.

Endpiece: creativity, learning, citizenship and video game design

We have given examples, then, of how creativity can be seen as playful, imaginative transformation of cultural resources, and how it can involve four layers: technique, knowledge, poetics and truth claim. However, how does this model relate to learning, on the one hand, and citizenship on the other?

Part of the answer lies in the conception of game design as a component of what has often been referred to as “game literacy” (Buckingham and Burn 2007). This is related to wider forms of literacy such as media literacy and, indeed, literacy broadly conceived. What all these forms have in common has sometimes been seen as the three Cs: Culture, Criticality and Creativity. As we have seen from the examples in this chapter, culture can take the form of cultural knowledge, whether of Shakespearean drama or K-Pop soaps. Criticality consists of both technical competence (a component of creativity also) and an understanding of, and ability to intervene in, the values, politics and social meanings of texts. And creativity, as we have shown, provides the toolkits and mechanisms to develop these skills, allowing young people to claim their own truths and defend them. While our chapter has focused on game-making as a creative practice, we must reiterate that this is not the sole possibility in relation to how games can foster creativity. From the links between play and imagination (Vygotsky 2004) to different fan activities around games that can emerge, such as fan art or cosplay, there are multiple ways in which creative practices are connected to gaming. In that, however, we argue that a central element to understanding the role played by creative practices is related to what in academia we have conceptualised as game literacy (Bourgonjon 2014).

In game literacy specifically, the “technical” side is closely related to “functional” competences, such as the capacity to understand the rules of a game or to manipulate

controllers to play and to progress. Besides these “functional” skills, a game-literate person is able to go beyond technical interactions to understand how games draw on and influence broader contemporary cultures. Game literacy, therefore, involves a combination of these “critical” aspects to enable critical participation in contemporary digital cultures. Video games are an important part of contemporary culture, with their ties and mutual influence becoming more and more evident, with the rise of the alt-right or the erosion of and fight for workers’ rights in the digital age being first rehearsed in gaming circuits. Adopting a cynical stance that sees games and gaming as “minor” and/or separate from contemporary life only legitimises the exclusive practices that maintain games as “boys’ toys” in the public imagination.

But how to overcome these and broaden our understanding about games and game literacy?

A broader approach to game literacy depends on recognising young people’s broad and extremely varied cultural experience of games, and how this relates to their tastes, identities and values. It means adopting a critical, enquiring approach to the study and analysis of games in the classroom, and how they take their place alongside other media in the representation of our world, and the resources they offer (or withhold) for young people to engage with such representations. It means giving participants in gaming the ability to engage with notions of power to develop a critical understanding of games. Part of our role as educators interested in equity is to lay bare the power dynamics in the field and give individuals the ability to critically question them through participation. Why are non-male players harassed in online play sessions? Why are most female avatars – virtual characters – hypersexualised? Why are there so few people of colour working in games? Helping individuals to navigate questions such as these, not offering a definitive truth but the ability to think by themselves and finding their own answers should be one of the main goals of game literacy – and, arguably, any literacy.

Finally, and most importantly, as we have shown in this chapter, game literacy in the curriculum and beyond it means providing the means for young people to create their own games as well as playing and critically understanding them, as other chapters in this book argue. In the world of language, we would never dream of teaching young people to read but not to write.

To decolonise game literacy, we then must respect different experiences and different forms of knowledge, always asking “what kind of knowledge, by whom, for what?” In a game literacy initiative, this would mean showing how gaming is not a practice for a few, but one where everyone can take part. It means promoting a dialogical approach, where participants do not feel obliged to subscribe to specific discourses, but can make use of their own understandings in order to appropriate games as a cultural form, accommodating different levels of affiliation, interests and affinities. The main objective of game literacy should be promoting a more inclusive perspective of digital games, one that is equally open to everyone and not exclusive to a male Global North society and hardcore “gamers”.

To promote such a model of game literacy within the school curriculum carries benefits and challenges. The major benefit is that, at least in principle, all young people in a society can experience this aspect of education, though many barriers exist, not

least in curriculum planning and policy. Another benefit, also a challenge, is that the curriculum can provide learning progression over time, rather than isolated one-off experiences. Again, many policy barriers exist in this domain, as in other forms of media literacy education.

However, the learning landscape beyond school, often referred to as a “third space” (Potter and McDougall 2017), since it is located between school and home, also provides important opportunities for young people to engage in game design, as in the second of our examples. While this may limit the reach and progression, it can also provide opportunities where no others exist.

Whichever setting we consider, the question of its relationship to citizenship arises. How might game literacy (and more generally media literacy) form part of what we call “citizenship”?

We suggest three answers.

First, all citizens are entitled to literacy education broadly conceived. To be literate (in the senses we have described, involving critical, cultural and creative dispositions) is a prerequisite for the agency we expect all citizens to possess in order to participate in contemporary societies.

Second, all citizens are entitled to engagement with the arts. This must extend beyond the classical arts of music, fine art, theatre and dance, which often dominate curriculum policy, and incorporate the popular arts, the media arts and thus the artistic practices of game design.

Third, all citizens are entitled to access forms of expression through which they can explore, express and build their own identities, group affiliations and diverse forms of belonging. Our argument for recognising the different shapes that gaming, game design and games education can take supports this wider component of citizenship as we understand it. Whether it is girls designing games that feature girls’ voices, or Latin American teenagers designing games which draw on global forms of popular culture, these creative endeavours push the boundaries of what it means to be creative, what it means to be educated and what it means to be a citizen.

Highlights of the contribution

- ▶ **Creativity is more than technology:** while video game design with young people must involve technology in some way, it is important to move beyond this.
- ▶ **Game design and knowledge:** designing games can encourage young people to use their knowledge of the world, and even to produce new kinds of knowledge.
- ▶ **Game design and poetic shape:** making games involves forms of poetic or aesthetic choice, such as narrative shaping and the design of elegant and effective game structures.
- ▶ **Game design and truth claim:** designing their own games can help young people to evaluate what is true for them, and to lay claim to these kinds of truth.

- ▶ **Game literacy and culture:** an aspect of literacy is cultural competence. Designing games provides opportunities for young people to explore their cultural choices and to assert their cultural identities.
- ▶ **Game literacy and criticality:** game design involves political choices, such as how to represent gender or ethnicity. In making these choices, young people can develop better critical awareness of how representation works in the games they play.
- ▶ **Game literacy and creativity:** while it is important to be able to play and interpret games critically, it is equally important to learn to design games: to “write” games as well as “read” them, to use the print literacy analogy. But it is also important to provide opportunities – in the curriculum and beyond it – for young people to express themselves creatively in a wide variety of media and art forms, not limited to the traditional arts.
- ▶ **Game literacy is multimodal:** game design requires the use of a wide variety of communicative modes: visual design, language, dramatic action, animation, music and computer code. For this reason it also offers educators many opportunities for collaboration across the arts.

Infobox 1 – MissionMaker Beowulf

Platform: *MissionMaker* (if you wish to try the product, contact a.burn@ucl.ac.uk or Bruno.depaula@ucl.ac.uk)

Key themes: creativity, game literacy

How it promotes creativity

- ▶ It encourages users to move beyond technical aspects of game design to draw on knowledge of mediaeval and neo-mediaeval aspects of popular culture (e.g. *Game of Thrones*).
- ▶ It encourages aspects of poetic design, such as narrative shape, dramatic shape and game structure.
- ▶ It encourages multimodal design: visual design, language, coding.
- ▶ It opens opportunities for cross-arts collaboration in the curriculum (literacy, art, music, drama, coding).

How it promotes game literacy

- ▶ It promotes cultural aspects of game literacy (engagements with popular culture, gaming culture, mediaeval narratives).
 - ▶ It promotes critical aspects of game literacy (e.g. the representation of gender).
 - ▶ It promotes the creative aspects of game literacy: the design of play, for other players.
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Ludography

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Chapter 3

Video games and “well-being”

Anthony L. Brooks

Introduction

This chapter aligns with the Council of Europe’s digital citizenship education (DCE) initiative by examining the complex relationship between video games and well-being. It explores gaming’s evolution and cultural impact, highlighting cognitive, emotional and social benefits, while emphasising the role of educators and industry in fostering a responsible gaming ecosystem. This chapter also considers the rise of “health games”, which combine engaging gameplay with evidence-based behaviour-change strategies to support wellness, education and medical or psychological treatments. Adaptive interfaces, such as biofeedback-driven systems in physical therapy (see Infobox 1), demonstrate the potential for personalised interventions. Developers are encouraged to design with audience needs – age, health literacy and cultural background – in mind, and to co-create with target demographics to ensure relevance, effectiveness and sustained meaningful engagement.

Well-being is a complex and multidimensional construct, encompassing cognitive, emotional and social dimensions. Well-being in this text also literally refers to “being well”. While commercial video games may incidentally contribute to positive affect, relaxation or social engagement, this contribution critically examines how intentional game design can systematically target well-being as a primary objective or as a consequential outcome of meaningful engagement. Particular attention is given to applications within formal educational contexts, supported by a review of seminal scholarship and peer-reviewed research that evidences measurable enhancements to well-being through the integration of thoughtfully designed interactive experiences.

This contribution highlights the vital role of educators in designing health games by ensuring medical accuracy and relevance, enabling games to target specific health outcomes safely and effectively. Developers share a responsibility to uphold ethical standards – prioritising transparency, informed consent and robust data privacy – so users remain protected and confident in the system. Inclusive, adaptable designs, such as adjustable difficulty levels, multi-language support and culturally sensitive content, further enhance accessibility and compatibility with assistive technologies. A notable example resulting from the author’s work is a third-party independent study by healthcare professionals (physiotherapists) who describe the created games as “visual computer feedback” where results demonstrated up to a 400% improvement in training-specific performance, with outcomes recognised for their “clinical rehabilitation impact” (Hagedorn and Holm 2010).

Frameworks of influence and positioning are shared while including relevant developmental design policies, regulations and recommended strategies, highlighting how emerging tools can drive future optimisation with health-associated personalisation through adaptation. Simple DNA cheek-swab kits already offer personalised health insights, from disease risk to nutrient absorption, delivering tailored advice on diet, fitness and lifestyle. Such personalised healthcare could eventually extend to gameplay recommendations within a future well-being index, supported by artificial intelligence (AI) enhanced gaming environments, as posited in the closing statement. Until then, one truth remains: engaging in fun, interesting games can boost happiness – and, by extension, well-being.

Navigating the digital landscape: video games, well-being and digital citizenship

In today's world, where digital technologies are integrated into nearly every part of life, it is essential to understand the role that video games play in our well-being. Video games are a global cultural force, deeply woven into everyday life, particularly for young people. While often viewed simply as entertainment, they have complex implications for mental, emotional and social health. DCE stresses the importance of fostering critical thinking, ethical behaviour and active participation in the digital world. In this context, understanding how video games can support or hinder well-being – and how digital citizens can engage with them wisely – is necessary. Recognising video games as spaces where values, choices and social interactions occur, just like in real life, is thus crucial in a digital citizenship context.

The history of health games spans from early physical game peripherals in the 1980s to modern “exergames” like Konami’s *Dance Dance Revolution* and Nintendo’s *Wii Fit*, which significantly boosted the market. The field – previously referred to as “exergames” and now known as “games for health” – has grown to include digital tools for managing conditions, promoting fitness and educating users, driven by consumer demand, technological advancements and increased public health concerns like obesity and chronic diseases. Key evolutions include products with advanced interfaces with embedded sensors resulting from developments exploring the use of (raw) sensors, alongside integration of health themes into gameplay, leading to billions in revenue and ongoing research into their effectiveness.

Video games have undergone a dramatic evolution since their beginnings, transitioning from basic pixelated graphics to intricate, immersive experiences (such as virtual reality and head-mounted displays offering 360-degree environments). This progression has established gaming as a significant cultural and social phenomenon. From early arcade games like *Pac-Man* to the extensive open worlds found in titles such as *The Legend of Zelda: Breath of the Wild* and more, gaming has grown from a niche pursuit to a major global industry. Modern video games are more than just games; they are complex digital environments offering interactive storytelling, user-generated content, competitive arenas and social platforms. Understanding this evolution allows us to see video games not merely as distractions but as interactive cultural artefacts that both mirror and influence our societies. Beyond entertainment, video games function as a medium for storytelling, art and cultural expression, reflecting societal values, challenges

and aspirations, and offering players a perspective through which to explore diverse narratives such as those in the author’s research on well-being and (re)habilitation.

In the 1990s the author investigated bespoke video games within (re)habilitation narratives at institutes, clinics, hospitals and schools catering for special educational needs (SEN), as a supplement to traditional intervention. A multidimensional sensor-based biofeedback system capable of mapping sensed motion data to responsive multimedia (primarily auditory content, later including visuals and robotic devices) was self-created in the mid-1980s. This was later used to control simple interactive animations that were created within standard commercial software (Macromedia Flash and Director). The created games were selectable according to participants’ profiles alongside their preferences of stimulus aligned to their therapists’ goal from intervention. Self-efficacy, agency and flow (alongside other traits) were typically empowered with an awareness of achievement, as in all cases variables could be adjusted by facilitators or players (i.e. adaptive interfaces). Progressive training was incremental, fitting each situation and participant so successfully that, as well as the third-party studies mentioned previously, the research led to large international and national (Denmark) funded projects and prototypes (see Figures 3.1 and 3.2, Infobox 1). Research collaborations involving healthcare experts and educators included therapists, neuropsychologists and psychologists, as well as staff and leaders.

Infobox 1



Figure 3.1. Orbit Comdex Basel, The European Network for Intelligent Information Interfaces (i3net): European village – prototype testing with the public (2001). The right screen shows a created wireframe dolphin game navigation controlled horizontally and vertically by two bespoke IR sensors to catch a dead fish floating from top to bottom. The left screen shows changeable archivable variables impacting the experience as well as scores that are recorded with change data alongside videos of the player interactions for correlation and post-session well-being analysis.

Figure 3.2. Same dolphin game as Figure 3.1 in Danish Government-funded “Humanics” project with acquired brain injured (stroke) patient controlling one sensor/navigation axis (left) and physiotherapist controlling a second sensor/axis. In subsequent sessions the patient achieved control of both sensors (thus X and Y axis).



Parallel investigations across the author’s artistic commissions, where the same research system was embedded in his created interactive installations, cross-informed on wider human performance use, thus enlightening further potential in well-being settings and situations. Aligned learnings from the healthcare interventions informed his artwork designs. The next section introduces the conceptual, theoretical and methodological influences that framed the work and develops further the concepts already introduced.

Examples of conceptual, theoretical and methodological influences

In the early 1960s, communication theorist Marshall McLuhan (1964) posited in his book *Understanding media: the extensions of man* how technology can be considered as extending the human central nervous system, our senses and consciousness. Such concepts relate to the development of video game peripherals alternative to a joystick, gamepad or other traditional controller. Beyond hand-operated controllers with embedded sensors, advancements include worn and off-body biofeedback systems. Aligned are advancements in video game displays, such as monitor size, image quality and alternatives such as head-mounted display (HMD). Laying the foundation for modern reality systems (both virtual and augmented), computer scientist Ivan Sutherland and his student Bob Sproull created the first HMD in 1968. The original device presented computer-generated graphics on a head-mounted system, allowing users to view wireframe graphics that changed based on their head position. Later developments presented video games on HMDs with a variety of controllers for interaction within 360-degree digital worlds.

Shortly afterwards and relatedly, Arthur C. Clarke (1973) published his infamous “third law” that reflected how “Any sufficiently advanced technology is indistinguishable from magic”. As well as “magical new display environments”, in 1983, a new “magical” communication signal protocol called Musical Instrument Digital Interface (MIDI) originated as a device-to-device means for arrays of apparatus including sensors and computers to exchange data, communicate and (importantly) to control.⁴ Mapping of interface-sensed human data (such as via MIDI) could subsequently control feedback stimuli (such as video games) presented on a monitor or HMD. Aligned to such philosophical and technical developments, ethnographical researchers in healthcare explored the cultural, behavioural and experiential from within specific contexts. Historic influences here include Russian psychologist Vygotsky’s Sociocultural Theory (VST), Zone of Proximal Development (ZPD), Scaffolding and his concept of *perezhivanie*.⁵ Luria from the same period in healthcare also had an impact, alongside many others in the following decades, such as psychologist and activity theorist Leontiev (1981). These influencers have continued beyond their days with 21st-century scholars developing the ideas further – including in gameplay and well-being.

Such conceptual thinking and digital technology advancements led to digital media artists and researchers designing new modalities of interactivity and creating new relationships between physical and virtual spaces throughout and beyond the 1990s. At this point GestureTek⁶ are worth mentioning as a company originating from the work of interactive multimedia artist Vincent John Vincent that led to the company’s patented full-body camera-based human gesture interface software. The company claim invention and shaping the field of “applied computer vision” with their concept of “video gesture control” (VGC), which offers a light-dependent planar dimension of game interaction. While this claim could be argued given luminary works such as Krueger’s *Artificial reality* (1983/1991, also 1985), this technology was notably behind

4. See <https://en.wikipedia.org/wiki/MIDI>, accessed 15 October 2025.

5. *Perezhivanie* is a term coined by Vygotsky for a person’s subjective, emotional, lived experience, which shapes their understanding of and interaction with the world. It is not a simple “experience” but a complex psychological structure where personal context, emotions and cognition are intrinsically linked. It can be understood as their personal “prism” through which they perceive and interpret events, with the act of experiencing also reshaping this prism over time.

6. GestureTek Health – <https://gesturetekhealth.com/>, accessed 15 October 2025.

both the discontinued Sony EyeToy (Brooks and Petersson 2005a) and Microsoft Kinect that impacted as gesture-based video game interfaces (with the Kinect still being used in hospital operating theatres and in gait analysis). An online presentation by Vincent discusses pertinent aspects of interfacing the technology to the body and brain (embodiment), with video examples of the work.⁷ Interfacing a participant to a game as an intervention strategy to supplement traditional mediation is presented in the next section, which shares framing of the author’s emergent model coined in 2005 as the “Zone of Optimised Motivation” (ZOOM) from within his research.

Processes involved in targeting a generic model on well-being from video game interventions

From both general and specific positions of considering video games and well-being, it is complex to explain the process of intervention. There was no model to guide systematic facilitation. Thus, around 2005, the author began putting into words and images a model from his research, the idea being to ask questions, further develop the concept, method and apparatus, and advance the field’s learning for self as well as others (as digital citizens). The created model, developed up to the present day, reflected expert inputs and positive results as seen in Infobox 2.

Infobox 2 – Positive outcomes from author’s intervention with institution daycare residents, most with profound multiple learning disabilities

▶ Training with causality	▶ Eye tracking	▶ Reduced learning curve over existing tools
▶ Training with gross motor skill (arm)	▶ Improved concentration	▶ Improved auditory association
▶ Eye–hand co-ordination	▶ Increased motivation	▶ Reduced stress
▶ Eye–eye contact	▶ Improved communication	▶ Reduced spasm attacks
▶ Change between hard and easy tasks	▶ Safe, natural and personal contact	▶ Increased relaxation
▶ Possibilities for imitation tasks	▶ Experience of control	▶ A successful smile on conclusion of session
▶ Working with hands	▶ Trust	
	▶ Improved body language expression	

(c.1998, see Brooks 2006, with permission Falkenberg)

A sense of the well-being that accompanied the process was evident in the expressed joy of participants. Thus, the optimal loop closure⁸ (aligned to design and intervention) was deemed as resulting in what was coined as “Aesthetic Resonance” – that is, “a moment where the response to an action or intention is so immediate and aesthetically pleasing that it makes one forget the physical effort involved” (Brooks et al. 2002). Associated is the concept of “Ludic Engagement Design”, considering the playful nature of human beings and incorporating it into the game designs. Integrating the “engagement” factor refers to the targeted immersion of the participant achieved through the adaptation of the available environment design features. This is so that tailorable

7. TEDx presentation video www.youtube.com/watch?v=EMmZYirBxgY, accessed 15 October 2025.
8. Afferent Efferent Neural Feedback Loop Closure.

personalisation becomes available and is optimised, thereby creating attention and consistency through agency, resulting in a form of semiotic interplay and self-efficacy.

In other words, designing for Ludic Engagement includes the creation of spaces for playful learning. However, due to the complexity of the human, especially across the span of abilities, competences and age in this context, it was posited that it was questionable whether people with profound learning disabilities could consciously generate and initiate signals. In such instances, increased facilitator guidance of the interaction within the sensing Virtual Interactive Space was empowered through mimicry to achieve a successful communication channel between facilitator and participant. In many cases it was found that similar out-of-body experiences to that described when the state of flow is reached (e.g. through creative expression or gaming – Csikszentmihalyi 1991) were achievable by facilitators developing an improvisational approach to “jam” and play freely with participants while closely observing their interactions and behaviour. Such interventions involved systematic video analysis that iteratively informed advancement of studies, system and concept. The analysis was aligned under a unique Hermeneutic Action Research synthesised methodology considered as recursive reflection.

The resulting emergent model was published as a “Zone of Optimized Motivation” (ZOOM) where the model evolution was posited as foundation for AI algorithm designs to support the field of video games and well-being (Brooks 2021). The bespoke recursive reflection hybrid synthesis coined as Hermeneutic Action Research is where aspects of the whole and its parts are questioned/analysed within an action research spiral, which involved steps of identifying a problem, developing a plan, implementing the plan, observing the outcomes and then reflecting on those results to inform the next cycle of planning and action; subsequently each part becomes a whole that has its parts similarly questioned. This cycle continues iteratively under a recursive reflection process. The model is framed conceptually, methodologically, and theoretically influenced by luminary philosophers such as Csikszentmihalyi’s Flow model, Schön’s reflective practice model and Fischer’s dynamic skill theory on development – especially his Microdevelopment concept. Further influences as mentioned earlier include activity theorist psychologists Vygotsky, Luria and Leontiev, as elaborated elsewhere in the author’s publications (see References).

This section briefly frames research behind creation of a design and analysis tool for the field while hinting at how well-being via video games is gaining interest from scholars. This is illustrated by publications, such as Mary Ann Liebert’s *Games for Health Journal*,⁹ and annual events such as the Games for Health Europe Conference¹⁰ (also known as the European Conference on Gaming and Playful Interaction in Healthcare) as well as several art and health initiatives in different countries alongside international project collaborations. Despite early trepidation by industry giants about catering for accessibility and inclusion needs by turning them into products (so they consciously did not),¹¹ such companies have, since circa 2012, realised future market potential – especially

9. See <https://home.liebertpub.com/publications/games-for-health-journal/588/overview>, accessed 16 October 2025.

10. See www.gamesforhealtheurope.org/, accessed 16 October 2025.

11. As seen in an e-mail exchange c. 2003 with the Development Director for London Studio (SCEE), Sony Computer Entertainment Worldwide Studios group who, despite sponsoring the author’s work (via Egmont/Nordisk), said they had no interest in (re)habilitation markets.

aligned to personalisation as predicted in Healthcare 5.0.¹² The industry is further reflected in the next section, sharing principles of design with video game examples.

Integrating well-being into game design: principles and future directions

Reflecting a growth in awareness of the psychological and social impact of games some developers are designing games and resources not just to entertain but also to support player well-being and (re)habilitation.¹³ For example, “Designing for health: tips for health game developers”¹⁴ shares principles associated with designing health games, which are seen as a promising way to improve health and wellness. Such games use engaging gameplay mechanics to encourage positive health behaviours, educate their users and support medical and psychological treatments. Health games show the importance of understanding the target audience while integrating health behaviour theories within case studies. Emphasising user engagement and motivation in health games is a principle of design needed to keep players’ interest. Using elements such as rewards, fun challenges and stories that players can be part of can help to keep them coming back and wanting to play more.

A historic example is *Le Village aux Oiseaux* (“The Birds’ Village”), a therapeutic video game designed as a rail shooter for seniors with attention disorders, including Alzheimer’s disease. The game uses familiar and calming environments and a simplified controller scheme to engage players and train their visual attention in a less tedious way than traditional methods. The game’s design considers the mental and physical limitations of its audience, resulting in a tool that stimulates attention networks and provides fun experiences for elderly players.¹⁵ In this study 89% of seniors found the video game entertaining, which indicates significant engagement where existing game mechanics were adapted by designers, simplifying first-person shooter mechanics to the rail shooter format making targeting accessible for seniors. The Nintendo Wiimote interface was used and 78% of seniors reported that they could easily manipulate the controller, suggesting effective usability for this demographic. Also the seniors responded well to competitive elements in the game design, expressing a desire to improve scores, with 81% emphasising the importance of performance-based scoring mechanisms (Mader et al. 2012).

Another principle of designing games for health involves collaborating with health professionals throughout the game development process to ensure medical accuracy and relevance. Their expertise helps create content that is both informative and appropriate for the intended health outcome. *SilverPromenade*, a digital game designed to provide virtual walking experiences and a new leisure activity for frail, institutionalised elderly individuals, exemplifies addressing their physical and cognitive limitations. Reflecting the age of the work, it used simple controls, such as the Nintendo Wiimote and Balance

12. Notably c. 2010 Microsoft established new vocations by promoting a traditional interactive designer to become “Researcher Accessibility & Inclusive Designer”, which led to the dedicated Microsoft Inclusive Tech Lab.

13. Player well-being has been impacted via tools such as Unity, Blender, Unreal Engine, alongside online tutorials and adoption into higher education.

14. Resource available at <https://negativefive.vc/uncategorized/designing-for-health>, accessed 16 October 2025.

15. See <https://smader.interaction-project.net/project.php?title=le-village-aux-oiseaux>, accessed 16 October 2025.

Board, to allow players to go on virtual walks while accounting for age-related needs. Evaluations of the game found it to be accessible and enjoyable, with observed benefits including increased social interaction among players and positive impacts on their quality of life. Targeted at those residing in long-term care facilities, the development involved collaboration with healthcare staff to ensure the game's activities were suitable and beneficial for the mental and physical abilities of the target audience (Gerling et al. 2012). Notably, both selected studies are well over a decade old. Subsequent examples (below) hint at advancements where the field may progress in the future.

An additional principle in the design of these games is the need to conduct rigorous evaluation and testing, though these are often lacking or at best questionable, and they are also complicated by subject differences. Implementing thorough evaluation, including user feedback, meaningfulness and medical studies, is key to assessing a game's effectiveness in helping to achieve health outcomes when used to supplement traditional interventions. Collecting and analysing data on user engagement, habit change and health progress provides valuable insights for game refinement. Health games should be easy for everyone to use and understand. This means making them work well for people with disabilities, different reading abilities and various cultural backgrounds. Games should let players change the difficulty level and choose their preferred language, while including content that feels familiar to different groups of people. Guidelines for designing health-literate mobile applications emphasise the importance of clear communication, user-friendly interfaces and cultural sensitivity. Applying these principles to game design can improve accessibility and user engagement across diverse populations.

Another design principle is that of leveraging technology and innovation to offer new opportunities for creating engaging and personalised health gaming experiences. The development of *Hellblade: Senua's Sacrifice* (2017) illustrates the potential of research-informed collaborative design in creating games that tackle mental health. The game development team talked to mental health doctors and people who experience psychosis to create a game that helps players better understand and relate to mental health challenges. An article by Zoey Ahmadi titled "Leveraging AI and gaming to advance mental health" posits support for the condition aligned with gaming as a forward-thinking approach that can engage users while delivering measurable therapeutic benefits. Similarly, the Media Lab at MIT introduced *The Guardians: Unite the Realms* (2020) and *The Guardians: Paradise Island* (2022) as mobile games designed to integrate mental health support into a fun, engaging gaming experience. These games employ behavioural activation therapy (BAT) principles to help players engage in real-life activities that promote mental well-being, such as exercising, socialising or engaging in creative hobbies. These actions, mirrored in the gameplay, translate to in-game rewards, motivating players to persist in activities that can reduce symptoms of depression and anxiety. One conclusion was that AI-powered games, machine learning algorithms and chatbots can offer meaningful support, particularly for individuals who face barriers to accessing traditional mental healthcare.¹⁶

A final principle in this brief primer is that game creators need to consider ethics, getting players' permission, keeping their data safe and ensuring the game will not harm players mentally. Setting up clear rules and getting the right approvals helps protect players and keep their trust. Ethical frameworks in game design and gamification

16. Available at <https://negativefive.vc/game-industry/leveraging-ai-and-gaming-to-advance-mental-health-support/>, accessed 16 October 2025.

state how health games need clear rules to protect users while helping them.¹⁷ This means being open about what information is collected, explaining things clearly to players, respecting their choices and rights, and ensuring the games work well.

In summary this section posits how designing effective and affective health games¹⁸ needs a multidisciplinary approach that uses insights from game design, health behaviour theories, user experience research and technological innovation. By focusing on the target audience, working with health professionals, emphasising user engagement and sticking to ethical standards, developers can create games that not only entertain but also contribute to improved health outcomes. Examples of such health behaviour theories related to the ZOOM model include the Health Belief Model (HBM) (Rosenstock 1966; Becker 1974), Social Cognitive Theory (SCT) (Bandura 1993)¹⁹ and Self-Determination Theory (SDT) (Deci and Ryan 1985, 2000; Ryan and Deci 2000). The latter is a framework explaining human motivation and well-being, rooted in three basic psychological needs: autonomy (a sense of control), competence (feeling skilled and effective) and relatedness (feeling connected to others). When these innate needs are met, people are more intrinsically motivated, leading to greater personal growth, engagement and mental health. Conversely, when these needs are thwarted, motivation and well-being can diminish, as evidenced by intervention utilising the ZOOM model.

Purposeful design

Whereas the previous section shared design principles and influential framings to realise effective and affective health games with illustrative examples, this section introduces the shift towards “purposeful design”, where developers ask deeper questions about how a game impacts players’ mental health, fosters connection and empowers rather than manipulates them. This trend mirrors wider movements in technology towards human-centred design, prioritising user health. Alongside this, certain game mechanics can be intentionally designed to promote emotional regulation, mindfulness and self-awareness, as suggested in the following.

- ▶ **Mindful gameplay:** games with calming aesthetics and contemplative pacing can offer a soothing sensory experience, helping players relax and reflect (Sliwinski, Katsikitis and Jones 2015).

-
17. Ethical frameworks in game design provide standards for responsible practice, covering player well-being (avoiding addiction, promoting healthy habits), fairness (transparent monetisation, avoiding “pay-to-win”), content integrity (promoting diversity, avoiding stereotypes) and data privacy. Key frameworks like the ETHIC Framework (Liberty 2025) focus on player empowerment and intrinsic reward, while other principles emphasise transparency and accessibility with responsible community and employee practices to build a sustainable and trustworthy gaming industry. See also Brooks 2017.
 18. Effective health games focus on achieving measurable health outcomes, such as improving physical fitness or cognitive function, often through structured gameplay or exergames. In contrast, affective health games prioritise emotional responses, leveraging a player’s psychology to influence their behaviour and physiology, with the goal of enhancing the player experience and promoting well-being, like reducing stress or managing cravings.
 19. Albert Bandura’s SCT posits that individuals learn and are influenced by their environment and social interactions, not just by direct experience. Key concepts include reciprocal determinism (a dynamic interplay between personal factors like cognition, emotion or behaviour and the environment) and self-efficacy – the belief in one’s ability to succeed in specific situations or accomplish a task. Reciprocal determinism is a continuous loop in which each element influences and is influenced by the others, and not determined by a single factor. This aligns with the Human Afferent Efferent Neural Feedback Loop Closure in the author’s work (see References).

- ▶ **Non-violent and prosocial objectives:** some games explore non-violent conflict resolution and co-operation, fostering empathy and emotional expression (Nosek and Durán 2017).
- ▶ **Growth-oriented feedback loops:** designers can implement systems that celebrate effort, learning and progress over perfection or constant winning, encouraging a growth mindset and reducing performance anxiety (Jaworska 2021).

Purposeful design mechanics illuminate how such integration can provide consistent encouragement for effort and learning, using positive feedback for attempts and progress, rather than focusing solely on winning or perfection. This “system” fosters gameplay and interplay alongside a growth mindset – the belief that abilities can be developed through effort and perseverance – which reduces anxiety by framing mistakes as learning opportunities. Examples include small, frequent rewards for actions, visual progress trackers and systems that offer advantages for falling behind, ensuring continued engagement and a positive experience. A growth mindset in video games is the belief that skills and abilities can be developed through effort and practice, leading to continuous improvement and a (lifelong?) love of learning. Games naturally foster this mindset by encouraging players to retry, experiment with new strategies, learn from mistakes and view challenges as opportunities to grow, rather than as indicators of fixed limitations. Players with a growth mindset embrace challenges, value the process of learning and are more resilient when facing setbacks, ultimately enhancing their engagement and skill development within the game.

Evolution in the field has seen leading studios increasingly collaborating with mental health experts during the design process to identify risks and opportunities. This helps ensure narratives are respectful and empowering, as seen with games addressing themes like loneliness and depression. Exemplifying this are organisations like “Take This”, which offer consulting services on mental health in game design.²⁰ As awareness grows, there is momentum towards creating industry standards for healthy game design, potentially including voluntary labelling for emotional content, ethical design guidelines for engagement loops and well-being audits. The larger goal is to embed well-being into the culture of game design itself.

The next section discusses next-generation activities, including highly recommended video viewing in parallel with reading associated with new vocations achieved through education. It concludes that AI integration within video games can contribute to a healthier future aligned to advances in healthcare (such as Healthcare 6.0) and thus associated with well-being and a paradigm shift that moves towards individualised medicine and home-based care, fundamentally changing the roles of healthcare professionals and emphasising efficiency and proactive, preventative treatment.

Discussion and conclusions

Video games are a powerful medium, not inherently good or bad; their impact depends on what they are and how and why we play them. For digital citizens, being game literate means understanding both the risks and rewards and making

20. See www.takethis.org/programs/industry-consulting/, accessed 16 October 2025.

informed choices that support personal and collective well-being. Aligning gaming practices with digital citizenship principles allows individuals to navigate the digital landscape in a way that promotes personal growth, social connection and overall health. The DCE initiative provides a framework for fostering positive gaming cultures where integrating well-being into game design is a moral and social responsibility. With thoughtful design, games can become a source of joy, healing, connection and personal growth, especially when one considers the potential of integrating AI so that automated in-game support can be tailored optimally to goals of gameplay.

Digital citizenship calls on us not only to consume games wisely but to create and support games that reflect our highest values. Video games are shown here to be a valuable tool for enhancing well-being, but they also require a mindful and balanced approach to avoid potential negative consequences; thus the author’s research, over approximately four decades, indicates how it is imperative to collaborate with professionals who understand the human condition and the specific idiosyncrasies of each individual participant and their profile of needs and preferences.

See also: Infobox 1 with example images from collaborations; Infobox 2 with example results from the work; and Infobox 3 exemplifying a postgraduate student project. The results of this collaboration in developing VR games for well-being indicate how next-generation learning by digital citizens is imperative to advances aligned to the shared principles and to the emergence of new vocations²¹ – with video and publication links (highly recommended viewing/reading – Diaconu et al. 2019).

Infobox 3



Author’s Medialogy graduate students collaborating with local institute therapists and patients in VR HMD games study targeting well-being – see video <https://youtu.be/GhXljHWSZFk> https://link.springer.com/chapter/10.1007/978-3-030-06134-0_44 (Diaconu et al. 2019 with permission), accessed 16 October 2025.

The maxim “We shape our tools, and thereafter our tools shape us”, often attributed to McLuhan (1964), reflects his view of technology as an extension of our human central nervous system (1967), an extension that is a prevalent reality in contemporary society with each person having a mobile identity. A conclusion where video game playing and well-being are analogous can be extracted from McLuhan’s thoughts on how our private senses are not closed systems but are endlessly translated into one another in the synaesthetic experience that we call consciousness. Also, in the past, our extended senses, tools or technologies were considered to be closed systems incapable of

21. Three of the four Medialogy students are now fully employed in a new 3D Lab at the regional hospital.

interplay. Every “new” technology from that period diminished the interplay of our senses and awareness of precisely the area ministered to by that technology: a kind of identification of viewer and object occurs. Contemporary electronic technology, however, is not a closed system. As an extension of the central nervous system, it deals precisely in awareness, interplay and dialogue. In the electronic age, the very instantaneous nature of the co-existence among our technological instruments has created a crisis quite new in human history. Our extended faculties and senses now constitute a single field of experience which demands that they become collectively conscious, like the central nervous system itself. Fragmentation and specialisation, features of mechanism, are absent.

In closing this history of video games and well-being alongside, I note how personalisation aligns with societal trends such as “Healthcare 5.0”²² and “Healthcare 6.0”. My background of being born into a family with disabled members, affected and impacted with embedded tacit knowledge developed over many decades, has been transferred into research as a mature body of work shown around the world. Evolving the work while educating next-generation digital creatives having focus on video games and well-being has been rewarding in many ways, resulting in “new” vocations. Currently the author is investigating “AI observation” (listening and watching) to optimise the user experience in line with the ZOOM model. AI can already be used to maintain engagement of the player in line with Flow Theory and Aesthetic Resonance.²³ This reflects how the term “game AI” was redefined in 2012 whereby AI methods could generate new content or interactive stories as well as performing data mining on user behaviours, allowing game designers to explore how people use the game, what parts they play most and what causes them to stop playing, allowing developers to tune gameplay or improve monetisation (see elsewhere in this volume). AI from the period could alternate approaches to non-player characters (NPCs) that included changing the game set-up to enhance NPC believability and exploring social rather than individual NPC behaviour (Yannakakis 2012).

Predictions on the evolution of AI-driven game worlds based on player’s choices were such that: “Developers will rely on it to create new stories, improve graphics, and produce worlds that breathe on their own. And players will feel it, too. Games won’t just be something you play – they’ll be something you live in, with the game adjusting itself to meet your style, your decisions, and your preferences”²⁴ This was speculatively authored²⁵ under the renowned Association for Computing Machinery (ACM) in their publication *Computers in entertainment* (CiE),²⁶ on how game players

22. Healthcare 5.0 is the evolution of the healthcare industry, emphasising a patient-centric approach by integrating advanced technologies like AI, the internet of things and big data with human intelligence to provide personalised, predictive and participatory care. It builds on Healthcare 4.0 by focusing on human-machine collaboration, sustainability and the creation of more resilient, human-centred healthcare systems that improve patient outcomes and experiences (Malviya et al. 2024).

23. Dynamic game difficulty balancing, also known as dynamic difficulty adjustment or dynamic game balancing.

24. See <https://enablis.co/resource/how-ai-is-changing-gaming-tech-in-2025>, accessed 16 October 2025.

25. “Artist and audience: emerging the nano-entertainment experience” in ACM Computers in Entertainment – <https://web.archive.org/web/20190113121934/https://cie.acm.org/articles/artist-and-audience-emerging-nano-entertainment-experience/>, accessed 6 October 2025.

26. See <https://dl.acm.org/magazine/cie>, accessed 16 October 2025.

of the future will interface intuitively from within their personalised AI-enhanced Nanobot-populated “Kinesphere”.²⁷ The gameplay would be bio-intelligence-driven, where the player experiences “real interactive content” informed from invisible (on-body and off-body) nanobots intelligently generating sensed human data while “body-internal” nanobots (as a future bio-signal feedback system due to nanobots being digestible and breathable) would analyse such experiences internally to inform the system on player state for real-time refinement of optimal experience and well-being, while simultaneously archiving outputs to a digital twin (Dubey et al. 2024). More magic lies ahead ... We can be sure.

Highlights of the contribution

- ▶ Navigating the digital landscape: video games, well-being and digital citizenship
- ▶ The evolution and nature of video games
- ▶ The multifaceted benefits of gaming
- ▶ Recognising the risks associated with gaming
- ▶ Promoting positive gaming practices
- ▶ The roles of educators and parents
- ▶ Policy and industry responsibility alongside ethical considerations
- ▶ Integrating well-being into game design: future directions and principles
- ▶ Embracing AI for a healthier gaming future
- ▶ Speculating on system and educational/vocational advancements

Ludography

- ▶ Bandai Namco Entertainment (1980), *Pac-Man* [arcade game], Bandai Namco Entertainment.
- ▶ Konami (1998), *Dance Dance Revolution* [arcade game], Konami.
- ▶ Ninja Theory (2017), *Hellblade: Senua's Sacrifice* [video game], Ninja Theory.
- ▶ Nintendo (2007), *Wii Fit* [video game], Nintendo.
- ▶ Nintendo EPD (2017), *The Legend of Zelda: Breath of the Wild* [video game], Nintendo.
- ▶ Tekneo, Seaside Agency, SpirOps, Neofactory (n.d.), *Le Village aux Oiseaux* [interactive/educational game], CEDRIC3, INSERM 4.
- ▶ [Developer unknown] (n.d.), *SilverPromenade* [video game] – Gerling et al. 2012.
- ▶ MIT (2020), *The Guardians: Unite the Realms* [video game].
- ▶ MIT (2022), *Guardians: Paradise Island* [Video game].

27. A three-dimensional invisible dynamic sphere personal space, like a bubble, that encompasses everything reachable by the body's extremities without stepping or changing their point of support. Additionally, the Kinesphere's size can reflect emotional states or psychological conditions related to well-being and psychological state: term coined by Rudolf von Laban.

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Chapter 4

From pixels to planet: educating for sustainable development through video games

Gaia Amadori

Introduction – The journey of sustainable development education

In recent decades, the world has faced growing challenges: climate change, poverty, inequality and environmental degradation. These issues made it clear that a new, shared vision for the future was urgently needed. The journey toward the sustainable development goals (SDGs) began with early international efforts to connect human well-being with the health of our planet. In 1987, the concept of sustainable development was famously defined by the World Commission on Environment and Development as meeting “the needs of the present without compromising the ability of future generations to meet their own needs” (WCE 1987).

Throughout the 1990s and early 2000s, global summits and agreements – like the Earth Summit in Rio de Janeiro (1992) and the Millennium Development Goals (2000) – helped shape a worldwide conversation about how countries could work together for a better future.

In 2015, following extensive dialogue and co-operation among governments, scientists, businesses and communities, the United Nations adopted the 2030 Agenda for Sustainable Development. This comprehensive framework set out 17 SDGs and 169 detailed targets, aiming to address a wide array of social, economic and environmental issues. The SDGs are designed to guide collective efforts toward achieving a sustainable, peaceful, prosperous and fair future for all, emphasising universal, transformative and inclusive strategies (Sachs et al. 2019).

The European Union committed to achieving the SDGs, and in 2019 launched the European Green Deal, a long-term growth strategy comprising initiatives for a green transition, with the ultimate goal of achieving climate neutrality by 2050. These efforts seek to safeguard, preserve and improve the EU's natural resources while also ensuring the health and well-being of its citizens by reducing environmental risks and impacts (Pineiro-Villaverde and García-Álvarez 2020).

In this context, education serves as a cornerstone in promoting and implementing SDGs, as it disseminates the principles of sustainability and fosters the skills and attitudes essential for reshaping our socio-economic and environmental systems in a more sustainable trajectory (Senka et al. 2024). As emphasised by UNESCO (2018) and highlighted in Target 4.7 of the 2030 Agenda, sustainable development education (SDE) empowers individuals – both present and future generations – to make informed, responsible choices that support environmental integrity, economic resilience, social justice and cultural diversity. SDE thus entails embedding key themes of sustainable development within educational practices, with the potential to foster ecological citizenship among learners (MacGregor 2014). Global ecological citizenship is defined as “the right to a non-polluted environment and the responsibility both to refrain from harming the environment and to participate in its preservation and rehabilitation” (MacGregor 2014: 114). This concept closely aligns with the broader idea of digital citizenship and is particularly relevant for children growing up today, who can develop environmental consciousness through interactive digital environments that make complex sustainability concepts accessible and engaging (Muenz et al. 2023; Lozano-Díaz and Fernández-Prados 2020).

In recent years, a plethora of initiatives have been taken by diverse institutions, in civil associations as well as the corporate sector, to promote SDE across formal, informal and non-formal educational settings (Senka et al. 2024).²⁸ In this context, video games are increasingly being used as educational tools to address specific SDGs or, more broadly, the theme of sustainability (Stanitsas et al. 2019; Beke et al. 2024). Thanks to their interactive and simulative properties, these media constitute a unique medium for reflecting on the challenges posed by the current socio-climatic crisis (Chang 2019) and developing ecological awareness (Lozano-Díaz and Fernández-Prados 2020).

The present chapter seeks to illustrate how video games can contribute to SDE by examining an institutional campaign that recreated the Venetian lagoon in *Minecraft* (as created by Mojang 2011) to raise awareness and educate primary school children about sustainable urban development. First, it will outline how video games, particularly ecogames (Beke et al. 2024; Raessens 2019), are employed as pillars of SDE projects promoted by various stakeholders at local, national and international levels, while also presenting the main findings from the body of research focusing on serious games and sustainability. The discussion will then proceed with an in-depth analysis of the case study, highlighting its distinctive features and exemplary modalities, which will be revisited in the conclusion to foster a broader reflection and discussion on the role of ecogames in SDE.

28. Formal education refers to structured learning that takes place in schools, universities or other accredited institutions, leading to recognised qualifications. Non-formal education is organised and intentional, but occurs outside the formal system – such as in workshops, community courses or youth groups – and usually does not result in official certification. Informal education happens through everyday experiences, interactions and activities, without a set curriculum or structure, and is not institutionally organised.

Ecogames and sustainability education

Since the mid-2000s, there has been a notable rise in projects and initiatives utilising video games to increase the understanding of sustainability issues and familiarity with sustainable development strategies (Stanitsas et al. 2019).

Digital serious games, namely games designed and developed for purposes beyond entertainment (Ritterfeld et al. 2009), are being increasingly employed for sustainability education for several reasons. These reasons include their positive impact on learning outcomes (Rossano et al. 2018), their ability to simplify complex concepts by allowing learners to explore, observe interconnected systems and receive immediate feedback on their decisions – see Chapter 7 for more on this topic (Janakiraman 2020) – and the opportunity they provide to engage in activities within a safe, simulated environment where ideas can be tested without real-world risk (Novo et al. 2024). One of the pioneering examples is *World Without Oil* (2007) by Eklund and McGonigal, an online alternative reality game,²⁹ where users can envision and chronicle their experiences amid a plausible oil crisis to reflect upon solutions to a possible near-future global oil shortage.

Sustainability is a focus of serious games developed not only by non-profit organisations and research initiatives (Madani et al. 2017; Stanitsas et al. 2019) but also of mainstream commercial games and the broader industry. A prominent example is the Playing for the Planet alliance (P4TP), launched in 2019 by the UN Environment Programme and non-profit environmental organisation GRID-Arendal. This alliance includes many organisations and leading gaming companies, such as Sony, Ubisoft and Rovio, all of which have pledged to meet specific, measurable sustainability targets, ranging from cutting carbon emissions during production to integrating green initiatives within their games.

Because of this high interest, eventually a new category of video games emerged: “ecogames” (Beke et al. 2024). These games either minimise their ecological footprint through sustainable production, distribution and gameplay practices (Abraham 2022) and/or explicitly promote sustainability-oriented attitudes and behaviours among users (Beke et al. 2024). Most ecological games developed today aim to deepen understanding of the actual ecological crisis by offering innovative opportunities for learning and raising awareness. They are also often classified as “games for change” (Burak and Parker 2017), which seek not only to foster ecological thinking but also to motivate players to take action and turn them into ecological citizens (MacGregor 2014). Through ecogames, people can learn to exercise digital citizenship responsibly while developing ecological awareness (Lozano-Díaz and Fernández-Prados 2020).

There is a wide diversity in the types and approaches of ecogames (Raessens 2019), that can be traced back to four main categories.

1. More artistic and independent projects use game design to challenge our relationship with the environment and development. For example, *Lichenia* (2019)

29. ARG is an interactive game that blends digital elements – such as websites, e-mails and social media – with real-world activities, creating a narrative experience that unfolds across both online and offline environments (Bakioglu 2015).

by Molleindustria is “a city-building game for the Anthropocene” that critiques the environmental harm caused by human activity and industrialisation.

2. There are serious games created to promote environmental awareness and educate players about the importance of sustainability. One instance is *Eco* (2018) by Strange Loops Games, a multiplayer simulation game where players collaboratively build a civilisation in a shared world with a fully simulated ecosystem. Every action impacts the environment, requiring players to balance development with sustainability to prevent ecological collapse.
3. Entertainment games incorporate simulations of sustainability challenges. A representative case is *Alba: a wildlife adventure* (2020) by Ustwo Games, a child-friendly exploration game where players take on the role of a young girl visiting her grandparents on a Mediterranean island. As the protagonist, players document local wildlife, clean up pollution and rally the community to protect the island’s nature reserve.
4. Even some highly commercial games can be considered ecogames when they engage with current socio-environmental issues through their themes, premises or settings. Exemplary here are *The Sims 4: Eco Lifestyle* (2020) by Maxis and The Sims Studio, which promotes environmental themes but has been criticised for offering a reductive, consumer-oriented portrayal of environmentalism (Imbierowicz 2024), and *Minecraft* (2011) by Mojang, widely used for sustainability learning purposes thanks to its mechanical, structural and aesthetic features that help to simulate real-world issues and environments (Chang 2019; Nguyen 2016).

This last category also comprises special in-game events or features developed to engage players in sustainability themes, often in collaboration with institutional partners. One notable example is “Angry Birds Champions for Earth”, a special tournament held in *Angry Birds Friends* (2012), a game from Rovio Entertainment used during Climate Week 2015 in partnership with the United Nations. This campaign aimed to raise climate change awareness and inspire players to adopt more sustainable behaviours. Through in-game climate fact cards developed by experts, players learned about environmental issues and were encouraged to take real-world action – such as signing petitions, pledging to plant trees, contacting elected officials and sharing their support online. Proceeds from the tournament helped fund the Earth Day Network’s Canopy Project, resulting in the planting of 150 000 new trees in East Africa thanks to player participation.

Along these lines, to celebrate Earth Day, the “Pokémon GO Earth Day Clean Up” initiative, launched by Niantic in 2018 in partnership with various environmental non-governmental organisations, encouraged players worldwide to participate in community clean-up events. By joining organised clean-ups in parks, beaches and urban areas, players not only helped remove litter and improve local environments but also unlocked in-game rewards as an incentive. The campaign successfully mobilised tens of thousands of players across dozens of countries, demonstrating how mobile games can inspire real-world environmental action and foster a sense of community responsibility (Niantic 2018).

Another promising project is Minecraft Coral Crafters, a multifaceted initiative launched in 2018 by Mojang and Microsoft in partnership with The Nature Conservancy and other organisations to raise awareness and support for coral reef restoration. Players were challenged to place 10 million virtual coral blocks in-game, unlocking a \$100 000 donation to The Nature Conservancy for real-world coral restoration. Mojang also worked with the community to design virtual coral sculptures, which were then recreated as Biorock³⁰ structures and installed off the coast of Cozumel, Mexico, to help regrow damaged reefs.³¹

Alongside these activations designed and promoted by gaming companies, it must be remarked that existing titles can be deployed by stakeholders outside the industry as platforms for delivering educational content. An example is ClimateFortnite (2018), a weekly initiative where a climate scientist hosted two-hour *Fortnite* (Epic Games 2017) gaming sessions every Sunday, joined by prominent climate experts. While playing, the hosts discussed climate change topics, answered viewer questions and provided scientific explanations, especially during mid-game breaks. This interactive format aimed to engage gamers in climate science conversations in an accessible and entertaining way.

In parallel, a range of educational stakeholders – including schools and cultural institutions – have leveraged the mechanics and popularity of famous titles to develop campaigns about sustainability-related topics. In this regard we can cite Climate Hope City, a *Minecraft* educational map created for *The Guardian*'s climate campaign in 2015, showcasing a futuristic city built with real-world green technologies. In this map, players explore sustainable solutions like solar power, green roofs and vertical farms, learning how current innovations can help combat climate change.

This last category of ecogames is particularly interesting, showing how educators and practitioners can leverage video games already popular with their young target audience to educate them about sustainable development. An example of this is the case study discussed in this chapter, outlined next.

The case study: the Climate Hero campaign

In recent years, Venice has emerged as an icon of climate change at national and international levels. In particular, following the exceptionally high tide of November 2019 – when water levels reached 187 cm, the highest recorded since 1966 – this “amphibious” city (Giupponi 2022) has become a symbol of the risks associated with global sea level rise. The term “amphibious” is particularly significant for understanding the very nature of the city, which is composed of land – 119 islands connected by 150 canals and more than 400 bridges – and water, namely the lagoon and the sea that surround it. This characteristic makes the issue of sustainable development especially salient, as the city's environmental features impose a series of constraints

30. Biorock is a marine restoration technology that uses a low-voltage electric current to encourage minerals to form on underwater metal structures, creating a solid base where corals and other marine life can grow faster and more resiliently.

31. For more on the campaign, see www.minecraft.net/en-us/article/giving-back-ocean-coral-crafters, accessed 18 October 2025.

on daily activities and services, such as logistics and the supply of resources in the historic centre. This requires both short- and long-term strategic adaptation, with the aim of responding to the increasingly pressing challenges posed by climate change.

This chapter details a case study within this context, the institutional campaign Climate Hero, launched in 2021 by the educational department of the 20th-century-focused museum in Mestre, Venice, coinciding with the city's 1600th anniversary. The initiative aimed to raise awareness among young people, specifically targeting children aged 8 to 11, about urban sustainability – a central theme of the museum's Green Semester – and, more broadly, about the SDGs outlined in the 2030 Agenda. The museum's dedication to sustainability is deeply connected to its affiliation with a banking foundation committed to fostering Venice's human capital and positioning environmental sustainability as a key driver for the city's development and well-being.

The campaign, developed in collaboration with a small Italian software house, centres on an interactive map of the Venetian lagoon created in *Minecraft Edu* (2016) by Mojang. In this digital map, the protagonist – a modern champion of sustainability – is tasked with actively promoting sustainable development through a variety of green practices. These include cultivating urban gardens, fining drivers who use polluting vehicles and establishing short supply chains and solidarity-based economies. By successfully completing these activities, players earn in-game coins that can be invested in renewable energy, helping to secure the city's sustainable future.

To examine both the campaign's design and deployment, as well as the interdisciplinary collaborations, this research utilised semi-structured interviews (N=2) with those responsible for project development, namely the head of educational programmes of the museum and the CEO of the software house responsible for creating the virtual map. The interviews explored four thematic areas: 1. the origins of the project, target audience and expected objectives, to understand the motivations underlying the initiative; 2. narrative and game design perspectives, to account for aesthetic choices and gameplay mechanics; 3. imaginaries and practices of sustainability; and 4. potential critical issues and misalignments between developers and commissioners, at both the design and implementation stages.

The interviews were conducted via online communication platforms and subsequently transcribed manually. Coding was then carried out using a grounded approach (Charmaz 2014): the analysis was inductive, iterative and comparative, involving several stages of code revision and aggregation to summarise the main themes that emerged.

Playing sustainable development: key findings from the Venice virtual map

Campaign design

The Climate Hero campaign was developed to raise awareness among young citizens – specifically children aged 8 to 11 – about sustainable urban development in Venice. This age group was intentionally targeted, as they are among those who will most directly experience the tangible consequences of climate change. The strategy,

as described by the head of educational programmes, was to design “a product that could reach a broad audience, be widely accessible, and use a universal language to raise awareness about the challenges currently facing Venice.” The museum’s commitment to sustainability is closely aligned with the mission of its parent foundation, which aims to “strengthen the human capital” of the local area while promoting the objectives of global frameworks such as the United Nations’ 2030 Agenda through targeted educational initiatives.

Beyond its educational objectives, the campaign also served as an opportunity to enhance the museum’s local visibility and identity. Established in 2018 in Mestre – the most populous and densely inhabited district of the Municipality of Venice – the museum initially faced mixed reactions from the community, ranging from scepticism to support. In an effort to build public consensus and to better connect with younger audiences, the Education Department began incorporating video games as educational lure tools and later launched a long-term programme that leverages *Minecraft Edu* to engage children in learning about sustainability, citizenship and urban planning. Within this initiative, *Minecraft* has been used for several years for projects “of significant educational value” based on an inclusive approach that facilitates interaction with young people, especially those who “are not usually leaders, who struggle with traditional school experiences, but in contexts like these demonstrate great skill and a remarkable ability to play” [head of educational programmes]. The Climate Hero campaign developed out of this innovative programme. The idea of creating an interactive 3D map of the Venetian lagoon using *Minecraft Edu* stemmed also from the intention to tap into “an audience that is already ready” – a pre-existing community of young users familiar with the platform – in order to prompt reflection on meaningful aspects of their everyday lives.

The entire process of designing and distributing the map relied on a close exchange of expertise between the museum and its partner software house. The museum contributed in-depth knowledge of the local context, serving as a privileged observer of the area’s specific issues and needs, while the software house provided the technical infrastructure and skills required to bring the virtual map to life. To ensure architectural accuracy, the museum supplied extensive reference materials – including photographs and architectural plans of the Procuratie in Piazza San Marco³² – which guided the recreation of Venetian features within the game. Although it was impossible to replicate every detail, these core elements played a pivotal role in capturing the city’s distinctive character in the virtual environment. The nature of the game itself also influenced the construction methods used: as *Minecraft* does not offer a dedicated development studio suite, the map of Venice was assembled using a reverse engineering approach, namely building it manually, block by block, aided by unofficial modelling tools developed by the wider *Minecraft* community.

Throughout the campaign, the trust of the museum as commissioning institution and the developers’ ability to mediate between expectations and reality proved crucial, as

32. The Procuratie are the historic colonnaded buildings that line three sides of Piazza San Marco in Venice, forming the city’s most emblematic civic square. Their iconic architecture is central to Venice’s cultural identity, making them especially relevant for achieving visual and contextual accuracy in the game’s re-creation.

stated by the head of the software house: “We have to find a compromise between something that is set in a specific context but must also engage children, allow them to carry out activities that they expect, and, at the same time, learn something. Our task as technicians is precisely to balance this kind of effort.”

Balancing entertainment and education represented a fundamental prerequisite for the success of the initiative: “You have to understand the tool and try to get the most out of it ... So if I tell you to focus a bit more on a fun mechanic rather than an extremely educational or didactic one, you have to trust me, because otherwise, the playability of the map suffers” [head of the software house].

This comment underscores the need to prioritise gameplay in order to maintain user engagement. Without this balance, the risk is creating an experience that fails on both fronts – neither engaging nor pedagogically effective (Gee 2003; Egenfeldt-Nielsen 2006; Blumberg et al. 2024). As the head of the software house vividly put it, overlooking the importance of playability can lead to “video games that taste like chocolate-covered broccoli – enjoyable for no one and potentially even counterproductive.”

Hence, in addition to faithfully reproducing the urban environment, the map had to prioritise gameplay, incorporating challenges that were both educational and enjoyable. The museum identified five essential green practices crucial for understanding and operationalising sustainable development within the urban context of Venice. These practices, aimed to convey the idea that “the territory reacts to and is affected by certain interventions” [head of the software house], were thoroughly discussed and ultimately became the central focus of the gameplay: waste management, renewable energy, sourcing seasonal foods, managing tourist flows, and pollution from industrial production and motor vehicles. The active role of the player is central to the experience’s design – aligning with the project’s goal of “active sensitisation” – and reflects a specific conception of young people’s agency. The head of the software house indeed highlighted the intention to leverage this generation’s sense of responsibility: “Young people’s inclination to say, ‘I’ll take care of this myself.’”

Furthermore, while the campaign aimed to inspire children to “take ownership and awareness of their territory” [head of educational programmes] it also sought to foster a broader perspective on sustainable development. The applicability of good practices and general awareness raising was extended to non-Venetian players:

The map featured Venice in this case because it’s more recognisable – a tide-sensitive environment, for example. But fundamentally, the map was designed to be played by children across Italy and beyond, to convey the message that any territory must be preserved, whether it is the one I live in daily, like the Venetian lagoon, or a mountain village I might visit. Those places also need protection. [head of the software house]

The completed map was uploaded to the official *Minecraft Edu* library, making it accessible to schools and children worldwide. To further expand its reach and ensure inclusivity, the map was also made available as a free downloadable file on popular websites frequented by *Minecraft* players seeking new environments to explore.

This dual distribution strategy had multiple effects. On the one hand, it enabled the campaign to reach a much wider audience without limiting access to official or

paid platforms. On the other hand, uploading the map to the official *Minecraft Edu* library required that all overt branding – such as incorporating the museum’s logo – had to be removed, in order to comply with the platform’s policies on marketing and promotional content.

Campaign evaluation and results

After the launch in March 2021, this initiative was evaluated through three primary metrics: download statistics, media coverage and social media engagement. Despite representing a substantial financial commitment – approximately two thirds of the museum’s annual budget – the campaign yielded mixed results across all measurement areas.

The software development partner recorded 30 000 downloads during the campaign’s active phase. This metric was regarded as a benchmark of success by both the software house and the museum. However, the latter institution also highlighted the lack of a post-campaign monitoring plan, largely due to limited staff resources. Although monthly download reports were consistently generated throughout the campaign, all monitoring of map downloads ended once the campaign concluded – even though the map itself remained available online.

Press attention was limited and disappointing relative to expectations and investment levels, generating only 15 articles between March and June 2021. The institution attributed the modest national media response to insufficient communication resources, with the head of educational programmes acknowledging that promotional outreach was not an area of strong expertise.

Along these lines, the campaign’s social media presence was minimal, with only a few posts on Facebook and three videos published on YouTube. These included a trailer uploaded by the museum and a gameplay livestream produced by a game development company, reflecting the overall modest level of online engagement.

These results therefore highlight how the expectations and aspirations of actors who use video games for environmental education purposes may sometimes clash with a context that is not yet fully ready to recognise the potential of this tool, regardless of the educational effectiveness of the initiative.

Learning from the case study

The Climate Hero campaign in *Minecraft* represents a significant case study that illustrates how digital games, especially ecogames (Beke et al. 2024), can be employed for sustainable development education (SDE). Its alignment with international frameworks such as the UN’s 2030 Agenda and the European Green Deal situates it within a broader policy context that recognises education as a cornerstone of sustainable development (Sachs et al. 2019; Pineiro-Villaverde and García-Álvarez 2020; Senka et al. 2024).

In particular, the project belongs to a specific subcategory of ecogames: those that repurpose existing popular titles for initiatives by stakeholders outside the gaming industry (Raessens 2019), such as cultural and educational institutions. In particular,

it highlights several aspects useful for understanding both the limitations and potential of adopting existing video games for sustainability education purposes.

First of all, the virtual map represents indeed a “game within the game”: it is a serious game purposely developed inside *Minecraft*, capitalising on the game’s popularity among young audiences as well as its affordances. By offering the map as a free download on the *Minecraft Edu* library and other external repositories, the project was able to reach a diverse group of children, including those who might not typically engage with traditional educational or cultural programmes.³³ Moreover, it leverages the “crafting” affordances³⁴ by recreating a real-world environment, while also manipulating standard sandbox-oriented³⁵ and player-driven gameplay by introducing structured educational objectives related to Venice’s sustainable development.

However, these affordances are accompanied by significant limitations during development. Unlike platforms such as *Roblox Studio* (2006), *Minecraft* does not enable automated generation of proprietary assets, which impacts project structure and timelines by requiring manual workflows for map construction. Every element of the virtual map had to be built block by block, so any subsequent changes were challenging and resource-intensive, often discouraging substantial revisions. Furthermore, *Minecraft*’s distribution policies restrict how the game can be published and promoted, imposing limitations on branding and outreach. In the campaign’s context, direct branding was omitted from the in-game experience and instead integrated into external support materials, such as social media posts, rather than embedded content. These factors fundamentally shaped the game’s design and influenced the strategic decisions made throughout development.

Despite these challenges, the virtual map acts as an “applicable simulation” (Dishon and Kafai 2022), making complex sustainability issues more accessible and preparing players for real-life scenarios, thus making the learning experience more comprehensive and real (Gerber et al. 2021). By situating learning within an interactive map that represents an urban environment threatened by human-driven phenomena – such as overtourism and pollution from cars and industry – and by providing practical examples of sustainable practices, the campaign stimulates critical thinking (Novo et al. 2024) and systems understanding (Ouriachi et al. 2019). This transforms *Minecraft* from a general entertainment tool into a targeted educational platform, where players engage in missions, solve sustainability problems and experience the consequences of their choices within a faithfully recreated local context.

Such a context-sensitive approach in SDE underscores the importance of place-based pedagogy (Kioupi and Voulvoulis 2022). Simulative ecogames offer immersive educational experiences so that learners can transfer the knowledge and skills they acquire to other settings with similar characteristics, fostering broader systems

33. However, it is important to recognise the risk of excluding children who do not have access to *Minecraft*, whether due to financial, technological or other constraints. This digital divide can limit the inclusiveness and overall impact of such educational initiatives, highlighting the need for additional strategies that utilise free and accessible digital tools to ensure broader participation.

34. *Minecraft* is based on the possibility of creating and recreating – i.e. crafting – virtual worlds through 3D blocks.

35. Sandbox is a genre of video games that gives players a high degree of freedom to explore, create and interact with the game world, often without a fixed objective or linear storyline.

of thinking and adaptability (Ouriachi et al. 2019). This dual benefit – deepening local engagement while supporting global transferability – makes localised, context-driven sustainability education a key element for effective and transformative learning.

A second point to emphasise is that, while anchoring SDE in a local, tangible context is a key strength of the project, it is equally important to address the intersection between educational objectives and institutional branding. In the context of game-based campaigns this overlap is particularly evident: while the deployment of a popular digital platform such as *Minecraft* serves clear learning purposes, it also acts as a vehicle for institutional visibility and outreach. This convergence can be seen in decisions around game dissemination, such as making the map widely accessible through the *Minecraft Edu* library and other external channels, which not only broadens educational participation but also extends the institution's influence beyond its immediate geographic area. At the same time, as discussed, platform-imposed restrictions – such as limitations on overt branding – demand careful adaptation of content. Consequently, stakeholders are required to navigate competing priorities while adhering to the platform's commercial guidelines and content governance rules.

Third, it is important to recognise that in educational campaigns, video games rarely function in isolation (Amadori 2024). Their impact depends not only on the quality and design of the game, but also on the effectiveness of supporting activities – such as social media outreach, media coverage and ongoing community engagement. A campaign's value lies not just in creating innovative digital environments, but in ensuring that target audiences actually discover, access and meaningfully interact with them. This requires significant investment in promotion, monitoring and feedback activities, which may pose unexpected challenges for institutions less familiar with digital engagement, such as cultural and educational organisations. Given these factors, moving beyond simple metrics like download counts is crucial; such data often fail to reflect genuine engagement or educational impact. A more robust strategy should actively involve players in ongoing evaluation, drawing on their experiences and interpretations of both gameplay and sustainability representations. Hence targeted outreach, resource allocation for campaign management and sustained participant monitoring are vital steps for realising the full potential of video games in educational contexts.

Finally, the Climate Hero campaign illustrates the importance of collaboration among diverse stakeholders – such as museums, software developers, educators and local communities – in achieving the common goal of SDE. These interdisciplinary partnerships bring together a range of expertise, from technical skills like programming and game design to in-depth domain knowledge about the local territory, its challenges and opportunities, and the characteristics of the target audience.

Trust in each other's expertise and abilities is the cornerstone around which collaborations develop, especially in contexts where video games are still viewed with scepticism as educational tools. This trust also plays a key role in mediating and finding a balance between education and entertainment, helping to avoid the pitfall of “chocolate-covered broccoli” games. This balance reflects best practices in game-based learning, where fun and learning coexist to sustain motivation and deepen understanding (Rossano et al. 2018).

Consequently, adopting an ecosystem perspective, where different actors work together rather than in isolated silos, is essential for developing successful educational programmes. It allows for the transformation of games from stand-alone entertainment products into adaptable platforms for serious educational purposes. By combining technical innovation with a nuanced understanding of local realities and learner needs, these collaborations create educational experiences that are both engaging and contextually meaningful, ultimately increasing their potential impact and effectiveness in promoting sustainability.

Moreover, the ecosystem can give rise to an eco-network (Stoknes 2015), a collaborative web of stakeholders actively engaged in SDE and green initiatives. Research identifies such networks as critical drivers of pro-environmental behaviour, as collective action and shared purpose amplify individual efforts (Ibid.). In the field of gaming and education, this eco-network facilitates social influence at two levels. Upstream, it fosters collaboration among developers, educators and institutions to create green projects – green both in content (e.g. sustainability-themed games) and production (e.g. eco-conscious game development practices). Downstream, the eco-network extends its impact by embedding learning within social contexts. By engaging children alongside peers, families and communities, initiatives like Climate Hero can transform individual knowledge into environmental stewardship (Neys and Jansz 2010). This social dimension is crucial for translating game-based learning into real-world action and sustained behaviour change.

In conclusion, this chapter illustrates the contribution that ecogames can make to SDE, particularly when they are grounded in real-world contexts and designed through the collaboration of diverse stakeholders. It highlights key considerations for using existing video games in sustainability education, including the importance of balancing educational content with engaging gameplay, the opportunities and limitations inherent to game-specific affordances and platform policies, and the necessity of implementing follow-up strategies to effectively evaluate educational impact. In addition, the case study, which aimed to inspire a new generation of climate heroes, shows the interconnection between ecological and digital citizenship, as fostering the former is increasingly shaped by digital practices and literacies. By engaging children in simulated, place-based sustainability challenges within virtual environments like *Minecraft*, the project not only enhances their environmental awareness but also develops their capacity to navigate, critically assess and positively influence digital spaces. This intersection is crucial because the skills needed to be an active, responsible ecological citizen today are inseparable from the competences required to participate meaningfully in digital society. In this regard, ecogames represent a largely untapped resource that deserves further exploration for the development of innovative, context-sensitive approaches essential to preparing the next generation of responsible and engaged global citizens.

Highlights of the contribution

- **Ecogames as tools for SDE:** the chapter illustrates how video games, especially ecogames, are increasingly used to engage young people in sustainable development education (SDE), aligning with global frameworks like the UN's Agenda 2030 and the European Green Deal.

- ▶ **Mainstream games as platforms for SDE:** well-known commercial games can be used as platforms by stakeholders – such as museums and educational institutions – to host serious games specifically designed for sustainability education.
- ▶ **Contextual and place-based learning:** grounding global sustainability challenges in a local, tangible context (Venice) can enhance the relevance and engagement of learners, making education more meaningful and fostering active participation.
- ▶ **Game design and educational balance:** the success of the campaign depended on balancing educational objectives with engaging gameplay, avoiding the pitfall of “chocolate-covered broccoli” games that fail to appeal to players.
- ▶ **Collaborative, ecosystemic approach:** the project highlights the importance of interdisciplinary collaboration, combining technical skills (game design, programming) with domain knowledge (local context, audience needs), and fostering trust among partners.
- ▶ **Leveraging games’ affordances for experiential learning:** the campaign uses *Minecraft*’s interactive, crafting-based environment to simulate real-world sustainability challenges, encouraging critical thinking, systems understanding and practical action through gameplay.
- ▶ **Need for follow-up strategies:** the campaign underscores the importance of integrating follow-up strategies that go beyond download numbers, actively involving players in evaluating their experiences and learning outcomes to better assess the real educational impact of ecogames.
- ▶ **Ecological and digital citizenship:** the initiative fosters both ecological citizenship and digital citizenship, preparing children for active roles in both domains.
- ▶ **Eco-networks:** by engaging a network of stakeholders and embedding learning in situated contexts, the project amplifies its impact, supporting collective environmental stewardship and sustained behaviour change.

Infobox 1 – Angry Birds Champions for Earth

Platform: mobile

Key themes: climate change awareness, real-world action, community engagement

How it promotes sustainability education

- ▶ The “Champions for Earth” campaign featured in-game climate fact cards and challenges during 2015 Climate Week, developed in partnership with the United Nations.
 - ▶ Players were encouraged to learn about environmental issues and take real-world actions, such as signing petitions and planting trees, directly linking gameplay to positive environmental impact.
 - ▶ Proceeds from the tournament supported tree-planting initiatives, demonstrating the tangible effects of collective digital action.
 - ▶ The campaign exemplifies how gamified learning and incentives can drive both awareness and real-world environmental stewardship among a global audience.
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Infobox 2 – Minecraft Coral Crafters

Platform: all platforms

Key themes: ecosystem restoration, collaborative action, experiential learning

How it promotes sustainability education

- ▶ Challenging players to place virtual coral blocks in-game, unlocking real-world donations for coral reef restoration projects in Cozumel, Mexico.
 - ▶ The initiative combined creative play with environmental education, teaching players about the importance of coral ecosystems and the threats they face.
 - ▶ By involving players in a global restoration effort of the Mexican coral reef, the campaign fostered a sense of agency and collective responsibility for environmental protection.
 - ▶ The project illustrates how in-game activities can be directly connected to real-world conservation, making sustainability education immersive and actionable.
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Infobox 3 – Climate Fortnite

Platform: all platforms

Key themes: climate science communication, public engagement, digital citizenship

How it promotes sustainability education

- ▶ Climate Fortnite leveraged the popularity of *Fortnite* to host weekly livestreams where climate scientists played the game while discussing climate change topics in real time.
 - ▶ By integrating scientific dialogue into an entertainment context, the initiative reached a broad, younger audience that might not typically engage with environmental education.
 - ▶ The interactive format allowed viewers to ask questions and receive expert answers, fostering critical thinking and making climate science more accessible and relatable.
 - ▶ This approach demonstrates how mainstream games can serve as platforms for informal science learning and promote digital citizenship through informed participation in sustainability discussions.
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Ludography

- ▶ Eklund K. and McGonigal J. (2007), *World Without Oil* [alternative reality game], Independent Television Service.
- ▶ Epic Games (2017), *Fortnite* [video game], Epic Games.
- ▶ Maxis & The Sims Studio (2020), *The Sims 4: Eco Lifestyle* [downloadable content], Electronic Arts.
- ▶ Mojang (2011), *Minecraft* [video game], Mojang.
- ▶ Mojang (2016), *Minecraft: Education Edition* (Windows/Mac version) [video game], Microsoft.
- ▶ Molleindustria (2019), *Lichenia* [video game], Molleindustria.
- ▶ Niantic Inc. (2018), *Pokémon GO* [mobile game], Niantic Inc.
- ▶ Roblox Corporation (2006), *Roblox Studio* [game creation platform], Roblox Corporation.

- ▶ Rovio Entertainment (2012), *Angry Birds Friends* [mobile game], Rovio Entertainment.
- ▶ Strange Loop Games (2018), *Eco* [video game], Strange Loop Games.
- ▶ Ustwo Games (2020), *Alba: a wildlife adventure* [video game], Ustwo Games.

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Chapter 5

Navigating crossings: migrancy, refugees and citizenship in video games

Beatriz Pérez Zapata, Víctor Navarro-Remesal

Why should we think about citizenship and migrancy in games?

Although not mainstream by any means, these two concepts have been incorporated many times in games that explore them through their narrative and game systems. Starting with some newsgames (games made as journalistic pieces) two decades ago, the topic of refugeedom has appeared in several dozen games, enough to bring to our attention how they portray it and to see them as a solid resource for educators dealing with the topic. These games repeat, rewrite and challenge general narratives about citizenship and refugees, so a wider context is needed to understand them and perhaps strategise how to use them for education.

Contemporary discourses on citizenship are linked to the movements of mass displacement that have taken place across the globe in recent decades. Citizenship speaks of rights and belonging, symbolically and legally, to a community. Citizenship is, ultimately, subordinated to the various legal systems imposed by different states and, while the Universal Declaration of Human Rights states that “everyone has the right to recognition everywhere as a person before the law”, being legally recognised as a citizen may not prove so universal.

Citizenship is often conceived as a given that is granted by birthright or blood ties that legitimise one’s existence within a political and legal system. Concepts such as the birthright lottery (Shachar 2009) and the privileges it may grant us or the inequalities it imposes within myriad political scenarios should also be taken into account. And within the current unstable global contexts one may quickly cease to exist as a citizen of a particular nation or community.

Contemporary global conflicts have caused a record number of forced displacements: according to the United Nations Human Rights Council (UNHRC), by the end of June 2024 there were 122.6 million people forcibly displaced worldwide, out of which 43.7 million were refugees, 72.1 million were internally displaced people, 8 million asylum seekers, to which we should add 4.4 million stateless people – those

who have not been recognised as nationals by the laws of any state (UNHCR 2024a). Within the European context a refugee is:

either a third-country national who, owing to a well-founded fear of persecution for reasons of race, religion, nationality, political opinion or membership of a particular social group, is outside the country of nationality and is unable or, owing to such fear, is unwilling to avail themselves of the protection of that country, or a stateless person, who, being outside of the country of former habitual residence for the same reasons as mentioned above, is unable or, owing to such fear, unwilling to return to it, and to whom Art. 12 (Exclusion) of Directive 2011/95/EU (Recast Qualification Directive) does not apply. (UNHCR 2024b)

Asylum in the European Union is deemed “a fundamental right and an internal obligation for countries”, although the ultimate decision on who becomes a citizen depends upon the legal framework of each of the member states. And these have become more restricting in face of the so-called refugee “crisis”. The use of the term “crisis” may imply an abrupt problem that requires rapid action (Gatrel 2019: 30-31) and that may grant states exceptionalities to their laws that see constitutional rights diminished or even revoked. But rather than think of recent events as a crisis, we should think about the long history of forced displacement and the political, social, economic and (increasingly) environmental contexts in which such migratory movements occur. For example, Lyndsey Stonebridge (2018: 3) argues against the use of the term “crisis” because, she claims, that “far from being a ‘crisis’ affecting the poor unfortunates of the world, the history of placelessness is everybody’s history”. Refugees have always existed, but the 20th century brought about a violence and scale that gave us new understandings of what mass displacements entailed. And there were lessons to be learned: Stonebridge argues that placeless people (a category that includes refugees and stateless people) from the 20th century “brought with them a message about the fate of rights and citizenship in a world fast spinning off its political and moral axes, that has echoed, for all that could hear, across the past eighty years to the refugee ‘crises’ of our own day” (Stonebridge 2018: 7). The first decades of the 21st century still find us with worrying messages about the rights to citizenship in a world where forced displacements continue to be a pressing reality.

While the issues around refugees and citizenship are mostly legal, the social and media perceptions of refugees and asylum seekers are of equal importance, since they can ultimately exert pressure and decide political matters. And these perceptions are, on average, rather negative. Philosopher and sociologist Zygmunt Bauman argued that negative perceptions of these vulnerable peoples came, ultimately, from how these people bring their bad news onto our doorsteps: “they make us aware, and keep reminding us, of what we would dearly like to forget or better still to wish away: of some global, distant, occasionally heard about but mostly unseen, intangible, obscure, mysterious and not easy to imagine forces” (Bauman 2017: 16). These strangers have launched some into a moral panic, which can be further capitalised by politicians (ibid.: 17-18) to promote ethno-nationalist and anti-immigration agendas. This panic has indeed created some contradictory scenarios. As Professor Anthony Good, following Matthew J. Gibney, explains (Good 2019: 103), European states show rather schizophrenic behaviour in the way they present themselves as open for asylum yet refuse many asylum seekers.

In a 2015 global poll (around the time when the number of irregular arrivals was at its highest), “52 per cent of respondents across Europe stated that the number of immigrants should be reduced in their countries” and the welcoming attitude towards refugees declined when the host countries’ resources and security were perceived to be at stake (Haenens and Joris 2019: 9-11). At the time of writing, a poll by YouGov revealed that – when asked about the level of immigration in the last 10 years – Germany, Spain, Sweden, Britain, Italy, France and Denmark considered it to be a little too high or much too high (from a combined 55% in Denmark being the lowest to 81% in Germany being the highest). These numbers show that generalised attitudes towards immigrants – and refugees – far from improving have, in fact, worsened. The scale of contemporary forced migration and the continual feeling of impending global crises mean that many members of society have extrapolated their current anxieties into their fear of otherness. In the face of such perceptions, and the associated negative behaviours towards others, we need to question what tools we have at hand to change them.

Similarly, a report published in 2015 by the UNHCR in collaboration with the Cardiff School of Journalism found that “across the EU attitudes towards asylum and immigration have hardened” (Berry et al. 2015: 4). This report emphasised that the media “provide the information which citizens use to make sense of the world and their place within it” (ibid.: 5) and by negatively framing refugees, media coverage had contributed to a climate of heightened hostility towards these others.

It is thus urgent that we start questioning the media representations of immigrants and refugees since the media, whether through fiction or non-fiction, reflect, amplify and shape social imaginaries. Media accounts of refugees arriving in Europe have been pervasive in recent decades and they have often been highly biased: it is a crisis, there are waves of refugees, it is an invasion – ideas that coexist with images of drownings and the dead. Myria Georgiou and Rafal Zaborowski in their 2017 report for the Council of Europe, “Media coverage of the ‘refugee crisis’: a cross-European perspective”, analysed the key role that news media played in reporting the mass arrival of refugees from around 2015 and the challenges that the systematic presence of hate speech in some media posed. They concluded that:

overall, media paid little and scattered attention to the refugee and migrant plight. There was little connection between stories on new arrivals and war reporting or between stories on refugee plight and international news stories from their countries of origin. In addition, little and scattered information was made available to the public about migrants’ and refugees’ individual stories, their lives and cultures; thus information about who these people actually are was absent or marginal in much of the press coverage in most European countries. (Georgiou and Zaborowski 2017: 3)

Their report also found that such reporting turned more militaristic over time, moving in line with the schizophrenic behaviour mentioned above: governments must help refugees yet they must also protect themselves from their perceived threats. Refugees are presented as either victims or threats and rarely do we hear their stories in the media. When interviewing refugees, Smets et al. (2019: 189) found that refugees wanted their plight reported, but not in such binary terms: they wished for “balanced

representations” that are neither “suspicious” nor “miserabilist”; they wanted a story that is real and that will not be presented as part of what Lilie Chouliaraki called “the spectacle of suffering” (Chouliaraki 2006).

But access to those more real accounts is difficult or outright impossible when migrants and refugees are often presented as a mass devoid of individual voices. Georgiou and Zaborowski allude to this question as well: media and political representatives talk much more about refugees than refugees talk about themselves and there is a worrying lack of contextualisation within the larger scale of global events and relationships. While TV, newspapers and documentaries seem to be dominant forces in this representation, games offer an alternative space where refugees, and those willing to tell their stories, can potentially escape the trends of the news cycle.

Refugee narratives in games

While video games do deal with contemporary social and political topics, they often do so in a more limited manner than other audiovisual and narrative forms. Games that are conceived as tools for change have received much attention in the last years, and such is the case of newsgames and serious and persuasive games. Newsgames about refugees, as objective and informative interactive stories, seek to inform and reach wider audiences through unbiased stories that often include testimonies that can prompt affective reactions. Examples such as *The Refugee Challenge* for *The Guardian* (2014), *Syrian Journey: Choose your own escape route* (BBC 2015), *Two Billion Miles* (Channel 4 2015) and *The Migrant Trail* (Gigantic Mechanic 2015) were developed during the years when the arrival of refugees started to increase dramatically in Europe and hate discourses against migrants were on the rise in the United States as a way to complement journalistic accounts and respond to those which were more biased against these events. These games also sought to trigger emotional reactions, namely different types of empathy (Plewe and Fürsich 2017). This is also the goal of serious and persuasive games.

Serious games, those created not exclusively for entertainment, and persuasive games, those which according to authors such as Gonzalo Frasca (2001) and Ian Bogost (2007) aim to positively modify the players’ beliefs about a given subject, have been created and analysed as responses to contemporary problems that could and should “have real-life consequences” (Raessens 2015: 246). As Hera et al. (2021: 16-17) argue, the transformative potential of such games, as tested through validation, is “small but noticeable”. Several games that focus on the refugee experience have been analysed from this persuasive focus and, more particularly, from the belief that they can develop empathy towards those in vulnerable circumstances.³⁶

In their analysis of *Against All Odds* (2005), a video game developed by the UNHCR to explore what it means to be a refugee, Wertley and Soliz (2021: 220) refer to “simulated contact” to speak of how the game makes players experience the plight

36. Note that many games dealing with refugeeedom (and other social issues) are not formally included in the “serious games” category by their authors or commentators, implying that a) serious games are not playful and b) only serious games can include “serious” topics. That shows the limitations of the label, yet the wide use of the concept makes us keep it as an analytical framing.

of refugees. Their analysis of players' responses is rather nuanced: video games can prompt changes in attitude but with some limitations. In fact, they called for a more nuanced approach to the research of persuasive games since individual histories and particular contexts, the cultures and societies of production and consumption, as well as video game literacy will influence the games' potential to effect changes in players. To a point, these games are designed with the hope they can move beyond the "compassion fatigue" (Chouliaraki 2006; Bauman 2017) that tragic media representations of refugees can create, which means that audiences may become wearied of images of suffering repeatedly shown by the media. Nevertheless, the design of the game must also take into account that players may experience reactive empathy, which as Plewe and Fürsich (2017) explain, can generate sympathy, pity or even guilt. Ideally, these games would generate compassion, which is linked to questions of justice, and games, by requiring players to move beyond the role of passive spectator to that of performer – to use the terminology of Clara Fernández-Vara (2009) – could work more effectively towards this goal than other media.

With all of the above in mind, this chapter now presents a contextual study of video games developed with migrants and refugees as protagonists and an analysis of the representation and the strategies and mechanics they employ.

The three waves of refugee games

By exploring online shops such as Steam and Itch.io, as well as gathering newsgames and looking for game projects on crowdfunding platforms such as Kickstarter, we have identified 30 games that deal with migration and refugeedom³⁷ in a direct manner and with narrative techniques built around highlighting individuals, that is, portraying refugees and migrants as characters. Strategy games such as the *Civilization* series (Meier 1991-present) or the *Democracy* series (Positech Games 2005-22), in which migration policies are left to the player and have consequences on the gameplay, have been excluded. Our interest is in game narratives that move from the bigger picture to ground level, thus allowing for individual stories. Out of these 30 games, nine were made in the European Union (Italy, France, Poland, Austria and Germany), five in the UK and two in Switzerland. The rest were made in the US and Australia. The single exception is *Death Stranding*, an AAA (major production) game made by a Japanese studio, Kojima Studios, which was presented as a direct response to Brexit's referendum results and Trump's electoral victory in 2016.³⁸

A careful analysis reveals at least three waves that include video games within more specific time frames and that follow similar strategies: a first wave (newsgames) from 2005 to 2010 includes games that are mostly journalistic and make news from regions in crisis playable; a second wave (indie games) highly influenced by the success of *Papers, Please* (Lucas Pope 2014) and by the development of a series of video games

37. Refugeedom, according to Gatrel, "directs attention to the 'experience' of displacement, but also encompasses the process of labelling and categorisation, the umbrella of protection and thus those who are not protected" (Gatrel 2019: 31). Thus, refugeedom might make us think about those policies of inclusion and exclusion that have come to define who may qualify as a citizen of a particular country and how these policies are implemented in games.

38. See www.bbc.com/news/av/newsbeat-50269587, accessed 19 October 2025.

in the second half of the 2010s that reacted to the forced displacements caused by the war in Syria and used tough choices within the game to narrate the stories of well-defined protagonists; and a third wave (bigger productions, in contrast to the relatively small development teams of the previous waves), which includes larger games that deal with the discourses around borders as reactions to the post-2016 political circumstances in the United States and United Kingdom. The roles these games ask us to assume are usually those of the refugee, either on their way to their intended destinations or once they have arrived and settled in their host countries. Other roles are that of the relative left behind (in *Bury Me, My Love*), people in the machine that sustains borders and systems (*Death Stranding*), bystanders willing to help (*The Night Fisherman*) and writers/researchers (*We, the Refugees*).

The first games we have identified in our research started in 2005. At the time, the source and hosting countries of refugees were largely in the Middle East, with mostly Afghan people seeking asylum in neighbouring countries (UNHCR 2006). *Against All Odds* (UNHCR 2005) was conceived as an educational game targeted at teenagers and contained a lot of informative pieces and speaks of a generalised experience of refugeedom. *Food Force* (UNHCR 2006) was also conceived as a serious, educational game that, although not specifically concerning migration and refugees, introduces problematics that could lead to displacement and mechanics of resource management.

It also seems to have inspired *Darfur is Dying* (2006), in which, after a genocide episode, a family is displaced to a refugee camp that players must manage. On her website, *Darfur is Dying* creator Susana Ruiz states that they thought of a game in which “the player reflect upon her own place in the real world and its systems, as well as upon her behavior, assumptions, and societal norms, that the ‘power gap’ between those who experience oppression and those who hold greater social privileges can directly be addressed through gameplay”. Although these games’ informative aim should be valued positively, displaced peoples are not that much included in their narratives – with the exception of *Darfur is Dying*. And, as Lyndsey Stonebridge reminds us, some accounts may run the risk of seeing refugees as “unfortunate others in a humanitarian crisis to be solved, rather than fellow citizens in transit” (Stonebridge 2021: 16).

The second wave of video games about refugees was largely prompted by the escalation of mass forced displacements prompted by the war in Syria, but also the Rohingya genocide in Myanmar beginning in 2016. But there are also games with more universalist approaches that refer to fictional countries and worlds. By 2015, according to the data provided by the World Health Organization, the highest numbers of refugees were coming from the Syrian Arab Republic, followed by Afghanistan, Somalia, South Sudan and Sudan. The top five refugee-hosting countries were Türkiye, Pakistan, Lebanon, the Islamic Republic of Iran and Ethiopia, with no European country still within the top 10 hosting countries: most refugees are hosted in neighbouring low- to middle-income countries. Given this scenario, it is quite telling that many of the video games from this second wave were produced within the European Union. It could be questioned whether these games were made indeed as a response to the increase of refugee arrivals – but not as many as most people might have expected according to the data shown above – and as a way for potentially more emphatic stories around refugees to reach wider audiences.

At the onset of this second wave, we must acknowledge the success of *Papers, Please* (Lucas Pope 2014), in which players take on the role of a border control officer in the fictional communist state of Arzotska: reviewing documents and deciding who gets in and who stays out amount to difficult ethical decisions. It is noteworthy that the game does not fit the category of serious games – it is an independent game, but a commercial one. Widely praised as an empathy-generating game, *Papers Please* turned bureaucracy into a procedural rhetoric³⁹ and as part of the category of border games, it reflected the ordeal of the entry option. It is interesting to see how other games reacted to it: for example, take Creatix Tiara's *What the \$!#&@! Do They Need Now?* and *Here's Your Fuckin' Papers*, both published on itch.io in 2017, and both of which are more direct criticisms of border bureaucracy and the anxieties over obtaining a visa. *NORTH* (Outlands 2016) situates players within an alien world in which its protagonist is requesting asylum in a confusing atmosphere that also has strenuous bureaucratic processes for its protagonist and adds the anxiety of a constant system of vigilance.

These games deal with the entry option, but most common of all in this second wave are games that show us escape routes, the exit option. One of the inaugural games of this type was the newsgame *Syrian Journey* (BBC 2015), which is presented as "Choose your own escape route", alluding to a core mechanic of interactive narratives. Based, as its website states, on "extensive research and real stories of Syrians who have made the journey", the game asks players to make decisions for themselves and their families. It combines informative pieces with choices based on trust, resource management and the chances of being caught and surviving. Although the protagonists are not that clearly defined, they do have a personal history that we must consider when making the tough choices the game presents.

The year 2017 saw a proliferation of video games about refugees. The UNHCR, together with advertising company Grey Malaysia, launched *Finding Home*, a game in which players have access to the phone of Kathijah, a teenage Rohingya refugee. Based on interviews with young refugees in Malaysia, the game puts players in charge of Kathijah's survival and shows them the lack of security and the separation she experiences. This "interface game" (it plays entirely on a simulated phone OS) has a well-defined protagonist whose story we can unveil in the fragments her phone contains. *Finding Home* belongs to a series of games that aim to give voice to refugee stories via first-person narratives.

With a different tone (website eTeknix covered the success of the game claiming "Whoever knew being an illegal immigrant could be so much fun!") and a different take on illegal migration, but with an equally denouncing spirit, *Borders* (Macua Studios 2017) was conceived as an art game during a game jam by Gonzalo Alvarez, Jon Digiacomio and Genaro Vallejo Reyes. Inspired by the story of Alvarez's parents crossing the border, players try to reach the US border while avoiding patrols and dealing with harsh conditions. Each time the avatar dies, a skeleton remains in place, and the accumulation of dead bodies aims to draw attention to the elevated number of deaths in this particular crossing at a time when the containment strategies of

39. The idea of procedural rhetoric is that games can persuade players through in-game rules and representation.

the US Government were being promoted and enforced. While these games situate players beyond the borders of Europe, they do speak of questions of worldwide citizenship and border relationships that are necessary to understand the wider ecosystem of refugee games in this second wave of video game production on migrants and refugee stories and the worldwide events and attitudes around displacement.

The third wave we have identified sees a movement to different models of games about migrants and refugees that still coexist with those established in previous waves. Here, we find games developed by larger studios that include these topics and the continuation of smaller production teams with more specific experiences. *Life is Strange 2* (Don't Nod 2018) and *Death Stranding* (Kojima Productions 2019) are two examples of the former. Don't Nod, a French studio, tackles belonging, racism and migrancy through the story of Sean and Daniel, two brothers who, after losing their Mexican father, decide to return to his homeland. The game makes players play as Sean, the older brother, and players have to make moral decisions that will affect the upbringing of their younger telekinetic sibling and the problems they encounter on their way to the border. The wall features prominently and the attitudes towards these brothers, born and raised in the US, show the escalation of racist attitudes in the country after Trump and how these others are not deemed full citizens (Jardina and Piston 2023).

Death Stranding's creator, Hideo Kojima, openly admitted that this game was a reaction against the politics of Trump and Brexit and thus, in face of division and the open rejection of anything outside these particular borders, he set out to develop a game about connection and establishing bridges. *Death Stranding* presents a science-fiction scenario in which a global cataclysm produces an extinction event and people live in secluded bunkers. The player controls Sam Bridges, a porter who travels from settlement to settlement connecting the "Chiral Network", a sort of spiritual internet, and with it connecting people. The open positionings of *Life Is Strange 2* and *Death Stranding* are likely caused by the history of their creators and their recognition as auteurs, and it contrasts with a general reluctance in gaming, still present to this day, to tackle social matters frontally. They show the promise that refugeedom, and the political and social causes behind it, can reach the big-budget, commercial levels of video games culture – though at this stage this is just still a promise.

The three waves of refugee games share the use of video games as a medium that grants access to a new audience, while affording intimacy, a focus on particular subjects (instead of faceless masses) and educational possibilities. They all seem to be made with a Western audience (North American or European) in mind, with the aim of helping them discover the realities of refugeedom through roleplay and enactment (that is, interactivity) and minimising the information. In that sense, they seem to operate as potential entry points to the challenges faced by people like their protagonists. In the next section, we go into detail in a selection of key refugee games (all of them from the second wave) to see the creative strategies they deploy to achieve those ends.

Playable auto-documentary in *Path Out*

Autobiographical video games are not very common, with *Dis4ia* (Anna Anthropy 2012), *Cibele* (Star Maid Games 2015) or *Memoir En Code: Reissue* (Kalopsia Games 2016) being rare examples. Having the author speak or appear on-screen, as a sort of developer's commentary integrated in the game design, is even rarer, with meta-narrative exercises such as *The Beginner's Guide* (Davey Wreden, Everything Unlimited 2015) exploring this less travelled path. *Path Out* combines both by having the player control actual Syrian young escapee Abdullah Karam as he tries to escape his country, while having him, in recorded videos, interrupt the game to comment on its events and act as a narrator.

Not only does Karam present himself as a gamer ("I used to be an average kid ... playing video games ... lots of video games"), but the game's Steam store description describes it as "camouflaged as a Japanese RPG [role-playing game]". The game design aspires to be familiar to gamers. This is reinforced by the choice of engine: it is made with RPG Maker (called RPG Tsukûru in Japan), a popular tool among amateur (and sometimes professional) creators.

However, one key element of the genre is missing in *Path Out*: combat. Posting in the RPG Maker forums, Georg Hobmeier, one of *Path Out*'s co-creators, explained: "We did try out some combat, but it simply didn't fit. Basically violence doesn't suit the character and a traditional RPG battle system would be ridiculous considering the depiction of an actual war". The conventions of the gaming genre clearly clashed with the game's intentions and narrative, so the team opted for a more minimalistic approach: "it really is more of an adventure with tons of story, quests and some stealth action". The conventions of gaming genres are useful to a degree, but some of them, in the tradition of the "serious games" discourse, can trivialise what is being told, a clear danger for a game with no commercial aspirations (it is free) but also one that rejects being merely educational.

Perspective and focalisation are the key elements here. The game begins in Syria in 2014 and when players are ambushed, Karam, appearing in video in the style of a YouTuber, speaks to us: "You just killed me, man. In reality I wasn't as clumsy as you. Yeah, you don't get it, right? You're playing me in the game. You see that little guy with the yellow shirt? That's me, trying to escape Syria and stuff. But the adventure started a few years ago. Let's take you there, shall we?" *Path Out* plays with scenes of the quotidian and direct addresses to players, which makes them confront the loss of home and the quick disruption of everyday life that refugees face in a simulated direct conversation with Karam.

By using metatextual strategies and humour, *Path Out* acknowledges the implied players and presents its protagonist as another teenager/young adult, which makes his case more prominent in the understanding of how quickly a life may change and generates, potentially, greater empathy. This emphasis on the quotidian (the language of games, the rhythms of daily life pre-war) and the double representation of Karam as a narrator and as a playable character create a narrative and gameplay of closeness, in a sort of playable (auto)documentary.

Reconstructing escape with *Bury Me, My Love*

Bury Me, My Love (BMML) was developed by The Pixel Hunt, a French independent studio founded in 2009 by former journalist Florent Maurin. The game was conceived as a “reality-inspired interactive fiction” and it was developed with the assistance of Dana, a Syrian refugee, and Lucie Soullier, a French journalist who wrote an article entitled “Le Voyage d’une migrante Syrienne à travers son fil Whatsapp” (“A Syrian migrant’s journey through her WhatsApp feed”) for *Le Monde*. BMML is described on its official store site as a “story ... about those [migrants] who achieve that goal [getting to Europe] ... and about those who don’t. It is about those who die trying. It is about the world around us. Something which we hope will lead you to keep pondering on after it is over”.

The protagonist in BMML is Nour, a fictional Syrian woman who flees her country aiming to reach Germany, but we play as Majd, her husband, who stays behind in Syria and is in constant communication with her through his smartphone: we players learn of her progress and problems in the journey and give her advice. BMML mirrors instant messaging apps, similar to WhatsApp, and players never get to fully see the events from her perspective, they can only assess the situation from the messages and pictures. In fact, playing this game involves a lot of waiting and uncertainty that is integrated into the player’s real time. The capacity to influence the game state is limited. In a talk at the GDC (Game Developers Conference) of 2018, Maurin argued that they wanted Nour to “feel like a real person”, and players to feel they are “not on the ground”, “not in control” and that “life is not fair”.

Decisions made as Majd can and will change the path taken by Nour and the game’s ending. There are 19 different outcomes that together with extra variants result in 39 different endings. According to Maurin (2018), they designed different types of choices and consequences: direct decisions, “blind” decisions and cumulative effects. The game uses four system variables: Nour’s morale, the couple’s relationship status, Nour’s budget and her inventory; but these variables are never displayed. “Contrary to lots of other interactive fictions”, the game’s site explains, “your choices in *Bury Me, My Love* really have an impact on the story” (ibid.: 31). In this regard, BMML posits itself as a narrative challenge that demands the attention and effort of the player, reproducing the ordeal of refugees on their escape routes but also the anxieties of those who are left waiting. Unlike *Path Out*, which is distributed for free, BMML is a commercial game, but that does not remove its strong journalistic style and intent.

Settlement and family reunion in *21 Days*

Many refugee games are small productions by small teams that often have no other games on their portfolios and no online information about them. That is the case of *21 Days*, a 2D game by Hardtalk Studio released the same year as *Path Out* and BMML. The game, a simulation adventure, deals with the life of a fictional Syrian refugee and former elementary school teacher, Mohammed Shenu, who has arrived in the host country in western Europe leaving his family behind. In the game, players have to manage resources, time and even mental health. The goal is to survive and be able to bring the family together.

With a minimalist game design that recalls management and choice-based games around hard topics – such as *This War of Mine* (11 Bit Studios 2014) and *Papers, Please – 21 Days* gives citizenship and integration a prominent role. For example, unless the protagonist takes language lessons, the dialogue will include words that are hidden; the more classes we take, the clearer the dialogue becomes. Shenu has not only to survive, but to wait for his family to get to him and help them do so. The game description mentions the UNHCR principles: “according to ‘The Principle of the Unity of the Family’, he and his family can both live together in Europe with refugee status, but only if they can arrive there. So, Mohammed now has learned to handle himself in this foreign society and to earn money, so he can help his wife and son escape.” This separation recalls *BMML* and the use of distance and communication problems, mostly via e-mail.

The game systems are built to force players to manage scarcity, as in games about difficult situations such as *CHANGE: A Homeless Survival Experience* (Delve Interactive 2020). His wife’s e-mails add extra pressure on players, as they see their own scarcity and struggles to reach the border (for example, being scammed and losing all of their money) and have to transfer them money. Failing to do so results in a game over – players have to take care of both Shenu and his family.

The interactions with NPCs in the game are also key, since they show the varying attitudes towards refugees and, despite the country’s intention to accept all of them (as announced at the beginning of the game), players experience the confrontation with prejudices and with those who believe that refugees do not want to make an honest living. Joining the local refugee community improves Shenu’s mental health but, since time is limited, it reduces the opportunities to do paperwork, learn the language, mingle with locals or work. The game, ultimately, asks players to make sense of Shenu’s host country and navigate the complex relationship with his country of origin. This forms a creative strategy of not just management, but roleplay: since the game is available in English, Spanish and German, it is reasonable to assume that it is primarily aimed at European players and not Syrian (or anywhere else) refugees. At the time of writing, the game is available for just €1.99, making it a commercial game, but on a very small scale. The game trailer also shows that it was nominated in the category of “excellence in narrative” at the BIC (Busan Indie Connect) Fest 2016.

Citizenship and Brexit in *Not Tonight*

Brexit was orchestrated by the Vote Leave movement as a campaign to regain control of the economy, sovereignty and the perceived elevated number of migrants in the UK. *Not Tonight* (Panic Barn 2018), in turn, was developed as a reaction to it and what British journalist and author Gary Younge has called Britain’s “imperial fantasies” (2018). Inspired by *Papers, Please* and cyberpunk fiction, *Not Tonight* presents a dystopic Britain governed by fear and surveillance, in which the campaign of Albion First has turned European citizens into “Euro Aliens”. The avatars we can select are born in England and face expulsion due to their European ancestry and “a missing immigration form”. But they are just a number: European citizen #112. This scenario recalls not only Brexit but also the Windrush Scandal that started to

unveil in 2017 and saw people originating from Commonwealth countries, particularly the Caribbean, being denied their rights and citizenship (Gentleman 2019). A more commercial game compared to the ones seen above (and also the longest), *Not Tonight* distances itself from documentary and “serious” discourses, but with a strong political backbone nonetheless.

Not Tonight is a (pseudo)RPG in which the player navigates a post-Brexit alternative Britain in ruins under a far-right government. The player must earn their possibility to stay in what is supposedly their home under the scrutiny of officer Jupp. Working as bouncers through a list of who can and cannot get into clubs according to their nationality, earning money and checking the news (written in the style of media pundits), players may choose to resist or submit to the regime. The game offers multiple endings, all framed within a newspaper that generally spreads hate against anything foreign. The idea of the government “taking back control” on migration turns into a nightmarish setting. Its use of dark humour underscores the perception that the games politicians play with citizenship have descended into madness. Together with a gameplay that seems to suggest that no matter what we do in this context, we will be in the wrong, *Not Tonight* mirrors the frustration and exhaustion of inhabiting a system that does not want you. It creates an “us versus them” narrative and a playable system where belonging is denied and acceptance is almost always at risk.

The game uses a system of social credit that, combined with the interactions with other characters, turns citizenship into a fragile thing that can be revoked at any time. But by following the document-checking gameplay loop of *Papers, Please*, it also puts players in the role of the enforcer, controlling others and being potentially complicit in the same system that threatens to reject them. This contributes to an experience of distrust, paranoia and moral dilemmas, but also potential resistance and revolution – one that, unlike the fictional setting of *Papers, Please*, takes place in a real-world country, with a fictionalised version of its actual political scene.

In 2022, Panic Barn released *Not Tonight 2*, which this time features a broken North America in which the dreams of citizenship are, once more, being revoked. The game combines document-checking at “the doors of clubs, churches, racetracks, casinos, and cults” with a road trip structure that recalls the French game *Road 96* (Digixart 2021), in which teenagers try to reach the border of Petria, a fictional version of the US governed by a tyrant. Together with *Death Stranding*, these games represent the biggest attempt by refugee and border narratives to make it into the mainstream, in what we see as a third wave of refugee games that can open new avenues for the field.

Conclusions

It can be argued that refugee games have at least two decades of history. It is hard to assess their impact: no studies have been made about changes in perception and opinion on their players, and we can only imagine what the gaming landscape would have been without them.

What we can affirm is that they are a constant and stable space, but their impact on the mainstream is still limited. The promise of “political games” that came with the

release of *Not Tonight*, *Life Is Strange 2* and *Death Stranding*, or even others such as *Deux Ex: Mankind Divided* (Eidos Montréal 2016), has not really been fulfilled, and refugees are still hard to find in popular games. Another unfulfilled promise, even more important than the one mentioned, is that of *Path Out* as a way forward for refugee games: the game was distributed for free as a sort of first chapter, with the announcement of more chapters to come and a full story to tell. The game creators have admitted publicly and repeatedly that they could not secure funding from any publisher to complete these plans.

The leap from small, passion projects to bigger productions, more integrated in the gaming mainstream and its structures (not only commercial, but also press coverage, awards and so on), seems to be still an impossibility. The more pessimistic reading of this is that refugee games are condemned to circulate in the same circles, played and discussed by a population that already actively supports their message – preaching, so to speak, to the choir. Here, the role of educators is key: they can bring these games to the classroom, use them to explore the topic and articulate debates and individual and group reflections after playing them, taking them out of their niches.

However, there is a more optimistic reading: that for two decades, creators have been able to find ways to discuss refugeeedom, citizenship and hospitality with creative playable strategies, and players have supported them. Mid-size productions such *Road 96* suggest that the gates between serious games and commercial games have not yet been closed. The interactive graphic novel *Songs of Travel* (Causa Creations 2024), a quasi-sequel or expansion of *Path Out*, proves that there are alternative ways to expand refugee interactive stories, perhaps not so steeped in the language and conventions of gaming. New games such as *We, the Refugees: Ticket to Europe* (Act Zero 2023) bring little new to the already existing formula, but they prove that that very formula works. *Death Stranding 2: On the Beach* (Kojima Productions 2025) has been released, promising to double down on its focus on complex political matters. Games such as *Take Us North*, “A narrative adventure/survival game that follows the journeys of migrants and asylum seekers on their way to cross the US-Mexico border” created by Anima Interactive, do well on crowdfunding platforms, showing that there are alternative ways to enter the industry and fund these projects, with players willing to support them in advance.

Perhaps the most sensible reading is that of a middle ground: video games, as a medium, still struggle with real-world, difficult topics, but they are not totally unable to do so, and many players want to play them; refugee games have likely made their dent on that. Games alone cannot change the perception of an entire population, but the refugee games we described here, and many others, have managed to at least counter the narratives of refugees as faceless masses, with European creators giving them voice (often literally) to discuss belonging in Europe. If the world is made of stories, for many European players those stories include the ones of refugees who may live and play among them.

Highlights of the contribution

- ▶ **Refugee:** person who has escaped their country due to political, religious, racial or ethnic reasons and/or persecution.
- ▶ **Refugee games:** games which tell the stories of refugees by voicing, among other things, their stories of war, escape and resettlement. These games are generally created in close collaboration with refugees themselves.
- ▶ **Persuasive games:** games which through their narrative and design aim to engage players on particular topics and critically change their perspective on such matters.
- ▶ **Interface games:** some games take place partially or entirely in the operating systems of phones, computers and other machines. This way, a real device (for example, our phone) becomes a fictional one (another phone).
- ▶ **Newsgames:** video games which, by using a journalistic approach to gameplay and design, aim to expand on difficult and complex real stories.
- ▶ **Autobiographical games:** many games have told the story of their creators, having players control them as avatars. This creates a situation where players both witness and enact someone else's story, while being aware that the role they are playing is different from them.
- ▶ **Choice-based gameplay:** many narrative games rely on hypertextual structures similar to the Choose Your Own Adventure books, where choices are presented and result in a branching structure with many different paths and endings. This is often used to recreate moral dilemmas.
- ▶ **Resource management:** an element of strategy that is frequent in games about difficult realities, such as homelessness or refugeeedom. Players face many needs that they have to cover with limited resources, resulting in a need to strategise and be aware of the requirements of even simple actions and situations.

Infobox 1 – Path Out

Platform: Steam

Key themes: war, Syria, escape

How it promotes reflection on refugeeedom and citizenship

- ▶ Including a first-person perspective and the video interventions of a Syrian refugee, it engages with a narrative of refugeeedom that directly addresses players. It allows players to think about the life, family and world left behind due to war.
 - ▶ The use of metatextuality and humour may help develop greater empathy among players.
 - ▶ The game uses a visual style (pixelated 2D) and narrative resources (YouTube-style commentary by the author/protagonist) that are meant to be familiar to players of many countries.
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Infobox 2 – Bury Me, My Love

Platform: Android, Switch, Steam

Key themes: Syria, escape journey, separation, communication

How it promotes reflection on refugeedom and citizenship

- ▶ The game takes place fully inside a chat app similar to WhatsApp or Telegram, recreating the communication with loved ones, both during difficult moments and in more trivial matters.
 - ▶ It details the steps of a refugee travelling from Syria to Europe and the many problems and hard choices they face.
 - ▶ The use of real time, especially when playing with a smartphone, lends an air of reality to every step and makes waiting more pronounced and relevant.
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Infobox 3 – Not Tonight

Platform: Switch, Steam

Key themes: bureaucracy, citizenship, control, surveillance, resistance

How it promotes reflection on refugeedom and citizenship

- ▶ Citizenship is presented as a legal status that can be revoked and depends on bureaucracy and political decisions.
 - ▶ Themes of exclusion of big parts of the population and submission through surveillance are explored in the narrative and gameplay.
 - ▶ Players can decide whether to align with resistance movements or comply with the rules.
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Ludography

- ▶ 11 bit studios (2014), *This War of Mine* [video game], 11 bit studios.
- ▶ Act Zero (2023), *We, the Refugees: Ticket to Europe* [video game], Act Zero.
- ▶ Anima Interactive (forthcoming), *Take Us North* [video game].
- ▶ Anna Anthropy (2012), *Dis4ia* [video game].
- ▶ BBC (2015), *Syrian Journey: Choose your own escape route* [Interactive game], BBC.
- ▶ Causa Creations (2017), *Path Out* [video game], Causa Creations.
- ▶ Causa Creations (2024), *Songs of Travel* [video game], Causa Creations.
- ▶ Channel 4 (2015), *Two Billion Miles* [Interactive game], Channel 4.
- ▶ Chard de Fault and Campbell R. (2020), *The Night Fisherman* [video game], Far Few Giants.
- ▶ Creatix Tiara (2017), *Here's Your Fuckin' Papers* [video game].
- ▶ Creatix Tiara (2018), *What the \$!#&@! Do They Need Now?* [video game].
- ▶ Delve Interactive (2020), *CHANGE: A Homeless Survival Experience* [video game], Delve Interactive.
- ▶ Digixart (2021), *Road 96* [video game], Deep Silver.
- ▶ Don't Nod (2018), *Life is Strange 2* [video game], Square Enix.

- ▶ Eidos Montréal (2016), *Deus Ex: Mankind Divided* [video game], Eidos Montréal.
- ▶ Everything Unlimited (2015), *The Beginner's Guide* [video game], Everything Unlimited.
- ▶ Gigantic Mechanic (2015), *The Migrant Trail* [video game], Gigantic Mechanic.
- ▶ Hardtalk Studio (2017), *21 Days* [video game], Hardtalk Studio.
- ▶ Kalopsia Games (2016), *Memoir En Code: Reissue* [video game], Kalopsia Games.
- ▶ Kojima Productions (2019), *Death Stranding* [video game], Sony Interactive Entertainment.
- ▶ Kojima Productions (2025), *Death Stranding 2: On the Beach* [video game], Sony Interactive Entertainment.
- ▶ Lucas Pope (2014), *Papers, Please* [video game], 3909.
- ▶ Macua Studio (2017), *Borders* [video game], Macua Studio.
- ▶ No More Robots (2022), *Not Tonight 2* [video game], Panic Barn.
- ▶ PanicBarn (2018), *Not Tonight* [video game], No More Robots.
- ▶ PID Games (2017), *Bury Me, My Love* [video game], The Pixel Hunt.
- ▶ Sid Meier (2011-present), *Civilization* [video game], MicroProse.
- ▶ Square Enix (2015), *Life is Strange* [video game], Don't Nod.
- ▶ Star Maid Games (2015), *Cibele* [video game].
- ▶ Susana Ruiz (2006), *Darfur is Dying* [online game], TAKE ACTION.
- ▶ The Guardian (2014), *The Refugee Challenge* [interactive game], *The Guardian*.
- ▶ UNHCR (2005), *Against All Odds* [educational game], UNHCR.
- ▶ UNHCR & Grey Malaysia (2017), *Finding Home* [virtual reality experience], UNHCR & Grey Malaysia.
- ▶ WFP (2005), *Food Force* [educational game], WFP.

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Chapter 6

Gender in video game cultures

Maria Ruotsalainen, Mikko Meriläinen

Introduction

Gender in video gaming is a topic with considerable tension, often justifiably dominated by discussions of a range of negative gendered phenomena, such as sexism (Vergel, La parra-Casado and Vives-Cases 2023), problematic representation in game content and advertising (Kirkpatrick 2017; Lynch et al. 2016) and questionable masculinity ideals (Braithwaite 2016). As a pastime enjoyed especially by young men, gaming has also been brought up in wider societal discourse on the influence of digital technologies on society. An example of this is the connection of gaming to an alleged “masculinity crisis”, a narrative in which young men are falling behind in society in part because of their consumption of digital media (Zimbardo and Coulombe 2015).

However, there is much more to the intersections of gender and game culture than problems. Game cultures encompass a wide range of games and the practices around them – for example, live action role-playing games (larps), video games, tabletop gaming – but here our focus is on video game cultures. Video games and the communities and transmedia surrounding them can provide ways for exploring and reflecting on gender identity (Bell, Kampe and Taylor 2015), can help find connection with others (O’Brien et al. 2022) and can serve as empowering environments that help people of all genders to resist, contest and subvert gender norms (Blanco-Fernández and Moreno 2025; Hussain et al. 2021; Sundén 2009). Even the problematic aspects of game cultures can also have beneficial outcomes, prompting communities and the game industry to push back against hostility, discrimination and injustice (Boudreau 2022).

Gaming is a hugely diverse and complex phenomenon. When we discuss gaming or game culture(s) in this chapter, we do not only mean the act of playing games; we also refer to the social world of video gaming, a large cultural sphere that, in addition to playing games, encompasses for example the gaming industry, other media content related to games, gaming events and everyday interactions that connect to games (Sokka et al. 2025).

Drawing from several decades of academic literature and contemporary practical examples, in this chapter we provide an overview of the many ways – both positive and negative – in which gender is present in video game culture, from gender

representation in games and gaming media, to political struggles in gaming communities, to women's lack of presence in esports. We demonstrate the complex interconnections between game culture and gender, highlight how questions of gender should not be reduced to a struggle between men and women, and suggest how problems could be alleviated and positive potential leveraged for social change.

Infobox 1 – Gamergate

Gamergate (or #GamerGate) was a loose online campaign that was most active during 2014-15. While participants claimed that the campaign was a movement to promote ethics in game journalism, it largely focused on the harassment of women in gaming, whether journalists, game developers or scholars, and it also drew in individuals not usually involved in game culture.

Why it is relevant for understanding gender in gaming

- ▶ It brought the harassment of women and gender minorities in game culture to public attention, as mainstream media outlets started addressing the topic.
 - ▶ It showcased how gaming is a site for broader “culture wars” and political struggles: while ostensibly about games, Gamergate was very prominently an anti-feminist campaign that gained support from, for example, anti-feminist activists outside game culture.
 - ▶ It showed the diversity of participants in game culture. While people who play games are sometimes collectively referred to as “gamers”, in reality there is no global collective, but instead there are people with very different backgrounds and political views.
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Finally, it is important to note that although in this chapter we sometimes discuss game culture as a single broad domain, in reality, game cultures are plural and differ from each other depending on multiple factors, such as locations, generations and game genres. These factors can dramatically influence the gender distribution in a given game culture. For example, competitive gaming or esports is a domain of gaming largely dominated by men (Rogstad 2022), whereas for example the modding (game modifying) community around the *Sims* series (Maxis 2000-) appears to be particularly attractive to women (Wirman 2014).

As it would be impossible to address all the ways in which gaming cultures connect to gender, in this chapter we focus on what we consider to be central themes and topics. We first provide an overview of the role of gender in gaming, with a focus on the implications of the overall masculinised nature of video game cultures. We then move on to discuss the opportunities for resistance and empowerment that gaming cultures provide and follow these with a look at concrete examples of advancing gender equity in gaming contexts.

What do we mean when we talk about gender in game cultures?

Gender is present in game cultures in a wide range of ways. There are some ways that are very obvious, such as game protagonists being men more often than other genders (Waddell et al. 2022), women and gender minorities encountering

harassment and discrimination (Fox and Tang 2017) and the game industry being heavily skewed towards men in terms of demographics (Neogames 2022; Taylor 2022). There are, however, factors that are more easily overlooked, such as how games can be places of empowerment and belonging for sexual and gender minorities (Blanco-Fernández and Moreno 2025), how games can be queered⁴⁰ by players challenging their heteronormative content (Hester 2021; Maletska 2024) and how player communities actively challenge the way gender is constructed in game cultures (Zaremba 2012).

Although this chapter is concerned with gender in game cultures, it is, in fact, about gender in culture. While game cultures have their own specific gendered dynamics, it always needs to be kept in mind that gaming cultures are situated in the framework of broader society: gaming should not be viewed as a separate island. What we tend to label as game cultural gender issues, for example sexism or a lack of gender representation, can more accurately be described as wider, systemic gender issues that actualise in gaming just as in most other aspects of society, culture or media. Many times, this actualisation leads to enforcing or strengthening existing issues in society, but sometimes it can function as a counter-force to sexism, for example through community resistance (Boudreau 2022) or conscious design choices that promote diversity (Välisalo and Ruotsalainen 2019).

The distinction between gender in culture and gender in game culture is not simply semantic, but helps us understand gendered issues in gaming culture and greatly influences how we can address them in practice: to meaningfully discuss issues such as gender discrimination in the context of gaming, we need to connect these issues to the broader societal context, both locally and globally. Although gaming is sometimes presented and perceived as a neutral, apolitical and equal arena (Siutila and Havaste 2019), it is a part of everyday life; while playing games, people are still themselves and influenced by the same societal structures as in most other contexts. For example, discriminating speech during a game will likely be perceived very differently depending on whether a person also faces discrimination, such as sexism or racism, outside of gaming or not.

A boys' club?

Game culture is often discussed as a masculinised domain: although people of all genders participate, many areas of gaming are dominated by boys and men and they are arenas where masculinity is reinforced (Maloney, Roberts and Graham 2019). This means that, regardless of the gender of the participants, they are expected to conform to the masculine norms of these environments; individuals who go counter to these expectations can find themselves targets of (often negative) attention. For example, players who do not enjoy competition or difficult games may be ridiculed and not seen as belonging in gaming; such reactions are most evident in the criticism of “casual” games and gaming (Chess and Paul 2019).

40. Queering means modifying or reframing game content in a way that subverts heteronormative expectations (Maletska 2024). As a simple example, giving a stereotypically masculine player character a traditionally feminine name changes how the character and their (originally heterosexual) romantic interactions with women characters are interpreted.

In the early years of gaming it was viewed as an activity that almost exclusively appealed to boys and young men (Jantzen and Jensen 1993). Although this view is not entirely accurate (Kirkpatrick 2017; Kocurek 2012), it is not entirely false either. The men-dominated demographics of gaming have historically been reflected in the design of games as well as in gaming media, as games and much of other gaming content have historically been aimed at boys and men (Cote 2018; Kirkpatrick 2017). This focus on boys and young men has had a profound influence on game culture, in both positive and negative ways. Gaming can be an important part of social life and friendships, especially for boys (Peltola and Phoenix 2022) and serve as a safe environment for spending time with friends and bonding over shared interests. Game culture can also provide an alternative to traditional masculinity ideals, such as those that emphasise physical strength, allowing men who do not fit these traditional ideals to better express themselves and experience a sense of belonging (Ruotsalainen and Välisalo 2022).

However, this gender imbalance and catering to men's interests has also far too often meant the exclusion of other genders from game culture, whether explicitly or implicitly. While game culture may provide a safe haven for men who feel pressured by traditional masculinity expectations, not everyone is willing to share this space with others, and women and minority genders in gaming often find themselves the target of gendered harassment when playing games or participating in online communities (Vergel, La parra-Casado and Vives-Cases 2023). This can be particularly prevalent in domains of gaming that are viewed as especially masculine, such as esports and other competitive gaming (Rogstad 2022). This deep-rooted sexism remains a central problem in game culture.

While their problems often differ from those that women encounter, men also have their own negative gendered issues in game culture. Gaming, especially intensive "hardcore gaming" that typically features strong identification with gaming as a hobby, has historically been a men's and boys' domain. Because of this, worries (Maloney, Roberts and Graham 2019) and negative stereotypes about gamers (Kowert, Festl and Quandt 2014) have also centred on men. Traditional masculinity ideals, such as those that emphasise athleticism, can often be at odds with gaming and other geek hobbies, leading to feelings of inadequacy and resentment (Massanari 2017) while societal expectations about men's adulthood can position gaming men as "forever children", unable or unwilling to become "proper adults" (Latinsky and Ueno 2020).

It is important not to see game culture as a polarised struggle between men and women. Both of these groups are hugely diverse, with a broad range of different attitudes, politics and worldviews. Although always present, gender is not the only, or even the most important, factor in every individual's conduct or a defining feature of their game culture participation. There are also different minority groups and intersectionalities within the broader demographic of people who participate in game culture; as an example, someone belonging to a sexual or gender minority may experience game culture very differently from individuals belonging to majority groups, even without taking into account features such as race, dis/ability, local cultures or socio-economic status (Richard and Gray 2018).

Representation matters

Although things may be changing (Lynch et al. 2016), games have also often been criticised for poor representation of women, positioning them as passive, non-playable characters (NPCs) to be rescued by the protagonist, typically a man (Waddell et al. 2022). Female characters have also commonly been sexualised in games, for example featuring exaggerated body proportions or wearing more revealing clothing than their male counterparts (Lynch et al. 2016). Whether these contribute to increased sexist attitudes in players is unclear (Breuer et al. 2015), however.

The complexities of representation are aptly illustrated by one of the first popular video games to have a female protagonist, *Tomb Raider* (Core Design), published in 1996. The game's iconic protagonist Lara Croft has been widely criticised for being a hypersexualised character, but at the same time, women have experienced empowerment while playing her, a capable female character who is not waiting for a man to save her (Mikula 2003). This might have been in part because, at the time, female protagonists were so rare and, historically, female characters were either missing or NPCs in games. Lara Croft, while hypersexualised, was also a new type of female character – one with agency within the game world.

In recent years there has been increasing diversity in game characters, and the selection of playable female characters has widened considerably (Lynch et al. 2016). Female protagonists are no longer anomalies and the tendency to portray powerful women as hypersexualised and/or masculine has lessened, albeit not disappeared. Characters like Saga from *Alan Wake 2* (Remedy Entertainment 2023), Ellie from *The Last of Us* (Naughty Dog 2013), Max from *Life is Strange* (Don't Nod 2015) and Selene from *Returnal* (Housemarque 2021) offer types of diversity that research suggests continue to be important to players (Välisalo and Ruotsalainen 2022). For example, players appreciate the fact that Selene is an older woman character, with visible lines in her face, meaning her age is allowed to be seen (Ruotsalainen 2024).

Infobox 2 – Undertale

Platforms: Nintendo Switch, PlayStation, Linux, PlayStation Vita

How it promotes inclusivity

- ▶ Includes two nonbinary characters, Chara and the main protagonist Frisk, who are referred throughout the game as they/them.
 - ▶ Portrays same-sex relationships as a normal part of the game world.
 - ▶ Allows players to complete the game without using any violence, thus moving away from traditional masculine themes and game mechanics associated with games.
-

With time, how male characters are designed has also become more diverse and they have evolved from the hypermasculine heroes of previous years. Whereas male characters have often embodied and exaggerated traditional masculine ideals such as a tendency towards violence, aggression and dominance, games such as *The Walking Dead* (Telltale Games 2012) and even the latest instalments in the *God of War* series (Santa Monica Studio 2005) – known for its over-the-top violent action – have

addressed themes of care and fatherhood (Bell, Kampe and Taylor 2015; Conway 2020). Furthermore, games have diversified gender representation via nonbinary characters, like Frisk and Chara in *Undertale* (Toby Fox 2015) and presented players with opportunities to create nonbinary protagonists, seen for example in *Baldur's Gate 3* (Larian Studios 2023).

Representation counts also beyond game characters. For example, competitive gaming, widely known as esports, is an area dominated by men (Rogstad 2022) with women far less visible. Women are often discouraged from pursuing careers in esports due to a number of barriers, including the perception of esports as a space for men, and fear of harassment (Ruotsalainen and Friman 2018). However, having women players at the top of esports as role models is something that could encourage women to pursue careers in esports (Crothers et al. 2024). Representation alone, be it in video games, in game development or in esports, is of course never enough by itself (Shaw 2012). In addition to diverse representation in games and those playing games, actions such as combating harassment and discrimination via in-game and out-game moderation are needed. For example, since marginalised genders face systematic barriers in esports, organisers and game developers are now addressing this by organising separate leagues for women and gender minorities.

As demonstrated by the inclusion of nonbinary characters in games discussed above, we also need to acknowledge that there are gender minorities that disrupt the binary of men and women. This requires moving away from binary understanding of gender and rather thinking of gender as fluid (Butler 1990). While some nonbinary gender representation exists in games, it has historically been (Shaw et al. 2019) and is still rather minimal and most games operate within the binary gender paradigm (Lacey 2023). Furthermore, not all representation is good; as with female characters, badly made nonbinary and queer characters might end up contributing to negative stereotypes (Lacey 2023; Sihvonen and Stenros 2018). Many LGBTIQ+ players find games and game communities important for them (O'Brien et al. 2022), which highlights the need for inclusive design solutions in regard to game characters and beyond. In some cases, games can be the only safe spaces for LGBTIQ+ players to express their gender, it being impossible, for a host of reasons, in everyday life beyond the game (Blanco-Fernández and Moreno 2025).

Opportunities for resistance and empowerment

The majority of games have long been made for boys and men, in accordance with their imagined needs and wants. This has often excluded men who are part of marginalised groups, such as gay men and trans men, from their target audience (Shaw 2009). However, games have also offered opportunities for playing with gender and gender norms as well as opportunities for resisting the dominant gendered narratives. While game developers have the power to choose the kind of games they make, this does not mean that players do not challenge these choices or play around with them. Many games are designed with an implied player in mind, and traditionally this implied player has been a heterosexual man (Sundén 2009). However, transgressive play, or playing against the game or challenging the game

and social norms surrounding it, is part of game cultures (Ibid.): players constantly negotiate their relationship with games and gender in creative and surprising ways.

One of the documented ways players play with gender is through gender swapping, which means playing a character of different gender than the player by choice. Contemporary games, both online and single-player, often allow players to customise their characters, including picking their gender (Maletska 2024). Players gender-swap for multiple reasons, including enjoyment of playing as another gender (Hussain and Griffiths 2008), same gender attraction (Zhou et al. 2022) and exploring gender identities (Maletska 2024). While gender swapping can offer opportunities for playful explorations, this is not always the case. Gender swapping can also function to mask or hide one's gender, especially in the case of women players (Zhou et al. 2022). This activity, gender masking, is known to be one of the survival strategies women employ in multiplayer games (Fox and Tang 2017). Gender masking can include playing male characters, using an avatar or a player name that sounds masculine or gender neutral, and avoiding the use of any voice communications (Buyukozturk 2022; Fox and Tang 2017).

While gender swapping is one way of playing with gender in games, many games have a limited amount of playable characters and limits to character customisation, and in these cases practices like gender swapping are not possible. Furthermore, even in the games where customisation of the characters is possible, there tends to be a limited number of options in regard to gender, nonbinary options being very rare (Lacey 2023). This does not mean, however, that players are just passive receivers of the games and meanings embedded in them – rather, players are active meaning-makers who challenge and play with the ideological implications that games have. Jennessa Hester's (2021) reading of the "Bowsette" phenomenon is an apt example of that.

In her article, Hester (2023) discusses players' reception of a particular game mechanic in the game *New Super Mario Bros. U Deluxe* (Nintendo 2019). This mechanic is known as the Super Crown and it transforms the playable game character Toadette to Princess Peach, allowing the player to play as her. The Super Crown does not work with other characters, but in a comic strip about the game, created by digital artist @ayyk92, the Super Crown is used by Bowser, the male villain of the Super Mario games, turning him into a female-presenting mix of Bowser and Princess Peach (@ayyk92 2018). Known as "Bowsette", this character quickly became popular among players, spawning numerous examples of fan art.

However, according to Hester (2023), the crown was not simply repurposed by fans to allow more diverse gender representation beyond the game but can in itself be considered as transgender game mechanic as it evoked the desire for creation of the transgender character of Bowsette. According to Hester (2021) the crown as a game mechanic itself resembles transgender experience even if it is concealed inside heteronormative representation (both Toadette and Princess Peach are female). As such Hester stresses the importance of gender-as-mechanics rather than gender-as-representation in video games. The creation of Bowsette further highlights how playing with gender does not happen only inside the game but can happen outside the game as well. Players thus have agency beyond that granted by the game

developers, as players can engage with games in a multitude of ways (Meriläinen and Ruotsalainen 2023); other media, including the media created by fans and players, influence how games are experienced (Koistinen, Koskimaa and Välisalo 2021).

Alongside game design, social norms around gaming strengthen the masculinised and gendered practices in game cultures. Oftentimes they also repeat and reinforce societal gender norms. Consequently, in multiplayer games women often face pressure to play in ways that are deemed gender appropriate (Ruotsalainen and Friman 2018; Witkowski). This can mean, for instance, playing characters that are designed to take care of other characters, such as healers and supports (Ruotsalainen and Friman 2018). Women are pressured to take these roles in order to negotiate access to game culture, but can also utilise these roles to resist the gendered norms through acts of transgression. The following example of a transgressive way of playing a healing character Mercy from the game *Overwatch* (Blizzard Entertainment 2016) aptly demonstrates this.

Infobox 3 – Overwatch

Platforms: Nintendo Switch, PlayStation, Microsoft Windows, Xbox One

How it promotes inclusivity

- ▶ Includes a diverse cast of playable characters from different genders, sexualities, ethnicities and body types.
 - ▶ Promotes and celebrates LGBTIQ+ events like Pride.
 - ▶ Even though marketed as a first-person shooter (FPS) game, it showcases a wide set of different kinds of game mechanics beyond classical shooting mechanics, thus making room for different types of skillset.
 - ▶ Offers a number of moderation solutions to combat sexism and discrimination, including muting and reporting other players.
-

Overwatch was a multiplayer first-person shooter that was updated to *Overwatch 2* in 2022.⁴¹ Mercy, a female healer character, is one of the playable characters in both games and her role in the game is to support other players. Mercy has been seen as a character mainly played by women, and women have often been expected to play Mercy (Ruotsalainen and Friman 2018). Simultaneously, some of the players of *Overwatch* would mock Mercy, arguing she is an easy character and also belittle those playing Mercy (Ibid.). The following transgressive way of playing Mercy, utilising the so-called “bunny hop”, can be seen as a response to this.

Bunny hop was a high jump that was not originally part of Mercy’s abilities, but a glitch (unexpected malfunction) in the game that happened when players utilised two of Mercy’s abilities almost simultaneously. This glitch would allow Mercy to jump high up in a game, allowing her to escape difficult situations and gain access to locations that would otherwise be hard or impossible to reach. Executing bunny hop also required precise timing and skill. While some players protested against the use of bunny hop and called on developers to remove the glitch, many embraced it, including the developers who eventually added it as part of Mercy’s abilities. Interestingly enough, some

41. *Overwatch* does not exist anymore in the form that it did then, but *Overwatch 2* bears a strong similarity to the original game, having the same characters and same core gameplay as *Overwatch*.

of those who opposed the use of bunny hop would call it an “e-girl⁴² hop” or “e-girl jump”, adding a clear gendered dimension to their opposition. This gendered framing of Mercy as an easy to play character implies both that Mercy is a “girls’ character” and that this is because women cannot play characters perceived as hard to play.

In the case of Mercy and the bunny hop the developers embraced a transgressive way of playing Mercy and added it to her set of abilities. However, not all transgressive acts are met with the game developers’ approval, at least not initially. This is what happened with some of the first openly queer guilds in *World of Warcraft* (Blizzard Entertainment 2004). *World of Warcraft* is a massive multiplayer online role-playing game from the same developer as *Overwatch*, Blizzard Entertainment. In the game, players can create their own communities, known as guilds, and can advertise them via in-game chats. In 2006, one of the players, Sara Andrews, created a guild she advertised as “GLBT (gay, lesbian, bisexual, transgendered) friendly”. After advertising her guild in the public trade chat visible for all players, she was requested to disband the guild by the game moderators, as, according to them, talking openly about the guild’s status as GLBT friendly risked making them targets of harassment (Sundén 2009).

The last example highlights how in masculinised and heteronormative spaces of gaming, sexual and gender minorities have been othered and gamers have tried to get rid of them. Andrews, however, persisted in pursuing justice for her guild and, after public pressure, the guild was allowed to continue existing and she received an apology on behalf of Blizzard Entertainment (Ibid.). Ever since, different types of queer guilds have been part of the landscape of *World of Warcraft*, allowing players to challenge the masculine norms typical of game cultures (Sihvonen and Stenros 2018). Recently, different LGBTIQ+ friendly content has become more commonplace in games and events like Pride month are added as in-game events (Blanco-Fernández and Moreno 2025). While these types of additions are often done in order to financially capitalise on LGBTIQ+ players, they can simultaneously help make games more inclusive spaces.

As these examples show, games offer ample ways to challenge gender norms. Sometimes just playing games can also function as a way to escape or rebel against societal gender norms. In their research, Hussain et al. (2021) draw attention to how Pakistani women experience empowerment through esports. They note how the women they interviewed found esports games such as *Tekken 7* (Bandai Namco Entertainment 2015) and *PUBG: Battlegrounds* (PUBG Studios 2017) to be places where they could leave everyday gender norms behind and be themselves. Playing games gave them freedom and a sense of agency. However, the research also discusses how some of the games, for example *Tekken 7*, are influenced by post-colonial and masculine norms, as in them white male characters are the powerful ones (Hussain et al. 2021). This influence goes beyond these games, as some of the women interviewed had also internalised these ideals, choosing to play white male characters even when it did not give them any strategic advantage (Ibid.).

42. The term e-girl refers to a gaming woman. It can be a positive way to self-identify as a woman who likes to game (thus claiming the term and contesting its negative connotations) or a derogatory, belittling way of referring to a gaming woman (by someone else).

This functions as a stark reminder of two things. Firstly, as we have highlighted, games and gaming are never cut off from the world surrounding them. As such, they have potential to be sites where norms are both challenged and reinforced, sometimes even simultaneously. Secondly, this highlights how inclusion and exclusion are never just about gender, but in order to understand gender in games and game cultures, we need to examine them through an intersectional lens. Intersectionality is a concept that was originally introduced by Kimberle Crenshaw in 1989 as she examined how black women's lives differed from those of white women in the United States. Crenshaw (1989) argued that the experience of womanhood cannot be reduced to gender only: oppression and marginalisation can accumulate depending on race, ethnicity, nationality and other social and political identities.

Actions advancing gender equality

In the previous section, we discussed different ways through which games can function as avenues or sources of resisting and challenging gender norms, both those prevalent in game cultures and those in societies at large. This shows how games are not static artefacts, but constantly played with. In addition to this potential, more systematic initiatives are needed in order to achieve more equitable game cultures that offer safe and welcoming play experiences for all genders. It is important that these initiatives are not solely reliant on individual players and their efforts, but are also undertaken on a more systemic level by actors such as game developers, event organisers and policy makers. It is crucial that game developers commit to actions which foster gender inclusivity, for example by having gender diverse characters in their games and by developing functional moderation tools to ensure a safe and harassment-free environment for players.

What kind of characters and themes games have is largely dependent on those making the games. There are still substantial issues with inclusion and equity in the game industry (Kivijärvi and Katila 2021). However, there are also initiatives that try to solve these. For example, grassroots organisations like We in Games promote women's and gender minorities' position in the game industry and fight against gender discrimination. Researchers Stephanie Fisher and Alison Harvey (2013) stress the importance of bottom-up solutions in order to diversify the game industry. They caution against programs based on stereotypical views of women, because these programs often rely on top-down operations, and also against simply adding women to existing work cultures without challenging these cultures' gendered and discriminatory practices.

Independent ("indie") game development is often seen as a scene that goes against the dominant, hegemonic discourses, and thus also an ideal place to create more gender diverse works (Fisher and Harvey 2013). For example, games like *Night in the Woods* (Infinite Fall & Secret Lab 2017) have been created by indie developers and prominently feature nonbinary characters in a manner that is consequential beyond aesthetic. Also, bigger developers have actively sought to diversify gender representation in their games. Developers of competitive multiplayer online games such as Riot Games and Blizzard Entertainment have also been vocal about creating moderating tools to protect women and marginalised groups in gaming.

These include tools which allow reporting hostile players as well as, in the case of Riot Games, a chat moderation tool which stops spelling out slurs and offensive terms. At the same time, both Riot Games and Blizzard Entertainment have been criticised for work cultures that are hostile towards women; and both companies have been sued for gender discrimination (BBC 2021).

Major game industry actors, such as prominent game developers and big esports event organisers are not the only ones who can promote gender equality; other parties such as gaming and esports clubs, schools and youth work should also be mindful of these issues when they engage with games and educate children about games and game cultures. While they might have limited power over what happens in the games, they can create their own rules around gaming activities, influence what kind of games are being played and help players consider and understand gaming from other perspectives that young players especially might not be aware of, such as gender dynamics.

Creating safer spaces for gaming comes from actively challenging and dismantling the negative norms around gaming. For example, Taylor and Hammond (2018) discuss an esports club centred around the game *League of Legends* (Riot Games 2009), hosted in North Carolina State University by students. During their research, they noticed that the club organisers were committed to creating a safe space for play. This was visible, for instance, in how the organisers were quick to stop participants from using homophobic slurs and how they were re-orienting play from competitive to more diverse forms of engagement through activities such as cosplay, in other words dressing up as game characters (Taylor and Hammond 2018).

Summary

Throughout this chapter we have shown through examples how closely gender is intertwined with game culture: it both influences gaming on a structural level and very concretely manifests in individual experiences and encounters. These experiences are far too often negative, and while steps have been, and will continue to be, taken to make gaming more equitable for everyone, there is still much work to do. There continues to be a need to not just make problematic gendered dynamics in game cultures visible, but also to seek and provide concrete solutions for them. However, while this noted work is undertaken, we must be careful to acknowledge the diversity of players and game cultures. Gender is only one of the many intersecting variables that influence gaming, and both structural (e.g. socio-economic status, ability, race or ethnicity) and individual (e.g. preferences, life situations) factors shape individual players' experiences of game culture (Meriläinen and Ruotsalainen 2023). In a complex field, there are no simple template solutions.

We also wish to draw attention to how gender is addressed in research, public discourse, education and other work with young people, as often our attention is drawn only to problematic phenomena. Despite the problems discussed in this chapter, we have sought to demonstrate that game culture also presents positive opportunities in the context of gender issues. Game culture can help explore gender on a personal level, contest gender norms and diversify our views of, for

example, what we view as masculine or feminine. This is not only the case for games themselves, but also for the people who play them and the discussions that surround them.

It is important to note that here we are not discussing purposely designed educational games, but commercial, mainstream ones and the communities formed around them. As they are often important arenas of social interaction and emotional investment, games and game communities are environments in which people of all ages and genders may come into contact with issues of gender, whether they perceive it or not. This potentially makes them places of informal learning, where gender views, norms and attitudes are expressed, reinforced and contested. It follows that parents as well as educators and other professionals, especially those working with young people, should take into account the role of game culture as part of individuals' everyday life.

Highlights of the contribution

- ▶ Video game culture is not separate from the rest of culture. Societal structures, for example those related to gender, are also present in gaming. This can be seen for example in the systemic discrimination against women and the negative stereotypes about gaming men.
- ▶ Sexism is a problem in gaming. Women and gender minorities regularly encounter gendered harassment and exclusion in game communities and the gaming industry.
- ▶ Stereotypically masculine norms influence conduct in gaming and beyond. Many games and gaming environments feature themes of, for example, power, dominance and competition.
- ▶ Gender is present in many different areas of video game culture. The role of gender can be seen, for example, in game characters, the lack of presence of women and gender minorities in fields such as esports, the demographics of the game industry and the high status of games and gaming perceived as more masculine.
- ▶ There is no singular video game culture. Video game culture consists of countless different game cultures, built around for example different ways of gaming, individual games or group identities.
- ▶ Video game culture can both reinforce and contest gender stereotypes. As a diverse form of culture, gaming offers plenty of opportunities for addressing gender.
- ▶ Actions are, and can increasingly be, taken to advance gender equality in gaming. While video game culture still has many problems in terms of gender equality, this does not need to be a permanent feature but can be changed.

Ludography

- ▶ Remedy Entertainment (2023), *Alan Wake 2* [video game], Epic Games Publishing.
- ▶ Larian Studios (2023), *Baldur's Gate 3* [video game], Larian Studios.

- ▶ Santa Monica Studio (2005), *God of War* (series) [video game series], Sony Interactive Entertainment.
- ▶ Riot Games (2009), *League of Legends* [video game], Riot Games.
- ▶ Don't Nod (2015), *Life is Strange* [video game], Square Enix.
- ▶ Nintendo (2019), *New Super Mario Bros. U Deluxe* [video game], Nintendo.
- ▶ Infinite Fall & Secret Lab (2017), *Night in the Woods* [video game], Finji.
- ▶ Blizzard Entertainment (2016), *Overwatch* [video game], Blizzard Entertainment.
- ▶ Blizzard Entertainment (2022), *Overwatch 2* [video game], Blizzard Entertainment.
- ▶ PUBG Studios (2017), *PUBG: Battlegrounds* [video game], Krafton.
- ▶ Housemarque (2021), *Returnal* [video game], Sony Interactive Entertainment.
- ▶ Bandai Namco Entertainment (2015), *Tekken 7* [video game], Bandai Namco Entertainment.
- ▶ Naughty Dog (2013), *The Last of Us* [video game], Sony Interactive Entertainment.
- ▶ Maxis (2000), *The Sims* (series) [video game series], Electronic Arts.
- ▶ Telltale Games (2012), *The Walking Dead* [video game], Telltale Games.
- ▶ Core Design (1996), *Tomb Raider* [video game], Eidos Interactive.
- ▶ Toby Fox (2015), *Undertale* [video game], Toby Fox.
- ▶ Blizzard Entertainment (2004), *World of Warcraft* [video game], Blizzard Entertainment.

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Chapter 7

From players to active citizens: civic education through video games

Lobna Hassan

Introduction

Part of digital citizenship education is teaching individuals, especially young people, about the concept of citizenship – what it means to be a citizen, a part of society, and to actively contribute to that society in ways that align with democratic values and human rights. These topics can sometimes be engaging for young people, but they can also be disengaging due to their abstract nature. Democracy, for instance, requires long-term thinking and cognitive skills that may still be under development in young people. Similarly, civic action often does not yield immediate, tangible results. For example, a person experiencing poverty might vote in an election hoping for policies that alleviate their poverty, but the effects of that vote take time to materialise. Delayed outcomes can make it difficult for individuals – especially young people – to see how their participation in citizenship matters. Hence, teaching civic engagement can often remain theoretical, abstract and with little value in the eyes of young learners.

Games, however, especially video games, can make abstract concepts more concrete. They can simulate societies, policies and civic action so that players are better able to see the long-term outcomes of their actions, such as voting, effectively removing temporal ambiguity of civic actions (Hassan et al. 2019). Games are also often interactive, engaging and immersive in ways that encourage the more sustained engagement needed for learning (Aura et al. 2022). Because of these reasons and many others, video games can serve as excellent tools for educating especially young people – but also individuals of all ages – about what it means to be a citizen.

This chapter explores how video games – simply “games” from now on – can be used as tools for civic education. It presents examples of how games can be incorporated into educational programmes in formal and informal education. The chapter also discusses how games have already been used in real civic action initiatives. Finally, the chapter discusses the critical awareness needed when using games for civic purposes. While games can be positively used to teach democratic values and human rights, they can also be misused to promote harmful ideologies. Hence, there is a need to ensure that games serve as tools for positive civic education rather than become vehicles for manipulation (Hassan et al. 2019; Sicart 2019).

Games as tools of formal civic education

“Formal education” refers to structured education that typically takes place in schools, colleges and universities, guided by a curriculum and delivered by trained educators (UNESCO 2012). Many EU countries offer dedicated, formal civic education courses that provide knowledge of political systems, civic rights and responsibilities, human rights and social values such as justice, equality and participation (Aura et al. 2022; Kerr 1999). Other countries teach such knowledge as part of other courses and subjects, such as history or geography. The delivery form may differ but civic education is mostly considered an integral part of formal education so as to shape learners into informed, responsible and active members of their societies (Goren and Yemini 2017).

As an overgeneralisation, formal education tends to mostly rely on didactic teaching and passive forms of learning, such as lectures and textbook readings. These methods do not often resonate with students and can fail to demonstrate the real-world relevance of civic education (Hassan et al. 2019; Hess and McAvoy 2015). Abstract concepts like political agency, justice or the rule of law can appear disconnected from the lived experiences of young people, and they may not see the immediate value of learning about it (Galston 2001). Curricula also can sometimes be biased, overly standardised or ideologically constrained, presenting a narrow understanding of civics (Hess and McAvoy 2015). The same limitations can be true of any media or method of education, but it is important to recognise that different methods of education also have their strengths. For example, curricula can provide clear guidance for education down a structured path, towards an intentional learning goal. Books and reading, in general and when part of curricula, can foster imagination and empathy. Movies, also in general and when part of curricula, can be especially engaging, which can allow them to grasp the attention of a learner for long enough to communicate a key learning to them.

Games, as the focus of this book and chapter, are especially active and interactive media. They can present abstract and complex concepts in a dynamic form that can appear more relevant and accessible to the learners. Simulation games such as *Run That Town* (Australian Bureau of Statistics 2013) or *Democracy 3* (Positech Games 2013) allow players to experiment with policies and resources allocation, and observe societal consequences – thereby offering them immediate, visible feedback on civic decisions (Hassan et al. 2019). Abstract actions are made more concrete and long-term impacts can materialise more observably in the now. As noted by Sicart, a game like Lucas Pope’s *Papers, Please* (2013) invites players to engage with ethical dilemmas in immigration policy (see Infobox 1), while *This War of Mine* (11 Bit Studios 2014) demonstrates the civilian cost of conflict and the long-term impact of authoritarianism (Sicart 2019). Hence, games can provide a contained, safe environment to experiment and understand the impact of different actions. These games also support problem-solving, critical thinking and collaborative learning – skills that are essential for civic participation (Bhattari et al. 2023; Squire 2005).

Over the years, the Council of Europe has developed several educational programmes and tools to promote democracy and human rights education among young people. These have often included game-based education in various forms. For example,

*Compass: manual for human rights education with young people*⁴³ is a comprehensive guide to teaching human rights through interactive activities and discussions. Another example was the Education for Democratic Citizenship and Human Rights Education (EDC/HRE) programme,⁴⁴ which offered interactive activities, including game-based learning, for teaching citizenship and human rights in formal and informal education settings.

These tools are part of the Council of Europe's broader initiative to integrate human rights education into formal – and informal – civic education across Europe and beyond. Often, these tools are developed in close collaboration with stakeholders – such as schools, researchers, policy makers and youth organisations. Access to them tends to be open, which can make it easier to utilise these tools in different contexts of civic education and also makes these tools very important to educators. However, educators may not know about the existence of these tools or how to utilise them. Hence, some of these tools are briefly discussed in the following subsections of this chapter.

Infobox 1 – Papers, Please

Platform: Microsoft Windows, macOS, Linux, iOS, PlayStation and others

Developer: Lucas Pope

Initial release year: 2013

Key themes: bureaucracy, immigration, ethical decision making

How it promotes civic learning

- ▶ Players take on the role of a border inspector deciding on the entry of civilians to an imaginary country.
 - ▶ The player is faced with ethical dilemmas in immigration control. For example, on the entry of civilians who may not have their papers in order but need entry for humanitarian reasons.
 - ▶ The game challenges the player to balance personal values, institutional rules and their survival needs in the game.
 - ▶ The game demonstrates how state policies affect individuals and families on a human level as well as the immigration officers enforcing the policies.
-

Games as tools of informal civic education

“Informal education” refers to education that occurs outside traditional educational settings, often through everyday experiences, peer interaction, media and participation in community activities (UNESCO 2012). Informal civic learning is typically self-directed and differs from person to person depending on their personal characteristics, their social circle, the media they consume and so on. Learning can, hence, be more personally relevant and have a more critical role in shaping civic identity, social norms and public discourse (Aura et al. 2022; Jenkins et al. 2016). Over the

43. See www.coe.int/en/web/compass, accessed 21 October 2025.

44. For more on education for democratic citizenship and human rights, see www.coe.int/en/web/edc, accessed 21 October 2025.

years, we have indeed seen social media platforms such as Twitter (currently X) (Abdelghaffar and Sameer 2013; Sameer and Abdelghaffar 2015) and TikTok more recently (Moffett and Rice 2024) have a tremendous impact on public discourse, election results and even larger civic movements such as those of the Arab Spring during the 2010s (Anderson 2011).

Informal education often allows more freedom for exploration and identity formation as it is self-directed. There may be dialogue and crossover between formal and informal education in different ways. For example, educators in formal education can help learners reflect on and direct their informal education. That can be beneficial to learners when it helps them deconstruct, for example, radical thoughts or ideas that could lead to self harm. But the crossover can be detrimental if it directs the learner away from hobbies that may not necessarily be harmful or when it hinders them from identity exploration and expression necessary for self-development, for example by directing a learner away from reading fantasy books like *Lord of the Rings* or attending concerts because an educator does not find these activities beneficial or of value. This connects to a bigger and very important debate on what can be beneficial or detrimental to engage with and who decides that (Hassan 2024; Hassan and Hamari 2020) but engaging critically with that debate is beyond the scope of this chapter. The goal here is to mainly note that, for better or for worse, formal and informal education do not exist in silos, which makes it important to consider the role of games in different forms of education.

Because of the freedom that informal education offers, it can be especially relevant to and appreciated by youth and marginalised groups who may find formal spaces uninviting, overly prescriptive or unrepresentative of their experiences (Jenkins et al. 2016). Games, particularly commercial and multiplayer games, are powerful informal learning tools. As discussed in the last section, they provide relatively safe, contained spaces where individuals can explore social issues, encounter moral dilemmas and negotiate community values through play. The pairing of informal education and games can hence provide relatively unlimited and decolonised spaces for identity exploration, formation and enactment (Gee 2007), where games can function as “accidental curricula” on civic and ethical issues beyond the classroom (Gee 2007; Squire 2011).

One notable example of how commercial games can contribute to informal civic and ethical education is from *Call of Duty: Modern Warfare* (Infinity Ward 2019), a mission set during a terrorist attack on a US embassy. It is important to note that the *Call of Duty* game franchise is internationally popular, yet highly criticised as a pro-military game that is seen to promote thoughts harmful to social well-being (Ford 2025). This is not a game explicitly connected to ethics education, and it is not used as an example here to promote its use in informal education, but the example is noted to show how game design can particularly move players, even against the presumed intentions of the game developers. In *Call of Duty*, players alternate between multiple perspectives of military personnel and embassy staff, at different locations in the unfolding scene and with different attitudes towards it, as they attempt to defend against this sudden event. The player’s agency is deliberately restricted during certain moments – particularly when players are

unable to prevent harm or save civilians. This forced restriction serves to elicit the player's emotional engagement and critical reflection on the complexities of military action from many players (Clement 2019). Hence the game can provide a space for players to contemplate the moral ambiguities and emotional toll of global conflict, aspects that may be less emotionally or concretely experienced in formal civic education. Even when these reflections are not explicit, they may subconsciously occur and indirectly influence a player's attitude over time.

For example, numerous indie games (independently developed games by hobbyists or small studios) intentionally blur the line between entertainment and activism, aiming to provoke thought and empathy through informal engagement. *Bury Me, My Love* (The Pixel Hunt and Figs 2017) – also discussed in Chapter 5 – is a mobile game told through smartphone messages, simulating the journey of a Syrian refugee. It invites players to consider the bureaucratic, emotional and ethical challenges of forced migration. The game garnered international recognition and was nominated for over 20 awards, including prestigious accolades such as the BAFTA Game Awards, the Game Awards, the Game Developers Choice Awards and IndieCade Europe. Notably, it won the Best Meaningful Play award at the International Mobile Gaming Awards in 2018 and was honoured as the Best Emotional Mobile Game at the Emotional Games Awards the same year. For more on this game, see Chapter 5 in this volume.

In the EU, several initiatives have connected games with informal civic education. In Germany, for example, the game *Through the Darkest of Times* (Paintbucket Handy Games 2020) lets players lead a resistance group during Nazi rule. The game is designed to teach players about historical resistance and moral choices under dictatorship and was nominated for the Games for Impact Award at the Game Awards 2020. In Sweden, the Block by Block initiative began as a collaboration between Mojang and UN-Habitat, using Minecraft (Mojang Studios 2011) to involve young people in redesigning their local environments, participate in urban planning and promote inclusive and sustainable community development. Finally, on several forums and social media internationally, we see players engaging together in unpacking games and the messages contained in them in a form of collective sensemaking.

However, it is imperative to note that game design is not ideologically neutral. Games can suffer from the same biases as formal education, and perhaps even more (Deterding 2016). Games can and do frame specific groups as threats and others as allies. Games can ascribe morality to grey or immoral action. Hence, games can subtly influence players' perceptions of justice, security and civic action – often reinforcing dominant geopolitical narratives or nationalistic ideologies (Stahl 2006), or dominant harmful stereotypes against minority groups, women, disability groups, religious and ethnic groups, toxic masculinity stereotypes and so on (Stang et al. 2025). In doing so, they carry the potential to either shape civic attitudes in ways that may be critically reflective or, conversely, to reinforce unexamined and potentially harmful worldviews. These concerns are discussed in the following section.

Infobox 2 – Democracy 1-3 game franchise

Platform: Microsoft Windows, macOS, Linux, iOS, Android and others

Developer: Positech Games, Red Marble Games

Initial release year: 2007 (latest release: 2013)

Key themes: governance, democratic decision making, policy trade-offs

How it promotes civic learning

- ▶ Players take on the role of a national leader of an imagined democratic country.
 - ▶ Players must implement policies, manage public services and balance competing demands from different voter groups (e.g. capitalists, trade unionists, environmentalists).
 - ▶ The game presents complex systems of cause and effect. For example, raising taxes may fund better public services but decrease support among certain groups, mirroring real-world political dilemmas.
 - ▶ Players must deal with media influence, economic shocks, election cycles and lobbying, which can demonstrate how public opinion and institutional constraints shape what is politically feasible.
 - ▶ The games do not prescribe a “right answer” but demonstrate the long-term impact of policies and encourage experimentation, failure and reflection to showcase the complexity of governance.
-

Dangers and ethical considerations

As discussed, games are not politically or ideologically neutral tools (Deterding 2016; Sicart 2019). For instance, a military game can have narratives and characters that encourage the player to be receptive to real-world military action or encourage the player to be critical of it. Game characters, for example, may be represented with a certain racial profile as heroes or terrorists. Characters with disabilities may be presented as a burden on the player, constantly demanding their help in missions, perpetuating existing prejudice against these groups, or as active agents that assist the player in their mission. These design choices are not inconsequential. Games are interactive and game narratives are actively engaged with, reflected upon and internalised by the gamer (Gee 2007; Stang et al. 2025), as previously discussed throughout this chapter.

Games can also be used for propaganda. When players are unaware that ideologies may be embedded in a game and engage with it passively, they are less able to critically assess the ideas being presented. Outside the games themselves, online gaming forums and discussion groups can also perpetuate hate speech, misogyny and radicalisation, as seen in the weaponisation of game spaces by extremist groups or for illicit activities. This can erode civic norms and encourage behaviour that is counterproductive to democratic values (Gray 2021; Massanari 2015). Hence, it is important to engage with games through the filter of an internal moral compass, or we risk reproducing the very civic disengagement or bias we were attempting to use games to counter.

Even when games are designed in line with “desirable” narratives and characters, the idea of “desirable” can often be philosophically challenged. Who determines

what is desirable? Desirable for whom? This has especially been a significant debate in the field of gamification where education, exercise and other aspects of life are being turned into presumably more engaging activities for users through the use of game elements or game designs in designing these activities (Hassan 2024). An example comes from gamification of government, where some regimes are establishing systems for collecting social credit – that can facilitate access to better services – through engaging with socially “desirable” social behaviour, for example, not being a smoker or using public transport instead of a car, but also losing said social credits when belonging to political parties opposed to the ruling political party or when maintaining ties with close family or friends belonging to such political parties (Kobie 2019).

In the context of civic education, it is not inconceivable to imagine that a game or gamified application could be similarly designed to teach learners what designers think is virtuous, desirable or of value, regardless of what that virtue or value really is or for whom it is desirable. Researchers caution that there is often a power imbalance in game and gamification design (Deterding 2019), which can allow paternalism to emerge where the government or an authority figure – such as a teacher – intervenes in the lives of others, under the belief that it is for their own good, even if it restricts their freedom or choices (Hassan and Hamari 2020). This can lead to misinformation (Hassan et al. 2019) or learner and user exploitation (Bogost 2014; Kim 2015). It is important to note that these same problems can also be found in almost all situations of top-down design, for example curricula, but they can often get dismissed in games and gamification as the latter are seen as “just a game” (Kim and Werbach 2016). The aim of this chapter is to demonstrate that game design and its content should be taken seriously.

There often are also practical challenges that can compromise the educational use of such “desirable” games. Educators often face practical and pedagogical barriers that complicate their use of games in classrooms such as a lack of training, limited classroom time, curricular constraints and uncertainty about assessment methods for game-based learning (Aura et al. 2022). These constraints may lead to superficial engagement with games, where students interact with the mechanics but not the civic values embedded within them, limiting the intended impact from the experience. Even the most well-meaning educational effort can fail if learners do not understand or receive games as was intended. On a more general level, not all educators or learners have the same access to education, technology, games or critical thinking tools. Students and teachers from underserved communities may be especially excluded from access to game-based education (Eynon and Geniets 2016) or critical media literacy education, which can work to reinforce existing social and civic inequalities. Detailing such systemic challenges is beyond the scope of this chapter but it is important to note that such challenges exist and they need to be addressed, especially for long-term impact. Thus, the integration of games into civic education must be accompanied by careful curation, guided reflection and critical analysis – and guidelines for this work are discussed in the next subsection.

Conclusion – How to responsibly use games in civic education?

It is imperative to approach the use of games in civic education critically and through co-operative work as educators, game developers and policy makers. It is important to first determine what it is that we want from the use of games in civic education, how to attain that, under what conditions, by whom and for whom. With that aim in mind, this chapter aims to outline how games can be responsibly used as tools of civic education. The recommendations summarised here are not exhaustive but they are an important place to start.

1. Conscious game design requires diverse teams: as noted, the top-down of designing games, gamification or game-based activities (Deterding 2019), as well as curricula and education, can especially subject them to many biases and limit the perspectives that learners are exposed to through these educational means. There have been continual calls to increase diversity in game design and development teams in terms of gender, ethnicity, ability and countless other demographic and social factors (Hassan et al. 2024; Rankin and Irish 2020). There are also many calls for participatory design of (educational) democratic tools to make sure that the outcomes are suitable for the intended learner and echo their voices (Motti 2019; Rothschild 2016). While it is unlikely that all top-down decisions can be eliminated from the development of games or curricula, we can increase the range of ideas communicated in them when the designers themselves come from a wide range of demographics and hold a wide range of opinions on civic engagement and education. It is important to note here that many design processes involve diverse users as a participation token without any real intention of including them in decision making. We need conscious work towards eliminating such tokenism, or else the addition of different voices to the design process becomes demotivating for the diverse designers included as well as detrimental to the design process, and may not necessarily lead to the kind of games we aim to develop through the employment of diverse design teams.

2. Conscious game selection in formal education: this involves identifying games that model inclusive, co-operative and socially desirable civic narratives. It may be especially valuable to prioritise games that challenge stereotypes, foster empathy and simulate democratic practices. It is also essential to evaluate not only what a game teaches, but how it teaches – especially when civic values are at stake. For example, two games may aim to simulate how democratic civil societies work, but one game might simulate democratic processes through scripted – rather than interactive – events, while the other may actively involve players in democratic decision making through interactive mechanics – such as voting, or by simulating impact from decisions. The level of player involvement in these games is different and so is the outcome from engagement with them. Outside of formal education, however, the task of “curation” often falls under the realm of media screening the censorship, the discussion of which is not within the scope of this work. However, it is because of the innate complexity of such curation outside formal education that the next recommendation becomes especially important.

3. Teach and promote critical media literacy: critical media literacy equips players – especially young people – with the tools to recognise bias, manipulation and harmful ideologies embedded within media, and to do this by themselves, without

dependence on safeguards and curators (Kellner and Share 2019). Such literacy can also help counter any biases within formal education and to generally analyse, question and understand the messages conveyed through all media, including games. Educators, parents, guardians and society must encourage each other and especially the youth to critically examine this content, asking: Whose perspectives are included or excluded? What civic systems are normalised? Are alternative models, opinions, ways of life, etc. presented? Who does this serve and how? Essentially, we are encouraged to teach students to critically engage with and deconstruct any games and media that they engage with.

4. Debriefing and reflection: game-based (civic) learning is often most effective when paired or followed with structured opportunities for reflection, often referred to as debriefing. Debriefing involves discussions of the material the students just engaged with to deconstruct it, extract learning and make sense of in-game choices and outcomes (Squire 2011). Educators can also employ written reflections or home assignments depending on their goal and available resources. Some debriefing in any form is essential to help confirm that students did not overlook civic lessons or misinterpret key messages, particularly in open-ended or sandbox-style games.

5. Educator training and resources: many educators recognise the value of games in (civic) education, but essentially lack the know-how of how to use the game. Lack of training, time and uncertainty about the use of games and how learning from it can be assessed are significant barriers to using games in education. Hence, we need informative conversations around the use of games, or even the provision of training and introductions to game-based education, along with needed resources for implementation. The facilitation of such professional development opportunities requires commitment and resources from larger educational systems and perhaps the EU at large, by creating, dedicating and continuously funding programmes that train trainers and raise the practical skills of educators.

6. Digital equity: access to the technology needed to play games, whether in formal education or outside it, remains a major ethical and logistical challenge to the use of games in (civic) education. To bridge this digital divide, civic education initiatives should prioritise low-cost, cross-platform (e.g. mobile games compared to VR games) or offline games, and ensure students have the necessary physical and mental tools to engage meaningfully (Eynon and Geniets 2016). Ensuring equitable access is not only a logistical need but a civic right – marginalised students and youth should not be excluded from learning experiences because of their economic, social, racial, gender, socio-economic or disability status.

7. Building safe learning spaces: in connection with the last point, it is essential to ensure that game-based (civic) learning environments – especially online ones – are safe and inclusive. As mentioned, gaming environments can perpetuate hate speech, misogyny and radicalisation, especially online and in informal settings. Educators and game communities should work to establish and enforce spaces and social guidelines that promote respect and inclusion. Community moderation, clear behavioural norms and visible role models can help counter exclusionary or harmful dynamics (Massanari 2015). Nonetheless, these dangers cannot be fully eliminated. Our goal, therefore, is to strive towards building and maintaining safe space within

which especially minority and stigmatised groups are able to participate, and to also establish safeguards and psychological action plans for when this effort inevitably fails (Vesa et al. 2025).

Through these key guidelines – and much more than has been summarised here – we can work towards the appropriate use of games in civic education. This effort is worth it. Games offer us a unique opportunity to teach remarkable generations that not only theoretically understand civics but have experienced its different forms and impacts in a relatively safe, simulated digital environment. Such generations are likely to understand civics at a deeper level than previous generations and may become more ready to participate in and uphold democracy. This is what we stand to gain from the conscious, responsible use of games in civic education.

Highlights of the contribution

- ▶ **Games can make abstract civic concepts tangible:** games can simulate complex systems such as democratic processes, social justice or ethical dilemmas, allowing learners to more concretely experience the long-term impact of civic action or policies.
- ▶ **Games can provide a safe space for civic experimentation:** through such simulation of real-world systems and dilemmas in a low-risk environment, learners can test civic actions, explore moral choices and learn in-game, which can develop their critical thinking and decision-making skills essential for active citizenship.
- ▶ **Barriers to game-based civic education persist:** lack of access to technology, limited teacher training and rigid curricula hinder the integration of games into formal education, often further excluding underserved communities and marginalised groups from game-based learning.
- ▶ **Game-based education is not ideologically neutral:** games can promote or challenge dominant ideologies through narrative framing, character representation and implicit values, making critical media literacy essential for both learners and educators.
- ▶ **Debriefing game-based education can be imperative for civic learning:** reflection through guided discussion, writing or dialogue can be crucial for deconstructing and comprehending in-game experiences, especially when games present ambiguous or open-ended scenarios.
- ▶ **Critical media literacy is a civic necessity:** teaching learners to ask who is represented, whose voices are missing and what ideologies are communicated in games – and any media – helps them resist manipulation and interpret media more thoughtfully.
- ▶ **Diversity in design can help lower bias in game content:** diverse game design and development teams as well as participatory game design with learners can help ensure that civic education tools reflect diverse perspectives and do not reproduce the biases they aim to challenge.

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Chapter 8

Video games and consumer awareness

Alessandro Soriani, Alesha Serada

Introduction

Consumer awareness is one of the most complex and future-oriented domains of the digital citizenship education framework proposed by the Council of Europe (2019). Typically, today's consumers no longer passively enjoy products and services offered to them by companies. Even if they do, freedom of consumer choice arises constantly in negotiation of their wants and needs, and their entire identity, with producers, sellers and marketers. In the words of Zygmunt Bauman, "Consuming life cannot be other than a life of rapid learning" (Bauman 2007: 96), and this makes it a lifelong learning process. Most importantly, it is not just about choosing what the customer wants, but also rejecting unwanted options and leaving them behind.

To be a digital citizen, to move in a world such as the present one, so steeped in digital technologies and services, means to be a user who uses these spaces to shape his or her creativity, thus producing value in the form of texts, images, videos, multimedia projects and so on. Above all, it means entering a relationship with an economic system in which the role of the consumer is becoming increasingly proactive. A producer–consumer user, a "prosumer" (Toffler 1990), interfaces in a more or less conscious manner with economic mechanisms typical of digital capitalism (Couldry and Mejias 2022). This digital capitalist system produces not just goods and services, but new types of people: new citizens, creators, artists and, of course, gamers.

Navigating the market has become an even greater challenge as products and services have become both more accessible and less tangible. We are living in the age of postmediality (Colombo 2020), in which technologies and media have gradually shed their physicality, adopted new languages and transformed their economic models.

Media convergence, defined by Jenkins (2006) as the process through which previously distinct media platforms, technologies and content forms increasingly integrate within a shared digital environment, and media vaporisation, which Eugeni (2015) describes as the loss of media's physical form and their seamless integration into everyday life, have together reshaped the distribution models across the media and technology industries. These sectors have moved away from one-off physical products towards profit-maximising service models – especially subscriptions that depend on user loyalty or passive engagement. This shift has extended to the world of video games, where traditional ownership is being replaced by subscription platforms, downloadable content and microtransactions.

Educating for consumer awareness therefore means upgrading digital consumers' understanding of this new media ecology. Ordinary consumers can benefit from a framework of principles and tools that enable them to understand and move more intelligently within the economic models that govern digital services and the entire infosphere (Floridi 2017).

The video game industry has become a huge, highly influential industry within the larger entertainment industry – and also one of the first to succumb to the core capitalist logic of indefinitely increasing profits on the market. Within the framework of consumer awareness, the video game medium presents several peculiarities that can open up productive avenues for pedagogical reflection. In the course of this chapter, the mechanics of this market will be presented in order to bring out its possibilities and risks for gamers, especially the younger ones.

Today's economic models

In the Council of Europe's framework for digital citizenship education (Council of Europe 2019) consumer awareness is perhaps the most forward-looking domain. Its practical orientation is to bring long-term benefits for the next generation of digital consumers, especially the most vulnerable categories of them. On the positive side, commercially successful digital games have proven to be effective tools for fostering critical reflection, systems thinking and problem-solving skills in typical classroom settings (Caldwell et al. 2017; Staaby 2023). At the same time, both the youngest and oldest internet users are particularly susceptible to online fraud and often become targets of less visible forms of economic exploitation within games and virtual environments.

In the next sections, some of the most important mechanics of this market (Alha 2020; Soriani 2024) are presented in order to highlight the opportunities and risks for video game players.

The offer of freemium and game monetisation

In the freemium model, users download the game for free and get access to a complete and fully functional version of the title, but are encouraged to purchase additional content (Seufert 2014). In more general terms, the freemium model would also encompass episodic games with free episodes and shareware games with paid extensions; more specifically, it is often first associated with free-to-play (Evans 2015; Nieborg and Poell 2018).

The most important divide between the early freemium offer and the contemporary free-to-play model lies in the inclusion of digital goods as optional purchases that enhance particular aspects of the overall game experience. Digital goods are virtual assets sold and used within the virtual world/game (as opposed to external extensions or episodes, for example). Introduction of virtual assets sold as in-game purchases affects game design: in many games, it becomes possible to gain advantage with money. The latter is considered as unfair practice by gamers themselves (Consalvo 2009; Alha et al. 2018; Nielsen 2020), although this practice, labelled "pay to win", is implicitly accepted in the practice of "dark play" (Carter 2015) in highly competitive virtual economies as well as in "crypto games" (Serada 2024).

In present digital economies, the free-to-play model has become the least transparent, and most often involved with dark game design and monetisation patterns (Zagal et al. 2013). Although it is almost impossible to control virtual economies “in the wild”, the role and the necessity of in-app purchases should be disclosed in selling descriptions of the games that offer them to consumers (European Commission 2014).

Historically, various profit-making strategies have emerged within free-to-play games, broadly falling under the freemium model (Alha 2020: 28-9). This gave rise to the entire business of game monetisation, as an occupation and a particular set of techniques. Contemporary monetisation techniques are largely data-driven and rely on current understandings (and, at times, exploitations) of user behaviour. The primary aim of game monetisation specialists is to extract value from players – particularly those who spend real-world money on in-game purchases.

The precursor to all monetisation models, particularly popular in the 1990s, is known as shareware (or, more simply, demo). This model, largely used in those years by software houses like idSoftware, provides a trial version of the video game that can be limited in terms of content (allowing the player to try only a portion of the final game) or time (allowing the player to play the game only for a limited period of time), or that presents an alternative section to the content that will then be present in the complete game.⁴⁵

Freemium in general is a distribution model for digital games that allows players to download and play the title for free in some of its functionalities, without any upfront costs. If the game meets their expectations, the players can unlock or enable, upon payment in real money, extra features and content such as other parts of the game, aesthetic changes or new models, controllable characters, objects or vehicles (Clark 2014; Hamari et al. 2017; Paul 2020). Although players are usually given the chance to pay for assets and experiences that they could obtain otherwise, the focus in game marketing is on exclusive content that is inaccessible without payment.⁴⁶

While freemium is typically discussed in a broader context as a business model (Seufert 2014), free-to-play is primarily a revenue model and a monetisation model. The many ways to design free-to-play games have been focused on profit-making; this has led to convergence of game design and marketing, where game mechanics themselves create demand for virtual goods (Hamari and Lehdonvirta 2010). However, monetisation does not amount to exploitation, although the logic of profit-making often drives it to that.

Regardless of the particular model, successful monetisation is possible only if virtual goods and digital services create perceptible value for players. To paying users, spending a lot is not always a problem if this improves their play experience. Paying players are generally satisfied with their purchases, as long as it improves their playing

45. For example, more recently, the 2021 demo of *Resident Evil Village* allows the player to explore a location that is actually present in the original game, but playing the role of another character, effectively presenting a prologue to the events.

46. An example of this type of content can be found in *Marvel Snap*: a free-to-play, online/competitive, superhero-themed trading card game. While playing, you accumulate different types of in-game currency, which allows you to unlock new cards/characters and aesthetic changes. The game system, however, offers exclusive content which can only be unlocked through microtransactions.

experience (Hamari et al. 2017; Alha et al. 2018). This trend has contributed to the emergence of so-called “whale economies”, in which the gaming industry derives a substantial portion of its revenue from a small subset of affluent users (called “whales”) in order to subsidise content and experiences for the broader, non-paying user base (Lappalainen 2016). This model reinforces a class-based division within gaming communities, distinguishing between paying and non-paying players and shaping unequal access to in-game advantages and content.⁴⁷

There are many reasons why players may want to buy in-game content (Hamari et al. 2017). Gamers are inclined to purchase extra content to be able to experience further adventures in that imaginary world, to be able to customise the gaming experience more or simply to complete everything that that video game has to offer within its universe. These purchases can generally be grouped into three main categories, each reflecting a different motivation and impact on gameplay.

- ▶ *Aesthetic (or cosmetic) modifications*: this type of purchased content concerns new aesthetic aspects (so-called alternative “skins”) of characters, weapons, usable objects or vehicles. These skins do not in any way concern extra abilities or upgrades that the player can benefit from, but are limited to offering exclusively a graphic customisation of that element.⁴⁸
- ▶ *Power-ups*: this type of purchasable content concerns aspects of the game that give the player an advantage, thus directly affecting certain gameplay mechanics.⁴⁹
- ▶ *Time shortcuts*: this type of content allows the player to speed up progress at acquiring certain game items without having to unlock them through the usual grinding. To many players, faster advancement is worth the money (Hamari et al. 2017), although it feels like cheating to others (Lin and Sun 2011).

“Game as a service” and downloadable content (DLC)

If freemium is a business model, and free-to-play is a monetisation model, then game as a service (GaaS) is a software delivery model. The key feature of such games is that they require a continuous internet connection to be played and that they focus much of their user experience on co-operative and/or competitive online play. Building on this shared characteristic, three main models of access and monetisation can be identified within these types of online gaming experiences.

47. Some game journalists (James Stephanie Sterling, most vocally) also point out that predatory monetisation techniques are particularly harmful to neurodivergent players, targeting their attention span and impulse control.

48. In this sense, *Fortnite* is particularly interesting: it is something very close to the concept of a metaverse applied to the world of video games as it offers different online multiplayer modes. *Fortnite* is completely free and there are no purchasable items that make one player stronger than another: only aesthetic modifications (skins, animations) can be bought using in-game currency. There are two main ways to accumulate this currency: either play regularly for a fairly long time, thus unlocking the daily, weekly or seasonal goals; or buy packages with real money that contain a certain number of items, skins or directly a certain amount of in-game currency.

49. An early case can be found in the famous puzzle game *Candy Crush Saga*, which initially offered the possibility to purchase certain power-ups with real money. These bonuses helped the player in certain game situations, for example by giving them a few extra moves to complete the level, or allowing them to make certain sweets explode on the board without using traditional methods.

The first is based on the purchase of a game client – i.e. the software needed to start the video game – to access all the content that is periodically released. This content is usually free – which means that the game is updated automatically and without additional cost – but in some cases it can also be paid for. In this case, we are referring to products such as *GTA Online*, *Sea of Thieves*, *The Elder Scrolls Online* or *New World*.

The second option is based on a monthly or annual subscription that gives you access to the game and all its features. In this case, as long as you pay the subscription you can enjoy constantly updated content: new maps, new missions, new characters, new stories and so on. Games such as *Final Fantasy XIV* and *World of Warcraft* are rather illustrious examples of this sector.

The third is based on a free-to-play monetisation model: i.e. free game client and no subscription. Some of these features will be available through purchase via the free-to-play mechanisms we have already discussed, i.e. through a large number of hours of play or through direct purchase. Take, for example, titles such as *Genshin Impact* or *Honkai: Star Rail*, which are periodically updated for free with new game areas and new missions and which, at the same time, allow the purchase of new player characters (with very different characteristics that result in a significant change in gameplay mechanics).

Dedicated gaming has learned its lesson from the free-to-play market. For instance, *Team Fortress 2* moved to free-to-play in 2012, which led to a major increase in revenue. However, free-to-play revenues on consoles appeared to be less than optimal, which motivated the transition to one-time purchases accompanied by DLC, often sold for in-game currencies (unlike PC gaming, where DLC is typically sold for real-life money). This inevitably led to delivering games on the GaaS model, to be able to update them on the go.

Downloadable content is additional content created for a video game that has already been published and is sold separately – or distributed free of charge in some cases – from the original title. The type of DLC that can be found ranges from aesthetic customisations (new skins for the game's characters or for usable objects) to actual extra content such as new characters, new missions, new maps, new game modes or even entire narrative sections that can continue the plot of the main game or offer insights into facts little explored in the original title.

Downloadable content is often associated with titles centred on the solo gaming experience – such as extra content for products like *Bloodborne*, *Cyberpunk 2077* or *Resident Evil Village* that extend the story, offering new sections, new weapons and new game mechanics – although there are some exceptions involving games that make the multiplayer component one of the predominant aspects – see for example the additional character packs for *Super Smash Bros. Ultimate* or the additional tracks for *Mario Kart 8 Deluxe*.

The fact that DLC can only be purchased through digital channels allows publishers to earn more money from the sale of a video game, and in fact 1) encourages the purchase of the original product; 2) cuts physical distribution costs; and 3) makes it impossible to buy and sell DLC on the second-hand market. On the one hand, this meant that developers had more time and a more relaxed pace to work on this

content – which is certainly a positive aspect – but on the other hand, the industry quickly realised that releasing certain content as paid DLC rather than as an element included in the basic game is a much more profitable and convenient policy.

Free-to-play, loot boxes, dark patterns

At its current stage, the game industry typically favours the free-to-play model, especially for casual markets. The game itself is free, but in-game purchases are crucial for optimal game experience. These purchases are made for in-game currencies, of which there are typically more than two (double-currency and multi-currency models). Soft currencies can be earned in the game, while hard currencies can only be obtained for real-world money. Some of these are used exclusively to purchase items, others unlock bonuses without having to enable them through in-game actions and others relate to gameplay aspects that allow you, for example, to be able to carry out actions or games without having to submit to time limits.

Loot boxes

Another rather delicate element to explore is that of loot boxes, which are virtual consumable objects (i.e. can only be activated once) that are purchasable using in-game currency (which in turn can be purchased with real-life money or unlocked through game sessions). Importantly, the selection of in-game content is random, although it largely belongs to the assortment described above (cosmetic changes, upgrades, etc.). This randomness shares “structural and psychological similarities with gambling” (Xiao et al. 2022): the already discussed case of the *EA Sports FC* packages is a very fitting example since the player does not know, a priori, the content of the envelope they are opening.

According to a report produced by the Gambling Health Alliance (2020) concerning children and young video game players (under 16), it is estimated that:

- ▶ 40% have paid real money to purchase loot boxes in online video games;
- ▶ 31% have difficulty keeping track of how much they spend on loot boxes;
- ▶ 33% feel they have no control over in-game purchases;
- ▶ 15% have used their parents’ money without their permission;
- ▶ 9% have borrowed money to buy loot boxes they could not afford.

The loot box phenomenon is a source of concern not only for parents but also for regulatory bodies and consumer associations: the Norwegian consumer association (Forbrukerrådet 2023) has published a report calling for the regulation of loot boxes and in-game purchases. This work is of interest because it highlights some aspects of the loot box phenomenon that represent a risk for video game players that must be taken into consideration; they are:

- ▶ the probability of winning items of interest from loot boxes is lower than for those items presented by the game;
- ▶ the in-game currency system is capable of confusing players about the real price of loot boxes;
- ▶ the presence of aggressive marketing policies also associated with games rated PEGI 3+;

- ▶ the presence of forms of deceptive game design (such as the use of particularly aggressive dark patterns or monetisation loops) aimed at pushing the player to spend money;
- ▶ game design excessively based on grinding to push the player to pay to skip the boring parts of the game. “Grinding” is a term used in the gaming world to identify a series of simple and not particularly challenging actions that the player performs repetitively (gameplay loops) with the aim of accumulating experience points necessary to progress the character or to earn the in-game money necessary to buy items in the game;
- ▶ the presence of countdowns indicating the expiry of offers or missions to be carried out. These countdowns play on fear of missing out (FOMO), a phenomenon that makes consumers feel they have to spend money to purchase an offer before this unique opportunity is lost forever;
- ▶ the action of opening the loot boxes is considered to be a process that stimulates the production of dopamine, which pushes the player to want to repeat this action after a period of time (Cardinal et al. 2002);
- ▶ the presence of objects that can be unlocked thanks to loot boxes, which can be devalued, removed or modified at any time by the game system.

The Forbruker Radet document quite clearly associates the phenomenon of loot boxes with that of gambling, arguing that the purchase of loot boxes encourages video game players to develop a propensity towards gambling.

So, are loot boxes a form of gambling? Although Belgium is currently the only country in Europe that has expressed a positive opinion on the matter, a report commissioned by the European Parliament (European Parliament 2022) has shown that it is not yet entirely clear whether or not loot boxes should be considered a form of gambling. Moreover, loot boxes are still widespread in games sold in Belgium (Petrovskaya et al. 2025). However, it is worth noting that the European Commission itself highlights the need to introduce some actions to regulate the practice. In an open letter to the two most important trade associations in Europe – Videogames Europe (an association of European video game developers) and the European Game Developer Federation – the following requests are listed:

- ▶ clearly notify the player of the possibility of purchasing loot boxes or any other paid item containing random content;
- ▶ clearly specify the chances of winning a particular item (or a particular type of item) within the loot box offer;
- ▶ the cost of the loot box must not include any additional costs (for example, winning an item and having to spend more money to be able to use that item);
- ▶ gaming service providers should not expose players to behavioural biases or introduce manipulative and deceptive game design mechanics (for example, timed offers at key moments in the gameplay that would encourage the purchase by the player), pervasive notifications or the use of acoustic and visual signals aimed at putting pressure on the player and pushing them to make purchases;
- ▶ finally, games should not contain direct exhortations to players aimed at stimulating the purchase of paid add-ons or loot boxes.

In the discussion above, two terms associated with the world of gaming were mentioned that require further discussion: dark patterns and monetisation loops.

Monetisation loops

Monetisation loops are procedures implemented by game designers that allow developers to monetise the game. These procedures are inserted into the game mechanics, creating recursive situations (loops) that cyclically subject the user to the possibility of making purchases or performing actions that can be monetised. For example:

- ▶ every time you access the game, a screen appears on the home page offering the purchase of certain extra content to speed up the gaming experience, or to upgrade your character at a discounted price;
- ▶ every time you fail to pass a level, you have the option of purchasing these items to simplify the next match;
- ▶ every time you don't pass a level, you have the chance to get an extra try if you watch an advert.

In all free-to-play games there are monetisation loop mechanics; what changes is the way in which these mechanics are proposed to the players and how invasive they are for the gaming experience. For example, games like *Marvel Snap* or *Candy Crush Saga* are still enjoyable even if you don't spend money, but when you play them you can recognise the moments where the programmers have inserted monetisation mechanics (countdowns, offers of the day, etc.), whereas other games, like *Walking Dead: Road to Survival*, have monetisation loops that are much more invasive and impactful on the gameplay.

Dark patterns

In contrast, the concept of dark patterns does not only apply to video games but more generally to the world of user interface (UI) design. These are UI systems specifically designed to confuse users, making it more difficult for them to express their real preferences or manipulating them to induce them to perform certain actions. They generally exploit cognitive biases and push online consumers to buy goods and services they do not want or to reveal personal information they would prefer not to reveal (Luguri and Strahilevitz 2021).

Applying this mechanism to the world of video games, Zagal et al. offer a rather interesting definition of dark patterns that highlights the interdependence between the way a game is designed and the player's ability to recognise this type of mechanism: "Dark patterns are a series of game design solutions intentionally used by video game developers to cause negative experiences for players, which are contrary to their interests and which are likely to occur without their consent" (Zagal et al. 2013: 7).

These "negative experiences" are often linked to monetisation mechanisms. The authors identify three main families of dark patterns: temporal (based on time), monetary (based on money) and social (based on the player's social capital and network of contacts).

Dark temporal patterns

This category of dark pattern refers to a disruption of the time needed to progress in the game, making the player feel as if they are wasting their time while encouraging them to spend more time (or more money on upgrades) to improve the gaming experience. Within this family of dark patterns we find the aforementioned 1) grinding and 2) playing by appointment, by which some games establish either defined waiting times (minutes, hours, days, weeks) or very specific moments (a date and time) when certain events in the game are triggered.

This is the case with games where in-game time is associated with real-world time: for example, in *Animal Crossing: New Horizon* the player has to wait a certain number of days for planted trees to grow or for shops to be restocked with more goods.

Zagal and his collaborators have identified some guiding questions to help understand if time-based dark patterns are present in a game:

- ▶ Is the player able to develop an awareness of how much time is necessary to have a satisfying gaming experience?
- ▶ Do the player's expectations regarding time commitment significantly contrast with the time actually required by the game?
- ▶ How likely is it that players will feel they have wasted their time?

Monetary dark patterns

This category of dark patterns involves strategies to encourage the player to spend more money than originally planned or anticipated by the game itself. It also includes game interface design solutions that push players to purchase content at unexpected moments (such as during a loading screen between levels, or at the end of a game).

Within this category of dark patterns there are various strategies such as: 1) pay-to-skip, which is the possibility of paying to shorten grinding processes or to skip waiting times (for example, in *Farmville* you can pay to reset countdowns that you would normally have to wait for before being able to carry out a certain action); 2) pre-delivered content, that is, the release of a game with a series of content that are not accessible without the purchase of certain packages that unlock them (for example, in the basic versions of some fighting games, such as *Mortal Kombat 1* or *Super Smash Bros. Ultimate*, only a certain number of fighters are available, deliberately leaving some slots empty to suggest that there are additional characters to purchase); finally, 3) monetised rivalry, which means proposing rankings among the best players, thus pushing them to compete to climb to the top positions (in this sense games such as *Clash of Clans* or *Brawl Stars* represent perfect examples). This mechanism not only encourages players to invest more time but also more money: the aim is to unlock upgrades and better items that will give them an advantage over other players.

Here are the guiding questions to identify this type of dark pattern.

- ▶ How likely is it that the player will regret spending real money on a video game?
- ▶ How likely is it that the player will "lose count" of how much money they have spent on a game?

- ▶ Is the player aware of what they will actually receive in exchange for their money?
- ▶ What is the likelihood that the player will inadvertently spend money in the game?
- ▶ Is the player aware of how much money they will have to spend to achieve their goals in the game?

Social dark patterns

Video gaming is an activity that activates numerous social and socialisation functions. Dark patterns belonging to this category exploit the player's perception of the value of their social status (recognition, esteem, respect, but also shame) within their network of contacts. In this category we find: 1) the pyramid social scheme, which can be recognised when some games push for direct confrontation with other players in order to trigger bonuses or upgrades (in *Farmville*, for example, to get bonuses the player can include some friends as neighbours, and if they don't have any contacts who play the game, they are encouraged to ask friends, family or other acquaintances to sign up); and 2) personification of objects. Many online and social interaction games allow players to see representations of their friends (or other players) performing certain actions that are not actually carried out by them, but by the game's routines. This not only risks confusing the player but also makes them feel surrounded by people who actually play that game on an ongoing basis.

Here are some useful questions to help you understand the presence of social dark patterns within a game.

- ▶ Could the player's social position (friends, respect, etc.) undergo changes (for example, decrease) because of the game?
- ▶ How likely is it that the player will feel compelled to play mainly out of a sense of social obligation?

It is important to emphasise that the greater the players' literacy with the medium, the greater the likelihood of recognising these patterns and being less influenced by them; this is also part of educating a video game culture.

Blockchain-based games, crypto games, play-to-earn games

For the purpose of this chapter, a "crypto game" is a game that uses cryptocurrencies in its game design, and a "blockchain-based game" is a game that uses blockchain as a part of its technological infrastructure. As of now, this genre exists either as a form of gambling or "play-to-earn", that is, performing laborious tasks in the game for a reward that can be converted into real-world monetary value. There is an abundance of speculative publications that highlight how the use of cryptocurrencies and blockchains may break away from a video game market that is still rather anchored to more traditional commercial logic (Jiang et al. 2022; Nguyen 2023).

Most importantly, the concept of true ownership implies that immutability of blockchain could prevent in-game assets, DLC or entire games from being devalued or removed at a publisher's whim, without any obligation or compensation (as sadly

happens when games are delivered as a service). In contrast, the studies that rely on actual obtainable verifiable data demonstrate new forms of exploitation of cheap labour (Jirásek 2022) or forms of addiction similar to those of gambling (Scholten et al. 2019). We have yet to see immutable solutions that actually secure ownership of digital games or particular content within them.

Technological incongruency of cryptocurrencies with the realities of game design has been acknowledged even by their proponents (Kow and Lustig 2018). The most basic principles of blockchain – decentralisation and cryptographic verification – do not allow synchronous gameplay that is principally based on the blockchain platform. Workarounds such as additional layers and bridges between various blockchain and non-blockchain solutions allow integration of cryptocurrencies and non-fungible tokens into video games with a relatively lively and complex gameplay, but also represent major security issues (Min and Cai 2019).

There is, however, a relatively popular subgenre of “crypto games” that does not use cryptocurrencies and only minimally engages with the blockchain technology as such. Instead, such games use the blockchain discourse in their fictional gameworlds, sometimes with the premise that they “teach about blockchain and cryptocurrencies” or even “provide financial/economic education” to their players. This substitution of pedagogical value with onboarding to unregulated online gambling and betting platforms should be investigated, and penalised.

As of 2025, crypto games as a genre are plagued by the same issues as the earliest virtual worlds on the internet in terms of widespread fraud, scamming and unregulated gambling. These problems are direct and inevitable consequences of the ability to cash out the winnings in cryptocurrency and exchange them for real-world money (Serada 2024). For this reason, all crypto games should be subject to the same regulations as gambling, including age restrictions. The same level of personal responsibility as in gambling should be required from adult players. Potential players should be informed about high risks of fraud and other financial crimes, easily compromised technological security and the environmental unsustainability of blockchain mining, before engaging with blockchain-based games.

Conclusion – Games and economic education

Platformisation of media creates new challenges on virtual markets as well as in multiplayer game environments. Consumer awareness acquires new levels and dimensions, especially among early adopters, many of whom also represent the younger demographic of online worlds (Mäntymäki and Salo 2011, on *Habbo Hotel*). Online worlds give rise to vivid communities of dedicated gamers who make use of, and sometimes even gain profit from, participating in virtual economies. These players gain valuable economic lessons which they can apply to real life (for example research on *EVE Online*, Carter 2015). Massively multiplayer online games such as *EVE Online* and *World of Warcraft* represent a broad range of opportunities for informal economic education, as well as more casually and accessibly *The Sims* series (Kalmi and Sihvonen 2021).

Educational games and virtual environments have been used to teach financial decision making (Kalmi and Rahko 2022) such as getting loans (Liu et al. 2011). At the same time, commercial video games do not need to be overtly didactic to deliver important educational messages to consumers. Beloved by many for its cute aesthetics, the social simulation game series *Animal Crossing* implicitly introduces contradictions of mortgage, debt and acquisition of property to players of all ages (Bogost 2007). As another example, the indie game *Turnip Boy Commits Tax Evasion* features a mischievous main character who does everything the wrong way, reminiscent of Pinocchio in children's literature. Instead of representing a role model, Turnip Boy creates a playful possibility space where players can reflect about society structure, economic behaviour and consumerism. Even in casual free-to-play games, players learn about investment and fund management with amortisation of costs, and strategise their consumption in order to spend as little real money as possible. Winning the game is now about not paying or, at least, spending as little money as possible.

The game industry continues to develop and explore new technologies and creative solutions to serve its customers – from integration with social media platforms to a vast array of in-game currencies, now also including cryptocurrencies. The logic of ever-increasing profit-making influences monetisation in unethical ways, but the games themselves hold a mirror to the economic system that engendered them. A classic example of game design, the incremental game *Cookie Clicker* (2013) both simulates and mocks the impossible logic of infinite economic growth, embodied in a capitalist enterprise. Tellingly, after a decade many crypto games have tried to emulate the same logic, only now instrumentalising it in a misleading promise of real-world profit.

Habitual gamers of massive multiplayer and free-to-play games eventually learn to understand monetisation loops and dark patterns, but a casual player might not be aware of them. The lines between dark patterns and smart monetisation logic are always blurred, and game publishers tend to prioritise what generates most profit, regardless of players' well-being. However, even such dark environments may lead to consumer enlightenment, as soon as players get the entire picture of economic transactions within games and learn how to win the game without paying – hopefully, also at a larger societal scale.

Highlights of the contribution

- ▶ **Consumer awareness in the digital age:** modern consumers are proactive “prosumers” navigating a complex, digital capitalist economy. Consumer awareness, as framed by digital citizenship education (Council of Europe 2019), involves understanding and negotiating economic mechanisms embedded in digital products and services.
- ▶ **Media convergence and postmediality:** media have become dematerialised and interconnected, leading to new business models focused on services and subscriptions. This shift challenges traditional consumer understanding and requires updated digital literacy.

- ▶ **Monetisation models in games:** a range of monetisation strategies are employed, including freemium, free-to-play, subscriptions, episodic content and in-game purchases. These models blur the lines between gameplay and commerce, often targeting vulnerable users.
- ▶ **Freemium and free-to-play models:** freemium games are free to access but monetise through in-game purchases. Free-to-play games take this further, often involving virtual assets and encouraging payment for gameplay advantages, raising ethical concerns about fairness and manipulation.
- ▶ **Dark patterns and monetisation loops:** game design increasingly incorporates manipulative tactics – such as countdowns, excessive grinding and disguised costs – to push players into purchases, exploiting psychological biases like FOMO.
- ▶ **Differences between loot boxes and gambling:** loot boxes are virtual items containing randomised rewards, often paid for with real money.
- ▶ **Game as a Service and DLC:** games are evolving into continuous services requiring subscriptions or periodic payments for new content. This model prioritises long-term monetisation over traditional one-time purchases and further commercialises the gaming experience.
- ▶ **Blockchain and crypto games:** blockchain-based and play-to-earn games use cryptocurrencies, often under the guise of economic education. In reality, they pose serious risks including fraud, exploitation and unregulated gambling, demanding urgent regulatory oversight.
- ▶ **Educational potential of video games:** despite their commercial pitfalls, video games – both casual and complex – can foster informal economic education, teaching financial decision making, market behaviour and consumer awareness through immersive experiences.
- ▶ **Need for pedagogical intervention:** the increasing complexity and subtlety of monetisation in games calls for educational initiatives that enhance players' ability to identify manipulative practices, evaluate their consumption choices and build digital economic literacy.

Infobox 1 – Animal Crossing: New Horizons

Platform: Nintendo Switch

Key themes: debt, property ownership, consumer choice

How it promotes consumer awareness

- ▶ Players take on a mortgage to build and expand their homes, learning about debt cycles and long-term financial commitments.
 - ▶ The game encourages customisation and purchasing decisions, subtly introducing the consequences of material accumulation and consumer identity.
 - ▶ In-game events and time-based mechanics mirror real-world marketing tactics, such as limited-time offers, creating space for reflection on FOMO-driven consumption.
-

Infobox 2 – Turnip Boy Commits Tax Evasion

Platform: PC, Nintendo Switch

Key themes: financial ethics, taxes, systemic critique

How it promotes consumer awareness

- ▶ Through satire and humour, the game raises questions about taxation, public goods and economic behaviour.
 - ▶ It offers a playful exploration of civic responsibility and financial systems, pushing players to think critically about their own roles as consumers and citizens.
 - ▶ By breaking rules and confronting institutions, players are invited to reflect on moral choices in economic systems.
-

Infobox 3 – Fortnite

Platform: all platforms

Key themes: virtual economies, market manipulation, free-to-play

How it promotes consumer awareness

- ▶ Usually, to play online on console systems, players need to pay monthly fees (Nintendo Switch Online, PlayStation Plus, Xbox Live...) and yet, to play *Fortnite* none of these subscriptions are needed: why?
 - ▶ *Fortnite* is a free online game but it is also among the most remunerative games in gaming history: how is this possible? How is the monetisation system structured in *Fortnite*?
 - ▶ Why are players so engaged and so willing to buy new skins and cosmetics options within the world of *Fortnite*?
-

Infobox 4 – Cookie Clicker

Platform: all platforms

Key themes: capitalism, industrial production, dark humour, infinite growth

How it promotes consumer awareness

- ▶ The game is famous for its dark humour, raising such complex topics as capitalistic growth, work exploitation and global warming.
 - ▶ Still, the game rules and its logic are inherently enjoyable, which allows it to deliver the educational message in a less direct and yet more effective way.
 - ▶ If one had to build an infinitely successful business, what sacrifices would have to be made? What lines would be crossed? Would it be even possible to reach the end goal?
-

Ludography

- ▶ Amazon Games Orange County (2021), *New World* [video game], Amazon Games.
- ▶ Blizzard Entertainment (2022), *Overwatch 2* [video game], Activision Blizzard.
- ▶ Blizzard Entertainment (2023), *Diablo IV* [video game], Blizzard Entertainment.
- ▶ Bungie (2017), *Destiny 2* [video game], Bungie & Activision.
- ▶ Capcom (2021), *Resident Evil Village* [video game], Capcom.
- ▶ CD Projekt RED (2020), *Cyberpunk 2077* [video game], CD Projekt.
- ▶ DashNet (2013), *Cookie Clicker* [browser game], Julien Thiennot.
- ▶ Devolver Digital (2020), *Fall Guys* [video game], Mediatonic.
- ▶ Electronic Arts (2023-), *EA Sports FC* [video game series], Electronic Arts.
- ▶ Epic Games and People Can Fly (2017), *Fortnite* [video game], Epic Games and Gearbox Software.
- ▶ FromSoftware and SCE Japan Studio (2014), *Bloodborne* [video game], Sony Computer Entertainment.
- ▶ King.com (2012), *Candy Crush Saga* [Mobile game], King.com.
- ▶ miHoYo (2020), *Genshin Impact* [video game], miHoYo.
- ▶ NetherRealm Studios (2023), *Mortal Kombat 1* [video game], Warner Bros. Games.
- ▶ Nintendo (2016), *Mario Kart 8 Deluxe* [video game], Nintendo.
- ▶ Nintendo (2018), *Super Smash Bros. Ultimate* [video game], Nintendo.
- ▶ Nintendo EPD (2020), *Animal Crossing: New Horizons* [video game], Nintendo.
- ▶ Nuverse (2022), *Marvel Snap* [mobile game], Second Dinner.
- ▶ Psyonix (2015), *Rocket League* [video game], Psyonix.
- ▶ PUBG Studios (2017), *PlayerUnknown's Battlegrounds* [video game], Krafton.
- ▶ Rare (2018), *Sea of Thieves* [video game], Microsoft Studios.
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Chapter 9

Gaming disorder: a history of an ecological niche

Veli-Matti Karhulahti⁵⁰

Introduction

In a renowned study in philosophical psychiatry, Ian Hacking (1998) analyses historical cases of “hysterical fugue” in the 1890s. The condition emerged as a type of wandering where a person lost their memories and identity, leading them to travel across cities in a literal search for themselves. The era is now historicised as the fugue epidemic of western Europe, which lasted until the early 1900s. The diagnosis was abandoned afterwards. People with similar symptoms are today treated for dissociative amnesia, known to be often triggered by a traumatic experience. Hacking coins the term “transient mental illness” to address such medical conditions of a sociocultural “ecological niche”, a condition produced by a specific time and place:

some types of mental illness and some arrangements of symptoms are central at some times and places and absent in others, even in the history of one fairly continuous culture – they exist only at a time and a place. I argue that one fruitful idea for understanding transient mental illness is the ecological niche, not just social, not just medical, not just coming from the patient, not just from the doctors, but from the concatenation of an extraordinarily large number of diverse types of elements which for a moment provide a stable home for certain types of manifestation of illness. (Hacking 1998: 13)

In this chapter, I offer a comparable analysis of a recent diagnosis – gaming disorder – which fills a new ecological niche as a mental disorder due to “addictive” video game play in the *International Classification of Diseases* (11th edn), which defines psychiatric practice in many EU countries. In the tradition of critical history, I organise the relevant literature to make the following interpretations. First, gaming disorder emerged in the 1980s and 1990s under diverse labels to serve a societal function of capturing both adaptive and maladaptive strategies of individuals to whom technological changes caused deviant forms of behaviour. Second, when the disorder was made official in the 2010s, its ecological niche had already shifted, returning to the conceptual confusion from which it was born decades earlier.

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The motivations of these analyses evade normative debates about what experts should have done about gaming disorder, and rather derive from my curiosity for understanding how the events unfolded. Hence, the chapter is historically descriptive and philosophically inquisitive. Although I have arranged the text chronologically from identification and measurement to formalisation to treatments, the events did not follow a rigid timeline but overlap, as you will be frequently reminded.

1980s to 1990s – Identification

For a long time, the liaison between play and addiction has been perceived as a positive one. In an introductory address to St George's Hospital Medical School – published in the *British Medical Journal* almost a century ago – Langdon Brown provided a rich analysis of the development of cross-species biological science and notes that only “man is the supreme grown-up play addict” (Brown 1935: 3). Phrases like this serve as predecessors to the later labelling of “positive addictions”, such as those listed by Glasser: “swimming, hiking, bike riding, yoga, Zen, knitting, crocheting, hunting, fishing, skiing, rowing, playing a musical instrument, singing, dancing, and many more” (Glasser 1977: 6). The discourse of the time also involved critical viewpoints, such as Morgan's case studies of “negative running addicts” for whose health the sport was considered harmful (Morgan 1979).

When technological progress led to the proliferation of computer-based play activities in the 1980s, it was but natural that the ongoing conversations on negative addictive behaviours would extend to them as well (Levison et al. 1983). Initially, this could be seen in major changes in the *Diagnostic and Statistical Manual of Disorders* (DSM), which continues to be used as a guide for psychiatric diagnosis, especially in the US. In the 1980 edition, DSM-III enabled diagnosis of “pathological gambling” as an impulse control disorder (Rosenthal 2020) and “sexual addiction” was added as a temporary label to the revised DSM-III-R in 1987 (Reay et al. 2015). Such fluctuations reflect the era's conceptual uncertainty regarding several activities that were evidently part of some cases of clinical distress, yet in shifting roles with significant variation. In a visionary reading of the multiplying discourse of addictions as a reflection of societal symptoms, Hatterer observed:

A society's psychopathology has its roots in the society's changing familiar, social, and goal-directed patterns as they shift and fluctuate over a span of time. Our society has become increasingly one of polarized excess. Our excess and preoccupation with them are reflected in the rapid growth in a short time of the number of people in it who can be characterized as addictive ... People now refer to themselves as being addicted to food, smoking, gambling, buying, forms of work, play and sex. (Hatterer 1982: 149)

We can witness the emergence of the discourse of “addiction” in psychiatry as the first critical vector contributing to the present ecological niche formation since the 1970s and 1980s. The conclusion drawn by Marks in an influential editorial echoes the spirit of the time: “It is useful heuristically to regard a wide range of repetitive behaviours as addictive syndromes, whatever their external triggers” (Marks 1990: 1394). Playing video games was an expected addition to such external triggers,

especially after medical case studies of gaming-induced physical injuries, such as finger and hand pain (Siegel 1991), started to emerge.

The addiction discourse was not merely a terminological matter, as demonstrated by the changes in pathological gambling. In the 1990s, gambling was still diagnosed as an impulse control disorder, but DSM-IV (1994) reformulated its criteria to match substance use and symptoms like “tolerance” made it coherent with how other “addictive” disorders were diagnosed. Eventually, DSM-5 (2013) moved the condition from the section of impulse controls to addictive disorders; and the other major psychiatric manual, *International Classification of Diseases* (ICD-11) followed in 2022. The gradually growing frame of addiction formed a looping effect: psychiatrically relevant problems related to gambling and other behaviours were treated and theorised through a lens of substance use, and people with such problems began to see their behaviours increasingly in such a way, namely, as addicted (Hacking 1995).

In this context, the first scientific case studies of gaming disorder were published in the 1980s under miscellaneous names. In a case series, Ross et al. (1982) identified a group of three men playing *Space Invaders* “obsessively” just before getting married. During that time, the individuals visited the arcade some 15 times per week until losing interest in the video game, which would likely be considered a non-problematic period of intensive gaming by today’s standards. A year later, Soper and Miller (1983) explicitly use the term “addiction” when describing a case of a student who excessively played *Pac-Man* for an unknown period of time, yet developing mental and physical symptoms such as anger, guilt and “shakes”. The authors thus infer:

Symptoms of videogame addiction [in] university clients proved similar to other addictions: compulsive behavioural involvement, lack of interest in other activities, association mainly with other addicts, and, in this particular instance, failing grades due to diminished school activity. (ibid.: 40)

Similarly, Kuczmierczyk et al. present a case study of an 18-year-old who sought treatment for self-diagnosed addiction due to having spent 3-4 hours per day in the arcade, which cost him US\$5 daily. Because of the above, the authors note that “compulsive video-game playing may be regarded as a form of pathological gambling such as racing, dice, cards, or slot machines” (Kuczmierczyk et al. 1987: 186). This and other previous examples illustrate how gaming, and specifically that of video games in the arcade, was rapidly identified as an addiction construct, while closely associated with other behaviours such as gambling. At the end of the decade, Shotton summarised the situation in what became the first book on addictive computer use:

Anecdotal reports [also] implied that a wider society recognized such a syndrome. Such colloquial terms as “computer addicts”, “machine code junkies”, “microholics”, “hackers”, and “micromaniacs” were used to denote people who were considered by others to use computers excessively. Such reports suggested that this apparent dependence upon, or “compulsive” use of, computers could have deleterious consequences, especially upon the social relationships and academic achievements of the young. (Shotton 1989: 1)

When internet use started proliferating in the 1990s, this introduced yet another complication: it remained unclear whether the identified problem-relevant construct

should be associated with computers, the internet or gaming. Nevertheless, both researchers and the public seemed to have identified a new clinical construct that, despite its messiness (Stepney 1996), many deemed in need of more attention.

1990s to 2000s – Measurement

The early case studies tended to voice a shared concern over the increasing popularity of computing activities, but efforts to quantify the newly coined pathological construct(s) did not proliferate before the 1990s. As part of her pioneering work, which was already cited above, Shotton was the first to systematically interview and survey people identifying as “addicted” to or “dependent” on computers (not gaming in particular). Based on the results, she observed patterns of behaviour and personality in the dependence-identifying individuals, concluding as follows:

In all generations, there have no doubt been object-centred, shy people who have turned away from human relationships, have subjugated their emotions, and have resorted to solitary activities to find satisfaction. However, never before has there been an activity such as computing which could give the distinct impression of providing companionship ... while attempting to cope in a world geared to successful social interaction, they were able to relax, and via the keyboard were able to achieve the type of stimulating encounter – the need to control the computer is neither neurotic nor pathological, but provides an admirable means of coping for those who may previously have felt inadequately fulfilled. (Shotton 1991: 229)

Shotton’s interpretations were far-sighted on multiple levels. At the same time when she observed computer and video game use as an activity that resonates with specific personality traits – psychiatrists would later refer to this by symptoms of ADHD, autism and social anxiety (Carpita et al. 2024) – she also paved the way for later self-medication models as well as those based on culture and adverse childhood experiences (Kardefelt-Winther 2017). Thereby Shotton laid a foundation for understanding how new technology shaped an ecological niche for groups of neurodiverse and coping individuals, and her mixed methods findings remain fairly consistent with our contemporary understandings of gaming disorder.

Perhaps the first major attempt to statistically measure gaming-related health problems was that of Sue Fisher (1994) who adapted the DSM-IV symptoms of pathological gambling and replaced the activity with “video game playing”, by which she referred to arcade gaming in particular. An important detail of this early self-report measure is Fisher’s attempt to stay faithful to the parallel construct of pathological gambling. Items like “needed to spend more and more money in order to achieve the desired excitement” reflect how money remains her concept of interest, albeit gaming had already left arcades and new generations of home consoles (Nintendo, Sega, etc.) thrived globally with the PC. Fisher specifically concludes her psychometric results to support the idea that “arcade video game playing is a behavior which resembles pathological gambling” (Fisher 1994: 551).

The most influential steps in measurement were taken after the mid-1990s by Kimberly Young. Starting from her “case that breaks the stereotype” – as the study of a 43-year-old woman was titled (Young 1996) – and a monograph series of other cases (Young

1998a) where computers were used intensively, she established a new construct: internet addiction. Thereby, Young distinguished different types of use, only some of which, such as multi-user dungeons (MUDs), represented video games. Having built her understanding on actual case studies, she knew that the problems people experienced were not typically driven by money but rather manifested as conflicts in social, occupational and other domains. Even though her diagnostic questionnaire was also adapted from pathological gambling, it did not (unlike Fisher's) focus on money but on time use.

Young's (1998b) questionnaire formed a basis for numerous similar scales, which were developed in the following years. This measurement trajectory – that had taken a direction in the 1990s – saw explosive growth in the 2000s. For example, the Chinese Internet Addiction Scale (Chen et al. 2003) and its revision (Tao et al. 2010) were based on Young's criteria, and became frequently applied measurement tools especially after the Beijing Military Hospital formalised their diagnosis in 2008 (see later).

Numerous video game-specific measures were developed as well, which led researchers to evaluate national and global rates of epidemiological prevalence. In one of the earlier studies, Grüsser et al. measured children's gaming habits in Germany and – based on criteria such as playing two or more hours daily – suggested 9.3% prevalence of "excessive engagement". Even though the authors employed items adapted from the DSM-IV, their interpretations of the data followed a stress coping model:

the excessive usage of computer and videogames is seen as a rewarding behavior which can, due to learning mechanisms, become a prominent and inadequate strategy for children to cope with negative emotions like frustration, uneasiness and fears. [The] data suggest that excessive computer and videogame players use their excessive rewarding behavior specifically as an inadequate stress coping strategy. (Grüsser et al. 2005: 188)

Of all gaming-specific scales, the Game Addiction Scale (Lemmens et al. 2009) eventually became the most popular. After a decade, the scale had already been applied in 61 studies to survey approximately 100 000 people (King et al. 2020). However, as it turned out that the formal ICD-11 criteria for gaming disorder – which were introduced a few years later – significantly differed from previous addiction components, the Gaming Addiction Scale was soon abandoned by most experts and replaced by new scales based on DSM-5 and ICD-11. Before ICD-11 was taken into clinical practice, no fewer than 32 unique measurement scales were in active use, which collectively suggested meta-analytic estimates of 1-2% gaming disorder prevalence globally (Kim et al. 2022).

Mirroring the issues in the previously discussed construct identification process, the unclarity of *what* has been measured carries over to the prevalence literature. Meta-analytic studies do not usually distinguish between "gaming disorder" and "internet addiction" – let alone their numerous versions – which means that global estimates typically represent all sorts of internet-related problems. Moreover, due to the linguistic history of "game" and "gaming" – words that also refer to gambling in English and many other languages – it appears that the majority of epidemiological estimates continue to include individuals who suffer from gambling problems as well (Karhulahti and Auranen 2025; Adamkovič et al. 2025). The situation is further

complicated by the increasing trend in the video game industry to utilise gambling-type designs (King et al. 2015), which, in turn, can make it difficult to draw clear lines, especially in mobile games.

Taken together, it is possible to see two parallel trends in measurement development. On the one hand, there were attempts to transform previously identified case studies of actual (elusive) clinical phenomena into psychometric language and explain them theoretically, for instance, by self-medication models. On the other hand, the very phenomena comprised a wide range of different technology uses that were associated with diverse types of clinical and non-clinical problems, which led the field to be populated by numerous distinct constructs and their corresponding scales (Karhulahti et al. 2021; King et al. 2020). Ultimately, an illusion of consensus surfaced: most experts agreed that technology and gaming were relevant to some people's health problems, but the measurement and theoretical understanding of such scenarios remained stagnant. The dominant frame of addiction made it difficult for researchers to explore alternative models.

2000s to 2010s – Formalisation

The first major steps in the formalisation of gaming disorder were taken in China, as the Beijing Military Hospital established its own criteria for internet addiction diagnosis in 2008 (Bax 2013). Despite the term “internet addiction”, most such patients appear to have been treated for their gaming. The hospitals in China had received treatment-seeking people with such concerns since the early 2000s, but now the formalisation of the criteria became a significant event nationally:

The decision to designate Internet addiction a clinical disorder elicited concern from parents and scholars, and ignited a debate between two leading Internet addiction specialists, Tao Ran, who introduced the clinical criteria, and Tao Hongkai, who considered Internet addiction to be an issue of reform through education and persuasion – in China, mental illness is heavily stigmatized, and many parents, though desperate to address their children's excessive Internet use, balked at the idea of labeling them mentally ill. (Szablewicz 2020: 59)

The fact that China paved the way for formal diagnosis (based on the addiction frame established mostly by American case studies) reflects the techno-cultural conditions that ultimately enabled formal diagnoses to emerge. It is useful to address these conditions as another niche-building vector, next to the ongoing surge of “behavioural addictions” in general.

Since the 1970s, China had operated by a one-child policy that limited families to a single child in order to prevent overpopulation. This often led families to set enormous pressures on their solitary child, which arguably became a key factor in China's push to diagnose gaming and internet use. For many families, their child was destined to study hard, work hard and take on various social responsibilities – which was not a good match with computer use that was unlikely to accrue cultural, financial or other forms of capital that measured societal success (and survival). The high pressures to perform were a probable cause of significant stress for many children, for whom gaming, ironically, served as easily available

self-medication. Based on ethnographic data collected with Tao Hongkai over a decade-long addiction education process, Bax recaps:

Internet addicts come from maladaptive home environments containing stress- and distress-producing conditions (parental divorce, neglect, absence, violence, illness and death), part of which is a result of the “failures” they are having trying to meet both their parents’ and Chinese society’s educational expectations. What we also see is the way in which they then use the Internet and Internet games as a mechanism to deal with these stresses and expectations ... what is thought to be Internet gaming disorder appears to be socially deviant behavior. (Bax 2016: 234, 252)

The notion of deviancy is critical, and I return to it later. A few years after China’s diagnostic criteria, the 5th edition of the DSM was published in 2013. Although “internet use disorder” had been planned to be included in the appendix, for unknown reasons, the DSM-5 working group changed the word “use” into “gaming” and thus established “internet gaming disorder” as a condition for further study (see Ferguson et al. 2020). At this point, according to the American Psychiatric Association (APA), more research was still needed because the literature “suffers from a lack of a standard definition from which to derive prevalence data [and] understanding of the natural histories of cases” (APA 2013: 796).

Considering the unclarity between gaming, gambling and other computer or internet use problems – as well as the more general issues of measurement that were discussed earlier – it is easy to comprehend the APA’s statement. Alas, a decade later the World Health Organization (WHO) felt that the literature was finally sufficient to include gaming disorder in the upcoming ICD-11. The representatives of the WHO working group listed three caveats to their decision:

First, the guidelines include only a few essential requirements, making them practical for use in multiple settings by different health care practitioners. Second, the guidelines do not include withdrawal and tolerance, as these are not relevant to gaming. Third, the emphasis on functional impairment is key for differentiating between people with gaming disorder and the large proportion of individuals engaged in intense or persistent patterns of gaming (e.g. 20-30 hours per week) without experiencing associated negative consequences. (Billieux et al. 2021: 198)

The above quote voices pragmatic reasoning, which builds on the premise that formally diagnosing gaming disorder can help individuals with related problems. The exclusion of tolerance and withdrawal symptoms as well as the explicit differentiation of nonpathological excessive play also distance the diagnosis from general addiction models, which can be considered an important step forward from the addiction frame that kept dominating research for the first decades.

Nonetheless, the narrowing of the diagnosis to gaming left a part of the field empty-handed, as other cases of technology and internet-related problems (online porn, short videos, social media, etc.) were not included for diagnostic support. Furthermore, despite the term “gaming disorder” and exclusion of some addiction components, the diagnosis was inserted to the category of “disorders due to addictive behaviours” and thus maintains an identity as an addiction in both clinical and colloquial language (Reer et al. 2025).

In DSM-5 and ICD-11, the assessment and decision-making processes remain unclear but also scientifically uninteresting. A diagnostic entity like gaming disorder is not a matter of fact or fiction but a sociocultural phenomenon whose inclusion in any diagnostic manual follows political and pragmatic reasoning in specific societal contexts. In cultural contexts where the DSM and ICD manuals are not in explicit use, diagnoses may reflect regional culture. For example, in South Korea, the local *Korean Standard Classification of Diseases* (KCD) still continues to discuss the potential inclusion and exclusion of gaming disorder. In other words: the diagnostic criteria established in China (2008), the conditional annexation of internet gaming disorder to DSM-5 (2013) and the formal classification of gaming disorder in ICD-11 (2022) do not reflect scientific progress as much as sociocultural processes.

2010s to 2020s – Treatments

Even though the development of treatments logically follows formalisation and is thus presented here last, numerous clinics for health problems related to gaming and the internet had already been opened in the 1990s. Perhaps the most well-known of those is the Center for Internet Addiction established by Young in 1995, a year before her forging case study (Young 1996). She refined cognitive behaviour therapy into a specific “internet addiction model” (CBT-IA), which was designed to help people who met her newly invented diagnostic criteria (Young 1998a).

China soon followed and started actively treating internet addiction in the beginning of the 2000s. In most cases, the patients were children and adolescents, brought to treatment centres by their concerned family members. For example, the mean age of participants in the oft-cited criteria development study was 17 (Tao et al. 2010). One estimate suggests that, by 2009, more than 300 Chinese institutions offered treatment for gaming and internet addiction (see Jiang 2022). Many of the treatment programmes utilised their outcomes for scientific publication, but the quality of the studies does not allow proper evaluation of those early treatments (Liu et al. 2012). Nonetheless, many institutions, parents and probably patients too acknowledged internet addiction as a concept, which reflects the looping effect in action (Brus 2013). A label had been established for individuals and groups to identify with.

A central factor that complicates the analysis and review of any such treatments is once again the plurality of means to engage with the internet. Considering that problems related to porn, social media, videos and other forms of internet content (in addition to video games) collectively constitute internet addiction, it is theoretically unlikely that a single treatment programme would yield consistent outcomes. On the other hand, because people who seek treatment for gaming and internet-related problems also tend to have other mental disorders with unclear causal chains, almost any high-quality therapeutic relationship may help such individuals to improve their lives (Flückiger et al. 2018). Cognitive behavioural therapy, which remains the most prevalent therapeutic approach to anxiety, depression and other common mental disorders, is unsurprisingly now the most frequently applied treatment for gaming disorder as well (Wildt et al. 2025).

In a study that was carried out with a Finnish outpatient treatment service, we found that 42% of those who had sought treatment did not meet the DSM-5 based

gaming disorder criteria (Karhulahti et al. 2023). Qualitative analysis suggested that people sought help for various gaming types and diverse reasons, namely: social reasons (e.g. conflicts in family or romantic relationships), existential reasons (e.g. loss of meaning in gaming or life), practical reasons (e.g. loss of sleep or money), self-perceived addiction (e.g. inability to control emotions or time) and a general wish for support. The reported proportion of treatment-seekers who meet DSM-5 gaming disorder criteria was nearly identical to Korean treatment centres (36%), with the authors highlighting that, in Korea, a “large proportion of these participants sought treatment under pressure from their family members or on the advice of friends” (Starcevic et al. 2020: 32). Treatment effects continue to be difficult to quantify as long as diagnostic constructs do not match well with treatment-seeking.

In summary, various forms of treatment have come to be provided for gaming disorder around the world, and it is possible that they are useful for people who need help for different kinds of problems. Nonetheless, it remains unclear whether specific treatments for gaming disorder have potential benefits in comparison to existing, well-tried therapeutics (Bean 2018). A reasonable alternative would be to develop training programmes for therapists to educate them about the changing cultures of gaming, which could help them build trust and, consequently, good therapeutic alliances for practice.

Transient mental illness in an ecological niche

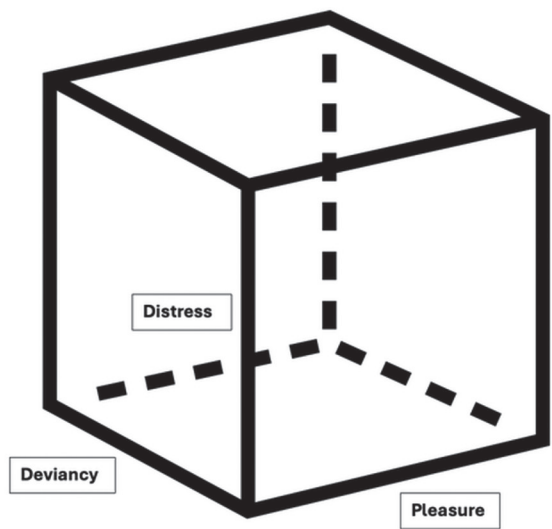
In the preceding sections I have shown how the recognition of gaming disorder has followed a path from identification via case studies to quantification by psychometric measurement and, finally, formalisation by authoritative diagnostic manuals and treatments. The process has been driven by two central vectors, which I have referred to as addiction frames and techno-cultural conditions. The former is characterised by the all-purpose rhetoric of “addiction” – especially in American and British medical discourse since the 1970s – which started serving as an explanatory model for various “deviant” ways in which people engaged with common activities. The latter is characterised as a societal clash between established cultural norms and increasing technological attachment, which ensued especially in countries like China and Korea, where increasing societal pressures were imposed on young people in the 2000s. The current discussions, as also in the EU, manifest in this historical context.

The addiction frames and techno-cultural conditions formed an ecological niche, which led to the formation of “addicted gaming” as a psychiatric construct under diverse, evolving labels. The events that took place from the 1970s to the 2020s thus represent an era that was favourable and natural for a diagnostic construct like gaming disorder to emerge – as reasoning for a changing world especially in countries with high societal pressure on the young. This reasoning, in turn, generated a looping effect: a wave of targeted research from such countries and a point of identity reference for both individuals and their close ones. As such, gaming disorder reminds us of Hacking’s (1998) analysis of transient mental illness a century earlier. Similar to “hysterical fugue” in 1890s Europe, gaming disorder is an arrangement of symptoms central to our specific time with local concentration in Asia, but with global impacts now also reaching Europe.

The perspective of transient mental illness does not imply that gaming-related problems are not real or that people who seek treatment for their gaming do not need help. Conversely, the problems can be very real and the people who seek treatment should be supported appropriately, keeping in mind the vast range of life scenarios that often benefit from different treatment approaches (associated with underlying health problems, such as unprocessed traumas). That said, a core part of what has made gaming disorder manifest in the present time and space is the dimension of deviancy, namely the degree to which an individual's gaming diverges from the norm in a specific sociocultural and temporal context.

Paraphrasing Kingma's 1997 cultural analysis of gambling, gaming disorder can be modelled as a three-dimensional construct where distress (as experienced harm) and pleasure (as experienced well-being) are supplemented by locally defined deviancy (see Figure 9.1). Gaming disorder diagnosis is not culture-free, but involves an assessment of whether the specific type of play is "normal" to a person in their context. Deviancy can manifest as specific beliefs in a culture, such as the stigma of being a "gamer" among Indian young men who are expected to grow up into adults with specific careers and marriages (Snodgrass et al. 2021). Similarly, the deviancy of gaming could be associated with local views of what activities are appropriate for women, or the status of esports as "real sport" worth intensive practice. A scenario where experienced distress is low but deviancy and pleasure are high produces cultural dissonance (Snodgrass et al. 2014).

Figure 9.1. Three-dimensional model of gaming disorder where biopsychosocial diagnosis is supplemented with a cultural dimension of experienced deviancy.



When WHO confirmed the formalisation of gaming disorder in the 2010s, the conversation among experts had already shifted from gaming-related health problems to other deviant behaviours, such as those of smartphone use (Orben 2020). The proliferation of social media, short videos and various gamified applications (for example dating, learning and crypto apps) represent the ongoing technological

evolution where features of gaming continue to find new forms. As I write this in 2025, the surge of large language models has resurrected yet another technological concern – parasocial relationships with virtual characters (Turkle 1984) – which might be the next in line for addictive behaviours “in need of further study.” So far, the persistent focus on deviancy in “gaming” has thus made it difficult for researchers to understand why certain designs relate to certain problems.

None of the above is to overlook the problems that some people have experienced with video games like *World of Warcraft* since its 2004 release. Rather, the point is that *World of Warcraft* as a technology is already outdated, and technologies will find techniques to engage people in similar but new and intensive ways. The concept of gaming disorder did not exist before video games became popular, and its relevance will diminish when new technologies overcome video games in popularity later. Like “hysterical fugue”, history is likely to remember gaming disorder as a transient mental illness, which thrived when the conditions in its fleeting ecological niche were right.

Conclusions

Four decades ago in DSM-III (1980), pathological gambling was initially generalised as a problem of “impulsivity”. As Rosenthal now reflects on that history: “the concept of impulsivity that was intended to unify the disorders was the source of problems” (Rosenthal 2020: 162). Just as the understanding of gambling disorder was first limited by representing yet another form of all-encompassing “impulsivity”, so the present framing of gaming disorder is limited by its conceptualisation as an addiction among others. The concept of addiction, which is intended to unify diverse behavioural problems of today’s ecological niche, remains a part of the problem that it tries to solve. Accordingly, we noted some years ago how the:

challenge of “gaming disorder” – perhaps unlike those of anxiety and depression – is that the human-technology relationship is rapidly ever-evolving and will remain difficult to domesticate into stiff nosological structures. (Karhulahti et al. 2023)

Learning to model technology-related treatment-seeking without “addiction” and “gaming” frames is likely to take the field to its next discoveries. An improved understanding of culture-specific cases and design interaction theories might reconstruct gaming disorder into very differently organised diagnostic classes, which presently may have – as Woods (2007) sagely pointed out – “merely by convention, been termed games”. Just as Hacking’s “hysterical fugue” was eventually explained in terms of dissociative amnesia in response to a traumatic experience, so a similar fate is likely to await gaming disorder when we are eventually able to see engaging forms of design through better-organised conceptual approaches to technology.

Highlights of the contribution

- ▶ Psychiatric research on gaming emerged in the 1980s. Many new phenomena from arcades and computers to consoles were mixed in the discussion.
- ▶ Pathological gambling, which had previously been perceived as an impulse control problem, was reconceptualised with “addiction” symptoms in the *Diagnostic and Statistical Manual for Mental Disorders* (DSM, 4th edn) in 1994.

- ▶ The proliferation of the internet in the 1990s further complicated gaming psychiatry. The topic drifted under the general label of internet addiction(s).
- ▶ Sociocultural changes in countries like China and South Korea led to a rapid increase in attention given to various informal internet addictions in the 2000s.
- ▶ In 2013, the *Diagnostic and Statistical Manual for Mental Disorders* (DSM, 5th edn) added internet gaming disorder as a condition needing further research.
- ▶ In 2022, the World Health Organization formalised diagnosis of health problems related to video games as gaming disorder under “addictive behaviors” in the 11th *International Classification of Diseases* (ICD).
- ▶ Along with the historical evolution of gaming psychiatry over 40 years, new media/technologies such as short videos, social media and various gamified applications have come to play significant roles across societies but lack diagnostic acknowledgement.
- ▶ It is possible that gaming disorder represents a temporary solution (i.e. transient mental illness) for dealing with sociocultural and technological shifts in the present time, which affect different societies to different degrees.
- ▶ With sociocultural and technological development in the future, the diagnosis of gaming disorder may change or merge with other diagnostic practices to better accommodate individuals’ new adaptive and maladaptive strategies.

Infobox 1 – Distinctions between gaming (disorder) and gambling (disorder)

Background: historically, the words “gaming” and “gambling” were synonymous in English. Still in the 1990s, the widespread academic definitions of “gaming” referred to playing betting and gambling games, such as slot machines. For this reason, psychiatric research on gaming before the 2000s typically utilises terms like “video game addiction”.

Turning point: when online games became popular in the 2000s, the word “gaming” gained a new meaning (in English) as playing video games in particular. Over the years, online games start integrating various gambling-like features, such as loot boxes and other randomised rewards. While the meaning of “gaming” has changed from gambling to also include video games, the video game industry has moved from traditional video game designs increasingly towards gambling.

Practice: today, gaming and gambling disorders are the only so-called addictive behaviours in the 11th International Classification of Diseases. Although they are conceptually distinct (“gaming disorder does not involve the betting of money or other valuables with the hope of obtaining something of greater value”), in many languages, as in English, the distinction remains vague and the increasing inclusion of gambling-like features in video games can make drawing the line between the two difficult. Current epidemiological estimates of gaming disorder are likely to be inflated due to being mixed with gambling disorder.

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