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D3.2 Scenarios for the Cultural Expansion of Games

Developed by the Gaming Horizons Project Team

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Introduction

The scenarios collated in this report are, primarily, an online output, and they can be viewed on https://www.gaminghorizons.eu/scenarios/. The scenarios are a key deliverable of the Gaming Horizons project. Their purpose, as per the Grant Agreement, is to "illustrate how to expand the use of games for socially relevant purpose, offering guidelines and best practice descriptions of a research-based model for SSH, ICT industry and civil society". The scenarios (and the accompanying Manifesto, D3.4) are the culmination of a programme of work that started in December 2016. Over a period of 14 months, the Gaming Horizons team reviewed the current state of the art in game studies, game-based learning and gamification research, carried out primary research through interviews with 73 informants, and engaged with stakeholders from five stakeholder groups, i.e. categories representing specific interests and goals associated with the development, the study and the use of video games. The stakeholder groups are: educators, researchers, policy makers, young people/players, and developers.

The scenarios are the result of an explicit objective: to present policy recommendations and practical guidelines based on evidence and an intense consultation process, which nonetheless are accessible and articulated in an engaging, non-specialist language. The use of story vignettes ad comics is informed by a clear communicative principle: visual, narrative and artistic methods open up possibilities for thinking about and representing complex topics. The scenarios should therefore be considered as 'hybrid texts' consisting of written language and other graphic content as a means of exploring theory, evidence and representing recommendations and advice not in abstract, but as a form of 'lived experience'. Moreover, the scenarios should be considered as 'live outputs' which will be updated and expanded over the coming months with additional resources,

links and through the continuation of Gaming Horizons' dissemination and stakeholder engagement through social media.

The scenarios were developed through an iterative process involved the entire Gaming Horizons team, striking a careful balance between primary evidence, research literature and a degree of creativity. During the design phase, the team found that the use of narratives and comics greatly enhanced the scenario's ability to convey opportunities, risks, recommendations and practical advice. Each scenario follows a similar, rather self-explanatory, template. The online format affords a 'non-linear' reading through the use of taxonomies, where keywords and audience types act like tags and categories respectively. These will display lists of scenarios which are relevant to a particular audience, or which have been tagged with a particular keyword.

Motivating through gamification

"Students take on the role of lawyers in a simulated legal case, so they have to take sides with a client who presents [legal] problems. We have two elements that stimulate motivation: on one hand there's the logic of competition [...] and then there's cooperation..." Quote from interview with Educator – ***EI03.***

Keywords: competition, Formal education, Gamification, motivation

Who will find this scenario particularly interesting? Educators, Policy makers, Researchers

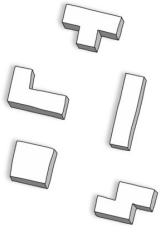
Description

In the research literature, gamification is seen as the application of game design elements in non-game contexts, where the elements do not constitute a fully-fledged game (Deterding et al., 2011). Although the term has come into general use only quite recently, basics elements of gamification like accumulating points and earning badges have been employed for years in different contexts, such as commercial loyalty programs.

In recent years, gamification has gained momentum within the business, corporate management and wellness sectors, and has raised interest in the academic and educational domains as well.

Undoubtedly, the key aspect driving researchers to analyse gamification in education is its potential for boosting motivation and engagement.

In their literature review, Hamari, Koivisto, & Sarsa (2014) report positive overall results in terms of perceived motivation, engagement and enjoyment of learning tasks, but stress that negative outcomes may also be present, for example stress due to increased competitiveness among students, or distraction from learning objectives.



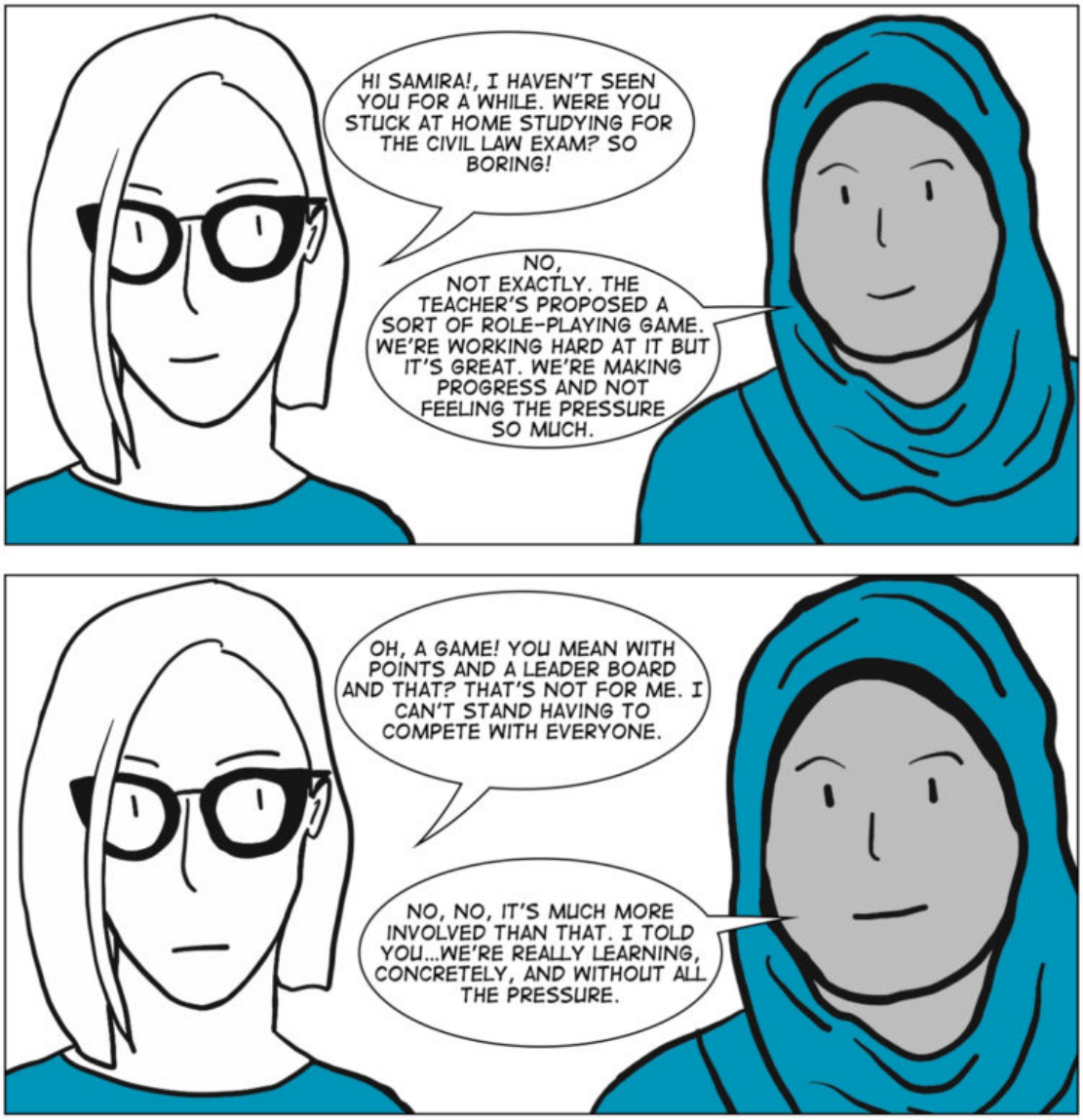
The discourse around motivation informs the literature on game-based learning globally, with almost general agreement about the positive motivational power of games. That said, there is considerable debate about the different types of motivation game elements foster, be it intrinsic (internal drive to perform an

action) or extrinsic (drive triggered by external influences), as well as the impact each of these may have on learning (Deci et al., 2001).

This scenario deals with the issues of motivation and competition, portraying the potential benefits of carefully designed gamification. It's inspired by an example of meaningful gamification reported in the research literature (Nicholson, 2012), in which conventional gamification elements like points are integrated with deeper game elements like narrative and challenges (Enders & Kapp, 2013). Here, extrinsic incentives trigger intrinsic motivation in some learners. It also highlights that whilst competition with peers can have a negative impact on learning, it can also stimulate motivation. Example of this include inter-team competition and the sense of achievement generated when learners complete a challenge.

Meet Carla and Samira, law students

Carla and Samira are two friends studying law at university. They've just met up in the law faculty corridor and they're having a chat about university life. Carla knows that Samira has taken civil law and she's curious to know how her course is going. Carla herself took civil law the previous year and found it really hard going: it's a demanding subject calling for hours and hours of study. In the end she had to repeat the final exam several times before she managed to pass. It was particularly tough because she found civil law boring and had no feeling for the concrete application of what she was studying. This year, though, Samira is attending the course with a new teacher who's restructured the course. After the first month, the teacher introduced a sort of a game that simulates an entire legal case. The students are playing the role of lawyers and have to complete some tasks in the effort to win the case.



Now Carla wants to know more about the approach. When she was at high school, a teacher tried to introduce something similar but it was all about earning points to boost your position in the final ranking. This made her feel frustrated and stressed because she really doesn't like being compared with her classmates. No way did earning points motivate her to study.

Samira tells Carla how different her experience is from that. The teacher set up a complete legal case, with a client who comes to a law firm for help. In this way, the students are fully immersed in a legal battle. They all work together in teams so that no one is left out. An assistant lecturer represents the opposition, and a real judge plays the role of the judge. So there's no competition among the students themselves. The teams work on tasks that reflect the actual steps taken in legal cases and the students behave like real lawyers, studying the law and drafting all the necessary documents. In this way, they gain a real working knowledge of the civil law code. At the end of each task, each group presents its work in the form of a document, or is involved in a simulated judicial hearing. All the team outputs are assigned a grade and feedback is given. So each of the teams proceeds in the case but the final outcome depends on how they perform. The positive aspect is that all the groups can, in principle, win the case if they complete the tasks satisfactorily. Carla sees how completely different Samira's experience is from her own, and appreciates the way the professor is approaching the subject. Nevertheless, she points out that, at the end, there's still an exam on the civil law code to pass, and it won't be all fun and games like the playful experience Samira is engaged in now. Samira agrees, but explains that the game gave her the opportunity to experience a concrete application of the code and so now she's more motivated to study it, however daunting it may be. In the end, she reveals that actually she's quite a competitive person and so the approach suits her well.

In a nutshell

The application of gamification in education is a fairly new approach that needs to be analysed further. Benefit would be gained from more rigorous studies investigating aspects like the mapping of the game elements in relation to individual learners and also to specific contexts, as well as short and long term outcomes. Researchers and policy makers should invest along these lines.

Gamification should be carefully designed so to make the most of gaming motivational power.

Gamification is a way to design a playful learning environment that can host a comprehensive learning path. Designing and implementing a gamified experience, possibly entailing blended (online and face-to-face) interactions, is a **feasible undertaking for individual teachers**, whereas digital game development requires a range of professional skills. Gamification also lends itself to progressive and manageable cycles of design, deployment and validation.

Competition can create stress and harm collaboration, therefore its integration in learning environments should be preceded by careful consideration of the specific application context. Ideally, it should also take different forms.

Competition can be a suitable game element to include in gamification, preferably in the form of personal challenge to achieve a goal, or as part of a mixed collaborative/competitive strategy.

Resources

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- Karl Kapp: Competition and cooperation in gamification
- Medium: Intrinsic vs Extrinsic Motivation in Games

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Alternative Framings for a new role of gaming in education and society

Menu

Arts and Entertainment Games Research

'[Interviewer] You say you've tried to get your games to academics to test, how has that worked out? Has it actually happened?

[Developer] No, it has not. […] Maybe it's a money issue, maybe it's the time, […]. I think the resources are probably pretty limited for people' – *Quote from an interview with a developer.* ***LSD28828.***

Keywords: Art, Entertainment, institutional funding, serious games

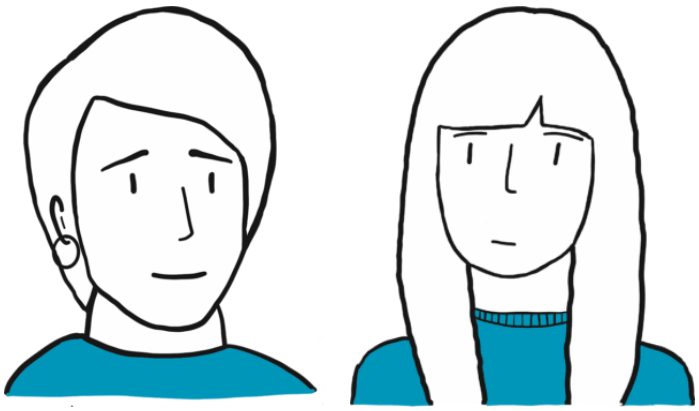
Who will find this scenario particularly interesting? Developers, Policy makers, Researchers

Description

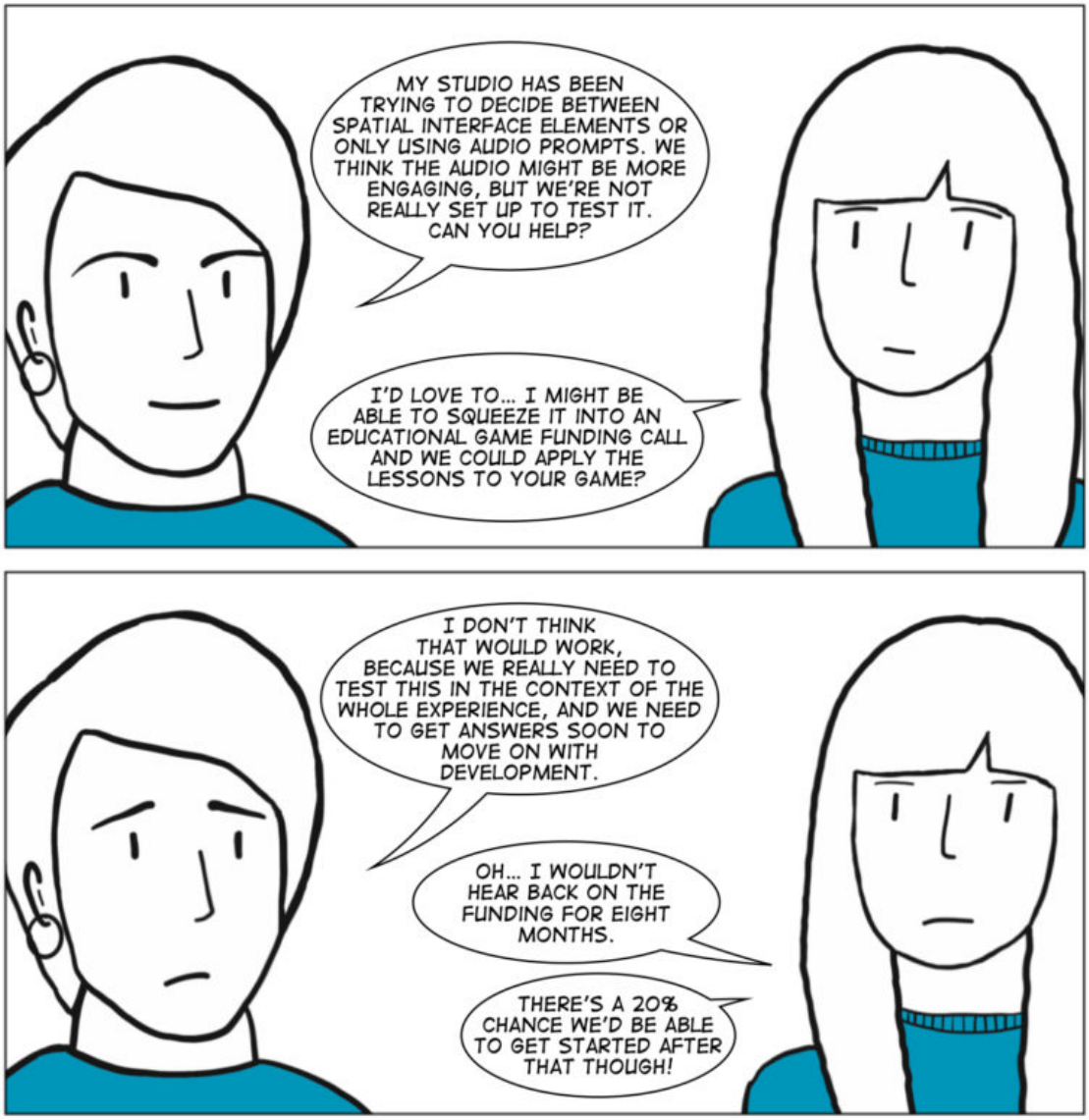
During Gaming Horizons research, it emerged that opportunities for applied and fundamental research into serious/applied games differed sharply from those for arts/entertainment games. Games research was most commonly situated in instrumentalist contexts, such as their direct and measurable impact on learning or antisocial behaviour, and rarely in the context of their creative, expressive, or artistic possibilities. From an industrial perspective, there was no sense of established collaboration with researchers, nor any sense that a change

was impending in this relationship. The work of academic researchers appears to be entirely out of touch with the arts and entertainment games sector. The systematic review of EU funding policies showed a strong emphasis on viewing the video game industry as an engineering sector, with research entirely focused on tools development and generally directed towards the serious/applied sector. Interviewees strongly criticised both the relevance and effectiveness of this research funding strategy to support the political, economic, and cultural needs of the EU. Researchers (and any developers that wish to work with them) are currently heavily restricted to working in the framing of the serious/applied sector, despite the widespread doubts about this sector's effectiveness shown by the Gaming Horizons interviewees.

Meet Silvia, a game developer, and Juana, a researcher



Silvia's studio has some immediate questions they need to examine in the context of the whole experience that they are trying to create. Trying out the systems in another game might give them a clue, but an educational game is aiming for a different player experience so the results wouldn't be easy to apply to Silvia's work. The length of time for results would be a big problem for them too: Silvia's studio wants to get results in a matter of months, not years. If Juana could be funded to work directly with the studio and on their immediate problems then she would be able to help, but at the moment nothing can be done.



Unfortunately, after this disappointment, Silvia is unlikely to bother asking again and she is left feeling like researchers have nothing to offer her industry.

In a nutshell

Current funding for research into the arts and entertainment video game industry is entirely inadequate to the needs of the artists and developers.

- Removing arbitrary delineations between serious/applied games funding and arts/entertainment funding would allow more interchange of knowledge and creative approaches to the use of gaming technologies.
- Showing recognition in research funding calls for the cultural impact of games (beyond only technological and economic impacts) will open avenues of both applied and fundamental research into video game development.
- Fundamental aspects of video game development (design, visual arts, animation, audio, programming, production, storytelling methods and technologies, consumer hardware, etc.) need to be explicitly supported to enhance the creative range and strength of the industry. This is a necessary long-term investment to supporting the future competitiveness of European games development when compared with other global regions.
- Applied collaborations of research with industry partners need to be done on game-production timescales, not academic/administrative ones, and so funding calls must reflect the fast-changing and unpredictable nature of creative industry requirements – year long application and review processes are entirely inadequate for the needs of the video game industry.

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Gambling and dark design

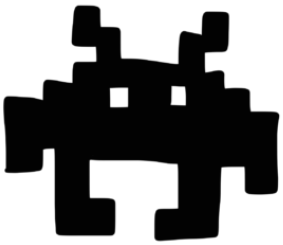
"The problem is a lot of the [free-to-play] games do use the gambling style mechanics to generate an addiction to try and maximise the revenue from those players. So done well with the right game, I don't think free-to-play is a problem at all. But like anything it can be used irresponsibly." – *quote from an interview with a developer.* ***LSD28783.***

Keywords: Ethics and Games, Gambling, Gamification

Who will find this scenario particularly interesting? Developers, Educators, Parents, Policy makers, Researchers

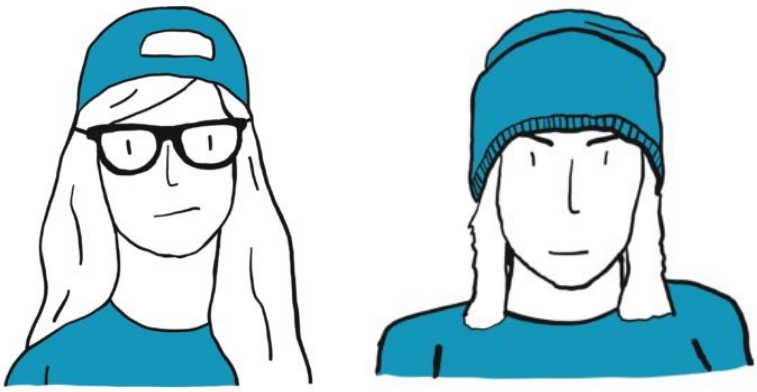
Description

While academic research demonstrated a bias towards studies of violence, developer and player stakeholders in particular were more concerned about the manipulative application of psychological principles linked to dopamine triggers in the brain. These were referred to broadly as 'dark design patterns' and commonly tied to paid activities, such as compulsive buying of in-game goods or creating gambling-related reward systems. These systems frequently exist in legal grey-areas. For example, under British law the purchase of 'loot crates' (random collections of in-game items that may significantly improve the player's performance) is not considered gambling because the player cannot 'cash out' their winnings (i.e. sell the in-game items), but other



countries have varying legal perspectives on this. Regardless of perspective, many competitive games rely on small loot-crate-esque purchases to bring in the only source of revenue that the developers get, so changing the legal status of loot crates may have a profound impact on many game developers; however, the methods of stimulating purchases can be done in a variety of ways, on a scale from fair to manipulative. When implemented unfairly, these systems can result in heavy financial burdens for vulnerable players. The loot crate idea, and other systems like them, are not a priori manipulative, but the presentation and surrounding systems may make them socially problematic. Careful evaluation and tracking of such systems is likely to be a much more urgent concern for the future ethical status of video games than scare-mongering stories about violence.

Meet Karen and Davide, players of an online multiplayer warfare game



Karen and Davide have been playing online together for a few years. They both have two jobs to try and make ends meet, so playing a free game online in the evenings is a cheap way of relaxing. Characters in the game can be slowly made stronger, but there's a random chance of getting a big boost to your character if you pay for a loot crate. Most of the crates have only minor improvements in them, but occasionally a bigger benefit will be in there and many players want to accelerate their characters' growth to win more fights.

While some players may have enough money to spare to invest in virtual in-game goods, not everyone does. Some games are purposely balanced to entice players to buy a random loot crate in the hope that the reward will enhance their overall enjoyment of the game. However, each purchase is a gamble that might pay off, and if it doesn't players can feel like it is worth spending more to have another chance of success. Various social mechanisms, variable-ratio schedule reward systems, game design choices, balancing of league competitions, and other techniques can be applied to push players to spend their money. These psychological techniques are linked to both gambling and addiction, and may affect players differently. Without sufficient current research, it is hard to say whether vulnerable players may particularly be negatively impacted, or if there are appropriate precautions that game developers could take to maintain their livelihoods without the risk of damaging or exploiting their players.

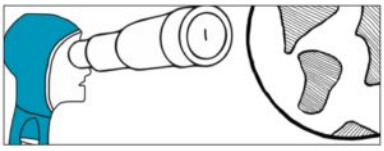
In a nutshell

The ethical spotlight in video game research is often pointed at violent games, but other aspects of game design would benefit from ethical study. Dark design patterns that exploit or

manipulate players need to be closely examined with a balanced review that can guide developers away from using them either intentionally or accidentally.

Studies into past and present systems of monetisation and compulsion-inducing gameplay should be conducted. Great care needs to be taken to recognise the complexity of game systems and balancing: loot crates and many similar aspects of game design are not automatically unethical, and neither are free-to-play games, but aspects of their content and context may lead them to be exploitative or manipulative. Such studies will need to be conducted with the assistance of industry professionals who can assess and the multiple subtle ways in which such systems are implemented across the whole game experience, not only as an isolated systems. Such an isolation would result in flawed or binary moral/immoral judgement that does not match the nuance with which such systems can be integrated into games; such an outcome would not benefit the industry, nor would it contribute to potential guidelines.

Resources



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Bridging the research-development gap

"I must admit I don't read academic papers on games. To be honest, I'm not sure where I'd go to find them if I did"- *Quote from an interview with a developer.* ***LSD28830.***

Keywords: dialogue, knowledge sharing

Who will find this scenario particularly interesting? Developers, Researchers

Description

Game development and social sciences research on games seem to run on parallel tracks, and rarely inform each other. Our understanding of games is weakened by the disconnect that exists between the people who study games and those who create and sell them. While a perfect alignment of priorities between industry and academia may not always be possible, or eve

n desirable, both worlds can benefit from sharing expertise and resources with each other.

In our own research, this disconnect was more acutely felt by developers, who overwhelmingly reported feeling very distant from academic social sciences research on games. They found it difficult to access findings because of unfamiliarity with both the dissemination channels (i.e. scientific papers and academic conferences) and for the technical language used in the contributions themselves. They also reported dissatisfaction with the pace of academic research, seen as too slow in the face of a constantly-changing industry. Lastly, they told us of a mismatch between their priorities and those of researchers: the kind of questions investigated by social research often focus on the educational outcomes of serious games and offer fewer insights that could be used for commercializing entertainment games. On the other hand, the

developers interviewed wished for more psychological and humanities research on games, especially on the narrative aspects, and were keenly interested in the discussion of game-related findings in non-academic contexts.

In this scenario, we sketch some possibilities for fostering closer collaboration between academic researchers and entertainment game developers. These forms of collaboration should respect the differences in priorities between the different stakeholders: the goal is finding a way to adapt academic research to a particular context without compromising on its values, and possibly making it more efficient and incisive. On the other hand, the need for developers to gain clear and applicable findings should be understood and taken into consideration.

In the wake of the Open Science Movement, we propose a form of industry-academia collaboration that can generate benefits for both parties and push forward research on entertainment games by embracing the most challenging aspects of studying a widespread, rapidly-changing phenomenon.

Meet Emily, a researcher and Robert, a game developer

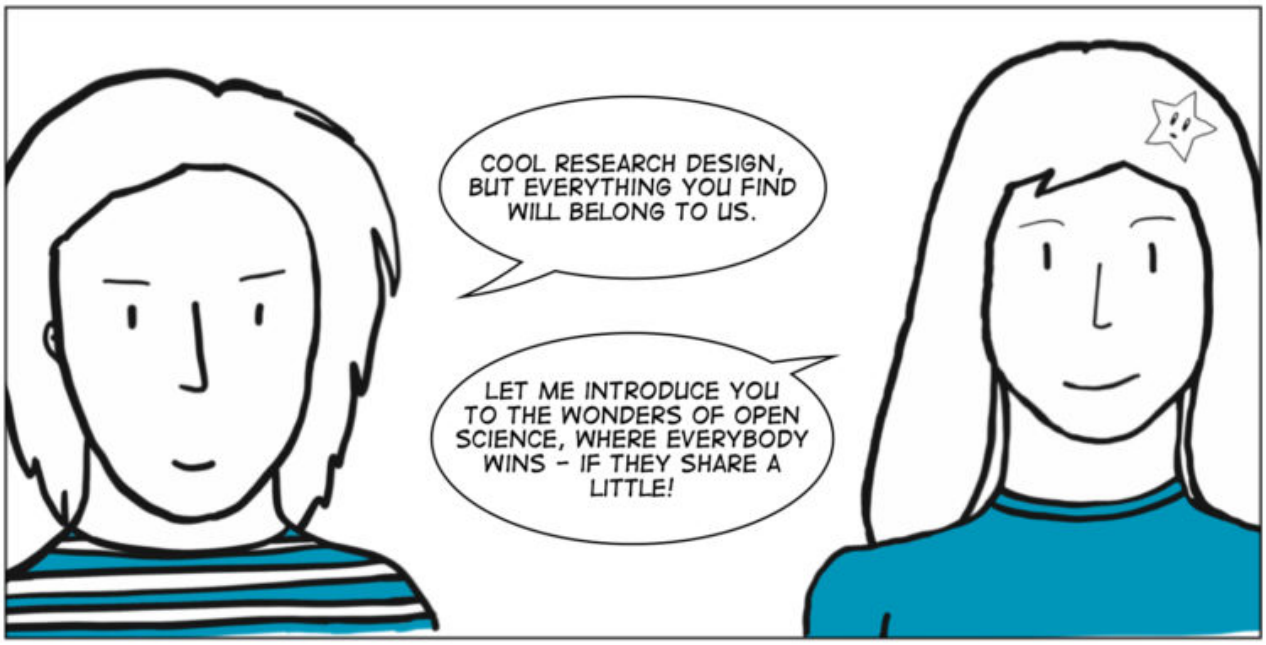
Emily is a social psychologist in the US, especially interested in studying factors related to discrimination of outside groups. She believes her studies have applicability to real-world problems, such as finding ways to dampen factors contributing to racial prejudice.

Her work is mainly based on lab experiments, in which participants are randomly assigned to groups that compete in tackling several tasks. In her studies, she explores how modifying different contextual variables (such as group size and composition, level of competition, difficulty and type of tasks to be completed) influences verbal aggression between different groups. However, she worries that the laboratory setting is negatively impacting the validity of her results. Her participants mainly comprise highly-educated psychology students, who tend to be self-conscious about their behaviour during social science experiments. Additionally, engagement in the tasks to be completed is sometimes low: some of the subjects participate as a personal favour, but find the activities boring and find it difficult to enter in a competitive mindset.

After discussing her concerns with some colleagues, Emily identifies multiplayer games as a possible way to obtain ecological data on group-based competition and discrimination. In a game, participants would be highly engaged in the activity itself. Furthermore, since many players conceptualize games as a 'free space' in which they can behave naturally, they are less likely to restrain themselves for social concerns. However, in order to obtain the data she needs, Emily has to have access to the game code itself.

Emily contacts Robert, who works for a game company that developed a Multiplayer Online Battle Arena (MOBA), proposing a partnership between the company and her university. They are a large company and have some capacity for investigating new approaches to improving their game without interrupting their core business model and production cycles, a possibility that a smaller company is unlikely to have. While discussing the proposition with the developers, however, it becomes clear to Emily that Robert expects his company to get something in return for their collaboration. One possibility would be to directly pay for access to the data, but that would take up a significant proportion of Emily's research budget . She proposes instead to offer her expertise and labour in return, by helping design a system for reducing in-game verbal aggression.

Robert is interested in her proposition, because it would help increase player retention in his game. However, he is worried about access to research results, and he informs Emily that the company will want exclusive access to findings obtained through the data. Emily's priority, in contrast, is to disseminate her findings as widely as possible, by publishing them in Open Access papers and presenting them at international conferences.



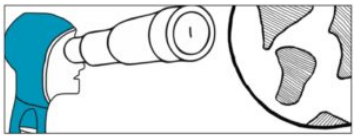
In order to make the collaboration successful, Emily writes and proposes an agreement that goes into great detail about the issues she most cares about: what kind of data should be collected, which of the data and analyses should be made publicly accessible, which kind of findings will be her own intellectual property, and how players are to be informed of the research conducted on their behaviour (and be clearly given the option to opt-out at any time). Robert and his coworkers add their clauses to the agreement, specifying what kind of analyses they expect in return, the terms of Emily's consulting tasks within the company, and what information about the game should be considered confidential.

In a nutshell

The general disconnect between academia and industry is real, and it is particularly acute between those who research video games, and those who develop and sell them.

Researchers and developers can find ways to establish meaningful and mutually beneficial industry-academia collaborations. A degree of negotiation and compromising may be needed, and the terms of the collaboration can be formalised in simple, easily drafted agreements inspired by the principles of Open Science.

Resources



- The Open Science Framework provides free and open source project management support for researchers. As suggested in the scenarios, it can assist developers and academics in establishing a common platform and collaboration.

- Several video game publishers are interested in research, but this is exclusively (narrowly) marketing research.

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Funding and supporting games as culture

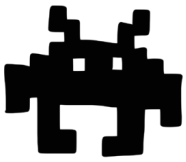
"I think any entertainment game can be defined an applied or serious game the moment they can touch somebody's feeling, so, I don't know, I feel [...] that there should not be that much separation between entertainment games and serious games, to be honest" *– quote from an interview with a developer. LSD2879*

Keywords: cultural value, dialogue, institutional funding, serious games

Who will find this scenario particularly interesting? Policy makers

Description

Who decides what is serious and what isn't? Nowhere more than in the gaming industry does this question cause frustration and confusion. The contested and arbitrary nature of such a label has bee

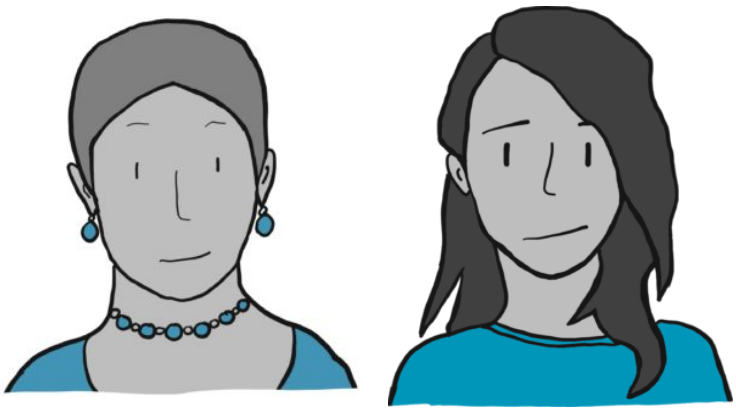


n noted by others before. Gaming Horizons simply confirmed it. It is perhaps understandable that, when it comes to taxpayer money, many worry that funding should be highly selective and not go to projects that may be perceived by the general public to be frivolous.

At the same time, our research on European funding highlighted some unclear strategies in relation to serious and applied gaming. It was difficult to tell if Europe wants to support serious gaming because it is right and ethically justified (according to criteria of social value), or because it is viewed as a promising sector that will contribute to economic growth and more jobs.

The contradiction at the heart of this tension should not be underestimated. Some argue that criteria of social utility, value and worth are best negotiated in the context of citizenship and democratic dialogue, while prioritising the market and economic benefits over everything else will ultimately lead to cultural impoverishment and trivialisation.

Meet Sanna, an EU Policy Advisor and Kim, a game critic



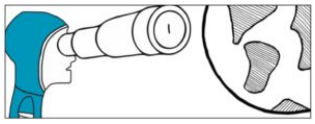
Sanna is a policy advisor who has been working with the EU for more than 10 years trying to bring a multidisciplinary perspective into the EU Research & Development (R&D) agenda. Such multidisciplinarity is reflected in her own background in philosophy and engineering. Sanna is very much interested in matters of social responsibility and ethical design – she has focused on the grand socio-technical challenges such as AI, big data and automation. Recently, she was assigned to a working group who will help shape the European agenda on serious gaming and gamification. The overarching objective of all R&D strategies in Europe is to create favourable conditions for innovation, market growth and employment, and this applies also to serious gaming. Quickly, however, Sanna becomes aware of a contradiction: while market growth and a self-sustaining business model may be the aspiration, the European serious games sector relies heavily on public funding. Sanna is struck by the contrast between the dynamism of the 'entertainment' gaming industry, in touch with the trends, debates and the cultural tastes of modern society, and a serious games industry that exists in a rather insulated space, where academic research and small or medium-sized companies depend on institutional support to survive. As part of her new role, she organises a consultation workshop to gather views from a wide range of stakeholders, beyond the traditional EU-funded networks. Participants include independent game developers, representatives from game publishing companies, and a video game critic called Kim. Kim is an outspoken advocate of independent games and digital arts, and quickly makes a thought-provoking observation about cultural value, commercial viability and 'seriousness'. She claims it is possible to create games which wouldn't necessarily be called 'serious', but which nonetheless are important and have cultural, artistic and societal relevance. Most importantly, she suggests that cultural and artistic relevance are not commercial constraints, but can in fact ensure forms of market viability which are perfectly suited to small and medium sized companies. Kim proceeds to illustrate several examples of small, culturally important games that managed to be profitable. She also emphasises the importance to engage with those mediation and curation channels (online communities, digital distribution platforms, games journalists, YouTube content creators) who can enhance the visibility of games and, thus, their commercial success.

In a nutshell

Criteria of social, artistic and cultural value can be part of an effective business model for games 'with a conscience', beyond restrictive labels such as 'serious' or 'recreational'.

Artistic and cultural relevance are not barriers to commercial viability but can in fact enhance market appeal in some cases. Public funding is still needed to support game developers or researchers that seek not only commercial success but also positive social impacts. However, criteria of social, artistic and cultural value should have more weight than they currently do in funding strategies. These criteria should not be viewed as fixed but can be negotiated through regular consultations with relevant stakeholders.

Resources



- Hellblade, Senua's Sacrifice is a successful 'independent AAA' games released in 2017. The game deals with difficult themes of mental health, while still being a compelling and artistically accomplished gaming experience. The game was developed by a core team of around 20 people.
- Cultural value may appear like a slippery term, but there is a body of knowledge that examines its definition and a multidisciplinary approach to measurement. Funding strategies about gaming (a cultural medium, not just a collection of technologies) could take this knowledge into account. Take, for instance, this recently concluded project funded by the UK' Arts and Humanities Research Council

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Game literacy in the curriculum

"I feel like our school system […] is not very game friendly in any way, shape or form. I think that's a big problem. I think they really need to start – because there's so much tremendous opportunity there."- *Quote from an interview with an educator.* ***PE02***

Keywords: Formal education, Game-based learning, Literacy, serious games

Who will find this scenario particularly interesting? Educators, Researchers

Description

Many of those who took part in our interviews enthusiastically described the ways in which video games *could* be employed for educational purposes, but it was clear that these are often talked about as *opportunities* that are not yet being fully realised. In part, these ideas of what we are calling 'game literacy' involve enabling students to understand games; how they are

conceived and constructed, the lives and stories that they represent, the cultural and global context in which they are created, even giving young children hands-on opportunities to develop their own games. In addition, interview participants talked about games as multimodal texts that can be actively read but also 'lived' and experienced by players, as a cultural and empathy-building experience.

Drawing on our interviews and workshops, these ideas are framed in relation to particular understandings of literacy, rather than necessarily being aligned with the computing or information technology aspects of the school curriculum. As such, these perspectives focus on multimodality and cultural enrichment, underpinned by the need to develop an alternative understanding of literacy. This involves the educator valuing (and being enabled or even *permitted* to value) multiple modes of meaning making, moving beyond common conceptions of school-based literacy that involve only written texts and rigidly defined outcomes.

These understandings of literacy already exist and are established in the field of new literacies and multiliteracies, through the work of James Gee, Brian Street, The New London Group etc. However, they are

not the dominant conceptualisations of literacy that are currently being drawn upon by policy makers, who tend to favour a skills based approach that generates measurable outcomes.

In the first dimensions of this scenario, therefore, we envisage a classroom that is open to the use of video games as educational resources and experiences, working around existing curricular restraints through a generous interpretation of the curriculum. In the second dimension, we strive to imagine an educational system bolstered by policy which actively acknowledges the cultural value of video games and even *encourages* their use, drawing on the extensive research around new literacies as a basis for creating this shift.

Meet Simon, a primary school teacher

Simon is a primary school teacher in the UK, in his fourth full year of teaching. He is currently responsible for a class of 27 ten-year-old children, as well as coordinating Literacy across the school. He enjoys his job and has developed a positive rapport with his class. In part, he attributes this positive relationship to the fact that he values the interests of the children and strives to make his teaching relevant and interesting for them. He is aware that many (but not all) of the children in his class are regular users of technology at home and feels that his classroom, and the school more widely, should reflect and take account of this 'real world' situation.

Faced with a Literacy curriculum that makes no mention of using technology – let alone games – in lessons, Simon has nevertheless made his classroom a place where videogames are valued as a relevant cultural resource alongside other media such as films, books, and other print media. He has used games on various occasions, thinking of them as 'texts' that contain and generate meaning, in similar ways to more traditional print based texts. He has used video games as a stimulus for descriptive writing (using the visually intriguing exploration game 'Myst'), explored the idea of personification (using the independent, narrative puzzle game 'Thomas was Alone') and helped children to create their own text based games (using the free game creation software called 'Twine'). He has also run a club at lunchtimes where children play 'Minecraft' on the school iPads, working together in small groups to create virtual play spaces. He is always enthused by the social interactions that this generates during the club.

Many other teachers in the school are less confident with using games in their classroom. However, through a series of staff meetings, Simon has introduced them to some possible ways in which video games could be brought into their classrooms often with little technical knowledge on the part of the teacher. This often involves the use of paratexts – print based and video texts that refer to video games – rather than directly using the games themselves. So, in other classes, teachers have been encouraged to supplement their existing resources with 'how to' guides for popular video games such as 'Assassins Creed', and even use video trailers for games in lessons as a means of discussing issues around critical literacy. As a result, the literacy curriculum experienced by the children is one enriched by a mixture of traditional texts with video games and other media from popular culture.

All of this has only been possible with the support of the headteacher, who believes that teachers should be encouraged to innovate in order to provide exciting, relevant learning opportunities for pupils.

Meet Andrea, Educational Policy Maker and Curriculum designer

Andrea has a role in designing the literacy curriculum for primary school children in the UK. As part of a new government assembled team, Andrea has listened to teachers, educational professionals and researchers. They have expressed concerns that the existing curriculum is limiting the opportunities for teachers to deliver exciting, relevant and innovative literacy lessons that reflect the way in which literacies (as social practices) are lived and experienced in the 21st Century. Having grown up playing video games herself, Andrea also has a good sense of the cultural significance of the form and understands that video games have a potentially significant role to play in the lives of children, at home *and* in school. At school, this involves educating children about video games, as well as using video games as a educational resource, all

the while encouraging and promoting a critical approach – just as learning in school traditionally involves teaching *about* books, and *using* books.

With this in mind, rather than being driven purely by outdated notions of literacy simply as a pre-defined set of skills to be taken on by children, Andrea and her team develop a curriculum that takes a broader view of literacy. Amongst other things, this supports teachers in understanding and using video games as multimodal texts with multiple affordances. This refined curriculum includes examples of the ways in which specific video games could be used by teachers as rich, multimodal texts that allow children to explore ideas of narrative and character; to consider issues of representation and motive in games; to explore the ways in which different game environments and settings influence or interact with the player. Suggestions on how some games can be used in social contexts can encourage teachers to look beyond outdated and limiting notions of video game play as a purely solitary pursuit; instead, teachers can consider how collaborative play experiences offer their own educational potential. There is also suggestion that paratexts around video games can provide excellent resources for prompting creative responses, written, spoken and *performed* by children alongside, of course, more established and traditional print based texts.

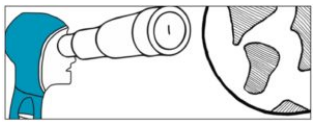
As well as being framed as texts to be read, video games are also positioned as artefacts to be remixed and created by children, alongside other visual and audio media. This ranges from early stages of design, through to hands-on video game creation, afforded by pre-existing and specially commissioned software designed to scaffold the game creation process for younger users. This curriculum is published online, featuring a significant interactive repository section that enables teachers and educational professionals to upload and link their own resources and ideas, making this a truly collaborative vision for an innovative and exciting curriculum that can finally be considered *'game friendly'.*

In a nutshell

There is a significant and relatively untapped potential for using video games in educational contexts, often held back by the restrictions posed by standardised curriculum requirements.

This has been a recurring theme throughout the project, with the overarching recommendation being that we all need to move beyond the realm of 'serious games' to include what might otherwise be considered 'entertainment' games into the classroom. This process of inclusion has more to do with literacy, than with the computing or information technology aspects of the school curriculum.

Resources



- Blog post on Minecraft Club
- Interviews Report: 3.3.2.2 Literacy, narrative and gaming's potential for education and cultural expression
- Cathy Burnett and Guy Merchant: The Challenge of 21st Century Literacies
- Fiona Maine: Monument Valley in the Classroom
- Andrew Burn: Mission Maker
- Cathy Burnett: Literacy and New Media
- D.A.R.E: Playing the Archive
- Catherine Beavis et al.: Serious Play
- Assassin's Creed
- Kodu
- Minecraft
- Myst
- Thomas Was Alone
- Twine

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Partners

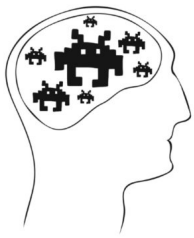
Games at home: inclusion & special needs

"I had a student on the autistic spectrum [who] really struggled … you put him in front of that video game and … he became the person everybody wanted to work with… he became the superhero in that classroom."- *Quote from interview participant.* ***EE01***

Keywords: Accessibility, Differently Abled, Diversity, Ethics and Games, Gender, Inclusion, Many diverse games, Special Needs

Who will find this scenario particularly interesting? Developers, Policy makers, Researchers, Young players and their families

Description



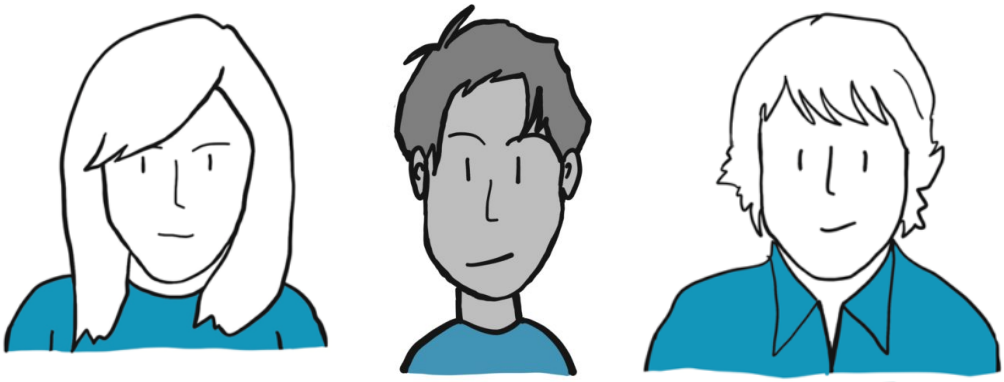
Considering the immensity and cultural relevance of videogames, the area of inclusion drew relatively little attention from the stakeholders that Gaming Horizons engaged. The exception is in education, an area in which inclusion is quite keenly felt.

A number of teachers see digital gaming as a chance to reach and engage learners with Special Education Needs (SEN). They also consider it a way towards integrating those students better, and thus make classes more inclusive, especially where there are marked differences in students' cognitive skills. At the same time, interviewees cautioned that care is required to harness gaming successfully for inclusive purposes.

When it comes to players and gamers with sensory impairments, the question of game accessibility becomes critical. This is "a big tent issue" affecting millions now and millions more as playing populations age. While digital games certainly pose a number of barriers, significant gains can be made for all – as some Gaming Horizons participants pointed out- from greater attention to the needs of the full user spectrum. More awareness of design-for-all principles could lessen barriers and in doing so improve everyone's experience, just like with our streets and buildings. Indeed, advocates point to how type, telephony and email – the backbone of modern communications – emerged from the efforts of inventors to tackle special needs. Certainly, with video games and the various technology platforms they employ, the risk of exacerbating the digital divide is ever present. In this sense, accessibility is not just a matter of interactivity levels but about making sure everyone gets a reasonable chance to play.

Of course special needs is just one facet of inclusion in games, an issue that touches on many questions, like gender bias, stereotyped representation of identities, the accommodation of minorities etc. These are tackled more specifically in other scenarios.

Meet Keisha (aged 16), Marco (aged 13), and the grown-ups: Kerry and Keisha's Dad



Keisha's a gamer. When she was younger, other kids would say she was 'nerdy' like some of the boys, but she doesn't get that much anymore. Just about everyone she knows plays some sort of game, if only on the bus or the train. Keisha herself mostly goes for fantasy MMOs – her current favourite is Aion. When she started getting into games, she wanted to find other girls like herself online. The hardcore gamers she came across on the forum boards and chats then could be pretty mean, especially to girls. But she didn't let it get to her and anyway it's not so big a problem now – and you can report anyone who gets really out of line.

A while back, Keisha and her dad relocated, moving in with her dad's partner Kerry, who has a son called Marco. Marco's three years younger than Keisha and he's the only blind person Keisha's ever known. The two of them are very different in character and tastes, but as it happens they both share a long-held passion for video games.

Marco has always loved mysteries and adventures. That's what started him off playing story-based computer games, like A Dark Room, using Text To Speech (TTS) applications. Then he started playing Terraformers, an old hybrid audio and video game, and he was totally hooked. It's remained one of his all-time favourites. He played it on a PC at home that's connected to an audio system which reproduces 3D positional sound; the position and direction of the sounds, together with sound qualities and audio cues, form a sort of 3D audio gamespace that Marco navigates and interacts in.

When Keisha moved in, Marco got her to try a few audio games. She found them kind of intriguing but none of them really grabbed her enough to play them right through. Then Kerry got her this artistic sort of game called Beyond Eyes, which gives you an idea about what it's like to be blind. It wasn't much like anything Keisha had played before but she was really glad she'd had the chance to try it. And playing together with Dad was special too.

For a while now Marco's been having a go at FPS and combat games like Quake and Bayonetta 2 using the 3D positional audio. Keisha's amazed at how well he plays using sound only; she's tried and found it really hard. She says maybe one day Marco might get as good as the youtubers he's started following, like True Blind, Sightless Kombat and the others. Marco's hoping that one day he'll get to play games that go ultra mega popular, like World of Warcraft. His dad thinks he should try joining the AbleGamers Player Panel to become a game accessibility tester and Marco's giving it some thought.

Kerry's just bought a cool party game suite called 1-2 Switch for the new Nintendo Switch console they got. It's a bit like Wii Sports but with some funny touch and sound based mini games that you don't actually need to be sighted to play. Keisha and Marco have a real laugh playing together (well, against each other) and they've started thinking of ways you could use the touch and sound combination in other sorts of games. Keisha might even make a study project out of it.

In a nutshell

Due recognition of design-for-all principles, and sincere efforts to fulfil them, can reap concrete gains for everyone: for players who, for some reason, are underserved or excluded; for player-consumers desiring more immersive and diverse game experiences; for the game industry growing markets. Here, video games – considered by many as a pariah – could be seen instead as a standard-bearer.

Converting a perceived win-win to an actual won-won demands concerted – and orchestrated – efforts across the board, especially from policy makers and the game industry. Game on.

Resources

Accessibility

- Game Accessibility (International Game Developers Association)
- Microsoft's Gaming for Everyone

Advocacy initiatives

- AbleGamers
- Includification
- Specialeffect
- One switch games
- Unstoppable gamer

About blind gamers

- Steve Saylor
- Terry Garrett (True Blind)
- Sightless Kombat

Games and Media

- Audio Game Hub
- Audiogames.net
- Beyond Eyes
- 1-2 switch
- Everything

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Games at home: guiding children in the world of games

"If you play games with your kids you get this beautifully shared experience with them […] like playing backyard football […] it's a great bonding experience" – *Quote from an interview with a player –* ***PE02***

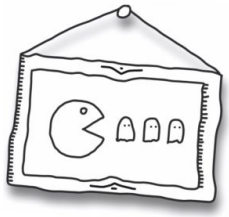
Keywords: Children, Ethics and Games, Literacy, Regulation

Who will find this scenario particularly interesting? Parents, Policy makers, Researchers, Young players and their families

Description

The influence games can have on children is a sensitive issue, and there is continued and serious concern about games' potential for encouraging antisocial behaviour. Regulations are in place for labelling violent, explicit, or sexual content (e.g. PEGI in the EU or the ESRB rating in the USA). The main addressees of these labeling systems are parents, who should be informed about the content of the games their children play. Those same parents have the power to disregard the label altogether, either as a reasoned decision or because they lack the context to understand the meaning of the labels.

At their worst, parents can be completely out of touch with the world of games, or even see gaming as a useful way for simply 'distracting' their children.

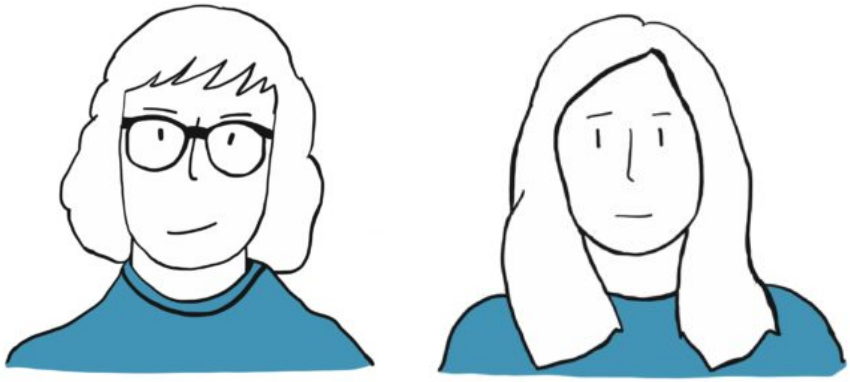


Our interviews, on the other hand, offered positive parenting examples. Several of the players we interviewed reported that they had started out playing with their parents. This was especially common for women, who often reported having been introduced to the world of gaming by their fathers. The shared activity of gaming was not only a way for parents to monitor the content their children interacted with, but also a moment of spending time together and bonding. By taking an active role in guiding their children to the world of games, these parents were able to highlight those features of video games that they found

most appealing (such as artistic value or creative potential), while sheltering their children from those aspects of video games they found most threatening, such as violent or unethical content.

On the other hand, when recollecting their adolescence, our players sometimes reported feeling that video games could be a private space: a way for getting *away* from family life, experimenting with their identity and discovering what they liked. In this phase, involvement of parents shouldn't be constant, and should focus on encouraging self-regulation and responsible use of games.

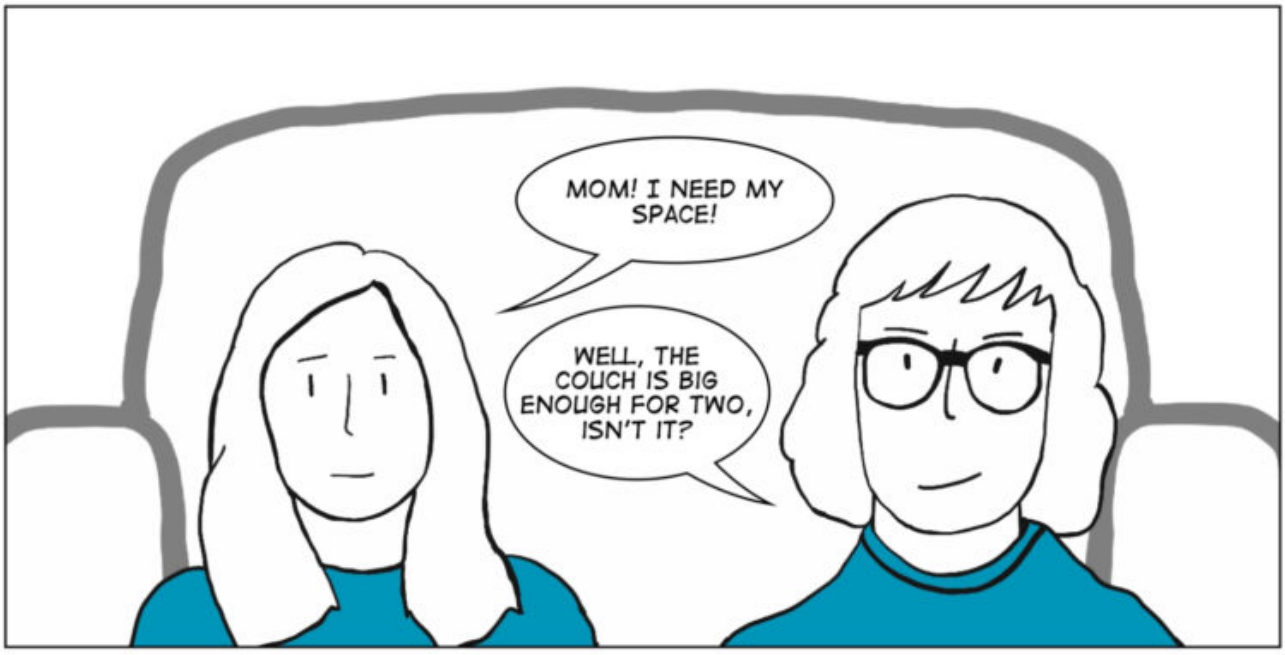
Meet Kate, a young player (aged 15) and Eleanor, her mother



Eleanor, now fifteen years old, has been playing video games with her mum since she was five. Her mother, Kate, has always been a gamer herself, although she spent far less time gaming after her pregnancy. When Kate decided to start playing games with Eleanor, she tried to find games they could both enjoy – Super Mario Galaxy was the first game they played together, a game that's both light-hearted and challenging. Together, they also played more open-ended building games such as Minecraft and Terraria. Kate decided to let Eleanor play alone, as long as she did all her daily chores. Kate still framed gaming as a shared activity, though: at the end of the day, if Eleanor played on her own, Kate asked her to show her the progress or the creations she's made, and they discussed them together. This shared hobby sometimes extended beyond the gaming time itself, as they often planned building projects or discussed strategies at dinner or while going to school.

When Eleanor was about ten, she started expressing interest in single player narratively-focused games. This proved trickier for Kate, since some of the games Eleanor wanted to play included, according to their PEGI rating, inappropriate content. Kate let the rating and game reviews guide her decisions regarding which games they could play together. So she decided that Eleanor could play Portal and Bastion, but she let a couple of years pass before letting her play Dishonored and the Elder Scrolls V: Skyrim. Eleanor wasn't always happy with her mother's decisions, and they had long discussions about where the boundaries should be set. They also discussed the amount of time spent gaming, since sometimes Eleanor wanted to play until late at night. Kate strived to set rules that were both reasonable and flexible. She decided not to set a rigid time limit for gaming, allowing Eleanor to play longer during holidays and restricting her play only when other activities were impacted.

Now that Eleanor is fifteen, she's starting to consider her mother's attention as controlling, and she no longer welcomes it. She's started to hide the full extent of time she spends playing, and longs to play some games completely on her own. She's increasingly interested in some games her classmates are playing – games with more 'mature' themes, such as NieR: Automata and the Witcher 3. When they discussed this, Kate was initially hurt: does her child no longer enjoy her company? Has she been too strict?



So Kate decides to discuss the issue with the mother of one of Eleanor's friends. She discovers that the experience of this mother with gaming has been completely different from her own: her son frequently plays competitive multiplayer games, and demands that the space and time are his, and his alone. Kate talks with the boy, and while she doesn't feel comfortable at the thought of leaving Eleanor completely on her own, the way the boy talks about his feeling of freedom and independence when playing resonates with her own experience as a player.

She decides to strike a compromise with Eleanor: Eleanor will be allowed to choose some games to play on her own, as long as they aren't too extreme in content. But on the other hand, Kate doesn't want to lose their shared gaming completely, and asks Eleanor to continue playing together, if only for a more limited time. Eleanor accepts, seeing that her sense of independence is respected, and not wanting to lose the bonding that gaming has brought them all these years.

In a nutshell

Parents should be ready and willing to play with their children, take an active interest in the games they play and foster their self-regulation with games. For children, video games can be an activity to be shared with parents; but in adolescence, games are also a space for self-discovery that should be respected.

Policy makers and researchers should promote actions to raise awareness among parents and educators about games, and about the power and influence games have on child psychological and cultural development.

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Games and formal education: a difficult marriage

"[The limitations on games in formal education?] Undoubtedly, timetabling is one. And it's an issue that's been debated for years, because it creates many problems. […] Our timetable, our morning, is divided into slots separated by the ring of the bell bringing the lesson to a close. Generally, the use of technology clashes with this idea of whatever's happening, the lesson is over now". *– Quote from an interview with an interview with an educator.* ***EI01***

Keywords: competition, Formal education, Game-based learning, learning design, Many diverse games, serious games

Who will find this scenario particularly interesting? Educators, Policy makers, Researchers, Teacher trainers

Description

Integrating games in formal education is not easy. Firstly, not all teachers are familiar with games or game-based learning and not all students see this 'marriage' favourably, especially when asked to play serious games, which often do not have the engaging power of entertainment games. Secondly, gaming is by definition a free exploratory activity, while formal education has its rules, its constraints, and sometimes the use of games isn't compatible with these restrictions. More in general, playing at school is almost an oxymoron: the nature of play is such that it cannot be done 'under teacher supervision', that is, with a teacher who chooses where, when, and what to play. How can these tensions be tackled? Can such a marriage actually work? And if so, should games be adapted to the existing school system, or should school change to better embrace the flexibility required by gaming and by other types of technology supported activities?

It is probably no coincidence that nine out of our twelve educator-interviewees were players themselves or had been in the past. Nor is it surprising that their teaching with games largely appeared to be informed and fuelled by their experience as players. There is a wide variety of ways the potential of games can be harnessed for educational purposes: from the most obvious – though not risk free – use of serious games

developed expressly to achieve specific learning objectives, to the use of popular entertainment or artistic games to stimulate reflection and discussion on ethical or philosophical questions (e.g. That Dragon, Cancer; Fragments of Him; Dear Esther). Our research also suggests that the time is not yet ripe for the creation of a school context which is fully supportive of teachers' efforts to adopt game based learning approaches. School managers, teachers and parents are generically in favour of game based learning due to its recent popularity. However, there is also an underlying scepticism, especially among parents and teachers, that play can support learning as well as, and often better, than other teaching practices.

Meet Jan, a middle school maths teacher and Irina, who teaches geography and history in upper secondary school

Jan teaches maths in the third year of a lower secondary school. His pupils will face the national exam this year, so he feels very committed to making sure they will be able to pass their first important summative test. The class consists of 25 children, most of whom are around 13 years old, with big differences as to commitment and learning outcomes. Jan believes the better performing students could be of much help to the others, but this is not happening spontaneously because several students are new to the class and the atmosphere is not collaborative enough.

For this reason, he has designed a gamified path connecting the main topics of the math curriculum, and for most of these topics he has found or invented a game supporting its learning. Recently,

> Recently, the headmaster has been encouraging Jan get the other teachers involved and scale it up to school level. Recently, the headmaster has been encouraging Jan to get the other teachers involved and scale it up to school level. A discussion among them has convinced them that gamification intended as 'pointification' (adding points and badges for motivational purposes but without deeper integration with the content) is not what they want. They are afraid that too much competition can create more problems than advantages. Anxiety is not the kind of feeling they want to prevail inside their classes. Jan's colleagues enriched the path with new activities and games, and their creative input has proved very useful. This is turning out to be quite a lot of workload, but it also has some big advantages. Firstly, the switch they made to inter-class competition makes the atmosphere inside each class more cohesive, as it leads classmates to support one another. Secondly, the typical scepticism of parents now clashes with a whole team of teachers very much convinced of the approach, which helps a lot.

Jan's wife, Irina, is a teacher too. She works in an upper secondary school, where she teaches history and geography. They often discuss the ways games can be harnessed for learning. Irina has only recently begun introducing games in her classes, but her school principal is sceptical and has been less supportive than Jan's was, making it much more challenging to get the resources and institutional backing she needs. She therefore has to count on her own resources and time only. Luckily, as a gamer, she knows a lot of games. She's found one, called Rise of Nations, that's ideal for introducing her students to complex geopolitical topics. She's confident that playing the game will help give them a firmer grasp of geopolitics than they would otherwise get through the rote learning of notions.

The demands of the school timetable mean that she can only manage a single one-hour game session per week in class. So Irina has encouraged the students to carry on playing outside school hours and then discuss their thoughts and impressions about the game content in class.

In a nutshell

Teacher education and professional development in support of game based education should be promoted and should focus on specific game based learning design principles, including criteria for game choice as one of the decisions teachers take while designing for learning. Although most of the responsibility for pedagogical design will be on teachers' shoulders, they should not be left unsupported. To deal with the limitations imposed by formal education contexts, teachers need active support from all stakeholders: school leaders, their fellow teachers, researchers, students and parents.

Investments in teachers' professional development and in research in learning design principles for game based learning are needed. As recent learning design research has pointed out, participatory approaches to learning design are to be privileged, centred as they are on communities of practice. These allow teachers to access and share success stories and failures, with the aim of overcoming problems and devising innovative solutions, and increasing awareness of both the potential and the pitfalls of using games for learning.

Resources

- Squire, K (2011). *Video Games and Learning: Teaching and Participatory Culture in the Digital Age. Technology, Education–Connections (the TEC Series)*. New York, NY: Teachers College Press.
- Blogpost by Sharan Shodhan: Educational Games—Balance between Learning and Engagement
- Kebritchi, M., Hirumi, A., & Bai, H. (2010). The effects of modern mathematics computer games on mathematics achievement and class motivation. *Computers & education*, *55*(2), 427-443.
- Serious Games As A Playground For Learning Math
- DimentionU games: a set of mathematics games
- Rise of Nations

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Games and formal education: one size doesn't fit all

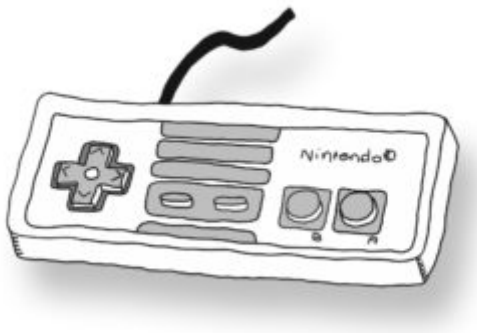
"my boys always engage more with the commercial games. And they didn't always like the Maths games or Science games, because it just didn't feel like real games to them […]. But the girls, they did, and the puzzle problems on Nintendos and things, they liked them, my girls" – *quote from an interview with an educator.* ***EE02.***

Keywords: competition, Formal education, Game-based learning, learning design, Many diverse games, serious games

Who will find this scenario particularly interesting? Educators, Policy makers, Researchers, Teacher trainers

Description

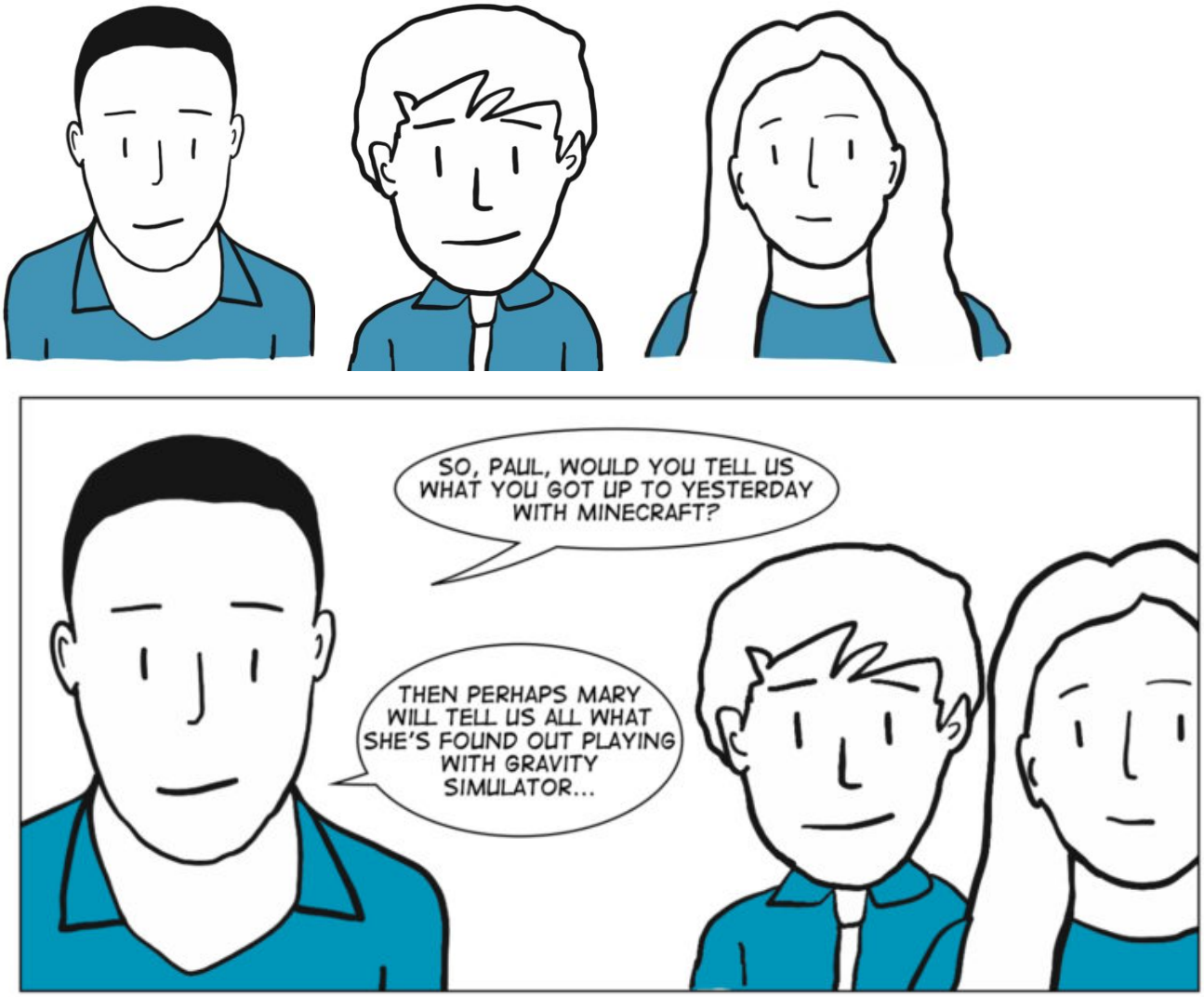
Drawing from the experiences of the educators and players we interviewed, we envisage a very creative and informed use of games for learning at school, with a wide range of games used by educators and a similarly wide range of uses. Game choice – as with all choices in the learning design process – should be driven by learning objectives, contextual constraints, and educator experience, and ought to take student preference into consideration. For example, in some cases teachers may choose short entertainment games that can be played episodically to stimulate discussion. In others, they may prefer to propose longer playful activities requiring authentic problem solving performed by participants in an online environment. In yet others, teachers might choose a serious game because it helps to achieve specific objectives. In any case, teachers will need to be aware of the risks of making gaming compulsory or using games in which the



playful/gameful dimension is a mere cosmetic layer added to instructional interactions.

Most importantly, teachers will need to embed game-based activities into a broader pedagogical design, where game choice is not the only choice to be made in view of desired outcomes. Other aspects to be considered concern how to manage competition (exploiting its engagement potential while avoiding stress), respecting students' preferences for different types of games but also using games to overcome personal barriers and counter social stereotypes, as well as dealing with digital divide issues. Last but not least, teachers will be aware that the motivating power of games is a double-edged sword, sometimes fostering motivation to win rather than motivation to learn, unless the two are effectively integrated.

Meet Robert, a secondary school teacher, and his students Mary and Paul (aged 16)



Robert is a secondary school science and technology teacher. He is a strong supporter of game-based learning, since he believes that games can successfully support inquiry learning in STEM and positively engage his 16-year-old students. Robert's teaching with games is informed and fuelled both by his personal experience as a player and by his professional training. This grounding allows him to consider a variety of different games for use with his students and several ways to use them.

When implementing purposeful gaming in his classroom, Robert usually couples it with other learning activities, and spreads gameplay over multiple sessions rather than limiting it to a single block. Sometimes he includes metagames and purposely-designed assessments.

What Robert always does is seek to calibrate gaming activities to his students' knowledge, needs, abilities and – last but not least – preferences. He's noticed that there are significant differences between his students' preferred game types, preferred mode of gameplay (alone or in groups), and of course, abilities. In contrast with some of his colleagues, Robert's particularly alert to the problem of the digital divide when it

comes to gaming. For example, the students with limited access to different consoles and devices at home tend to take longer to get acquainted with the controls.

Robert's school has access to a substantial repository of quality digital games to choose from, and this makes it easier for him to select the right game for different students and for different objectives. . This repository can be accessed through an online catalogue listing achievable learning objectives for each game and comments from other users, both students and teachers, and it can be accessed from home too. In this way, students can do their homework by playing in a similar fashion to the 'flipped classroom' approach. Each student is free to choose from the set of games Robert proposes, without feeling forced to play or getting bored by games they don't particularly like.

Mary and Paul (aged 16) are two junior students in Robert's science class. Although Paul is a player (or perhaps precisely *because* he is) he really doesn't like serious games. He feels they're mostly sugar-coated school exercises. That's why he and some of the other guys in the class prefer to play more creative games (Minecraft and Portal are his favourites) and maker-oriented activities with design kits like Arduino. Mary isn't much of a player and is more enthusiastic than Paul about playing applied games (especially puzzles) because she sees them as a playful alternative to the usual homework activities. She also likes creating wearable computing gadgets, which is something that many girls in Robert's class tend to like. For a while now, Robert has been wondering how to get the girls more interested in the Arduino kits in order to broaden their skills in STEM.

At school, however, Robert usually gets them all to play the same game, otherwise handling the class would be too complicated. In cases like these, he gets them to form teams and play as a group. In this way they develop collaboration skills, and it also avoids the better performing players predominating.

In a nutshell

One game certainly *does not* fit all. Students have individual preferences and teachers should try to respect these as far as practicable. However, schools are generally not designed, equipped or run to cater for variation. One way to tackle this is by moving towards more open classrooms, where one or more teachers can follow different teams of students doing different activities. To facilitate teachers' game choice, individual schools or school networks could create repositories of games offering a rich game choice.

Students' acceptance of game-based learning can be improved by avoiding mandatory play activities or games where the playful/gameful dimension is a mere cosmetic layer added to instructional interactions. It is also important to take into account students' individual differences when designing game-based learning activities. Particular attention should be paid to social and gender differences in order to avoid demotivation and frustration.

The European Commission could play a key part by supporting teacher education and professional development initiatives devoted to game-based learning. In this case, priorities should be placed on fostering virtual communities of teachers for the exchange of know-how and experience, and on supporting the establishment of repositories, in order to broaden access to effective games and lesson plans.

Resources

- Taylor, A. S. A. (2015, September). The active instructor: Benefits and barriers to instructor-led serious gaming. In proceedings of *VS-Games, 2015 7th International Conference on Games and Virtual Worlds for Serious Applications* (pp. 1-8). IEEE.
- Tsekleves, E., Cosmas, J., & Aggoun, A. (2016). Benefits, barriers and guideline recommendations for the implementation of serious games in education for stakeholders and policymakers. *British Journal of Educational Technology, 47*(1), 164–183.

- Wouters, P., & Van Oostendorp, H. (2013). A meta-analytic review of the role of instructional support in game-based learning. *Computers & Education, 60*(1), 412-425

- Minecraft
- Portal
- Arduino
- Gravity simulator

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Games and inclusion: Gender, minorities, and society

"[In] Dragon Age there's a transexual character, which is something really important because if a transsex person [...] sees themselves represented in a positive way, it can give them hope." *– quote from an interview with a player.* ***PI06.***

Keywords: Art, cultural value, Diversity, Gender, Inclusion, Social Value

Who will find this scenario particularly interesting? Developers, Policy makers, Researchers

Description

For all ages, video games are an expressive medium that is increasingly diversifying both the identities of the protagonists and the events and interactions presented in them. Issues addressed by video games include gender identity, treatment of cultural and ethnic minorities, refugees and war survivors, grief, love, sexual health, domestic violence, religion and faith, socialism, capitalism and neoliberalism, and, in a notable example from 2017, a playable interpretation of the work of the philosopher of Alan Watts (Everything). Such games can be used in a classroom

context, but they are also commercial and non-commercial entertainment products that are already being played by millions of Europeans. The expansion is not restricted to content, but also includes a wide range of people that are becoming involved with, or more visible in, the development and communities of video games.

However, this increased visibility is not occurring without challenges and, like in society more broadly, there has been populist opposition to progressive inclusivity. Such opposition has included threats or murder,

rape, assault, financial and legal implications, and even 'swatting' (the making of fake reports to the police of gunshots at their target's house, with the hope to provoking an armed law-enforcement 'SWAT' response). As seen in many parts of society, moving beyond the past and present systemic prejudices against women and minorities is making bumpy progress, but the determination to do this successfully was supported by every game developer stakeholder interviewed during the Gaming Horizons research and aligns with the goal of increasing RRI presence in EU funding policies beyond only ethics compliance.

Meet Pierre, a gamer who is heterosexual, and his friend David, a gamer who is gay.

Pierre feels like there's too much fuss over minority groups saying that they are not visible in cultural artefacts, like video games and television. He thinks there's nothing wrong with the way games reflect society, and he sees a lot of characters in games that he can relate to: white, male, cisgender, and heterosexual, and he's never really thought about how it would feel for others to see themselves so rarely. Rather than engage with the lack of representation, Pierre makes jokes about others who are asking for equality. David is Pierre's friend, but he would like to see different communities represented in games.

Although David laughs at Pierre's joke, 'dragons don't exist?', David secretly wishes that Pierre would take him seriously, but as a member of a minority group he knows that objecting puts him in danger: at the least he would change the nature of their friendship, but at worst he could be attacked verbally or physically. David has friends who have been attacked for being gay and he's nervous about being too forthright about wanting equal treatment.

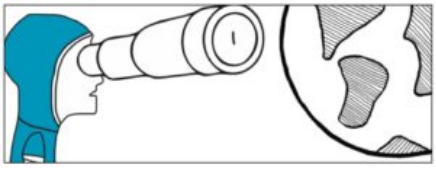
In a nutshell

Encouraging entertainment and artistic games developers to use women and minorities in their games will help build visibility for these communities as participants in everyday life and society. The wide reach of video games into European society allows them to function as a key asset in improving cultural understanding, relationships, and community. It is also likely to stimulate creativity in the industry, presenting new gameplay scenarios and inspiring new interactions.

Three approaches would contribute to progress in this area:

- further research to understand the current, past, and possible future states of women and minority gender and sexualities in video games, particularly in a European cultural context;
- training and workshops aimed at minority groups specifically intended to give participants game development skills;
- targeted arts funding for creative video games that specifies inclusivity (either in theme, individual/team, or both) as a metric of consideration.

Resources



- Why diversity matters in the modern video games industry
  Stuart, K. (2017, July 18). Why diversity matters in the modern video games industry. Retrieved December 15, 2017.
- Video games need a more diverse cast of characters
  Marks, P. (2009, September 22). Video games need a more diverse cast of characters. Retrieved December 15, 2017.

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Games conferences and new media as academic publishing

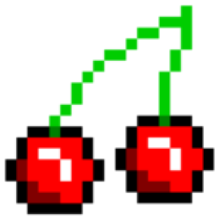
"I feel like we can move faster at conferences than you can with writing and reading papers and books." – *quote from an interview with a developer****. LSD28824.***

Keywords: institutional funding, knowledge sharing

Who will find this scenario particularly interesting? Developers, Policy makers, Researchers

Description

Instead of using traditional academic resources, games industry conferences were framed as 'nexus points' of knowledge sharing within the game development community. However, industry conferences are not always amenable to academic contributions because of perceived/actual problems of accessibility of academic language, data presentation, timeliness, or the lack of immediate practical implications from the research.

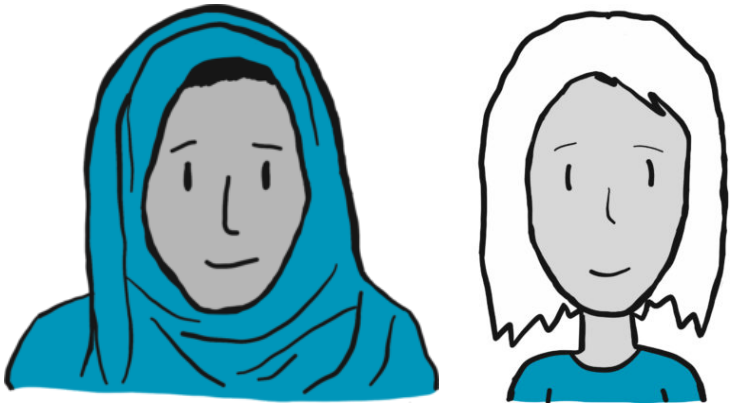


In addition to industry conferences for knowledge sharing, developers have responded positively to webinars, online videos, and blog-posts on industry websites such as Gamastura.com or GamesIndustry.biz. In the Gaming Horizons project, the ten webinars on a variety of research topics (such as cultural sensitivity, educational contexts for game usage, and the importance of realism in video games) have been seen by over 6000 viewers on the Facebook Live system. This demonstrates a reach significantly larger than most academic research activities and traditional dissemination methods. These views came through actively involving professional game developers and publishing directly to developer communities rather than to academia.

While researchers need to be more adaptive in how they distribute their work, governments and universities need to acknowledge that their systems and standards of measurement may be outdated. Researchers are typically judged on the impact of their work, and conference presentations and new media are typically rated as being of lower impact than a journal publication, regardless of the readership. Developers have a highly practical mindset, they desire knowledge that will assist them in improving the games that they are

making, and so changes in researcher assessment, and publication style, content, and dissemination methods are necessary to bring the academic publishing closer to the needs of the industry.

Meet Yana, a games conference organiser and Ebba, a video game researcher.



Ebba has been working hard to find new ways of signifying potential interactions in video games, but she hasn't had backing from her university to fully demonstrate this working in a game, only journal publications. Yana is interested in getting speakers for her conference with proven, applicable results – academic theory isn't enough to impress her practically-minded attendees.

There are many challenges regarding making academic research appealing to industry professionals. Academic research needs to remember that interests of practical applicability and approachability are foremost for many professionals. If the mode of expression and the content can be framed correctly, many of the Gaming Horizons developer stakeholders were positive about the prospect of getting researchers involved in their work but didn't currently feel that there was communication in a way that was meaningful to them.

Governments and their academic bodies will also need to give adequate recognition and status to applied research. While the split in 'fundamental' versus 'applied' research is also seen as a split between 'real' and 'low quality' research, academics who are desiring a strong career will be pushed away from creating research with the practical implications that professionals demand.

Likewise, national and EU funding bodies will need to support researchers working towards practical outcomes for games developers, and recognise in funding calls that industry conferences and new media outputs (for example YouTube demonstrations and tutorials) are much more desirable and potentially

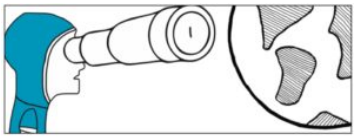
impactful than journal publications. Conference attendance for delivering research results and other new media dissemination methods must be supported financially.

In a nutshell

If academic research is to enter a discourse with professional contexts, it will need to adopt the methods and media that the industry uses.

This approach must also be supported by governmental and academic institutions understanding that industry conferences and other media are more impactful than traditional models (such as journal publications) in this domain.

Resources



- "Why academics and game industry don't collaborate on AI, and how we could improve the situation"
  Togelius, J. (2014, October 10). Retrieved December 12, 2017.
- "How academia is holding back video game criticism"
  Cunningham, Z. (2012, December 26). Retrieved December 12, 2017, from

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Partners

Reframing and refocusing the rhetoric of play

"The very act of playing […] assumes certain privileges and how we interact with others […] just the kind of social and financial and cultural capitals that people need to play […] I think we don't necessarily think about those people that don't sit within the same paradigms"- *Quote from an interview with a researcher**. R09**.*

Keywords: dialogue, Ethics and Games, Gamification

Who will find this scenario particularly interesting? Educators, Policy makers, Researchers

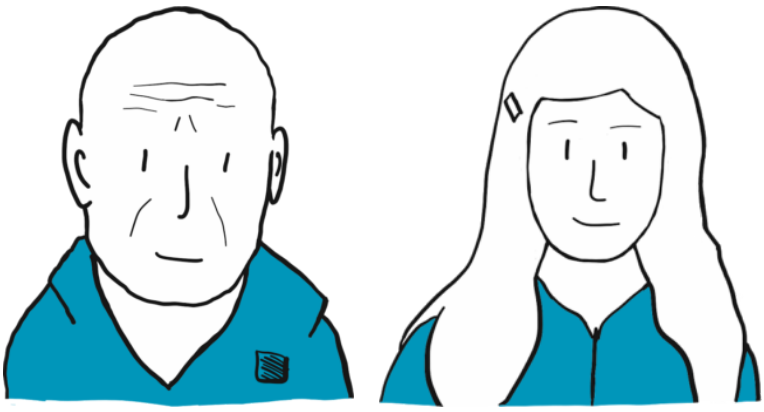
Description

As one of the multiple ethical considerations raised by our participants, a notion of 'play as privilege' was posed by one researcher during our interviews, highlighting a specific ethical concern around the assumptions made about the use of video games and gamification techniques in particular contexts. This suggests the need for a consideration of ethics around video games that is

highly contextualised and dependent on the particular experiences of those involved in gameplay. Here, ethics is positioned as being contingent on social factors, rather than necessarily being an inherent feature of the game itself. Moreover, it suggests that any ethical agenda around video game scholarship should include a careful critique of the context in which the game in situated and the privileges that are being assumed (or otherwise) by the researcher.

This scenario, therefore, is about reframing and refocusing the rhetoric of play in social research. Instead of taking a top-down approach, where a gamified strategy is viewed as a universal 'magic bullet' for improving an educational experience, the researcher adopts a 'bottom-up' mindset, involving the participants in the design of the project.

Meet Iain, a digital media researcher and Ruby (aged 8) a school pupil



Iain has designed a project to look at the affordances and constraints of using a video game in a geography lesson, with a particular focus on the attitudes and experiences of the participants involved. Rather than focussing purely on the educational outcomes of the planned intervention, Iain is careful to explore with the children their perceptions of the task. Moreover, working alongside the children, rather than dictating the approach he tentatively designed, he encourages them to explore their own usage of the game. Taking advice from the children, he adapts the approach to suit their needs. He ensures, for instance, that the intervention allows for independent work, as well as group work as some of the children express their anxiety at being made to play alongside others. Some children also explain that they feel that they need access to more conventional learning materials, such as books and on-screen texts, in order to help them make sense of the learning task.

By the end of the intervention, Iain has developed a complex and multi-layered approach to incorporating a video game into a particular educational context which is perhaps much more nuanced than the original top-down approach he had in mind. While this approach could not necessarily be adopted in every context, Iain's final research output makes a number of valuable methodological recommendations for researchers and educators looking to make use of video games in a range of contexts.

In a nutshell

Play can be powerful, enjoyable, exciting and empowering. However, play does not suit everyone, all the time.

We need to take a critical approach to game play in order to consider more about the context in which it may and may not be most appropriate.

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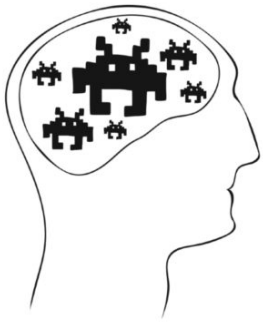
Reframing ethics in gaming R&D: beyond compliance

"You can only do that if you go beyond compliance. So it is not just ticking the box […] but to think […] about how we can be responsible and mainstream Social Sciences and Humanities meaningfully, not just as a cherry (on the cake) or an add-on stuff" – *quote from an interview with a policy maker.* ***P14***

Keywords: cultural value, dialogue, Ethics and Games, impact evaluation, institutional funding, knowledge sharing

Who will find this scenario particularly interesting? Developers, Policy makers, Researchers

Description

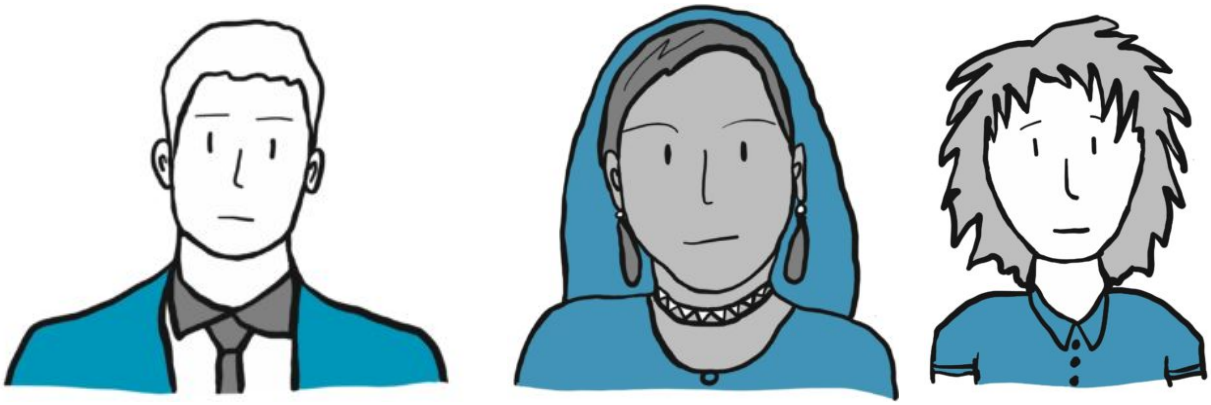


The notion of what is ethical in research and development is currently rather limited. Our own work focused on gaming and gamification in the European context, but the implications are broader. We talked to many experts and carried out an in-depth analysis of how research and development are framed as priorities in the European flagship funding programme: Horizon 2020. We found that ethics in R&D are almost exclusively focused on compliance, where compliance refers to the need to abide by ethical requirements and conditions. These requirements and conditions are concerned exclusively with the process of research, for instance in terms of ensuring informed consent or equal gender representation in R&D teams, rather than with its outcomes, or with the design principles that inform the process from the outset.

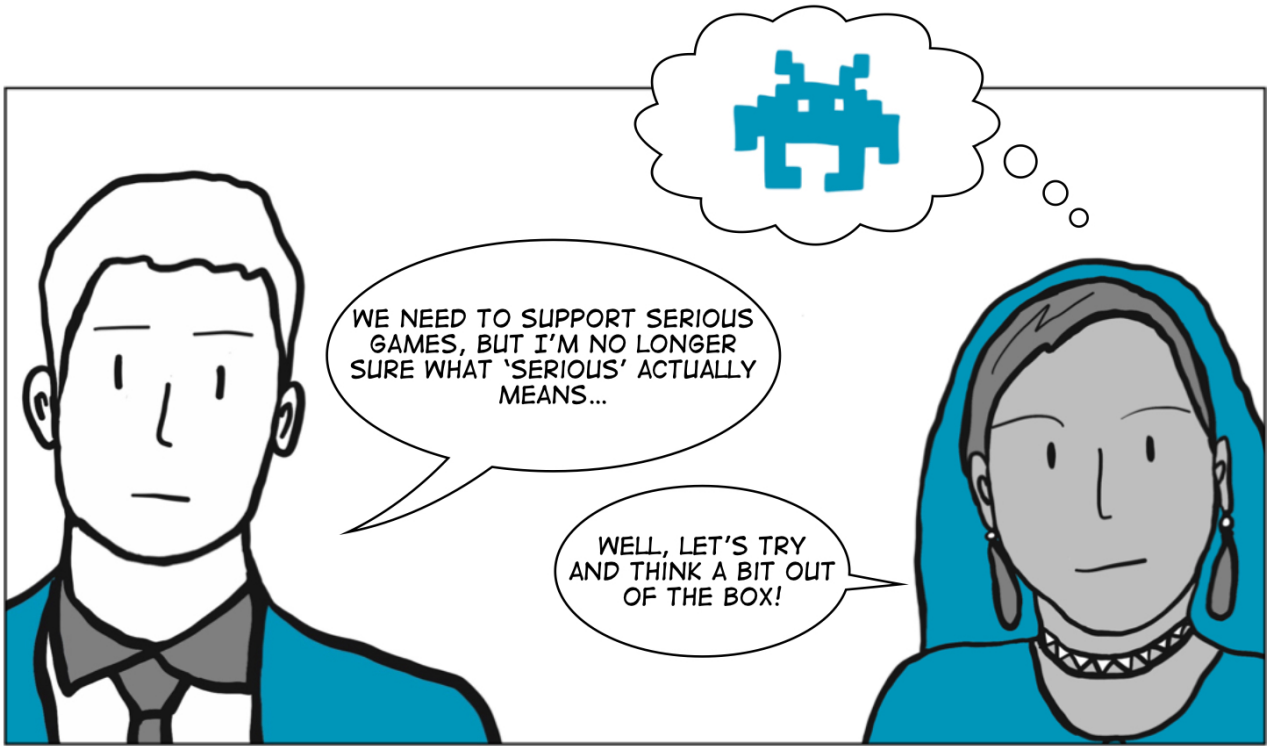
In this scenario, we describe a situation in which a more complex, nuanced and positive idea of ethics informs the design and development of video games. Rather than being narrowly framed as a collection of requirements that may constrain innovation and creativity, ethics becomes a positive mindset that puts the entire R&D process in a different light. Ethics, in other words, becomes synonymous with aspirations for

social and cultural relevance – something aligned with the humanistic, democratic and egalitarian values that underpin the European project. In this alternative scenario (and in its 'child' scenarios), policy makers, developers and researchers also begin to challenge strict accountability criteria that revolve exclusively around utilitarian goals and measurable outcomes. Alternative definitions of cultural and technological value, this time more negotiated and dialogic, begin to be explored.

Meet Michel (an EU policy maker), Simone (a social researcher), and Rita (a game developer)



Michel, Simone and Rita have been invited to an international round table to discuss the future of the gaming industry in Europe. The event is sponsored by the EU Commission and the focus is, predominantly, on the role of institutional support and public funding. The EU Commission is worried that its R&D strategies are beginning to be out of touch with the concerns and priorities of the various EU publics. Games are viewed as a profoundly 'social' and pervasive technology and they receive a significant amount of funding. As such, they are an area where concerns for cultural relevance and impact are particularly pressing.



The event provides an interdisciplinary forum to discuss games 'for good', which therefore have a distinctly ethical dimension. The event also provides concrete opportunities to examine examples of best practice, focusing on the experiences of developers (and users too) whose games don't fit into pre-existing categories such as 'serious' or 'educational' but still have recognisable cultural and educational value, and at the same time manage to operate in the market conditions of the leisure-oriented gaming industry.

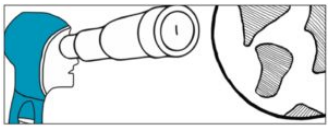
During the event, Michel, Simone, and Rita begin to outline a number of alternative cultural dimensions associated with games: narrative poignancy, appropriate representation, responsible usage, and so forth. They also begin to explore alternative ways to evaluate the cultural and social impact of games. One approach is forming citizen panels collectively recruited through social media; these examine, through a form of 'crowd-sourced' evaluation, the social of cultural impact of games developed under the patronage of the EU Commission.

In a nutshell

Ethics in research and development are often viewed as a restrictive set of requirements simply to be complied with. In our project, we often came across this limited interpretation, but we also saw signs of a different position where ethics are part of a more positive mindset, and where notions of what is good, decent, and worth pursuing are grounded in the priorities and concerns of society.

Funders and key institutional actors like the EU Commission could make more efforts to establish platforms (including face to face events and social media initiatives) to explore definitions of responsible research and innovation in a dialogic and democratic fashion.

Resources



- Lyst (conference, http://lyst-summit.org/)
- GaymerX (conference, https://gaymerx.com/)
- Game Happens (conference, http://www.gamehappens.com/)
- The work of Miguel Sicart provides many valuable insights in the complex relationship between video games and ethics: https://mitpress.mit.edu/books/ethics-computer-games

Our own analysis of EU Funding offers a critical perspective on how ethics and social responsibility are accounted for in the flagship EU R&D programme: https://www.gaminghorizons.eu/wp-content/uploads/sites/18/2017/05/D2.2_critical-analysis-of-H2020-sources.pdf

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Representations of race, and ethnicity: supporting inclusion in the social landscape

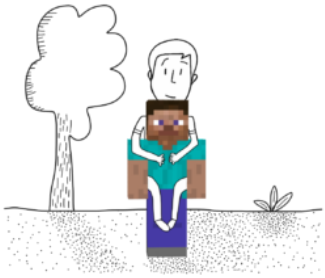
"[After making all the characters in a popular sports video game black] people value being represented. I think that's a very powerful thing to be the default and so I think the reaction was one of empowerment for people who were the default for the first time, and there was one of curiosity for people who weren't the default for the first time. Like, uh, why would you make this choice not to make me the default?" – *quote from an interview with a developer. LSD28788*

Keywords: Art, Diversity, Inclusion, Social Value

Who will find this scenario particularly interesting? Developers, Policy makers

Description

With video games becoming increasingly an everyday presence in the lives of all ages of Europeans, especially people below the age of 30, they can play an important role in signifying a group's inclusion and integration within society. The few studies of race and ethnicity in games have shown an unrepresentative dominance of white people as lead characters, with other ethnicities (if present) typically included as minor enemy characters. The research of these statistics is scarce, which does not assist in getting a full and current picture of both the present state



of this issue or trends in development (i.e. whether this has begun to change in recent years, if there are types of games or developers that are performing better than others, what influences developers to include a diverse cast, etc.); the impact on players of such varied social contexts is both challenging to study and important to approach. Developers that were interviewed for Gaming Horizons acknowledged the importance of this topic (alongside other issues of inclusion), but players made few comments on race or ethnicity specifically, suggesting that racial and ethnic inclusion is an industry concern that has currently not reached the player-base to the same extent. Further research is necessary in this area to understand it more fully.

Meet Luuk, a social arts funding officer, and Naija, an artist and second-generation immigrant who makes video games

Naija would love to make a game inspired by the traditions of her Nigerian grandparents. She knows that it is a financial risk to make something different from mainstream Western or Eastern mythologies, but thinks this source material could inspire something unique. Arts funding would really help her get the project off the ground and would give it credibility to help her explore other funding options too. She is an artist and her work is inspired by being a European whose life is framed by a place where she has never lived: she hopes that it will inspire players and developers to learn about Nigerian culture. Luuk has money to distribute, but he doesn't see the evidence that games will inspire others. He comes from a traditional arts background and secretly feels very uncomfortable with looking at video games as a medium with cultural worth.

Without many precedents or research into the social impact of artistic games, Niaja has to try and convince Luuk by herself that games can be both expressive and inspire curiosity in players's actual lives.

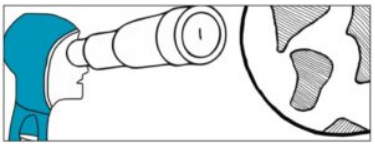
In a nutshell

There is great potential for video games to assist in the visibility of racial and ethnic minorities in European culture, encouraging variety and inclusion as well as potentially increasing the expressive range and themes of the medium.

Three approaches would contribute to progress in this area:

- further research to understand the current, past, and possible future states of race and ethnicity in video games, particularly in a European cultural context;
- training and workshops aimed at minority groups specifically intended to give participants game development skills;
- targeted arts funding for creative video games that specifies inclusivity (either in theme, individual/team, or both) as a metric of consideration.

Resources



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The discourse around games

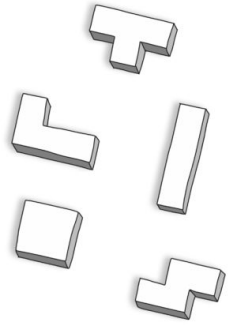
"We have this silly word 'game' and it just sort of encompasses everything [...] in a sense there isn't necessarily a lot similar, you know, if you have to actually make parallels between 'Uncharted 313' and 'Candy Crush 14', it is a completely different kind of experience, [...] the interactions are completely different and the experience is completely different, and where you might play that is completely different". *Quote from an interview with a researcher.* ***R03.***

Keywords: Diversity, Many diverse games, serious games

Who will find this scenario particularly interesting? Developers, Educators, Policy makers, Researchers

Description

During the project, participants talked of the need to understand games as complex and multiple, rather than acting as if there is anything like a 'generic' video game. One participant even suggested that it was the responsibility of researchers and other professionals to re-write the canon by turning the focus of their gaze towards games that were less commercial or less readily writte



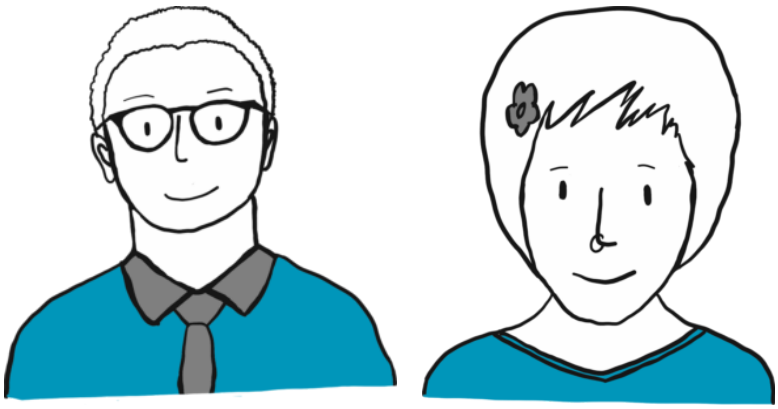
n about.

The view of gaming as a complex medium assumes that under the broad umbrella of gaming there is a multitude of different themes, mechanics and content, in the same way as 'film' is a medium that incorporates anything from video art, to documentary, to Hollywood blockbuster. This view is increasingly accepted but still faces some resistance which, perhaps unwittingly, seems to originate in the so-called 'gamer' cultures. Here, rather arbitrary distinctions seem to exist between real games, usually focusing on player mastery, competition and clearly defined win/lose states, and 'non-games' or 'artistic games' which experiment with and sometimes subvert those categories.

The identities and professional profiles of those who make games are also changing, reflecting a diverse range of personal, educational and technical backgrounds, and different design priorities are not necessarily

aligned with those of large commercial publishers and the so-called 'mainstream' industry.

Meet Steven, a journalist and Daisy, a game developer



Daisy is an independent game developer. Her trajectory started while she was still at university, studying in a game development course. She put her studies on hold when she got a job in a large development studio as a junior animator. Nonetheless, Daisy thinks her university experience is a valuable source of inspiration and cultural diversity. She fondly remembers attending extracurricular seminars in the sociology department, meeting and conversing with students and lecturers about different topics and interests. Over the past five years Daisy has worked on many games, but always felt that the focus on specific tasks within large projects was too narrow. This year, Daisy decided to 'go indie', setting up a small studio with a couple of trusted friends. Her first project is based on a personal exploration of issues that matter to her personally – she wants to create an interactive experience that challenges expectations of what a game can do. They are conscious that such a game wouldn't necessarily have mass appeal, and they are ok with it. With her friends and colleagues, she decides that crowdfunding offers the best chance to ensure creative independence and a direct connection with their intended audience. They hope to make a small profit to support their livelihoods and continue doing what really interests them. Days starts by tapping into her networks to do some marketing and raise the profile of the studio and the first game. After some time she lands an interview with Steven, a freelance journalist who writes about technology and games for a number of online and printed outlets. Steven is a keen technology enthusiast and a gamer. Immediately, the interview takes a slightly disappointing turn for Daisy…

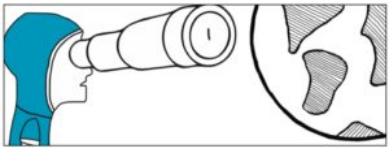
A more mature approach towards gaming, coupled with an acknowledgment of the complexity and multifaceted nature of this medium, could boost efforts to develop, understand, research and use video games in new, innovative, exciting and relevant ways. Dominant ways of understanding video games, and what they are, need challenging at all levels in order to generate more generous and nuanced understandings of the medium and its possibilities, in relation to education, culture and society.

In a nutshell

Although we often talk about video games as a singular entity, they are, in reality, diverse and complex. As a medium they offer a range of different features, experiences and opportunities to players in a varied range of contexts.

By considering games as singular, however, we are potentially simplifying debates and maybe even lowering our expectations. Funders, researchers, educators and developers are all responsible for advocating a more diverse and multifaceted notion of what a game can be or do. Funding Social Science and Humanities (SSH) research projects that survey the representation of cultural themes would allow the development of video games studies in curriculums at all educational levels, and increase their future relevance.

Resources



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Young players and their contexts

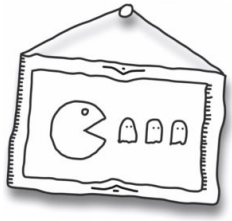
"there's an enormous gap between youth culture, which is steeped in social networking and videogames, and adult culture, which is far from these things. Adults don't understand these things much and yet, paradoxically, they're even greater victims of them than the kids are". *Quote from an interview with an educator.* ***EI09.***

Keywords: Children, Ethics and Games, Regulation

Who will find this scenario particularly interesting? Parents, Policy makers, Researchers

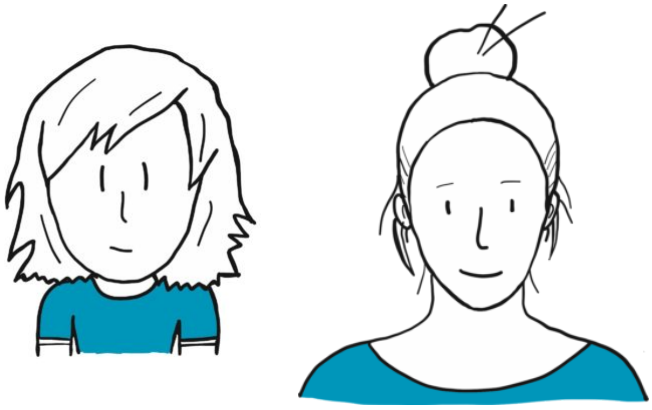
Description

During the project, the issue of children's gameplay at home was raised by a number of participants. This scenario is concerned with the 'soft' regulation of gameplay in the home and other



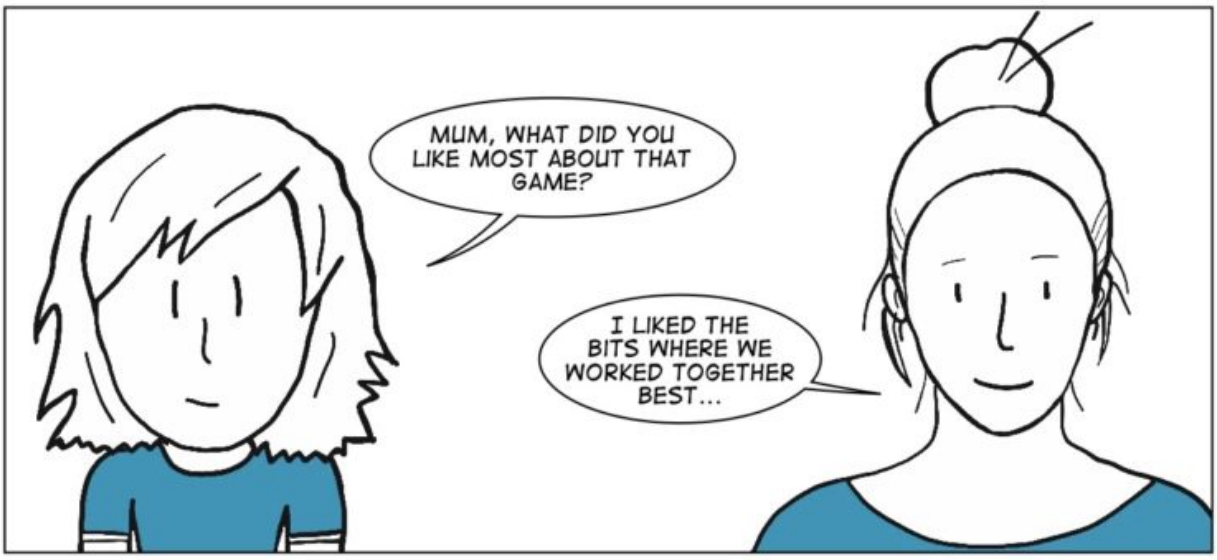
personal contexts. Video games *can* be problematic where young children are concerned. Some games may not be appropriate for young players, either due to their content or the connectivity they afford to other unknown players via the internet. While a child's unmediated access to gameplay therefore potentially has its dangers, a blanket ban on gameplay at home also has the potential to miss out on a whole range of benefits that can come from age-appropriate gameplay. A number of interviewees also saw games as contributing to the generation gap, suggesting that parents have scarce awareness or understanding of game contents and age limits. Consequently, children and teens often have access to games with unsuitably explicit (especially violent) content, and both parental and legal regulation is considered inadequate.

Meet Freya (aged 9) and Jessica, her mum



Freya has expressed an interest in playing a new video game on her tablet device. Her mother, Jessica, is uncertain whether the game contains suitable content for her daughter. She has recently read an article about the potentially damaging effects of gameplay in relation to addiction and children being exposed to inappropriate content. Rather than saying no, however, she decides to do some of her own research to educate herself about the game. Jessica does an internet search for the game and finds some reviews that appear to suggest that the game would be suitable for her daughter, but might be a little complicated in places. She downloads the game herself and plays through the first level. She finds that there's an interesting backstory to the game and the interaction with other characters involves some words which Freya might struggle with on her own, even though the content is seemingly age appropriate.

As a result, Jessica suggests that they play the game together. Freya takes the lead, taking control of the tablet device whilst seated on the sofa next to her mother. They play together, discussing their progress, talking through the tricky puzzles and solving problems together. This joint, shared activity spans across a number of sessions. Even when not playing they often discuss the game, anticipating the next session or reviewing sections of gameplay that they particularly enjoyed. Jessica notices that, as well as enjoying the social aspect of gameplay with her daughter, Freya has also – unprompted – used the game as a stimulus for a number of other activities. Her drawings and writing have featured adapted versions of characters from the game, and she also sees her daughter role-playing scenarios from the game when playing off-screen with her friends from school.



By getting involved in her daughter's game play, Jessica has gained insight into the kind of content that is available to her daughter. Although there is not always time for them to play together in this way, from this point onwards Jessica always takes an active interest in the games that her daughter is playing, due to the safeguarding issues but also because of her first hand experience of the wider benefits of engaging with this activity collaboratively, rather than leaving Freya pursuing her interest independently.

In a nutshell

Video games can bring ethical and moral complications with them, particularly where children are involved. However, there are also multiple benefits of playing video games.

While the idea of banning video games belongs in the past, moderation in usage and age-appropriateness of content are important. The need for 'soft regulation' at home (actively and positively involving parents and guardians) is important and should be discussed more.

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