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D2.3 Report on interviews with experts and informants

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Executive Summary

This deliverable is the output of activities pertaining to the fourth research task (Task 2.4) of the Gaming Horizons (GH) project: Interviews with experts and informants. This task is the final output of the first phase of the project: informed challenge through landscape analysis, which considers critically the empirical ‘state of the art’ and the cultural discourses on gaming and gamification in various social domains. Based on the Grant Agreement (GA), the objective of this task was to carry out primary data collection through interviews with key stakeholders.

This study is based on the ‘expert interview’ method (Bogner, Littig and Menz, 2009). This method rests on the assumption that individuals can act as expert informants whose perceptions, understandings and forms of localised knowledge can be systematically explored. The research design, including the broad methodological approach and the research questions, is described in further detail in section 2.

The interviews involved a total of 73 participants divided in 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.

Once the stakeholder categories were identified, three separate research teams in three countries (Italy, the Netherlands and the UK) proceeded to identify experts in each category, aiming to achieve a balance between groups as far as reasonably feasible (given that some informants were easier to recruit than others), while exceeding our target of 60 interviewees. This resulted in three distinct foci, represented in this report as three analytical sections. The first analytical section (3.1) focuses on the analysis of educator and player/user perspectives; the second section (3.2) on the development perspective; the third section (3.3) on researcher and policy perspectives.

Overall, our interviews point to a changing discourse in relation to video games and their cultural and educational potential, with signs of an emerging ethical sensibility which is trying to go beyond traditional, still dominant, concerns for effects and outcomes. What follows is a synthesis of the main common themes across the three sections. However, readers are also encouraged to engage with each individual section, as they all provide very in-depth perspectives on a range of relevant issues.

1. Games are still viewed as powerful motivating experiences, but we observed increasingly complex and mediated forms of engagement with the medium. Those stakeholders who use games in their leisure time or as part of their professional practice were, in fact, informed and critical actors, aware of the limits, the potentials and the 'hype'. For instance, informants from the educator subset readily demystified the idea that introducing games in formal learning contexts has immediate effects, reporting on students' disappointment when serious games

or gamification do not match their expectations in terms of what a game should really be like.

2. Many stakeholders, especially users, educators and developers, were deeply sceptical of games specifically designed with some kind of serious and applied purpose in mind. Instead, we noted a growing emphasis on artistry, craft, creativity and storytelling as necessary components for the development of compelling gaming experiences, regardless of their applications in real-life contexts, the seriousness of their premises and their intended audiences. Some developers also expressed reservations in relation to the support that serious games are given at an institutional level, and criticised the tendency of most public bodies to prioritise, through funding programmes and initiatives, overt and measurable pro-social outcomes. They argued that these restrictions do not promote creativity or impact in games, but instead that developers are less motivated and create lower-quality work. The implication here is that a heavy focus on subject content and measurable learning outcomes can hinder the enjoyment – and therefore the broader adoption - of games in various educational and professional contexts, somewhat negating their very purpose as alternative learning experiences, and reducing them to the status of traditional teaching interventions, irrespective of how effective they may be in purely instructional terms. This is consistent with the fact that relatively few of our educators focused on using games to foster the acquisition of strictly subject-based knowledge, tending instead to emphasise the development of transversal skills, using off-the-shelf games in a playful and engaging fashion.

3. Our study points to shifts in the cultural discourse around games, with some critical respondents less concerned with questionable content (e.g. depictions of violence, although these remain an issue when young people are involved) and more with issues of inclusion, equal representation (of gender and race), and 'dark design patterns'. The fact that games (and many gamification techniques) often aim to influence behaviours by exploiting psychological reward systems was framed by some as problematic, possibly even manipulative, thus necessitating a separate ethical examination beyond the usual concerns for access, inclusion and safety.
4. Our interviews with researchers highlighted an emerging desire to pursue a sensitive ethical approach in relation to gaming, in parallel with a growing critical awareness of the ways in which video games and gamification approaches can be culturally and socially problematic, as well as potentially valuable. Interviewees considered the research and implementation of games *in context*, showing an increasing understanding of how the medium itself could benefit from careful ethical scrutiny in relation to development processes and player engagement. External agendas of big business and industry, as well as historically persistent concerns (and potential misgivings) about video games as a medium, were positioned as potential barriers to ethical implementation.
5. The need for policies and regulatory frameworks was another recurrent theme, especially among educators using games as part of their professional practice. These stakeholders often described their roles as unwilling mediators and arbiters of gaming habits, indirectly criticising parents (and to an extent society at large)

for the 'burden' placed on them in terms of having to deal with the visible consequences of video-game misuse (e.g. tiredness and reduced school performance), which undermine the more positive, targeted applications they pursue as part of their practice. In this regard, we noted a shared belief that (greater) exchange between different stakeholders and policy makers in the gaming landscape would be beneficial for the definitions of these regulatory frameworks, particularly regarding game design and the definition of effective scenarios of use. Many respondents implied that several of these scenarios should highlight how collaboration with developers can help adapt *entertainment* (not serious or applied) games to make them appropriate for classroom settings.

1. Introduction

This report documents the richness and complexity of perspectives, hopes, fears and sometimes biases in the contemporary gaming discourse, attempting to go beyond sectorial distinctions (e.g. between serious or applied games and entertainment games). While we remain aware of the limits of our qualitative approach in terms of representativeness, we emphasise the advantages that the expert interview offers compared to more traditional survey methods, especially in allowing an in-depth examination of issues widely recognised to be relevant to the future of this medium. Our interviews represent, to use a game development term, a 'vertical slice'[1] of the current

[1] A partial output that illustrates the main features in every layer of a project - often used to showcase progress and provide a glimpse in the development progress: https://en.wikipedia.org/wiki/Vertical_slice

gaming universe: a cross-sectional snapshot which, while not representative of the entire landscape, provides a valuable glimpse into the main concerns shared in various layers of such landscape by key stakeholders (educators, players, researchers, policy makers and, of course, developers). Our interviews highlight a broad range of viewpoints concerning the current state of games, the reasons for using them, and the most promising ways they could be used. These are not limited to the obvious desire to entertain, or to stimulate interests and motivation, but also to encourage critical thinking and engagement with relevant social issues. The interviews were rich and detailed, and we recommend readers of this report to delve into the specific sections for an in-depth account of our analysis. In this introduction, we aim to illustrate some of the main highlights and tensions which have relevance for Gaming Horizons' goals.

Ethics and Games

The overarching objective of Gaming Horizons is to examine the state of the art and the potential of gaming and gamification in the context of European research and innovation, from an explicit ethical stance. As detailed in the research outputs produced so far (Persico et al, 2017; Perrotta et al. 2017), and in line with debates about Responsible Research and Innovation (RRI) in general (von Schomberg, 2013), our project assumes that ethics and social responsibility should not only be limited to compliance with requirements (e.g. to ensure data confidentiality), but can also represent a proactive approach to inform the design and study of technological innovations from the outset. Our interviews highlight that while the view of ethics as compliance is still dominant, there are signs of an emerging emphasis on the ethical ramifications of gaming and

gamification, in light of the medium's pervasiveness and growing cultural relevance. We noted, for instance, the existence of a complex ethical mindset among our informants, which suggests an important distinction:

- on the one hand, there are the more visible discussions about the ethics of video game usage, associated with inappropriate content, age ratings and parental involvement (or lack thereof);
- on the other hand, there are subtler ethical considerations concerned with the means through which games and gamification can be used to achieve socially acceptable or desirable ends. In this regard, the growing awareness of how games (and many gamification techniques) influence outcomes by exploiting behavioural reward systems is framed by some as problematic, possibly even manipulative, thus necessitating a separate ethical examination beyond the usual concerns for access, inclusion and safety.

Across our interviews, there was a clear sense that video games' ethical landscape is still predominantly concerned with questions of effects, but there are signs of a different discourse trying to go beyond these questions, towards a more complex set of issues. This - arguably more sophisticated- approach still accepts that some forms of content are inappropriate for a young audience, but is equally interested in the social relevance of gaming cultures and practices, and in opening up the conversation around ethics and social responsibility, often contrasting instrumentalism, where games are used to 'engineer' behavioural change, with more culturally sensitive, diverse and creative strategies to influence actions and beliefs.

Our interviews also highlight interesting tensions, some rather problematic and certainly worthy of further interrogation, that the use of games brings to the surface - especially when young people are involved. Some of these tensions are related to inclusion and point to enduring cultural biases about gender and technological competency. For instance, despite growing evidence of diversity in patterns of use, we came across the old, stubborn notion that boys are naturally more suited to video games (and to digital technology pursuits more broadly, such as coding), in particular those that involve mastery and competition, whereas girls are often redirected to less competitive games or 'softer' technological interests (e.g. wearable computing). Interestingly, this was to avoid tensions and conflicts, rather than to accommodate actual preferences and inclinations. We also encountered a certain reluctance, among young players, to accept that gender and minority representation should be given equal weight across the industry, implying that entertainment games are not be held to the same standard as games developed for more serious purposes. The association between 'seriousness' and ethical standards (e.g., equal representation is mainly a matter for 'serious' games) is part of an argument that underplays the cultural significance and ethical responsibility of entertainment games, arguably absolving them from that responsibility altogether. Interestingly, this is contrasted by accounts from actual game developers who were part of our sample. From these informants, we gathered a clear sense that recent tensions in the gaming world, and in popular culture in general, around equal representation and inclusion have helped raise awareness about these issues, and there is certainly plenty of goodwill within the sector to make further progress on this front.

Our interviews, finally, gave us a strong sense of the mediated nature of gaming and game-related activities. Many of our interviewees acknowledge that powerful game mechanics- or, as one developer called them, ‘dark design’ - can be manipulative, but this critical awareness is often accompanied by a positive belief in the ability of individuals to act as free agents. People, in other words, seem capable of rejecting cynical exploitative techniques, and actively choose to participate in video games, viewed as interactive experiences that may or may not bring about personal and social change. This is particularly apparent in our interviews with game players, who show awareness of the ‘problem’ of excessive use and of ‘addiction by design’. However, exploitation is disavowed and framed by these interviewees as the negative result of external agency (which can be resisted), that is, as something being done to them through features specifically designed to achieve a certain outcome. Conversely, positive engagement is more ‘internalised’ and framed as the result of a mediation, whereby mediation refers to the relationship between the player and the game (‘we’d all be working on it’ one literally says).

This suggests that, while users will likely indict blatant exploitative design, they need to be recognised as active agents in order to be engaged in a more positive, and ultimately productive, fashion. It also assumes a less mechanistic view of game-based motivation and learning - a view expressed by several interviewees alongside an expectation for authenticity and integrity. This expectation runs counter to the idea of game design and gamification as a matter of ‘nuts and bolts’, engineering, modular design and linear causation; pointing instead to a need, for game developers, researchers and critics, to appreciate the complex and mediated ways in which people (young and old) interact with

games. This is also consistent with research on active media audiences and local, deeply contextual gameplay practices (Apperley & Beavis, 2013; Cote, 2017; Livingstone, 2015).

Sectorial boundaries and a new role for narrative-driven experiences

'Blurring boundaries' is another guiding assumption in Gaming Horizons, resting on the notion that the advancement of the medium towards widespread cultural and educational relevance can be aided by bringing together the worlds of entertainment and applied ('serious') games. In our interviews, we noted that while some aspects are indeed becoming blurred, other distinctions seem to endure, and new ones are emerging. For instance, several game developers from the mainstream industry questioned the usefulness of having an entirely separate sector dedicated to serious and applied games, especially when serious and applied outcomes are regularly achieved by games that are not commonly given this title. They also emphasised the importance for social and cultural benefits to emerge organically from the creative process, rather than being there 'by design', as it is often the case with applied games, where positive outcomes are generally associated with visible features and earnest intentionality (games 'for x') - something that can easily backfire by coming across as lacking in subtleness and creativity. Along somewhat similar lines, our game players told us of their seamless experiences of games across formal and informal educational settings, but also indicated that these experiences rarely involved applied games specifically developed with educational objectives in mind. Instead, they referred to big-budget (so-called 'AAA'), as well as smaller, independent games that help users engage with some kind of disciplinary

knowledge, or having an implicit, not too obvious, educational dimension (citing as examples games such as Antichamber , the Portal games and Kerbal Space Program[2]). The same interviewees, however, were inclined to distinguish between actual games and 'artistic games', in a way that might be seen as rather reductive, possibly even constraining the medium's creative and expressive possibilities. A 'game front' and an 'artistic front' were construed as separate domains, with the former seemingly focused on interactivity, fun, escapism, mechanics, and more established game design conventions (progression, combat, role play, puzzles, exploration and so forth); the latter on a strong narrative orientation, less emphasis (maybe even no emphasis at all) on engineering a 'fun' experience, but more on evoking feelings and thoughts of a different order. Should these distinctions be accepted at face value or should they be challenged? It could be argued that the existence of a codified 'rulebook' that establishes what a game is or isn't is surely something to be interrogated, especially when this rulebook becomes an element within a broader argument whereby notions like escapism and 'fun' are used to exonerate, as noted earlier, the largest part of an industry from ethical responsibilities.

Remaining in the context of this tension, we also noted how the notion of 'narrative-based design' was often used by our interviewees, irrespective of background, as synonymous with a more responsible and ethically sensitive approach to the medium. The potential of narrative to increase engagement is mirrored in debates in the mainstream and independent gaming industry, and narrative-oriented games like That

[2] https://en.wikipedia.org/wiki/Antichamber

https://en.wikipedia.org/wiki/Portal_(series)

https://en.wikipedia.org/wiki/Kerbal_Space_Program

Dragon, Cancer and Virginia[3] are expressions of a design movement that seems to point to an alternative approach to gaming. This approach does not shy away from sensitive, 'serious' issues and is often fuelled by an ethical worldview. Those who develop these smaller games are also keen to experiment with forms of agency where gameplay is less concerned with acting upon reality in aggressive ways (i.e. through the most typical and ubiquitous game mechanic: combat), and more in exploring aspects of it which are personally or collectively relevant. The trajectory of narrative-oriented games from experimentalism, denigration attempts[4], and then to increasing relevance is an interesting one that encapsulates this tension, and which also emerged during our engagement with developers. The subversion of game design conventions and the purposeful implementation of stripped down mechanics (walking, exploring and limited object interaction) are in fact suited to small development teams with a certain creative outlook and with some kind of thematic vision that gives coherence and integrity to a project. Therefore, the definitional tension surrounding these 'experiences' is perhaps symptom of a lively creative energy rather than a problem per se. We observed signs of a similar debate among research stakeholders, spurred by the growing popularity of a view of games as multimodal texts that can be actively read or narrated, but also lived and experienced. Treating games as texts, i.e. not only technological products, expands

[3] https://en.wikipedia.org/wiki/That_Dragon,_Cancer
https://en.wikipedia.org/wiki/Virginia_(video_game)

[4] These games were initially derogatorily labelled 'walking simulators', until the label was reclaimed by some (e.g. Carbo-Mascarell, 2016).

considerably the range of interactions and forms of emotional engagement that can be encouraged. Games become experiences valuable in their own right, rather than instrumental hooks to elicit some kind of gateway interest in other areas. Our interviews suggest that echoes of these debates in the research community can be heard among game developers, but the gaming industry and the academic study of games remain largely untouched by each other. This poses a challenge for the development of a more informed design culture, pointing to a state of affairs whereby researchers struggle to be relevant in the eyes of those who represent one of their main audiences, and where developers' intellectual engagement with important disciplinary or theoretical debates may be impaired, due to limited opportunities for dissemination and learning.

2. Research Questions and Method

This study is based on the 'expert interview' method (Bogner, Littig and Menz, 2009). This method rests on the assumption that individuals can act as expert informants whose perceptions, understandings and forms of localised knowledge can be systematically explored. As already described in the GA, this method is theoretically rooted in the sociology of knowledge, which sees expert knowledge as distinct from everyday knowledge and common-sense knowledge (e.g. Bourdieu, 1975). Particularly useful in this respect are social realist perspectives whereby 'expertise' is not an essential quality of the elite, but is instead socially constructed and dependent on contextual and sociocultural factors. Nonetheless, expert knowledge is real and has functional, useful aspects necessary in our increasingly complex and self-reflexive societies (Giddens, 1991). Most importantly however, the status of expert is not fixed but can be ascribed by a researcher depending on the specific research questions and priorities under

consideration. Everyone can be an expert by virtue of their role as an informant in relation to a certain field of practice – for example a student can be an expert in relation to a subset of cultural settings where specific forms of learning occur. Likewise, an expert can be person who has institutionalised authority to construct reality by being involved in the shaping of funding priorities for a large research programme. Aside from its theoretical underpinnings, the 'expert informant' method is popular in social research for very pragmatic reasons: it is an efficient and concentrated method of gathering data, especially in light of the growing difficulty of systematic quantitative surveys to ensure the required response rates. Moreover, given its emphasis on open interview formats based on topic guides, the expert informant method is particularly suited to explore the mediated and often implicit nature of much expert knowledge.

The usual caveats of qualitative research, mainly in terms of limited representativeness, apply here. Our sample was small by survey standards (albeit rather substantial by qualitative research standards) and not based on a systematic sampling procedure. All claims made in the analyses that follow must therefore be treated with caution.

The five stakeholder groups were defined on the basis of the overarching methodological framework detailed in our first research deliverable (Persico et al., 2017), and reflect key conceptual and practice-based perspectives associated with gaming, which the project seeks to interrogate: the research one, the development one, the educational practice one, the policy one and the player/user one.

A total of 77 interviews were carried out for this study. An additional 10 interviews were carried out at an earlier stage of the project, bringing the total number to 87. These additional interviews involved 10 high-profile game developers from the mainstream

gaming industry, who were interviewed at the Game Developers Conference (GDC) in March 2017. The remaining interviews were carried out between May and June 2017 through a combination of VOIP (Skype) and face-to-face approaches. All interviews were recorded in digital format and individually transcribed.

Given the restricted timeframe available, 73 interviews were selected for further analysis and entered in the software for qualitative analysis Nvivo. The coding for performed in a systematic fashion (Braun & Clarke, 2006) by three separate research teams, each focusing on one subset of interviews and the related findings (as already mentioned, this is reflected in the organisation of this report). A descriptive 'snapshot' of the sample and the division of labour among research teams is reported in table 1. The analysis was based on a jointly designed codebook (see Appendix 3). Further details about the methodological approach and the analytical process are provided in the first (and more extensive) methodological subsection (3.1.2), relative to the educators and players perspectives. Context-specific methodological information is also provided, to a minor extent, in the methodological subsections relative to the other stakeholder perspectives.

Stakeholder group	N	Gender split	Research Team
Educators	12	F(6), M(6)	ITD
Players	13	F(5), M(8)	ITD
Developers	30	F(12), M(18)	NHTV
Researchers	14	F(6), M(8)	Univleeds
Policy Makers	4	F(2), M(2)	Univleeds

Table 1. Interviews by stakeholder group and division of labour

The process was given internal coherence by a set of overarching questions, which informed the semi-structured interview schedule and the codebook. These are as follows:

- What is the role of gaming in society?
- How are games framed for social change?
- What is innovation/disruption in gaming and through gaming?
- What is the relationship between games and institutional goals and priorities in the stakeholders' own fields?
- What do 'ethics in gaming and 'Politics in gaming' mean? What are ethical and political goals? What are ethical and political development practices?
- What recommendations can be made to support a more socially/culturally/educationally relevant approach to gaming in the future?

The overarching questions were then turned into a number of prompts to be used flexibly with our stakeholder groups. Table 2 provides an example of how an overarching question ('How are games framed for social change?') was adapted into a number of prompts, some cross-cutting, others tailored to specific stakeholder groups.

How are games framed for social change?	
Policy/research/development	What are games good for? What are they bad for? 'Games are powerful tools to change behaviours and attitudes for the better' Do you agree with this statement? Why? Is there a flipside to this argument, according to you? What might it be? What kinds of behaviours or attitudes can be influenced through games? What kinds of behaviours or attitudes cannot?

	Do you think serious, applied games or gamification are better positioned than entertainment games to achieve 'positive' outcomes? Why?
Education	Do you think games bring added value to learning? Under what conditions? What aspects of learning? What kinds of games? (Entertainment games or games designed for outcomes in addition to entertainment?) Do you think that games influence the development of (young) people? If so, how? Do you think there are any drawbacks to games for learning? What do you think of the widespread use of gamification in various fields, including education? [only if the term gamification was known to the interviewee]
Young person/player	Do you think playing affects you in any way? Do you feel you have [learned / gained] something from playing? Have you ever played a game with the purpose of learning something? If yes, can you say something about it?, Has anyone ever suggested that to you? How did it go? Do you think that society is changing in some way with all the game playing that's going on? In terms of culture, skills, social trends?

Table 2. An overarching question ('How are games framed for social change?') adapted into a number of prompts, some cross-cutting, others tailored to specific stakeholder groups

3. Data analysis

3.1 Interviews with educators and players

3.1.1. Introduction

The task of interviewing educators and players was carried out by a team of six researchers in three main steps: definition of strategy and general protocol, organisation and execution of the actual online interviews via Skype, and analysis of the resulting transcripts. In all stages, special care was taken to ensure (a) that the adopted methodical approach was suitably geared to match the stakeholder types addressed and (b) that the research team members involved had a shared understanding of the approach in order to minimise individual differences that might introduce bias. To these ends, the research protocols were defined, tested and consolidated cooperatively before carrying out the key phases of interview delivery and analysis. The activity workflow is described in fig. 1 below and an account is given of the measures taken to strengthen methodological rigour and cross-team homogeneity.

The following subsections describe the methodological specificities of the CNR-ITD interview cycle (3.1.2), the interviewee' sample (3.1.3), the outcomes from analysis of the interviews with educators (3.1.4) and players (3.1.5), and finally the conclusions we have drawn from the analysis (3.1.6).

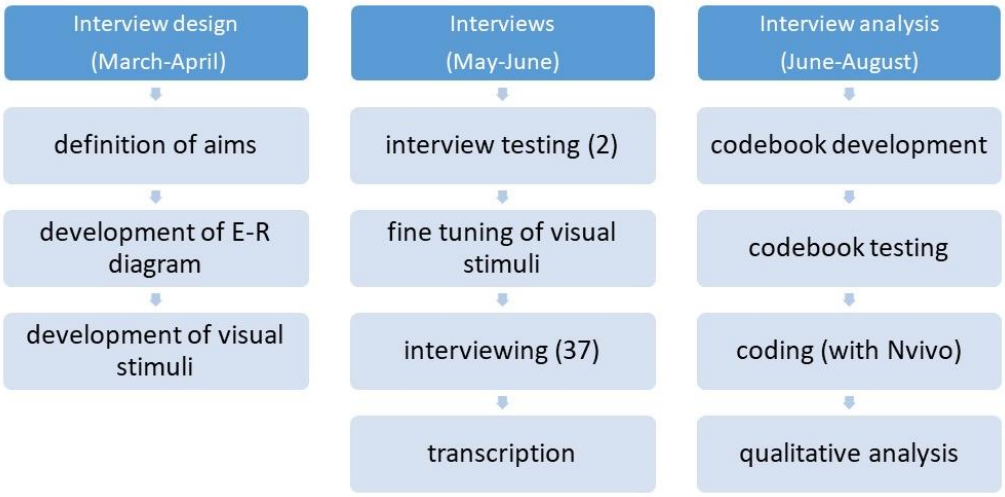

Figure 1 Workflow breakdown for the interviews with educators and players

3.1.2. Methodological specificities

The aims of the interviews with GH stakeholders were outlined in collaboration with the other project partners on the basis of the Project DOA, leading to the definition of the of Overarching Questions, as described in section 2 of this deliverable. The interviews were carried out and analysed according to established qualitative research methods (Braun & Clarke, 2006; Cote & Raz, 2015). This section describes the specific choices made for the interviews with educators and players.

Interview design

The interviews with educators and players called for more specific tailoring, including focus on particular perspectives: the educational perspective for educators and the psychological perspective for players. Bearing in mind the interview objectives, the project's methodological framework and the results of the literature review (Persico et al, 2017), a conceptual model was developed for these interviews using an Entity-Relationship diagram (Chen, 1976) (reported in Appendix 1).

The interviews covered six general themes and related sub-themes derived from the E-R diagram. Fig.2 shows the general themes with the terminology used with the educator interviewees (on the left) and their respective association to GH project terminology (on the right).

Figure 2 Interview topics for educators

To elicit interviewees' contributions in a reasonably homogenous fashion, visual stimuli in the form of text prompts were adopted (see Appendix 2). These visual stimuli, designed to guide the interviews and facilitate exploration of the six themes, were slides showing a set of related keywords presented individually or in clusters. For each general theme there were two slides: a first slide showing the general theme and a second slide with the same general theme and the related sub-topics. The interviewer would show these slides in sequence throughout the interview in addition to asking questions. This method was in part intended to prompt interviewee responses on the different areas of interest in the project and also to reduce difficulty or uncertainty deriving from having to

answer direct and sometimes broad questions (Barton, 2015). Four slide sets were produced, one for educators and one for players in English, plus the Italian versions for use with the Italian-speaking interviewees (see next subsection). The visual stimuli were only used with these stakeholders because it was perceived that researchers, policy makers and developers would not need the same type of guidance.

Interviews

Recruitment of candidate interviewees targeted individuals with solid experience in gaming (for the players) or use of games in education (for the educators). During recruitment and definition of the final sample, attention was paid to covering a variety of experiences and of interviewee typologies in terms of nationality and gender; age bracket was also considered for players, while in the case of educators consideration was given to school level. Educators were recruited through calls on relevant Facebook group pages and other networks like European Schoolnet. Players were enrolled through calls on blogs, player associations (eSports associations) and Facebook groups. Before the interview round commenced, a video recorded test interview was carried out with one educator and one player in order to fine tune the visual stimuli and to support shared understanding among the six-member interview team about the broad protocol and procedure to follow.

Between mid-May and early June the team conducted 39 online interviews - 18 with educators and 21 with game players (see Table 3) - via Skype. Each interview was recorded (for a total of 44 hours of audio) and transcribed externally by professionals.

Interview analysis

The restricted time frame time available for analysis meant the interview team had to select a subset (25) from the 39 transcribed interviews for systematic analysis (see Table 3). The selection was largely guided by (a) representativeness in terms of stakeholder group, language (Italian and non-Italian) and gender, and (b) the richness of information each interviewer provided.

	In Italian transcribed / **coded**	In English transcribed / **coded**	Total
Educators	10 / **6**	8 / **6**	18 / **12**
Players	8 / **6**	13 / **7**	21 / **13**
Total	18 / **12**	21 / **13**	39 / **25**

Table 3 Distribution of interviewee sample

The 25 selected interviews were coded individually by the six researchers using NVivo , a specialised qualitative analysis software package . The coding was performed systematically in a mainly deductive manner (Braun & Clarke, 2006) using a jointly designed codebook (see Appendix 3). This codebook is based on an E-R diagram, reported in Appendix 1, and its definition (DeCuir-Gunby, Marshall, & McCulloch, 2011) was an iterative process involving multiple revisions. Clearer insights about the interview data were gained as researchers achieved optimal agreement on the codebook's structure. Based on a relatively stable version of the codebook, a project was created in Nvivo to test the codebook structure on two interviews scripts (one educator and one player). The functionalities of NVivo for computing node by node percent agreement and Cohen's Kappa coefficient were used to identify low-agreement codes (pairwise comparison) (Campbell, Quincy, Osserman, & Pedersen, 2013). These cases were then discussed until

agreement was reached and the codebook was amended and finalized, mostly by enriching the codes description.

The final version of the codebook comprises four main conceptual categories (main nodes) and related sub-categories, i.e. nested child nodes:

- Interviewee experience with games: including sub-codes for chunks of text concerning interviewee experience with games;
- Views: including sub-codes for interviewee opinions, particularly their views about the overarching questions;
- Perspectives: including sub-codes for each of the four perspectives in the project's Methodological Framework (Persico et al, 2017)
- Games: including sub-codes for game categories, types, etc.

The codebook also includes general and specific instructions for code application.

3.1.3. Interviewee sample

This section reports some general data about the sample of 25 interviewees whose interview transcripts were coded and analysed in depth.

Educators

The 12 educators were people with experience using digital games and/or gamification in formal teaching practice, whether gained currently or in the recent past. Besides teaching, these interviewees reported involvement in other professional activities, including teacher training, academic activities and game development. Their distribution across several variables is reported below in fig.3.

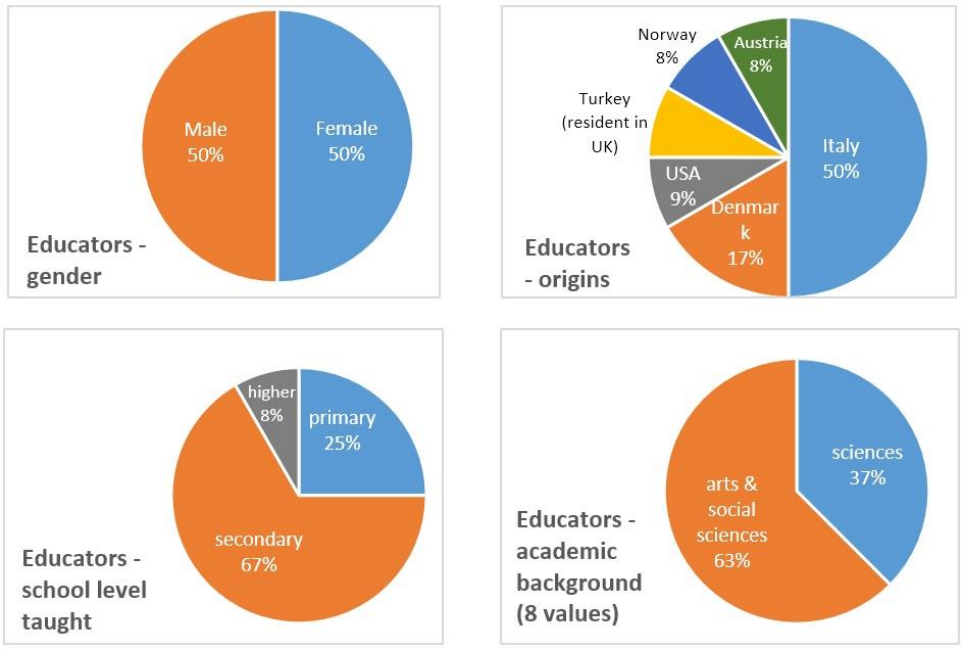

Figure 3 educators at a glance

Players

The 13 players had an average age of 26, based on seven reported values. The players mentioned involvement in various career-related activities, including university studies and game development. Further personal data are reported below in Fig.4.

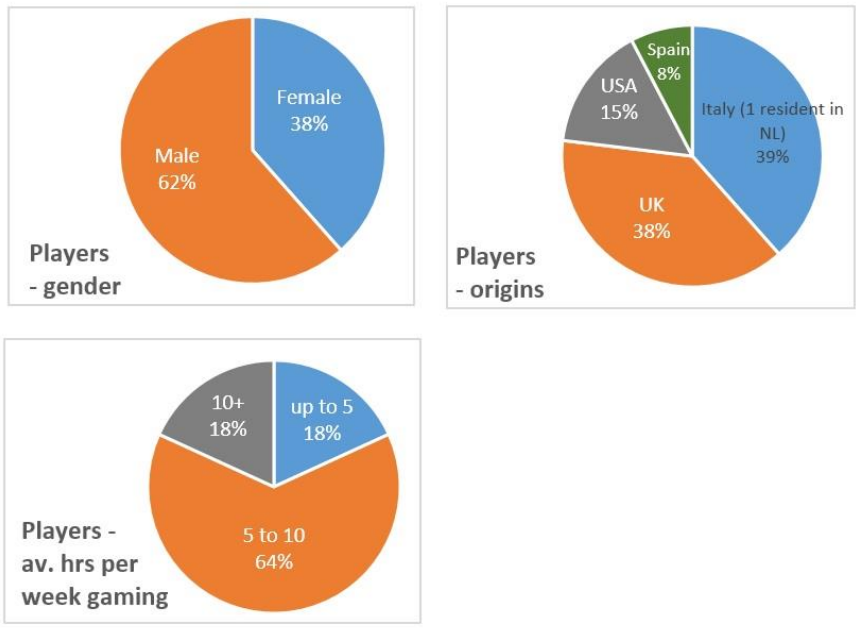

Figure 4 Interviewed players at a glance

3.1.4. Outcomes from educator interviews

This section reports considerations emerging from the interviews with the educators, while the following section regards the interviews with the players. In both cases, analysis was conducted following a qualitative approach; the researchers' interpretation was rooted in the available qualitative data, that is, the tagged interview transcripts. It should be noted that excerpts from the Italian interview transcripts have been translated into English, although the analysis itself was carried out in Italian. Considerations are provided for each of the perspectives adopted in Gaming Horizons– education, psychology, ethics, sociocultural/artistic – and for the overarching questions defined for the interviews and reported in section 2 of this deliverable.

3.1.4.1. Educational perspective

The interviews with educators revealed a broad landscape of educational applications of games, as well as a wide variety of viewpoints concerning the potential of games, the

reasons for using them, and the most promising ways they can be used. This breadth may partly be due to the fact that our interviewees work at different educational levels, from primary school to university.

Purposes and ways of using games

The reasons why our interviewees are using games are not limited to the obvious desire to stimulate students' interest and motivation:

> *[it] isn't just because kids were engaged with [gaming]; there are themes, subject areas and concepts that are very difficult in science to teach; […] to have kids actually interact with that information is a bit difficult. (EE01)*
>
> *I'm trying to figure out whether or not games can help students think critically and help them approach mainly literature in a critical sense. (EE03)*
>
> *the most important part I think [is to] provide relevance and meaning to the things that we want to teach the kids. So the game really becomes a meaningful context for learning rather than sugar coating (EE04)*

Some of them are strong supporters of game-based learning; while others are still exploring its potential:

> *I want to meet kids where they are, although […] if I could find a better way to teach them than a game I will do it (EE02);*
>
> *I think their importance is paramount: they provide an opportunity for getting close to reality. We talk a lot about competence development, authentic problems […] and games are an easy key to provide concrete stimuli (EI11).*

Nine, out of our twelve educator-interviewees, were - or still are - players, and their teaching with games largely appears to be informed and fuelled by their (enthusiastic) experience as players. Comments by the non-player educators reflected a desire to 'meet kids where they are' (EE1) and to capitalise on enthusiastic (emotional) responses to games:

[students] were going mad for it and […] those tiny screens seemed to engage them better than [what] I taught on the interactive whiteboard (EE2);

I think in many ways gaming has rescued me actually. I was a bright kid, I could do everything the teachers asked me to without really trying. But if I hadn't had that gaming space to really explore and develop on my own I do not think I would have ended up where I am. (EE04)

Gamification makes sense […] [for] a learning process that acknowledges the emotional dimension, because we often have a vision of a separation between rational and emotional processes. On the contrary, the two are much more strictly connected than we imagine.(EI03)

Significant differences emerged regarding the games the educators choose to use and the way they use them. For example, some choose short games to stimulate discussion, games that can be 'played episodically so you can stop playing and then come back to it later on' (EE03). At the other end of the spectrum, a university lecturer in a law school (EI03) reported developing an online role play environment which is used throughout a course to simulate an entire court trial from beginning to end requiring real-life tasks to be performed by participants in an 'alternate reality' environment.

Many interviewees use entertainment games for learning, while some also use serious games and gamification. In most cases the teachers embed the use of games into a broader pedagogical design, where game choice is driven by particular desired outcomes. Some of the interviewees have even developed or modified games to obtain a bespoke environment for their students:

I bought the game, which is a commercial game. […] with these additional rules [created by the teacher], the game becomes a parlour game […] where students solve computer science problems (EI09);

We've quite deliberately steered clear of any type of serious games […] because I feel that very few serious games or educational games actually work well enough […] of course this can take some time finding the right games (EE04);

So I was on the lookout for quite a long time for a nice looking game, an aesthetic game of some kind. And I found Drawn: The Painted Tower. It's a very beautiful game about a girl who

draws beautiful pictures and then they come to life. And it's a riddle game […]. Also you can go into the pictures in the game. (EE05).

One interviewee mentions the advantages of using games for assessment purposes with children, especially those with learning impairments, in order to contrast the emotional effects of formal assessment (EI10).

EE04 used First Person Shooter (FPS) games with special educational needs (SEN) learners:

[…] we wanted to play a World War II based first person shooter with the kids. Because we've read some research that said that the visual processes when you're playing FPS, first person shooters, are quite similar to the visual processes that goes on when you're learning to read. […]. And we didn't see any increase in violence or aggression whatsoever. However, we saw that half of the kids felt that actually just focussing the right place in the books became easier (EE04).

Acceptance

Students' acceptance of game based learning is reported to be good, provided that care is taken in the way this is proposed, avoiding, for example, making gaming compulsory or using games in which the playful/gameful dimension is a mere cosmetic layer added to instructional interactions:

as soon as you try to put students into the setting of having to play a game for learning there's, in a short time period, a shift where they then start to dislike this thought (EE07);

We have some training games […] and it's kind of lying to the children; it's like, okay, now you're playing a game but when they realise that they are not playing a game, they are making the same exercises again and again and again, then they get disappointed. Then they just don't want to do it anymore and find some system to cheat the game (EE05).

Such reactions have led some interviewees to eschew compulsory game-based activities:

games shouldn't be a mandatory part of all types of education. It is a supplement. For some it can be a really important and vital part of their classes. But then again it sort of boils down to your own interest as a person who's interested in games […]. Imposing games on a school or a school district or a curriculum is the wrong way of approaching it. (EE03).

According to EI11, girls are generally more enthusiastic than boys about coding activities with Scratch. Here, girls' better performance 'sometimes frustrates boys', who usually expect to be better at this kind of activity. This frustration can lead to aggressiveness or demotivation, creating problems for the teacher. On the other hand, EI11 reports that maker-oriented activities with design kits like Arduino sometimes do not appeal to some of the girls. Reported solutions to these pedagogical problems include suitable team composition to prevent prevarication by some better performing players, and proposal of a different type of activity that may be more in line with the girls' interests, such as those involving wearable computing. Of course, there is no right recipe: it is a matter of striking the balance between, on the one hand, encouraging girls to engage with tasks that are traditionally considered 'for boys' and, on the other, respecting their preferences.

As for the attitudes of colleagues and parents, there is a sense that the use of games isn't always accepted as a serious activity, one that is suitable for schools (EI11). Colleagues can be reluctant to collaborate in interdisciplinary game-based activities and parents are often dubious about time spent on gaming (EE03, EI11). Paradoxically, headmasters can sometimes be more enthusiastic, even if it is unclear whether they believe gaming is educationally effective or just because it's trendy (EI11).

Learning outcomes

Our informants used games to foster the learning of specific disciplines, the practice/development of transversal skills and competences, and the promotion of desirable attitudes. While a few of the educators propose games or gamification for memorizing contents (EI01, EI07), many do it to develop higher order skills and competences, such as problem solving in science (EE01, EE2, EI10), strategic thinking

(EI01), writing skills, information problem solving and critical reflection on complex content (EI03), game making and IT skills (EE07), computational thinking (EE02, EI07, EI09, EI11), self-regulated learning and meta-cognition (EE01, EE02, EE07, EI07).

In view of these objectives, gamified simulations are indicated by some as an effective approach (EE01, EI03). Games are also deemed suitable for creative activities of various kinds (EE02).

Game based learning seems to contribute to the practice and development of self-regulated learning skills, including metacognition:

> *the other thing that gamification of classrooms can do is give kids choices and then they feel like, you know, they have a voice in how and what they learn (EE01);*
>
> *they are the one who is in control of their learning, they are the one who is thinking about their achievement, their learning, their thinking. So definitely because they are using it all the time I am sure they are developing it (EE02).*

The impact of games on learners' attitudes was also discussed by a few interviewees, sometimes with reference to ethical aspects and responsible citizenship (for more on ethical implications, see section 3.1.4.3):

> *we are also using the games as a laboratory where we can try out different theories that we create. This is both regarding subjects like maths or communication or whatever but it's also regarding ethics and morals and who we are and who we want to be. […] games create a safe space where we can actually play with these things (EE04);*
>
> *an important component of our intervention on reality is increasing awareness of the world where we live. And videogames can serve this purpose (EI03);*
>
> *I think it is interesting to take advantage of a videogame, a simulated interaction to pose ethical-deontological questions to individuals (EI03).*

There is strong consensus among the interviewees that collaboration is fostered by gaming activities rather naturally, to the point that the teachers may be 'left out' and have to 'learn to handle the class in a different way' (EE02):

we started playing this video game […] and I watched and waited and […] those kids were collaborating naturally. […] kids get really competitive with themselves and with each other, and yet they're still willing to share the information, because even though they can get through level one, if they could help another kid get through level one, that kid might be able to get through level two better than they do. […]; I [the teacher] was the one that was left out, which actually was a pretty cool thing (EE01);

we can motivate the most pupils, the most students, if we focus on collaborative games and we focus on PVE games, player versus environment games. So, we have groups of players competing cooperatively against a computer player, an AI player, rather than against other human players. (EE04);

so, the teacher is a game-master who's actually on the same team as the students. When you're playing a dungeon master, a game master, in a role-playing session, you're really on the same team as the players. And your job is to make sure that it's interesting, that the challenge level is right, to keep things flowing rather than judging who's best. (EE04).

Competition, which in many of the interviewees' experiences is intertwined with collaboration, is described as both a positive and negative ingredient of gaming, since it is motivating but it also introduces complexity in classroom management (EE01, EE02, EI11):

the competition part means a lot to the boys and not that much to the girls (EE03);

competition is something we'd rather not go into. There's a lot of other ways to motivate and make things relevant and exciting than competition. And competition I think there's really enough competition in schools and education already (EE04);

competition, always mild, should not be too strong because in a class, especially with adolescents, it can be like a boomerang. (EI07).

Some see competition and collaboration as being linked with motivation (EI03, EI10):

there are two aspects that stimulate motivation: one is competition - because, in the end, someone will win and someone else will lose, both in terms of legal trials [the learning content] and academic performance – and then there's the cooperative side that encourages and fosters learning (EI03).

3.1.4.2. Psychological perspective

Motivation

As already mentioned, digital games are seen by the educators we interviewed as powerful tools at motivational level. Some educators refer to the intrinsically motivating

nature of games and playing (EI03, EI07, EI10), while others emphasise advantages deriving from the use of a language that is part of the daily experience of their students (EE01) or the fact that games represent an innovative medium to deliver contents (EE05). Nevertheless, it's stressed that games shouldn't be seen as a motivational panacea:

> *you can work to foster motivation, but if the situation is disastrous, with total demotivation, […] the techniques I've adopted up until now might not turn out to be enough (EI09).*

An educator who wanted to apply gamification in class raised an interesting point about individual differences at motivational level and their relation with game mechanics:

> *what we've found is that every person and every pupil is different. That is actually quite challenging for us as well because that means that our teaching method and our gamification is quite complex. We are using a lot of different game mechanics, game dynamics, to make sure that we motivate everyone. (EE04).*

Some interviewees also cite gender differences in relation to the motivational aspects of gaming in general and different games types and genres. While, in general, both girls and boys seem to have a positive attitude towards digital games, the game genre issue remains open to debate. For some interviewees, boys seem more motivated by playing commercial games, while girls seem more open to applied games (EE02) and especially puzzle games (EE02, EE05):

> *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 game to them […]. But the girls, they did, and the puzzle problems on Nintendos and things, they liked them, my girls (EE02).*

Moreover, while for one educator (EE05) games reinforce relationships between boys and girls in class, for others the fact that girls succeed in playing can produce frustration in boys (EI11).

The role of games in increasing intrinsic motivation to learn was only touched on lightly in the interviews. According to one educator, games can be powerful environments where learning (even acquired outside the game) can be applied, enhancing intrinsic motivation:

> *once they realised that what we're trying to teach them actually was applicable in a setting that they were really engaged in, in some activity that they wanted to become better at, we could then go back to our regular school books - boring, unsexy school books - and then they would actually carry this enthusiasm and this willingness to learn […]. Instead of us saying you need to do this because there's an exam coming, or your mother and father want you to do it, it became an internal goal. (EE04)*

Addiction

All the educators expressed opinions and concerns about the issue of games addiction. In some statements, the line between engagement and addiction seemed subtle (EE01, EE02):

> *So, the individual will play because they have the freedom I think. Engagement, enjoyment, motivated. I don't know whether it's addictive, I think it's just enjoyment. You get people who enjoy being on Facebook, spend hours in there, that's the same thing (EE02)*

In other cases, teachers report playing habits that considerably interfere with their students' life and academic performance (EE03, EE05, EI01) and which can thus be considered expressions of addiction:

> *We see kids in school every year that have issues dealing with their different – obviously different - types of addiction. But when it comes to games, I have kids coming in in the morning, they've stayed up all night playing, they had perhaps an hour's sleep (EE03)*

The issue of addiction is also considered in relation to the use of games at school:

> *I know some teachers that use Minecraft for instance or World of Warcraft; those games are notorious for being addictive. And then as a teacher you'd have to obviously have a plan for dealing with that, if that issue comes up and […] [have] some sort of follow-up in terms of the risk of addiction on kids (EE03)*

The importance of parental mediation and self-regulation is frequently expressed (EE02, EE05, EI01, EI10), for both adults and youngsters:

> *I think grownups can be even more addicted to the games than the kids. The kids are used to the grownups saying 'put it away', whereas the grownups just do it whenever they want to (EE05)*

Some game mechanics are recognized as having a role in triggering addiction behaviours:

> *most digital games give you stars, show the level you reached, encourage you to carry on; it's easy to get engaged in this gameplay, so you want to go on, to reach the next level, take the next step so you get these […] rewards, which are incentives to keep you playing. (EI01)*

The discourse about addiction leads to the issue of isolation vs. socialization. The interviewees see both as tools that can drive people to isolate themselves (EI09, EI10) and, at the same time, can represent an opportunity to socialize achievements (EE07).

One interviewee states:

> *Often the question that relates to that is on how much time an individual spends on gaming and that this might exclude that person from the rest of society […] there are certain dangers related to that, […], each gamer, even if it's a very heavy gamer, has to reflect the results with someone else. So this is the societal function I guess. So he has to tell his friends about his newest high score and where he did whatever. So, for me, that's not a big issue. (EE07)*

In this sense, schools can play an important role:

> *Digital games shouldn't be demonised [saying] 'the experience of this girl who isolated herself holds true generally'. Because, by bringing games into a social context [school], we've seen that games become social, sociable and socialising (EI10).*

Engagement

The concept of engagement often appears intertwined with those of motivation and addiction. While the potential of games and gamification for engaging students is widely discussed in the literature (Persico et al, 2017; Przybylski, Rigby, & Ryan, 2010), only a few educators reflected on game features and mechanics that boost engagement, such as interaction, narrative and modelling of emotions:

> *I'm interested in the application of game mechanics […] [like] narrative […] [that] are designed to engage the individual in a story and possibly [help] acquire, consolidate or*

validate knowledge, but within interaction, within the story, not in a context driving you to earn points. (EI03)

Some mechanics, like tasks with a time duration, are also recognized as engaging (EI09).

Another cited aspect is the social and competitive dimension:

I find that competitive multiplayer games are the ones that appeal the most. (EI09)

Physical activity

Interviewees recognized that the impact of games on physical activity is a widely discussed question. Their positions were in general quite positive: it is not games themselves that they hold responsible for sedentary lifestyles and obesity but, rather, their overuse (EI07, EI10). As to the potential games offer for encouraging movement, they see new generation controllers and VR games as important innovations (EE02, EI11):

with my son the other day, we had the VR for PlayStation. You're moving it, you're trying to fight against a robot and you're trying to move. It's developing, isn't it? Before you were sitting and playing with a keyboard (EE02).

The same holds for gamification apps (EE01, EE03):

There are different apps and different tools that you can use that help track progress as well. So the games part is also entering into that area of physical activity (EE03)

Cognitive and perceptual impact

The educators often referred to the potential of games for the development of problem solving skills (EE07), although some raise doubts that these skills transfer to other area of knowledge:

he's really good at playing games and problem solving and he does really good levels, but I don't see him using that problem solving skills in other areas of learning. It's like it's only staying in there (EE02).

One educator points out that cognitive and perceptual abilities are brought into play in games generally (not just digital ones), where these abilities develop in a safe and natural way:

If [the game] is well designed it will keep me in a zone where I feel good; I'm not over or under-stimulated and so I can develop these skills naturally in a fun way, without too much effort (EI09).

3.1.4.3. Ethical perspective

The interviewees were quite responsive to prompts regarding the ethical dimensions of game and gaming. This is hardly surprising given that educators play a pivotal role in the general formation of young learners/citizens, and have institutional responsibilities to act as 'gatekeepers':

Not all games are acceptable to use in a classroom setting. There are games that are on the fringes of what's acceptable as ethically sound […] We should really be aware of what types of games we're using. But then again we should probably also know that kids obviously consume this type of entertainment in their spare time. (EE03)

As well as addressing ethics-related criticalities, some educators (EE04, EI03) also stressed the potential games offer as arenas for exploring ethical issues and developing related capacities, whether or not these games had been designed for that purpose:

I think ethics-wise games can be a really great tool. [They] can create a safe environment, this laboratory for trying out who you are and consequences of different actions (EE04);

I've been using games like Life is Strange where it's all about making choices and about ethics. And we've been discussing about what's right and what's wrong and about having a digital identity (EE05);

Identity

A key aspect of this potential identified by several interviewees (EE03, EE04, EE05, EE07, EI01) is exploration of – and experimentation with – personal identity:

games can help create individuals who can think about themselves or see themselves and their own identity from a different perspective. Because [you] can play roles [and] test hypotheses in a safe environment […] and then see how they affect the way people react around you. (EE03)

playing with identities […] is something that might be able to strengthen their personality (EE07);

[in] multiplayer games […] you have to think […] Who do you want to be? […] the same person as you are in real life or […] take another personality on? […] Are you good, evil?(EE05).

By the same token, some informants (EE02, EE03, EE05) perceived a degree of risk related to the game contexts in which these identities are played out, especially in terms of appropriateness for (young) learners:

when it comes to some games that are more the violent type of kind, adopting an identity is obviously a risk (EE03);

certain games make it easy for you to become a character that is very successful by just misbehaving, and this is an ethical question (EE05).

Some see adult/educator mediation as the best response to this risk:

The problem isn't individual players, it's the adults they have around them, who don't know who to mediate or educate them (EI07);

[sometimes] the content can be […] not so ethical, but that's up to the teacher then. (EI01)

it's important for adults to be there and maybe try to talk with the kids about their games and why they play them (EE05).

Violence and aggression

As cited above, a key ethical issue is violent game content and interactions, and the potential these may or may not have to trigger aggressive attitudes and behaviours outside of gameplay. Most of the educators (EE02, EE04, EE05, EE07, EI01, EI07, EI09) were highly sceptical or dismissive about this association, either because their personal/professional experience tended to contradict it or because they saw it as media hype with little empirical foundation:

The best gamers in my class are non violent, absolutely (EE05)

the media … are always trying to link unwanted behaviour, violent behaviour, to technology or game playing. There is a kind of negativity towards games (EE02)

I have yet to see evidence that video games actually make you violent (EE04)

Some (EE01, EI10, EI11) saw the question solely in terms of their own responsibility to shield very young or SEN learners from inappropriately violent content; one (EI03) saw violence as a manipulative ploy that game developers use to engage players.

Interestingly, another educator deliberately sought out this characteristic as part of social skills education:

> *we wanted [..] to have a game where you could have friendly fire, where the kids could actually kill each other because we felt that we had graduated to a level of game literacy and social competence where it would be […] manageable. So we of course had to go to these kids' parents […] [and] every parent, without fail, said [OK] (EE04)*

Gender and sexual identity

Besides violence and aggression, the other core aspect of ethics that was posed to interviewees was identity: how (narrowly) this is both portrayed in games and perceived/developed through gameplay. Here, the aspect that attracted most attention was gender, although this was almost exclusively a concern of the English-speaking educators (EE02, EE04, EE05, EE07), rather than Italian-speaking ones. Some interviewees questioned the way gender is reflected in games:

> *there may be stereotypes in the games [where], for example, the role of women is always the one that has to be saved (EE07)*

Other comments centred on market dynamics:

> *it's still the boys who are gamers […] I don't know if you can call it a problem, but it's a problem when you teach it […] we have to see it more like a challenge to find games for the interest of both genders, instead of just leaving the game part out of teaching (EE05)*
>
> *[games] should more gender-neutral […] what game developers [are] doing is meeting the demand. So if the boys like those boyish games then of course that is what they will create […] [but] maybe we need to have more different types of games to meet different interests of children. (EE02)*

One interviewee challenged the assumptions underpinning those market dynamics:

I'd like to see this boys' games and girls' games [thing] eradicated. They're just games. This actually goes on to both players and developers, to stop splitting things up in gender gaming styles, gender games. Because I don't believe it's true. I think we saw larger variation within the genders than between the genders in what was motivating and what the kids enjoyed. (EE04)

Sexual identity received less attention from the interviewees. One mentioned the inherent potential of games in this regard:

[in] Gone Home […] we get to know a person who is in the process of coming out as gay […] [The students] can relate to that sort of pressure […] in every type of way [of] being a teenager. […] [The game] can be a space where they can deal with, or they can identify with, issues that are apparent in teenagers. (EE03)

Another felt games for children are restrictive in this regard:

What about those children who may not exactly know what gender they belong to? […] We provide them with games that are so gender dominated. How is that making them feel? I would feel like I was feeling excluded. (EE03)

Racial identity in games/gaming was only briefly mentioned in passing by a couple of interviewees.

Inclusion

The capacity of games to support inclusion was dealt with by a number of educators (EE01, EE03, EE04, EI07, EI09, EI10, EI11), particularly the Italian speaking ones:

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 super hero in that classroom (EE01)

I'm interested in inclusion because we've seen that […] kids with Downs Syndrome and with motor impairments, when you have a simulated room or office, for example, everyone moves in the same way (EI10)

games can be really inclusive because they allow different ways of being, different channels for expressing yourself that aren't a part of lecture-style teaching. (EI10)

Two interviewees also expressed concerns regarding inclusion:

children with impaired cognitive development, who have a really hard time, are strongly attracted to these games, but they find it hard to break away from them when they live their real lives (EI10)

the game itself can also be a core reinforcement of negative situations. […] Those […] who are ostracised, […] the same thing can happen, actually in a more serious way, a more disturbing way, in a virtual environment. (EI11)

Monetization

Prompts about the ethics of how games are monetarized attracted little response from educators. One, EE07, cited a paradigmatic example of the pay-to-win strategy: '[you] have games like World of Tanks where you would never be able to be at the top unless you pay.'

Others pointed to the specificity of the education market:

those issues are really mostly located in the casual gaming market, [whereas] we only use complex games, where you often times pay once for an entire game and then you own it for life (EE04)

our experience is that a lot of game makers actually want the games to be played in the schools and they want to participate in social responsible behaviour. (EE05)

Regulation

When prompted on the regulation of games and gaming from an ethics viewpoint, the educators mostly considered the question of protecting (young) players from potentially 'inappropriate' content and behaviours (EE02; EE05). As mentioned earlier, such gatekeeping is an established part of teachers' and schools' institutional role and responsibility:

You have to be very careful before using these games in schools. You don't want to get the reaction of the parents or your head teacher [...] The [PEGI] rating system is there, I don't know how much it's followed. If it's present and it's not followed it's not really useful. I don't really know how many parents are following [it] (EE02);

Some see the school as shouldering a considerable social burden in this regard:

Parents have to set limits, just as we educators should perhaps. At this point, schools are being called on deal with anything and everything because society and families are totally useless. So the only hope left is schools (EI10)

So the problem isn't the individual player, it's the surrounding adults who don't know how to mediate, how to educate (EI10)

Perhaps it is the weight of this burden that leads one teacher to call for blanket institutional regulation:

We need to find a way […] to regulate everything […] maybe at legislative level too, at institutional level […] [with] firm regulations that can't be circumvented, that don't just satisfy those who sell games, who produce them, who use them (EI10).

Finally, one interviewee questioned the ethical basis for enhancing learner engagement by applying what may be considered as manipulative game mechanics:

casual games like Clash Royale or Clash of Clans have extremely powerful dynamics […] the opening of a time-locked crate, the launching of time-based activities [lasting] a certain number of real hours […] [These] keep me glued to the platform […] There's a temptation to consider that, by using specific mechanics, I can get the kids to study more. Actually I find this a bit ethically unsound because there's a risk of being manipulative (EI09)

The argument that gameful elements and interactions are essentially manipulative by nature, and hence ethically questionable in an educational context, is one most commonly associated with gamification (Persico et al, 2017).

3.1.4.4. Sociocultural/artistic perspective

The interviews with educators indicated that they see the relationship between games and cultural/social aspects as complex. One point they raised is the integration of games in the social context, at macro and micro level, where cultural and philosophical beliefs are determined:

my son plays games, my students play games with children around the world. They created their own little world within a world, so a society within a society, so therefore they got their norms set according to their enjoyment out of the game. But then you have the real society, which is affected by media quite a lot [more] than [by] research […] Now you have the society

> *within school - the teachers - and what their view, what their experience of games is. So, you have society in different forms and they all have different views of gaming. That is, I think, what is causing the problem for games not entering the classroom of course. So which society are we talking [about]here? (EE02)*

In this view, the community of players is seen as a society within society, where cultural differences tend to be cancelled out. Another educator highlights the potential of games in affecting people from the cultural viewpoint, as other forms of cultural expression do

> *obviously games will affect people – they might also affect people negatively and that goes for probably most cultural expressions as far as I can tell. (EE03)*

and considers them powerful in triggering social awareness:

> *but if you talk about a general games culture, if you will, then […] games are potentially helpful in creating – developing - citizens who are able to ask relevant questions, who are able to solve problems by looking at different types of solutions, rather than just complaining about the problem itself. Because doing that in a game will get you nowhere (EE03)*

Few educators considered games from the artistic perspective. EI03 defined games as a new form of art or, better, hyper-art:

> *Videogames may actually be a new art form […] [combining] graphics, narrative, music in the creation of an experience. So games are a kind of hyper-art, in that you have different dimensions of art (EI03).*

More on this perspective is reported in the next section, given the significant overlapping with the themes of the Overarching Questions.

3.1.4.5. Views on Overarching Questions

When asked about the role of Games and Gaming in Society, the educators we interviewed touched upon several themes.

Social and cultural aspects

Games are seen as a powerful tool that can be leveraged to raise social awareness (EE03, EE04; EI03):

a major part of the work on reality is raising the general awareness level about the world around us (EI01)

One of them refers to Civilization and Democracy as games that require the player to make choices on behalf of themselves or a community:

so [when] taking a position in the world as a citizen, […] it's vital to ask questions about what's going on around you […] Using games as a simulator for the different types of choices [makes it] easier to relate to that, rather than just discussing it on a theoretical level. You can interact with, you can be a part of the experience yourself, and then that will potentially give a deeper insight into how you feel about different aspects of the world around you. (EE03).

Describing the NetLogo simulation platform, EI01 says:

this is a cultural use of videogames - argumentative, non-neutral, proactive – to raise awareness about issues that are in need of awareness-raising (EI01).

From the cultural viewpoint, this educator considers games to be a sort of 'free zone' where different barriers (cultural, religious, racial, etc.) are lowered:

if you look at the children coming from very different cultures, different religions, different races, different upbringings […], they are meeting with other children coming from different backgrounds - around the games. […] They design a new world through gaming that it doesn't have impact on, it doesn't have links to religion or race or anything. (EI01).

Elsewhere, EE07 considers this not as specific to games but as part of the globalization of communication.

The interviewees also recognized games' support to social and cultural changes. One educator refers to games for teaching social justice and equality:

as far as social change [goes] […] I look at games that teach about […] social equity and justice, and how those things work, especially right now in the United States. (EE01).

The same informant mentions the possible role of games for social levelling:

what games can do […] in society [and] probably in education in terms of levelling the playing field […] [is] some kind of social equalisation actually, where everybody can participate on their own level and have challenges presented to them that are meaningful for them right now. So, I guess games can somehow go against this trend of standardisation because they're so adaptable. (EE01).

Some interviewees see games both as media supporting socialization (EE07, EI07) and, at the same time, as providing the player with an escape from reality:

> *this goes back to addiction, to the escape from reality, to what Jane McGonigal says in 'Reality is Broken' – the fact that players find it so much more interesting and fun to spend time playing a videogame than they do to spend time outdoors together with their friends, so that, in the end, they start to withdraw (EI09)*

A number of interviewees see games as contributing to the generation gap. Some point out 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 regulation is considered inadequate (EE05, EI09). The same lack of awareness is also applied to some educators:

> *there's a gap in knowledge between those who educate and those who play these games (EI09);*
>
> *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. (EI09).*

A similar gap is also seen to be associated with the different levels of technology access that youngsters have (EE07, EI11):

> *the other aspect related to society is that […] we see the digital divide becoming bigger and bigger […] this might be an issue here because youngsters are so much specialised in certain fields, [and] others that do not have these possibilities might not ever be able to connect (EE07).*

Games market and policies

The educator-informants believe that game development companies prioritise commercial gain, and so ethical concerns are often overlooked (EE02, EE07, EI03, EI09):

> *In the quest to keep players in the flow zone, to continuously increase earnings, developers may be tempted to leverage things that are hardly the epitome of human expression. So […] we really need to reflect about this, to be aware of it, […] maybe coming up with an alternative. (EI09)*

Some of them see the games and films industries as having formed a symbiotic alliance to push their respective products (EI11) but, more generally, the ready availability of games on the internet is considered to have driven the market boom (EI10, EI11).

Virtual and augmented reality, coding and robotics are seen as innovative trends in games (EE02, EE05, EI03, EI07) with applications in fields as diverse as cultural heritage or economic literacy (EI03)

> *the modelling of emotional-relational aspects, including those linked to roles, is an extremely interesting area. There are several factors behind this, and one is the development of robotics. It opens up a number of application possibilities, including in game design obviously. (EI03)*

Several educators call for the development of educational policies to foster - but also regulate - the use of games in schools, school districts or nationally (EE01,EE03, EE07, EI01):

> *I'm thinking about educational policy as well, because that will definitely impact on how you can use games in the classroom or not […] in Scotland they mention games in their curriculum if I remember correctly: implementing games. So there was encouragement coming directly from the top (EE01)*

Nevertheless, the same educator is not sure that this top-down action will necessarily be effective:

> *So, I wonder: […] if the policy makers in education mentioned the benefits and use[s] of games in learning, would [they] be used more widely by teachers? I don't know.*

Some of the educators we interviewed are not completely positive about policies pushing games and technologies in general:

> *Right now, I find the temptation to sell anything and everything so scary that I just want to shut down, with the risk that I'll be missing out on useful games, important games that might help to develop learners' abilities, competencies and knowledge (EI01);*
>
> *Games shouldn't be a mandatory part of all types of education. It is a supplement. For some it can [be a] vital part of their classes […][but] if you're not really motivated […] then that shouldn't be a mandatory part of a curriculum (EE03).*

Moreover, strengthening the digital competencies of policymakers (and people involved in the educational context) is perceived as an important action (EE07).

The educator-informants placed importance on policies supporting the game industry in the effort to foster independent game development, which could lead to games with more meaningful contents:

> *The games industry, particularly local game development, needs support to mature. This means creating institutional infrastructures to help talented developers and to support quality production (EI09).*

At development level, some educators (EE02, EE07) call for closer collaboration among developers and other stakeholders:

> *considering learning processes as being part of gaming, […] [which] would be a new idea to game developers, [having] to involve more, even policy makers, educators, into this process. I think this would be a very interesting field for that. (EE07).*

Some (Italian) educators (EI03, EI07, EI09) envisage gamification having a potential impact at social level but see its reach as still being limited.

3.1.4.6. Recommendations for stakeholders

The educators we interviewed made a number of recommendations either spontaneously or in response to explicit prompting. They raised numerous points of particular concern to other educators, encouraging a critical approach to - and adoption of - video games for learning purposes. However, many of these suggestions have implications for other stakeholders as well, both inside and outside school communities, and including game developers and policy makers.

Integrating games into educational settings

As already mentioned, some interviewees (EE02, EE03) emphasized that integrating games into educational settings shouldn't be mandatory for institutions, teachers or

students. EE05 also suggested video games should be integrated into curricula progressively:

> *[from] very innocent games when the kids are very young […] then Minecraft […] then more serious games […] [so] you can talk about politics and stuff (EE05).*

Some interviewees (EE01, EI03) stressed the importance for educators to 'think outside the box' on games and their application for learning, privileging interdisciplinary approaches:

> *If we started to think a bit more in terms of problems and less in terms of disciplines, maybe we'd find better solutions to things (EI03).*

Some interviewees put forward interesting proposals regarding the theme of 'gaming as a literacy' (Gee, 2003) as a topic that should be addressed in school. EE05 recommended putting gaming on the agenda in school as a transversal theme, for example by providing courses on 'videogame literacy', including how to be safe when gaming and how to behave when gaming. This could parallel what is already being done in many schools with digital literacy or media education.

To support the design of game-based learning activities, EI07 highlighted the importance for educators to share experiences of video game usage in the classroom and suggested that 'competencies that students might gain during their playing experiences should be taken into account' when assessing students learning.

Teacher's Professional development on gaming

An important set of recommendations and suggestions that emerged from several educator interviews is that of teacher training and support. In order to implement and facilitate the introduction of games in formal educational settings, EE01 suggested it would be important to initially involve those who can be considered 'frontrunners',

whether among teachers or school administrators. Several interviewees recommended that teachers should be trained about different types of video games that can be used for learning, and that they should have a firm grasp of the games themselves, how they work, and how to exploit them for educational purposes:

> *We need to educate teachers more […] so that they know it's more than just bringing a game and playing in the classroom. So we need to really create some form of framework [...] not an academic tool [...] [but] a practical tool (EE02)*

To this end, EE02 also imagines a MOOC (Massive Open Online Course) or an environment for supporting CPD (Continuing Professional Development). More generally, the need was expressed 'to strengthen digital competencies of both teachers and teachers' trainers' (EE07). EI11 stressed the need for teacher training on videogames to be accredited and measurable in professional practice in some way (for example, by adding a 'compulsory practice' module to their training courses), since there is a risk of getting no concrete return on training investment.

On school policy towards teachers' CPD, EI07 mentioned the need for follow up actions to the training. Along this line, suggestions include: employing game pedagogues or expert teachers with specific skills in game based learning as responsible for developing games in local contexts and assisting teachers' integration of gaming in their professional practice (EE02); providing schools with game based educational scenarios and high quality road-tested games for educational purposes (EE05, EI01), along with guidelines describing situations and conditions where the use of each game is advisable and tested.

Games and society

Some of the recommendations and suggestions that the interviewees made concern the relationship between games and society at large and have implications for policy making.

The belief was expressed (EI07, EI03) that games could encourage active citizenship and thus support political decision making. For example, EI03 recommended that policy makers should give deeper consideration to the use of games for supporting civic engagement and raising awareness of economic and political matters among citizens.

Game development

Specifically for the game market, EI10 advocated the need for better legislation and for the activation of control policies, with rules that cannot be circumvented. EI11 maintained that a space for communication between policy makers and developers would be desirable, and that funding should be allocated to training at various levels. Finally, EI07 suggested that policy makers should provide local funding to raise game design quality and introduce institutional policies to support smaller, independent productions.

With particular reference to developers, EI07 stressed that they should dare to try something new and that they – together with policy makers - should act more conscientiously and ethically to ensure that players in younger age groups are suitably protected from exposure to explicit content. Moreover, EE02 recommended that developers should take into consideration the need 'to have more different types of games to meet different interest of children'.

Stakeholder interaction

Stakeholder interaction is an area that a number of interviewees highlighted. Some focused on the school community; for example, EE04 recommended that teachers and parents should discuss games and 'sit down and play with them'. EE02 recommended that parents should share their gaming experiences with their kids. Similarly, EI11 stressed the need for 'parents to be aware of video games, know that games have a meaning and then they should be introduced in certain ways'. EI07 emphasized that 'educators and families need to know and experience (games), be more courageous'.

More generally, there is a shared belief among the educators-interviewees that (greater) exchange between different stakeholders in the gaming landscape would be beneficial, particularly regarding game design and the definition of effective scenarios of use. EE01 also stressed that student voice should be taken into consideration. EI11 suggested that institutions should adopt specific funding policies to support exchanges of this kind. Interestingly, EE02 suggested educators should collaborate with developers on ways of adapting *entertainment* games to make them appropriate for classroom settings, a strategy echoed by EE07:

> *developers [should work] with teachers […] and with the focus not to create serious games, but to create games that enable learning processes that can be [off] benefit to teachers and students.*

3.1.5. Outcomes from player interviews

This section reports the main considerations emerging from the interviews with player-informants. As for the previous section, these are examined for each of the Gaming Horizons perspectives – education, psychology, ethics, sociocultural/artistic – and the overarching questions, following the same order as above.

3.1.5.1. Educational perspective

Through the various narratives of the interviewed players, several threads emerged with regard to the educational perspective. Players reported their experiences with game applications in various contexts, including learning and education.

Some of the players described personal experiences in formal learning settings - such as school or academia – where videogames were used as teaching tools:

> *at prep school we had games to help teach us languages and games to help teach us[…] Yeah, at sort of high school it happened a bit, I think with maths. (PE07)*

Other players reported experiences of using videogames for learning in informal settings:

> *Duolingo, done it for a while, and it really helps me like keep up. I think it can also help people learn, like I tried it on French, like other languages to see, but like it really helped me just to keep up with my Spanish. (PE08)*

Yet others reported engaging in gamification for professional training in non-formal settings:

> *It has mini-tournaments to see who's doing the most training or presentations, or who's done most modules; you earn points as you go and so you win trophies or badges (PI08)*

Regardless of the context, most of the reported experiences concerned the learning of foreign languages (PE06, PE07, PE08, and PE10) and scientific-technical disciplines (PE07). PE07 mentioned using videogames for learning mathematics at school, whilst PE08 reported playing games to learn different subjects, including geography:

> *Since I was small, at least from when I had a computer, I've always played lots of fairly educational games, where I learnt by playing. I learned about geography, etc.(PE08)*

A common thread was the players' implicit and explicit references to the impact of gameplay in terms of knowledge acquisition but also, in some cases, regarding the enhancement of general skills and capacities like memory, attention, problem solving and decision making:

> *I always thought gaming had no influence on skills, or problem solving, but now that I'm older I've seen it's not like that. I mean, some kinds of games can help a lot in the external strategy of how to act, and also on external perception agility. (PI08)*

When asked about their experience with gaming for particular purposes or applications, several interviewees said this was negligible. Moreover, they reported that opportunities to learn (school) subjects or explore knowledge domains are not limited to serious games, but can be part of game play with entertainment games:

> *[Antichamber] gives you intuitive sense of how your dimensional geometry works. (PE02)*
>
> *[Kerbal Space Program] certainly doesn't teach you to fly a spaceship […] or the Space Shuttle. But it does give you a pretty good idea of what a space mission is like (PI02)*
>
> *[Although Portal 2 presents] a story that has nothing educational about it […], there are physics and other contents that are justifiably seen as being educational. (PI03)*

A transversally addressed thread in the interviews is that of collaboration and competition in gaming:

> *in League [of Legends] you're on five man teams and you have to immediately come up with some sort of teamwork and communication. You have to collaborate with four other complete strangers in order to actually win. Which is difficult sometimes when you've got someone that is not a team player, but you've always got to try and make it work.. (PE06)*
>
> *they [games] have taught me both about the positives and the negatives for competition I think. (PE09)*

One interviewee reflected on the balance between free exploration and guidance in the use of videogames for learning:

> *you have to strike a balance between what your [learning] goal is and, you know, the players' interaction. And the biggest mistake is [when] the player just has, like, an open sand box and they don't learn anything [...]. You need some sort of guided thing in order to get something*

out of it […] [but]in my classes [the games] were too guided […] [like] watching a video. (PE05)

3.1.5.2. Psychological perspective

The interviewees responded very willingly to prompts on the psychological effects of video games, which regarded both negative effects, like addiction, and positive effects, like memory enhancement.

Drawing from their personal experience, some players reported issues in regulating the amount of gaming time (PE02, PE10, PI01, PI02, PI06, PI07). In these cases, self-regulation was deemed important and sometimes characterized as a skill that should be recognised and nurtured:

That's something that wasn't instilled in me as an adolescent and it's something that as an adult I had to come to terms with and get out of those bad habits. (PE02)

I'm learning to manage my toxicity levels. It's a bit like taking drugs, isn't it? [...] I'm learning to manage it and to carefully measure the amount of time I dedicate [to it]. (PI07)

Even for the players we interviewed who didn't feel they personally had experienced gaming addition, there was little doubt about the existence of the problem. However, the informants differed on what they believed was the source of potential addiction. Three positions emerged:

gaming itself as an inherently rewarding, and therefore potentially addictive pursuit:

Addiction is – in a lot of cases it's a mind-set; it's something that you have trained your body to want […] I definitely believe people can get addicted to video games [...] it's an enjoyable activity. (PE05)

player disposition, whereby some are particularly at risk due to their sociocultural context:

The 'fault' doesn't lie with the game; it lies with an addictive personality on the part of the person in question, which I'm not saying is their fault at all, but it's definitely not the game's fault. (PE09)

the result of how developers employ particular game mechanics and fashion the gameplay loop itself to engage players:

I think that some games definitely are [addictive] and it's often when they've got a very tight loop of rewarding you for doing something […] [you] just keep doing it as much as you like and it's just continuously rewarding. (PE10).

[some games] are deliberately designed to create dependence and to reward you for spending […] [then] a small percentage of players get hooked (PI02)

One informant questioned how research and academia actually frame gaming addiction:

addiction models in psychology in general are tremendously flawed and written through with a lot of implicit ideological assumptions about how people should spend their leisure time […][There are] some very condescending opinions on […] free will and [managing] one's own time (PE09).

Interestingly, while some informants mention game mechanics in association with the addiction issue, mechanics are rarely cited in connection with immersion and engagement in the game experience. Instead, engagement is reflected in the comments of some interviewees (PE08, PI03, PI08 PE02, PI07, PE07) on aspects like escapism, immersive audio-visuals, game challenges and narrative:

it's a real escape, a period of time when your mind is taken up with something that's not real (PI03)

it was just the pure elation of finding and defeating this thing, and we'd all been working on [it] for such a long time. It was like that joint euphoria (PE07)

the meaning of the game doubles; it's not just a game but also a narrative experience. (PI03)

Some informants also mentioned elements that can impede immersion, such as dated graphics and micro-transactions:

I want to be immersed. I don't want to have to think about real-world things like money. (PE10).

Perhaps the words of PE08 best encapsulate this kind of heterogeneity:

There's so many different types of games and they're so broad that there is almost, like there is a game for everybody; it's like music (PE08).

When prompted on the potential psychological benefits of video games, the interviewed players overwhelmingly focused on enhanced problem solving skills and critical thinking, benefits which are felt to extend beyond gaming contexts:

it's like problem solving just distilled in its more purest form […] it helps you with other problem solving outside of the games and gives you a good toolset. (PE02)

I would definitely say I feel that impact, that better critical thinking, I suppose, outside the game. (PE05)

I don't think I would be where I am now without having learnt a lot from games and without having honed decision making skills through games. (PE09)

Another benefit mentioned is faster reaction times and/or motor coordination:

I feel like my reaction times are a lot better, I feel like I'm good at bimanual tasks (PE06)

I can look and listen at the same time but also be aware of what's happening around me […] if you haven't got that capacity in a videogame, you're dead. (PI03)

One interviewee also identified improved social skills:

there's this vague misconception that gamers really don't have any social skills, but I feel like because I play video games I have a better understanding of social skills than anyone else. (PE06)

When asked about the relationship between video gaming and physical health, the players reported negative impacts

games have definitely made me […] pretty sedentary (PE02)

but also some positive ones linked to specific games:

we had Dance, Dance Revolution so all of us were always doing that. (PE06)

[with Pokémon Go] I was happily doing two kilometres a day. (PI08)

VR was also identified as a possible affordance in movement-based engagement:

those games [with VR] are very active. Some of them I can only play thirty, forty-five minutes before I'm just exhausted. (PE02)

3.1.5.3. Ethical perspective

The interviewed players expressed a variety of positions on the ethical dimension of games and gaming:

> *if you're looking for ethical issues you're going to find ethical issues but if you're looking to just […] enjoy the game you're going to be fine with it. (PE06)*

Indeed, some described the gaming experience itself in very different ways:

> *you immerse yourself in a world which you're never, ever, going to find yourself in … it's essentially bridging the gap between reality and what you deem to be out of reach (PE07);*
>
> *Obviously games are a reflection of real life […] [so] how you experience things in reality is how you experience them in games. They're just amplified (PI07).*

There were only two (faint) allusions to the potential for fostering ethical sensibilities through games:

> *a lot of moral, ethical decisions […] don't always leave the player feeling comfortable[…][but] that isn't necessarily a bad thing (PE05);*
>
> *In Dragon Age the wizards are discriminated against for what they are, so there is a sort of metaphor for real issues [...] it's a theme I enjoyed exploring (PI06).*

Violence and aggression

When prompted on the issue, almost all the player-informants refuted the link between gameplay and player aggression or violence. Some focused on their personal experience while others generalised the question:

> *I don't think that playing video games has made me overtly aggressive or violent. (PE06);*
>
> *I don't feel that it encourages you or desensitises you (PE10);*
>
> *No, I think people are pretty good at understanding it's a game (PE07).*

Among the latter, two interviewees alluded to the burden of proof (PI01, PE07):

> *how can you say 'No, he did it because he played that game and so the game influenced him!'. I can't see it as being so closely correlated. (PI01)*

While our interviewees are all above 18, many mentioned the potential risks involved when children and youngsters have access to games with explicitly violent content and

interactions. Measures to deal with this issue are discussed later in the subsection 3.1.5.5. (Views on Overarching Questions). Another risk factor that some interviewees cited is the blurring of fantasy and reality in players' minds:

> *A lot of people […] start thinking of the video game like reality [and] that's the point where it gets dangerous. (PE08)*
>
> *For some people the game might never end and so something remains. (PI03)*

In this regard, one player identified technological innovation as a potential intensifier:

> *[VR] is going to be indistinguishable from reality within our lifetimes, then the question of violence is going to crop up again*[5]*. (PE02)*

Interestingly, a design approach suggested by another player might offer a way of addressing this problem through game design:

> *I never liked things like Call of Duty […] I didn't like how realistic it was. […] When I hit an enemy […] I'd prefer to see a star come out of my enemy and collect it knowing that I was progressing the game; the focus is on the game. (PE08)*

Out of the five interviewed players (PE05, PE07, PE08, PE10, & PI02) who mention the developers' position on violence, one criticises the adoption of violence as a fall-back design option:

> *[in BioShock] the story was very compelling, the environments were lovely […] [but] basically, the entire game play is to just commit these acts of violence […] [it] was such a shame […] [it] was quite a lazy design choice. […] there are a whole wealth of other things you can do in a game that is not just shooting a gun. There's other ways to interact with people. (PE10)*

By contrast, another player praises the design of the controversially violent game series Grand Theft Auto:

> *I think Rockstar do a very good job in their characterisation that they don't paint them in a way that's trying to convince you that they're right. (PE08)*

[5] Coincidently, on the very day this section was authored, an item related to this was posted on the BBC Future Facebook page: https://www.facebook.com/BBCFuture/videos/10156467935638047/

Interviewee PI02, instead, cites ‘Spec Ops: The Line’ and ‘This War Of Mine’ as games that take a critical position on senseless violence and reports how the designers of the game Nier leveraged game violence to highlight moral/ethical issues:

> *In the first part of the game you killed these enemies but in the second part you find out that they weren’t the insensitive monsters you thought they were: they had a conscience […] and you start hearing their voices and so, all of a sudden, having killed them takes on real significance. But until you experience empathy for the people you kill [in games] [...] you’re actually impeded from saying ‘these things I’m doing are ethically wrong really’ (PI02)*

Another player-informant shifts the focus away from the depiction of violence and toward game mechanics and player competition:

> *Aggression doesn’t come from game violence, it comes from repetition, from not managing to do something, it’s not [..] because I’m shooting with a rifle in a videogame […] you get enraged, for example, because someone did you wrong and you want to get them back. (PI06)*

Another aspect mentioned in this regard is online interaction among players, something that did not crop up in the interviews with the educators. Here, the most common concern is aggressiveness:

> *[some] people don’t just play, they troll […] And that happens a lot [….] they go on until they see the same violence or aggression in other players […] [consequently] lots of platforms have, almost as a rule, a box where […] you can report it. (PI08)*
>
> *You’ll frequently see people, especially in competitive games […] just losing it […] swearing in the chat. (PE07)*

As attenuators of aggressive impact, one player cites collaborative play:

> *a collaboration game, Guild Wars, [is] a good example […] there’s no competition, because everyone’s sort of going towards the same goal […] you can still like die or that sort of thing, but it’s always your own fault […] so there’s no reason to get raged at the chat. (PE07)*

Socialisation is also cited in this regard:

> *even though there’s been a bit of rage here and there […] usually we all understand that it’s just a game and we’re all just having a bit of fun […] [we’re] all just logical enough to know when enough is enough. (PE07)*

Both these factors are cited in the Gaming Horizons literature review as possible attenuators of game-induced aggressiveness (Persico et al, 2017). It's worth pointing out however that, whereas researchers focus on whether game-related situations foster aggressive dispositions, the interviewed players mostly appear to consider how these trigger more transitory aggressive reactions (e.g. 'rage').

Identity

When prompted on the topic, the interviewed players voiced a variety of views about identity in games and gaming. Some focused on first-person character representation:

> *in MMOs it's incredibly easy to spread your own identity [via] character customisation […] you can play any of the five races, all of which have both genders. (PE07)*

> *I'm playing a game, my character is black, woo, if it's a woman, woo, if it's a transgender, woo. I don't care […] if the game itself is good. (PE02)*

Others considered gamer identity and archetypes

> *the demographics of gamers are no longer even remotely just white men. I think games have got to recognise that now and start changing pretty substantially. (PE09)*

> *[in] Dragon Age there's a transsexual character, which is something really important because if a transsex person […] sees themselves represented in a positive way, it can give them hope (PI06)*

Once again, the question of gender representation of characters was a key concern:

> *actually in the end it's always the pretty girl who flirts with the protagonist and does little else. (PI02)*

> *there are strong female characters too, it's just that they end up being overshadowed by the male characters for some reason. (PI06)*

> *[in] Clash of Queens the strongest character is female and I'm really happy to finally see a woman who's strong and not just pretty. And that says it all. (PI07)*

On this aspect, one interviewee made a distinction based on game category:

this game is made just for entertainment [and so] you can close an eye […] and accept it as it is. But if you want to create a game that really has educational purposes, you have to consider the whole thing more carefully. You can't simply make the lead character a woman or black. (PI03)

Gender also was also central to interviewees' comments on player identity, especially where online communities are concerned:

I wouldn't even play with the sound on […] or with my voice chat on, because I didn't feel like having people [..] yell at me because I was a girl […] like, 'Oh my God, you're a girl!' And I hate that so much. (PE06)

Non-acceptance of women as 'recognised' players was also reported as extending outside gaming communities:

the idea behind it is that if a girl plays a certain type of game, she certainly won't be much good at it, or that a girl would prefer different modes, different types of game […] the more adult you become […] [you are] accepted a bit less […] 'You're a girl and you still play games!!' [….] I do lots of artistic stuff, cultural stuff, [but] the moment I mention a game, it's seen as something infantile. (PI08)

Several interviewees (PE06, PE09, PI02) also cited harassment of women in the gaming community during the 'GamerGate' controversy (Massanari, 2017).

Racial identity is discussed by one interviewee, who cited the emblematic case of the game Mafia 3:

the protagonist […] is a victim of racism and reacts by unleashing mayhem, and so a game like that can't be used for learning, for educational purposes, for moral awareness; that's a game for entertainment. (PI03)

This echoes comments from others which, like this one, suggest that the interviewee equates ethical standards with 'serious' purposes, a framing that tends to underplay the cultural significant and ethical responsibility of entertainment games, if not absolve them from that responsibility altogether. Given the global pervasiveness of entertainment games, this framing can be seen as particular problematic..

Inclusion through gaming was rarely commented upon.

Monetisation

The player informants responded strongly to prompt on the ethics of monetisation.

> *[Monetisation] is actually the biggest ethical issue I have. (PE02)*

Micro-transactions come in for particular criticism, especially where these undermine the gameplay experience:

> *Mobile gaming is like the cesspool of this, it's one of the reasons I don't play mobile gaming. (PE02)*
>
> *I try to avoid [..] those games, mainly because the sense of gameplay gets lost. (PI08)*

However, some were less concerned:

> *[When]micro-transactions mainly involve cosmetic customisation [...] I don't find anything wrong in it [...] [providing they] don't have a bearing on the outcome (PI02).*

Several interviewees explicitly questioned the ethical soundness of some monetisation strategies:

> *I don't mind cosmetics. I don't mind subscription models [...] but there is a very risky slope [when] parts of the games are taken out because they know people need [and will pay for] that part of the game in order to progress. (PE05)*
>
> *if you want to monetise a game, [avoid] pay-to-win because that makes it unfair [...] the person who has paid the most money into this game [becomes] the best player. (PE07).*

As mentioned in the previous section on the Psychological Perspective, several interviewees (e.g. PI01, PI02, PE02) accuse game developers of acting unethically by leveraging particular game mechanics to maximise player spending and, at the same time, foster addiction:

> *lots of games have introduced the concept of farming, that is, the more you play, the more you benefit [...] Some games put in a timer, so you have to be there, and that obviously creates dependence. You get alerts on your mobile phone; it practically commands you, obliges you, to start up the game and do something. (PI01)*

Responsibility for fair monetisation is seen to lie both with the market and with developers:

if people deem that unfair [the game's] just going to lose popularity […] So I don't think that there's anything wrong with it, although […] [it's up to] the game developers themselves to control [it]. (PE07)

some responsibility lies with the game system, some responsibility lies with the individual, some responsibility lies with the society that conditioned the individual. (PE09)

From the player perspective, the other side of the monetisation-ethics coin - as it were - is the pirating of digital games. Some interviewees considered this a non-issue, as they felt the practice has become largely irrelevant in the current gaming landscape. That said, some comments were made reflecting contrasting ethical positions:

I don't pirate games, I don't care if other people [do] […] I understand why. […] I'd hate to spend fifty, sixty dollars on a game [only to] realise I hate it. [Nevertheless] I understand when they say piracy is an issue: people need to get paid, it's peoples' jobs. (PE06)

The real piracy is the current pricing of videogames. They're outrageously expensive […] I've always gotten pirated games. It's the only way to have a half-decent game collection. (PI01)

Divergence also characterises some of the comments the players made on the ethical position of the game developer:

[games are] a personal expression and we shouldn't really limit [developers'] expression because of our, maybe, ethical or moral standings. (PE02)

there are some big ethical issues around the depiction of contemporary events, like recent invasions of the Middle East […] it's important to think about how games portray those and how people are therefore encouraged to think about those conflicts […] games do have a certain ethical responsibility as well when they portray the very distant past […] there's a certain ethical requirement to at least try to engage with current academic understanding. (PE02)

This last suggestion, that the (historical) accuracy/authenticity of game environments is an ethical responsibility that *game developers* (as creatives) have not just to players but also to *academia* is one that has very interesting implications for the framings currently being investigated in the Gaming Horizons project.

3.1.5.4. Sociocultural/artistic perspective

The interviewed players generally perceived the role of gaming in society to be expanding rapidly. The increasing prominence of gaming in popular culture was seen by some as going hand in hand with technological development, particularly increased connectivity:

> *Before online was a bigger thing, it would be a rare thing that you would get to come round to your house to play with a friend. (PE08)*
>
> *e-sports and livestreaming are both significantly contingent [on] modern internet speeds […] I think both of them could only have appeared within the last five years. (PE09)*

Some comments support the impression that gaming as an activity is gaining an increasingly prominent place in the public eye, generating an emergent sector and public discourse:

> *It's part of pop culture at this point […] there was something like a million people on Twitch watching [E3 this week]. It got better ratings than half cable television. You can't argue with this sort of numbers. (PE05)*
>
> *[livestreaming] has come from almost nowhere within five years to become a completely ubiquitous part of gaming […] I thinks streaming has taken a desire that people always had to watch other people playing games. (PE09)*

When asked about the artistic dimension of video games, a number of the players explicitly labelled them as a (new) art form:

> games are absolutely art. I always laugh at the people who say games aren't art [...]so much is considered art *[these days]* but they exclude games. I think that's a pretty silly position to take. (PE10)
>
> it's kind of like a new artistic medium that has yet to be fully experimented *[…] there are a lot of things which are sort of lovely interactive experiences that are very hard to define what kind of game they are […] those are very much like pieces of art that you could put in a gallery […] it lasts an hour or two, which is akin to kind of similar experiences in other mediums (PE10)*

One interviewee, by contrast, rejected the game-as-art association view:

> *associating something made to earn money with art is a bit hard to swallow. They're [actually] excellent commercial products (PI03)*

An interesting point that emerged here was the perceived tension between artistically-oriented game design and actual gameplay. Some games identified by interviewees as having 'artistic' aspirations, such as Journey or Gone Home, were seen by several interviewees as offering somewhat less in terms of interactivity and gameplay:

> *those completely hit all the artistic marks but they don't really hit too many of the game marks for me. By contrast, the five games I listed [as artistic[6]] get a ten out of ten on the artistic front and a ten out of ten on the game front as well. To me that's the real apex of what games could be (PE09)*

> *I like point-n-click [games] but [when] following a story, you don't necessarily interact much […] TellTale made games like that, for instance, but it's not the same thing as a Dragon Age. (PI06)*

However, one interviewee doesn't see art and gameplay as mutually exclusive:

> *being focused on gameplay doesn't totally rule out [games'] artistic meaning. (PI02)*

A perceived artistic expression vs. gameplay tension might be seen, to a degree, as paralleling the educational objectives vs. gameplay tension that runs through much of the discourse on applied gaming for educational purposes, as discussed in the Gaming Horizons literature review (Persico et al, 2017).

Other developments that attest to the game world becoming more ubiquitous in popular culture are the boom in e-sports (digital gameplay as a major competitive and spectator sport) and the pervasiveness of gaming-related activity on major social networks, particularly gamer streaming. Some interviewees see these as useful for supporting the industry and build a sense of community in video gaming (PE06, PE09).

[6] Dark Souls, Bloodbourne, EVE Online, Command & Conquer, & Dwarf Fortress

3.1.5.5. Views on overarching questions

When prompted to consider the role gaming occupies in society, the players we interviewed tended to agree that gaming is increasing in prominence and games are having an increasing impact on how we live our lives:

> *I don't think you can argue that games aren't a part of society when it is that big and growing. (PE05).*

This growth is sometimes framed as a movement towards acceptance of video gaming as something that can be part of (an adult's) life:

> *We have all become more open and accepting of video games (PE06);*
>
> *there's a whole culture here in America and probably worldwide that's become a little more accepting of video games (PE06).*

In their comments, the interviewees mentioned three trends in the gaming landscape that are growing especially fast - mobile gaming, esports, and video streaming – each of which represents a different way of experiencing video games.

Mobile gaming and casual gaming

Some interviewees acknowledged that mobile gaming has brought the world of video games to a much larger audience:

> *I feel like there's been an extreme increase in casual gamers, phone gamers, people that just sit there and play apps on their phones (PE06).*

As the term 'casual gamer' suggests, the interviewees see this kind of audience as something different from other types of gamers, in part because they view the mobile gaming experience as diverging from the gaming experience that they most readily identify with themselves, typified by immersion, concentration and lengthy play sessions. One interviewee, PE06, recognises that both experiences have the same technical basis but sees them as less '*story driven*' and more '*stop and go*.' Others, like PE10, categorises

mobile games as mere time fillers that, however, can become quite obsessive. The other aspect commonly mentioned is ubiquitous micro-transactions in free-to-play mobile games; the ethical dimension of this monetisation strategy is discussed in the Ethical Perspective (Section 3.1.5.3).

Game streaming and eSports

The interviewees' responses suggest that they consider the enormous popularity of game streaming as both a cause and a consequence of the spread of video games:

> *If you look at any game that's doing well it will definitely have a massive online scene (PE07)*

and that seems to generate an appeal in its own right:

> *streaming in general definitely speaks to a broader desire either to be celebrities or to watch and actively engage with celebrities. (PE09)*

At the same time the player-informants commented on the phenomenon of eSports, both as a new spectator sport

> *It was quite surreal, because it's not an environment I expected to find myself in: people gathered round a screen in a swanky bar watching essentially a game […] the atmosphere in there was just so encapsulating, you couldn't help but get, you know, drawn into it and it was actually really exciting to watch in the end (PE07)*

and as a viable career path for gamers

> *e-sport's getting bigger and bigger and that obviously makes the lower tiers more profitable as well. So even if you're, you want to become a professional gamer, but you're not the best of the best, you could still sort of compete and be earning money, enough to sustain yourself. (PE07)*

Gaming has also been described as a new way of socializing and forming friendships ('*some of them have even got married*' - PE10), though this may come at the detriment of offline socialization:

> *When you go into a pub or something you'll see way more people on phones these days […] staying with my London friends online [has] made me stay in more in the evenings than I usually would. (PE07)*

Innovation and game development

Some interviewees categorise eSports, streaming and mobile gaming as major innovations in the history of video games. When prompted to consider the future of games, however, most of the players who responded focused on VR:

> *[Google] said they're approaching the point where it's indistinguishable from reality, already, today. (PE02)*
>
> *I feel like we'll eventually have little gloves that we can have on and we can actually touch things and interact that way. (PE06)*

Only one expressed strong doubts about the likelihood of VR becoming mainstream:

> *I can see a future where people say, sod this, this is way too much effort, I'd rather just go and play Bejeweled on my phone. (PE09)*

Interestingly, no players gave much thought to Augmented Reality (AR) in this context, even in the wake of the massive popularity and media attention generated by the Pokémon Go title (the game itself was cited by a number of interviewees).

When prompted on the future of gaming, some players were unwilling to hazard a view:

> *The rate of change is so high and so insane that even predicting ten years out of what video games are going to look like is extremely difficult. (PE02)*

However, some did express the impression that the AAA industry is currently stagnating and failing to innovate:

> *it's still the same old, same old, there's nothing spectacular or new about it. (PE06)*
>
> *I think there's very little new happening outside of a tiny handful of companies. (PE09)*

Independent developers were seen by several interviewees as the main source of innovation:

> *In almost all ways I think it's indie developers now who are doing the really cool, fresh stuff. (PE09)*
>
> *[the App Store] let people self-publish very easily again, like used to be the case. (PE10)*

The lack of innovation in mainstream gaming is seen by some interviewees as being closely intertwined with monetary concerns, in that game companies tend to 'play it safe' and adhere to genre conventions in order to secure earnings:

> *[AAA games, like blockbuster movies] follow a very well studied and consolidated formula…[...] until people get bored and another formula is needed. (PI02)*

The tendency to stagnate is reflected in some players' comments on game design:

> *Zelda is infamous for that, it's just the same thing every single time. I love Zelda, but for God's sakes do something different. (PE06)*

Even the ubiquity of combat-oriented interaction is considered as symptomatic of this:

> *it is quite lazy because there are a whole wealth of other things you can do in a game that is not just shooting a gun (PE10).*

Game marketing

When commenting on game development practices, a number of interviewees expressed the view that economic reasons lay at the basis of design decisions; they often talked about monetization strategies critically (See Section 3.1.5.3 - Ethical Perspective). This also held true, even if in an indirect manner, for gamified systems:

> *a system which tracks how much work you do each day and then you get points or trophies for doing more work, that's not a game, that's making people work harder in traditional neoliberal labour (PE09).*

The focus on revenue generation through games, especially through micro-transactions, is perceived as being so strong that some players advocate some form or legal regulation or safeguard:

> *The biggest thing I would regulate in video games is the gambling aspect of it. It's gambling and I think it should be regulated as if it was gambling. (PE02)*
>
> *I'd like institutions to protect both players and developers; players economically, as well as for their health, so dangerous games aren't put on the market. (PI07)*

Another side-effect of this emphasis on revenue generation is that video game marketing can become problematic, both in the messages it conveys:

> *I think games are definitely still marketed in a way that assumes all gamers are white men. (PE09)*

and for side-effects arising from the highly competitive marketplace:

> *The games industry has reached a point I think in terms of marketing where one has to hype one's game up so much that it becomes harder for the game to truly deliver in the end. In a similar vein, I think if we look at game reviewing, a lot of people have noted that seven out of ten is the new average in some ways. And that when people see a five out of ten they think, oh this game is shit. (PE09)*

On the positive side, increased marketing efforts can lead to more engagement with the gaming community:

> *it was quite nice to see, and quite refreshing, to see [closer] communication between the developers and the community (PE07);*
>
> *listening to your audience is brilliant (PE08).*

Gamer communities

Engagement with the community, on the other hand, raises the issue of regulation of online interactions. The interviewees almost unanimously described online interactions with strangers in gaming contexts as unpleasant; player behaviour was often described as 'toxic' and the most common recommendation to players was to find a way to be less verbally aggressive:

> *the online community sucks for everything because people are jerks and you can't fix that. (PE02)*
>
> *players calm down. Stop insulting. (PE06)*
>
> *to players I'd say try to be less toxic (PE09).*

Some interviewees mention efforts by particular companies to mitigate this problem, usually by limiting the range of interactions:

I'm glad that League [of Legends] does have a tribunal system where they do take reports into account. But sometimes they only get a chat ban (PE02);

in Windows games [...] you can only write by using pre-defined sentences (PI01).

Some players complain that game companies, despite this unpleasant relational climate, still seem to push towards online multiplayer gaming with strangers:

I slightly prefer to play with someone beside me than simply online, which is something that, lately, big companies like EA have started to discourage, eliminating the possibility to play in Split Screen mode from games that had that for a long time (PI02);

Some players report using multiplayer gaming to keep in touch with distant friends, a need that is not met by multiplayer games that favour interaction with strangers:

yeah, it's one of my favourite aspects of video games by far is the collaboration. And being in constant contact […] We're in constant communication with each other. And I play exclusively with friends that I had in real life […] so I keep in contact with them. (PE02)

Regulation

Another area that, according to the interviewed players, requires more regulation is access by children and youngsters to video games with unsuitably explicit content. Many see the current rating system as inadequate, since it is simply a recommendation that many parents are unable or unwilling to observe when buying games for their children:

The rating system is there, I don't know how much it's followed. If it's present and it's not followed it's not really useful [...] my parents didn't really care about the rating system (PE02);

The ESRB[7], that could be – I wish there was a little bit oomph behind that [...] I wish that even if the kid has parent permission I really wish they couldn't play M rated games. (PE06)

However, stricter formal regulation is seen by some as unfeasible:

there's a very fine line between someone's own agency and someone telling [parents] no, you can't do this […] here in America, you can't really infringe on a parent's ability to govern their child's life. (PE06)

7 Entertainment Software Rating Board (ESRB)

The interviewees see parents as being pivotal for enforcing regulation, but in many cases they are depicted as being detached and oblivious to the world of gaming due to the generational gap:

> *the biggest issue isn't necessarily regulation; it's more end user education, you know, trying to tell or explain to parents and older generations, you know, within this medium what's appropriate and what's not (PE05);*
>
> *parents is an area where I think there is just a generational gap, possibly, with what people still think games are. (PE10);*
>
> *most parents don't manage to set these limits; they either lack the know-how or simply don't have the time. (PI01)*

3.1.5.6. Recommendations for stakeholders

When the players we interviewed were prompted to provide recommendations for various stakeholders in the gaming landscape they converged on a number of key points. One that clearly emerged is a plea for developers to be bolder in experimenting with more innovative game mechanics and narratives. This is a response to the players' general feeling that the gaming landscape is becoming stale and predictable (see above):

> *To developers I'd say try new things […] that's the most important by a huge margin. […] don't be afraid to try new things, and please be realistic about the promises you make about your games (PE09);*
>
> *Please develop less online games and more narratives [...] there is only just Indie developers who do them. (PI06).*

Another recommendation that the players make for developers (also mentioned above) is to focus monetization strategies on the purchase of in-game cosmetics and the like (seen as legitimate) and avoid strategies that impact on gameplay, such as pay-to-win. Some interviewees also recommended that developers should not to neglect single player games and multiplayer experiences shared with others on site. Some dissatisfaction was

expressed with what was perceived as single-minded pursuit by the videogame industry of online gaming via MMOs. Lastly, some players called on developers to actively engage with the player community beyond mere advertising.

> *[developers] are actually doing something quite special here […] they're listening to feedback on the forums and building up the game through what their community are saying to them (PE07)*

A number of the players we interviewed had recommendations for parents, mainly to monitor their kids' game usage and, if possible, to share the gaming experience with them. Many players seemed to regard parents as pivotal in controlling access to games and, as such, have frontline responsibility for enforcing the recommendations of regulation boards such as the ESRB. Several players suggested parents are ill-informed on the content and influence of video games, and proactive effort is necessary to overcome this.

The most common recommendation interviewees made to parents was to monitor the games their children played, and to join playing sessions so as to share this part of their children's world:

> *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. (PE02)*

The recommendations directed towards educators included increasing familiarity with digital games, exploring the use of entertainment games for learning, trying to balance learning and fun, seeking the right level of challenge, and looking for new opportunities to use games for learning, such as VR:

Another suggestion is, for sure, to increase their videogame literacy; this can help them appreciate games more as an artistic medium:

> *I think educators really need to start taking a serious look at the benefits that they can get from video games (PE02)*

> *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. (PE02).*

However, the consensus among the interviewees is that 'serious games' are not the way to go:

> *I think labelling a game as something which is designed to be educational and wholesome […] [is] a real mistake and that turns people off. […] There's something a little bit preachy […] about this idea that people's leisure time should be explicitly co-opted into something productive and something useful rather than just accepting that leisure is useful in its own right. (PE09)*

Recommendations the interviewed players made to their fellow players overwhelmingly centre on learning to manage their emotions and being less verbally aggressive when playing online and interacting in online player communities.

> *Everybody wants to get into the game at some point and not everyone's going to be good at the game […] Being, you know, rage and 'go away' doesn't help. So […] my suggestion to any sort of player is try to be more understanding. (PE05)*

A secondary recommendation was to self-regulate gaming time and not neglect activities such as going out and exercising.

> *Players, don't play so many video games: take a break, walk away. Go outside, see the sun. That's huge. Exercise. It's so easy to get sucked down the rabbit hole of addiction with video games. You have to have the discipline to stop (PE02)*

The players made very few recommendations to researchers; one was to familiarise themselves more with games and gaming, and also to consider the social context games are being played in.

Lastly, the recommendations that the player-informants made to policy makers are to provide investment for games and be on the lookout for the opportunities they present, especially for community building, health improvement, and stress reduction.

So I feel like institutions could incorporate gaming and it wouldn't be as big of a deal as they imagine it would be. It would probably bring people closer together. It can help with stress relief (PE06)

Some interviewees expressed the opinion that policy makers are out of touch when it comes to games, and that this is possibly a reflection of the generational gap between parents and their children. Some see those responsible for policymaking as being excessively wary of the potential drawbacks of gaming, and not being capable of capitalizing on the potential benefits:

Parents, educators, institutions [...]: as digital games are so much part of everyone's life at every age, they should not be ignored or disapproved of [...] Something that almost everyone does shouldn't be labelled as wrong (PI01).

Lastly, the player-interviewees identified some opportunities that current policy makers, researchers, and educators may overlook:

part of the reason why at my university we convinced the honours lounge to buy us a Wii was because it aids in stress relief. […] I feel like institutions could incorporate gaming and it wouldn't be as big of a deal as they imagine it would be. It would probably bring people closer together. (PE06).

3.1.6. Conclusions concerning the interviews with educators and players

The interviews with experts and informants complete the picture provided by the GH Landscape Analysis by providing an insight into the practice and viewpoints of the various stakeholders the project addresses. Those reported in this section shed light on the opinions of 25 selected educators and players concerning the impact of games on their lives and profession, the purposeful application of gaming – particularly for learning, the effects on the individual and the role of gaming in society.

A first, very general consideration can be made with regard to the different perspectives brought into play by these stakeholders. As might be expected, the educators we

interviewed focused very strongly on issues within the educational perspective, while the players tended to gravitate around aspects concerning the psychological perspective. Both groups also responded strongly to prompts on the ethical perspective. By contrast, neither offered in-depth reflections on the sociocultural/artistic perspective, and questions connected with the wider role of games in society did not really spark strong responses. The strategy we adopted for the interviews with these stakeholders (starting from their personal experience and tailoring the prompts to their presumed concerns) might have accentuated this result.

Overall, the interviews with educators and players reveal a widespread belief that games have a great potential for learning and the development of the individual, but opinions vary when trying to better define this potential and the conditions to realize it.

The educators reported a range of experiences where digital games have supported learning in different ways. In some cases they were employed as tools for knowledge acquisition or, more commonly, as environments useful for developing transversal skills such as collaboration or problem solving. In others, games were more the object than the means of study, as part of media literacy activities and/or broad reflection on personal, social, ethical and philosophical issues, providing opportunities to investigate identity and heighten social awareness. At the same time, tensions and limitations were acknowledged, particularly regarding the constraints posed by school organization. This echoes similar concerns regarding technology enhanced learning generally.

Educators also reflected on pedagogical questions posed by individual differences, and commented on the inclusive potential of games. As to gender differences, it is interesting to note that while gaming now seems to be a more widespread pursuit among both boys

and girls, several educators identify gender differences in the preferred types of games, and one of them identified social expectations as playing an important role in these differences.

The educators analysed the concept of motivation, believed by many to be an automatic benefit of introducing games in formal learning contexts, and demystified this belief, reporting on students' disappointment when serious games or gamification does not match their expectations in terms of what a game should really be like. They also acknowledged that some addictive game mechanics can increase time on task when studying, but are clearly aware that that is not the kind of motivation their students need.

As to the conditions for harnessing the potential of games, some teachers believe games should not be approached as yet another technology-enhanced learning fad. Rather, effective game based learning requires educators to 'think out of the box' (EE01, EI03), with the willingness and ability to foster interdisciplinary contaminations and add an emotional component to the learning process, thus leveraging one of the features that make games so appealing.

This can be achieved, according to our informants, by taking account of both the strengths and weaknesses of gaming, that is, avoiding excesses in competition by balancing it with collaboration, using games more to stimulate skills like critical thinking and creativity rather than focus on content acquisition (which leads to the risk of cultural impoverishment) and, last but not least, accepting the need to adjust their classroom role. To put it in the words of one of our interviewees:

> *Technology can augment us; let's make sure that it does that, rather than letting it reduce our capacities (EI03).*

In their interviews, the players were prompted to look beyond the entertainment and enjoyment they gain from gaming. In doing so, they identified a number of personal benefits that games can bring the player, such as enhancement of memory, attention, problem solving, decision making and critical/strategic thinking skills, better reaction times and/or motor coordination, as well as social skills. Some also pointed to the potential for practicing collaboration skills, and this resonates with the position expressed by some of the educators we interviewed. However, when it comes to games and learning, the players tended to foreground gaming in informal, rather than formal, learning contexts. Indeed some saw the latter case in a largely unfavourable light, believing that games lose their essential appeal when 'harnessed' for educational purposes, especially when educators propose games that are essentially sugar- coated exercises.

As some educators attested, finding a suitable game capable of engaging an entire class can be a real challenge, especially given the sometimes high expectations of learner-gamers and the general divergence in player preferences regarding game type and genre, etc. In addition, many of the interviewees expressed quite a low opinion of serious games, particularly regarding their perceived lack of engagement power when compared with 'real' (entertainment) games. Indeed, we noted with interest that when describing their game based learning activities, the educators we interviewed mostly reported using entertainment games. This is consistent with the fact that relatively few of them focus on using games to foster the acquisition of strictly subject-based knowledge, tending instead to emphasise the development of transversal skills.

When considering the largely negative view of serious games expressed by the players we interviewed, it should be noted that they were all young adults over 18. By contrast, the educators reported more positive reactions from the (younger) students they teach. Furthermore, in terms of general attitudes to game based learning, there is a tension between the players' mostly negative reports/positions and the fact that most of the educators we interviewed are or were players themselves who are now advocating and practicing game use.

The interviewed players expressed strong awareness of the various downsides (actual or potential) attributed to games and gaming, perhaps to a greater degree than the educators. This was especially true about the question of addiction. Here, they tended to frame the issue not so much as the potential 'flipside' of immersion, engagement or flow, but more as a result of specific (sometimes pernicious) game mechanics like intermittent rewarding, incentivised repetition and time-framed events. Indeed, the players rarely cited such mechanics when prompted to discuss engagement and immersion, mentioning instead narrative (in particular) and things like audio-visuals and world building. A number of players mentioned the capacity to self-regulate gaming time, and some advocated measures to develop this, especially for young gamers. Some of them also see games as being connected to a sedentary life-style, a question that is likely to intensify with the current boom in e-sports and game streaming.

There was general agreement across the player and educator interview groups about the need to foster a stronger game culture among parents, educators and players themselves. Many informants called on parents to participate more – and more directly - in their children's gaming, an experience considered an important part of their daily lives and a

way for parents to discover more about who their kids really as. Similar recommendations were directed towards educators, who were called on to become more game-savvy (or game-literate) in order to appreciate how best to leverage games in support of learning. To this end, in addition to more extensive first-hand gaming experience, some educators advocated better training and the introduction of suitable policies at institutional and national levels. Another area that interviewees highlighted for policy initiatives concerns youngsters: the risks they run when gaming and how to behave responsibly and safely. Here some suggestions were made for schools to include 'gaming literacy' as part of media education.

Our interviews suggest that, from a cultural viewpoint, the world of gaming is continuing to expand beyond the confines popularly associated with the idea of digitally-based play. This is reflected in comments about how games can raise awareness of the world we live in: 'this is a cultural use of videogames, argumentative, non-neutral but rather proactive, aimed to sensitize the public opinion on relevant problems of our society' (EI03). Other developments attesting to the game world becoming more ubiquitous in popular culture that were mentioned are the boom in eSports (digital gameplay as a major competitive and spectator sport) and the pervasiveness of gaming-related activity on major social networks, particularly gamer streaming. The interviewed players mentioned this as a major development in the gaming landscape, alongside technological applications like virtual reality. However, when discussing what they saw as the need for change and innovation, they focused less on technological aspects than on game narrative. This is an aspect that many saw as neglected (especially in the current mobile gaming boom) and that held promise as a source for fresher, more engaging games. On this point, a number

of interviewees saw small indie companies as the champions of (narrative-driven) innovation while AAA companies, it was held, tend to fossilize around prevailing market trends, including combat-oriented and often violent interaction, said to reflect 'lazy design decisions' (PE10). Similarly, the educators presumably have smaller independent companies and developers in mind when they call for closer collaboration between educators and developers so that games can 'enable learning processes and keep the fun part' (EE07).

Some of the players regard game spaces as areas of free expression, and it is perhaps for this reason that they don't seem over concerned about the ethics of game content, including two key issues: explicit violence and character portrayals that are stereotypical (gender, race, sexual identity, etc.). Some do praise more 'progressive' portrayal of women in games but, on the other hand, the notion was also expressed (explicitly and implicitly) that these and other ethical questions are a concern for serious games, as if ethics in games were somehow intrinsically entwined with purposeful applications. On the other hand, the players were keenly aware of ethical problems (particular the treatment of women) arising in interaction within online gaming communities: almost all the players bemoaned the level of aggressiveness and (sometimes) abuse that seems to pervade online game chats and forums. Race representation was discussed very little by our interviewees, but since the analysed sample is composed entirely of white players, the picture is decidedly partial.

Game monetization proved to be a very hot issue for the players. Interestingly, attitudes to monetization practices and strategies seemed to be disconnected from the actual investment that players made in games. A number of players actively avoid mobile

games, mostly because of the micro-transactions they embed. Play-to-win strategies were held by many to be anathema; many players took the position that any competitive advantage gained by making a payment perverts a basic principle of (fair) gameplay, namely that competitive success derives from skill and know-how, possibly mixed with fortuitous circumstance.

The impression gained from the player interviewees is that our informants regarded such strategies as a breach of faith between the game developer and the player. Indeed in a number of comments - both positive and negative - on a range of different topics, we perceived a sense that players often saw their gaming experience not as simple product consumption but as in some way embodying a relationship with the developer/s. This was particularly evident when they commented on developers' active engagement with the gaming community, something that was very warmly received and encouraged. By contrast, they strongly disliked the feeling of being treated simply as 'cash cows' or, worse, 'blue whales' (compulsive – and gullible - big spenders).

3.2. Interviews with developers

3.2.1. Introduction

Game developers are a stakeholder in the outcomes of the Gaming Horizons project. As creators of gaming artefacts, they are central to all points of discussion. Without their consent and cooperation, any research outcomes will not manifest in changes to the medium of games. The interviews in this section cover a range of topics of social and industrial relevance that can inform scenarios and potentially policy decisions that result from Gaming Horizons. By interviewing this group, it is hoped that further insight can be

gained into the mind-set and the opinions of the creators whose work is discussed elsewhere in the project. What drives game developers to create titles such as Grand Theft Auto? What are their thoughts on the relevance of current academic research? Have they actively engaged in including pro-social content in their work? Themes emerge in the interviews that show a dynamic and self-aware cohort of creators with a passionate belief in the medium of video games for entertainment and for the intrinsic benefits that intelligently-crafted entertainment can bring.

The interviews took place at: the Game Developers' Conference (GDC) in San Francisco, USA; the Game Happens conference in Genoa, Italy; NHTV University in Breda, the Netherlands; and the University of Southern California (USC) in Los Angeles, USA. They were conducted in March 2017 (GDC and USC) and June 2017 (NHTV and Game Happens). As with all qualitative studies, the temporal context is worth noting because of its impact on conversation topics: the largest console hardware was mid-generation, meaning that Sony's PlayStation 4 and Microsoft's Xbox One have both been available for several years. Nintendo's Switch console was released more recently, but was not so new as to be immediately on the minds of interviewees. Socially, mobile games such as Pokemon Go have had widespread media coverage in 2016, but this had declined significantly by the time of the interviews. The 'GamerGate' controversy (Massanari, 2017), which resulted in many intimidating incidents directed particularly towards women and minorities, had subsided from its peak ferocity but remained a recent memory. Virtual reality (VR) and Augmented Reality (AR) were both developing technologies with recent major consumer hardware launches but without widespread consumer uptake. Video games have been used in the classrooms of many recent

graduates, so the younger interviewees have had student-perspective experiences with serious (educational) games. Applied (training) games and gamification were reasonably common, particularly in the field of wearable fitness and activity tracking devices. This brief overview of common themes and events for game developers in early 2017 may give context in the future to the perspectives of the interviewees.

3.2.2. Methodological specificities

The purpose of all stakeholder group interviews is to gather information related to the key research themes of the project. Each group will have specific areas of attention and strengths in their knowledge. The developer group is particularly focused on video game production, content, community, and trends. The questions asked to this group interrogated these areas most strongly to gain the most specialist insight possible.

3.2.2.1. Interview design

All interviews were conducted by one researcher, Dr. Mata Haggis, who is the Professor of Creative and Entertainment Games at NHTV University. The interviews with developers took place in four locations: two game conferences and two universities. The events and locations were chosen to allow maximum access to a wide range of developers. Video game developers are distributed across the world and, although there are development hubs such as Los Angeles, London, or Tokyo, there are smaller developers globally in widely dispersed locations. Conducting interviews at conferences allowed access to developers who would not commonly be easy to reach. Conference contexts may also have primed interviewees to be ready to discuss their work in a broader sense than during their day-to-day activities.

Interviews conducted at GDC and USC were recorded with video and audio, and were done with prior agreement that segments of the interviews would be shared online as part of the deliverables for the Gaming Horizons research outcomes. The transcripts of these interviews were not anonymised due to the explicit agreement for sharing them online. The questions were semi-freeform, guided by the experiences of the developers and their responses to the themes of the Gaming Horizons project.

The interviews at NHTV and the Game Happens conference were recorded with audio only. These interviews were performed on the grounds of anonymity. The audio-only interviews were more structured in the phrasing of the questions, but some topics were interrogated or prompted where deemed appropriate to gain deeper insights.

One of the NHTV interviews was conducted via Skype, but all other interviews were face to face.

3.2.2.2. Interview analysis

30 interviews were performed. 10 of the interviews were recorded on video, and some of these had additional audio-only elements recorded at the end of the interviews. The remaining interviews were recorded only with audio. All interviews were fully transcribed. The transcripts of the audio-only interviews has been anonymised manually. All thirty transcripts have been encoded for study using NVivo by three NHTV researchers, using the shared codebook that is detailed in the section of this document regarding ‘Interviews with educators and players’ (section 3.1).

Of the interviewees, 12 were women, 18 were men, and no people identified as other genders or with other pronouns (to further support anonymity, interviewees will be described using singular ‘they’, ‘their’, or ‘them’ in this text). 40% women interviewees

is a somewhat higher representation of women:men compared to the estimated workforce of the games industry, which is typically in the region of 20-25% (IGDA, 2016). In the video interviews, 4 interviewees were women and 6 were men, and in the audio interviews there were 8 women and 12 men. Of the total developer interviewees, 2 were African American and both were men, and all other interviewees were white. All interviewees were from North America or Europe. Sexual orientation was not requested, but 3 interviewees publicly identify as LGBTQ+. Of the other 27, some may also be LGBTQ+, but this was not noted and/or is not public knowledge.

7 of the 30 interviewees were currently actively teaching game development at the time of the interviews, typically at Bachelors level or higher. 2 further interviewees were teaching on a part-time basis. All of these teachers are involved to varying extents with ongoing game development, either professionally or as a semi-professional hobby. There may be biases within the sample set that have emerged from the process of finding interviewees; however, many additional full-time developers were approached for interviews and declined to participate or did not respond. It appeared to be a significant trend that full-time developers were less likely to participate in the research interviews than developers that were either fully or partially related to academia. Although it is hard to draw conclusions from this resistance to participation and the small sample set, this lack of interest in participating may correlate with the views discussed in the ‘Outcomes from developer interviews’ section regarding the perceived value of academic research (3.3).

No further demographic data was collected.

3.2.3. Interviewee sample

The interviewees for the developer stakeholder group were all active game developers either at present or, in the case of some game development lecturers, for a significant number of years recently and may be continuing to develop on a semi-professional basis. The interviewees were found through direct and extended networks of industry contacts from the researchers at NHTV, who themselves work in the games industry alongside their research roles. Efforts were made to find a range of job roles, experience, seniority, gender, age, development platforms, and game genres (among other factors), but there will be natural biases that occur within the selection process. Biases that are possible or likely to occur during the interviewee selection process: extroverted personalities are more likely to agree to being interviewed, people who feel comfortable with social media coverage were more likely to agree to be interviewed, game designers have an occupational bias towards discussion of abstract concepts when compared to visual artists or programmers and this can lead to a bias in the willingness to be interviewed, and potentially others. As with all research group selection processes, there are also potential biases based on (extended) networks sharing similar social, ethical, political, and other views similar to the people conducting the search for interviewees. Although regional variation would have been desirable, all developers were based in Europe and North America. It is likely that different, or significantly different, responses would have come from Asian, East Asian, South American, or African game developers; however, European and North American developers have the most significant impact on the economic and cultural production of games for the European Union. It is the belief of the researchers that a wide enough range of backgrounds has been reached to indicate broad

trends in opinion, but further studies would benefit the concretisation of any observed trends.

3.2.4. Outcomes from developer interviews

The following subsections detail common responses from developers when prompted on a variety of topics. To guarantee anonymity, respondents' names have been changed to alphanumeric identifiers, based on the order in which interviews were transcribed.

3.2.4.1 Characterisation of game developers

The common element of the characterisations of game developers was the degree of passion that they felt for their profession, but there was some variation in how this manifested in the identities of game developers. When asked to characterise developers, many interviewees emphasised rejection of labels such as 'nerd' or other common stereotypes of high-tech industry professionals, and instead emphasised developers' variety and individuality:

> *In video games everyone is truly an individual and brings something unique to the table and the fact that we don't see that reality reflected more often in the culture and press provided around games is a shame.* (LSD28786)
>
> *[Interviewee:] I wanted to create worlds which I could also personally enjoy, that were compelling and told a story and were – I – would be able to engage a player into this fiction I made, like a fantasy fiction made – made tangible.*
>
> *[Interviewer:] Okay. Do you think you share that interest with – with a lot of the people who make games, are they quite different?*
>
> *[Interviewee:] I think everyone – mostly everyone will enjoy a nice story, but I think it might be a bit different because some people focus on mechanics, mechanics in – in – in video games and other way – others might focus on just silly fun, so I do think everyone has their own particular area of interest.* (LSD28793)

> *In high school it was all basically we have to do this thing to pass the course, and then you got to this – this spot and it's like we do this because we really want to make games. This is what we love. This is what we want to do.* (LSD28795)

Although many interviewees explicitly rejected the perception of developers as 'nerd' or 'geek' archetypes, some asserted that there was accuracy:

> *'Nerds' always seems a derogatory word, and I don't see it as a derogative word because I feel that that's part of it. A nerd is just someone who's passionate about something, and I think game developers have a lot of passion and they usually have a lot of passion outside game development as well. So, be it books or sci-fi fantasy or movies, they're very well steeped in entertainment culture. They're very passionate about their entertainment.* (LSD28796)

During the interviews, there were often implied differences between the approaches of 'indie' and 'AAA' developers ('indie' commonly meaning smaller development teams and budgets, 'AAA' typically signifying larger teams and budgets that are secured in advance of the production from a publisher). One interviewee explicitly described this difference:

> *[Indie developers are] not necessarily focused on making a lot of money. They really are passionate about the craft of making a game. Sometimes I see that indie developers are more pure in what they make, compared to really big developers. They tend to look at unconventional ways of creating a game, and I think that's where bigger game developers stagnate, they don't really try to experiment any more.* (LSD28802)

Based on these interviews, the common elements of the self-characterisation of game developers are a high degree of passion for their work and, frequently, an explicit belief in the variety of people attracted to game development that goes beyond anti-social 'nerd' stereotypes. This may indicate that the professionalization of the industry has advanced to a sufficient state of maturity that youthful or anti-social characterisations are, at least,

considered unhelpful for addressing the social, industrial, and structural needs of this creative industry.

3.2.4.2 Characterisation of players, from developers' perspectives

Stereotypes of 'gamers' exist throughout media coverage of video games, both in games-industry coverage and in the mainstream media. To examine the expectations of game developers of their audiences, they were asked to describe who they believe are the typical players of video games. The answers were widely in agreement:

> *I would say that the audience who plays video games is similarly diverse [as game developers]* (LSD28786)
>
> *Nowadays I'd say everyone [plays games], from like eight-year-old kids till 60 – well, probably 60s, starting to get to the maximum of 60 or 70 is probably the oldest I've seen players play. But I think the more we go on the more gaming is going to be a culture from the start for the new generation, so never know, people playing games when they're 80 in like 20 years.* (LSD28790)

While some developers indicated that they believe particular game genres may have a bias in their appeal towards groups, e.g. by age, gender, or other background, in general there was a consensus that video games are increasingly played by a broad swathe of society.

Games were described as appealing to players for a variety of reasons:

> *I'd say there are a lot of people who play purely for the social aspect. They want to have fun with their friends and they don't really care what kind of game it is as long as they're – they're able to pick it up and play some matches with their friends. Then I categorise another group into being more hard-core gamers, maybe spend like a lot of time on it or regularly play games, maybe online. Those are the player that maybe – that they – they spend more time actually mastering the game, get – getting good at it. And of course*

> *there are also more casual gamers, maybe more interested in like a nice story or puzzle games.* (LSD 28793)

These distinctions between modes of appeal returned in explicit and implicit ways throughout the interviews. Although terms such as 'casual gamers' and 'hard-core gamers' would be used, many developers also described games that appealed to social play, competitive play, or story-oriented (narrative) play, and these games may be played online or offline, synchronously or asynchronously with others, and single-player or multi-player.

3.2.4.3 Cultural impacts and/or significance of entertainment games

In regards to the impact on other leisure activities, developers were agreed that games are likely to be taking time away from other leisure activities, such as watching films, reading books, or sports:

> *I think in the past people freely spent their leisure time doing whatever they liked, be it music or reading or books. I think it's now only being swapped for video games, so rather than pick up a book, people may be more inclined to instead play a video game for a couple of hours.* (LSD28793)

Rather than this being a negative aspect of games, developers were neutral about the social and cultural impact of this change. Playing video games, as a pastime activity, was seen as a direct equivalent to established hobby activities:

> *I can talk to people, like, 'Oh, have you played this game?' Almost like talking about sports, like, 'Did you see the match?' 'Did you play this section of the game yet?' So I think it's becoming a very important social tool.* (LSD28800)

> *I think the normalisation of games actually is what has altered how people use their leisure time. Often we have these dead spaces and now we have these digital devices in our hand and we're bored. So I think that they've normalised a lot. I think acceptance, if you ask people if they play games they still say 'no' even if they play Candy Crush on the train every day. And I think that that has a lot to do with how they see what a game is versus what*

> *developers see what a game is. They don't count casual games or games on their phone making them part of the gamer community.* (LSD28823)

Overall, the developers interviewed described the task of characterisation of 'players' in a similar way to how a film producer may describe 'people who watch films': the category has become too broad for the question to become meaningful. In this regard, the social impact and policy implications of the presence of video games in society should be closely examined to further understand their transformative effects (if any) on communities, socialisation patterns, and other social and cultural outcomes of their play.

3.2.4.4 Views on serious/applied games and gamification, and the associated research and innovation funding policies

All developers interviewed had knowledge of at least one of the terms 'serious games', 'applied games', or 'gamification'. Almost all felt confident about speaking with reasonable knowledge of the subject. The opinion of this group of educational/training/behaviour-alteration software was almost unanimously very low, for a variety of reasons, and sometimes stated very explicitly:

> *It's a totally different standard of game. The games that are made for, for instance, healthcare instances are not to be compared with any game in the entertainment industry. They're not focused on visuals at all. They're not focused on something you would expect from a game.* (LSD28802)

> *[Interviewer:] You mentioned earlier that* Dys4ia *[a game about transgender life experiences] is perhaps more impactful than a lot of other things. Would you say that that would have been traditionally classified as a serious or applied game? Or was it by the developer framed as a personal, artistic piece?*

> *[Interviewee:] I think she always framed that piece as a personal, artistic statement. She actually gets really, really angry […], she really does not like to talk about work in that way. If people are like 'I need to teach empathy for this segment of the population' then they make kind of like an emotionally*

> *voyeuristic tourist game and they cannibalise an experience in an attempt to explain that experience. Versus if you look at something like* That Dragon, Cancer*, that's an amazing game for cancer awareness. Like phenomenal. […] And it's because you just can't help but to lose a piece of yourself in that world and you come out of it a little bit altered. It doesn't allow you to be a voyeur in that game, I think that's a big difference. Yeah, I think there have been some successful serious games but I think they're harder, they reach fewer people and they have very targeted demographics, if that makes any sense.* (LSD28823)
>
> *I don't think serious and applied games have enough cultural impact to really have a huge effect. And very much the serious and applied games are built for a corporate goal, so as a marketing product or for training, for internal training, all that sort of thing. So I don't see them actually having a wider cultural impact because they're not consumed by the wider community. […]It's very focused and it's not having a wider impact.* (LSD28783)
>
> *The problem [serious/applied games are] trying to solve is one that's about commerce as opposed to entertainment gaming, which I think is about – more about society and social commerce.* (LSD28784)
>
> *[E-sports are a] huge and a very important part of kind of modern society for a younger demographic. And I don't see that same impact through serious games or applied games other than through fitness apps.* (LSD28784)
>
> *I was home-schooled since I was six or seven, and so I was like basically one of the first people, like the first generation, to actually learn all of my stuff online. So I learned, and it was all, some of it was a little bit gamified, so it was all kind of that kind of stuff. It was just like the* Zoombinis *and things like that, that I played a lot of. I learned a lot of my, I guess a lot of my education was through, they weren't really good games, but they were games.* (LSD28785)

The overall tone was emphatically negative towards serious/applied games, with many reasons cited, such as production quality, gameplay, doubts about their effectiveness, and the limited size of audience.

One interviewee highlighted that there were cultural differences that may impact on the effectiveness of serious and applied games:

> *I think these things can sometimes be devised by people of a certain character or someone who doesn't recognise a range of individuals who may or may not enjoy certain activities and stuff like that. So I don't think they're necessarily very well balanced and it's kind of an enforced 'whoo' fun kind of thing. Being Irish or British, not everybody is like that, either in terms of culturally or just personality types, so I don't think it works very well.* (LSD28801)

The issue that LSD28801 raises, of cultural differences, can be read in several ways: although they discuss national cultures, the same point can also extend to smaller didactical and play cultures that vary between games developers, players, and commissioning bodies (private companies or public funding groups). These cultures may have different ideas of how play can or should be used, these may conflict and, as LSD28801 says, reduce the impact of serious and applied games.

Interviewee LSD28799 has extensive experience with funding bodies, policy requirements, and their impact on creative output. They consider the standards of serious and applied works that result from private/public funds are considered to be low and, in the following quote, they argue that funding bodies place restrictions on work that, by the nature of those restrictions, prevent serious and applied games from improving their quality:

> *A lot of people that I know working in this area who come from DIY are almost allergic to getting funding. You start talking through the process and you can see them cringing. There's a purist element where – someone put it to me – 'funded' means 'fun dead', like they're going to kill your work. [There are problems with the pro-social and measurability frames of funding, and also] I think there's an additional problem, and that is that it isn't 1960 anymore. So these art forms that we're using weren't there a year ago. We're not in a modernist era where there's a correct way to do things and you're a painter and you're either a good one or a bad one. We're working with things that are evolving at a very rapid rate. So the people who might decide*

> *whether you get the funding or not probably have no idea what they're talking about.* (LSD28799)

Despite this condemnation for both serious/applied games and the manner in which funding for research and innovation in creative industries is evaluated, there were some developers that showed a modicum of optimism that serious/applied games will not always be so limited in their success. Interviewee LSD28784 argued that the comparison of entertainment games to serious/applied games, to decide which are 'better' games, was not necessarily valid:

> *They're attempting to achieve different outcomes so it's not that they're better, it's that they're different.* (LSD28784)

Several developers touched on the concept that serious and applied game outcomes were achieved by games that are not commonly given this title. They argued that entertainment and leisure-focused games frequently had what could be framed as effects that are distinctly pro-social, i.e. they are educational, socially instructive, or generative of empathy and insight:

> *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 it's a bit hard to answer this question because I still feel that there should not be that much separation between entertainment games and serious games, to be honest.* (LSD28790)

Interviewee LSD28799 explicitly drew a line between creative work that is explicitly aimed at being socially beneficial, and works where social benefit automatically emerges from a fully-formed creative process, and the challenges this presents to funding bodies:

> *I think that any artist who's making work is making serious and applied, whatever it is they're doing. […] So what you do as an artist is you take these very serious and applied problems and you dig deeper and you go under the surface and you work on a subconscious, unconscious level with feelings and so on. There's nothing more serious and genuine in doing it that way […] we*

> *can be doing it in a much more sophisticated, but difficult to measure, way. And that's where I understand the funders struggle with things. [Regarding aiming for explicit measurability in outcomes] Well, this all to me feels really out of date, and so the notion, I would say, that there's a hell of a lot of serious and applied games and films and everything else, would never be called that. Meanwhile, there's a lot of shite that would be called that, in all seriousness, which is a curious situation.* (LSD28799)

The value of serious and applied games was a topic that generated several points of broad consensus across the developer interviewees: existing serious and applied games were generally regarded as having low standards, but the notion of games having impact was given much greater approval. Many developers discussed that entertainment and leisure titles already have significant positive outcomes for players, but that these occur as a natural outcome of a successful creative process and that this is part of what makes them compelling rather than serious games which are seen as 'stodgy […] preachy works'. (LSD28786)

3.2.4.5 Do developers agree with the statement that 'games are powerful tools to change behaviours and attitudes for the better'?

Developers were dismissive of the overall quality and impact of serious and applied games, but were very positive about the video games in general having the capacity of games to stimulate pro-social patterns. The caveat was that the developers believed that this was already occurring as a natural result of the creative process of entertainment/leisure game development and play, and that this was not specifically enhanced (or was potentially weakened) by deliberate didactical approaches to game design (as stated in the previous subsection). When asked whether they agreed or disagreed with the statement 'games are powerful tools to change behaviours and attitudes for the better', the response was consistently positive about their potential:

Definitely, I very much agree with that statement. (LSD28792)

Speaking to people within games has caused me to change certain deeply held mind-sets I've had in the past. The act of playing games themselves, I've felt emotions and understood perspectives I never would before, in games that were for entertainment. More so than for any games I've played for a serious purpose. (LSD28786)

Absolutely, I think that games are one of the primary ways in which people engage with each other now. (LSD28788)

I played games that changed my way of thinking. Like I am pretty sure that after playing The Last of Us *I was fairly closer to my parents, like it showed me why sometimes parents can take decisions and why that can hurt both parties, but why is that for the better, for example. I'm not saying that it's going to change me from A to Z, but I'm pretty sure that games that can touch the right button can really change the perception of things for a person.* (LSD28790)

I was playing Bloodborne *[a very difficult game set in a gothic-horror fantasy world] and I'm also currently struggling a bit with coping with my day-to-day life, chronic stresses and stuff, and sometimes it's really easy to give up or just be hard on yourself. So I was playing* Bloodborne*, which is really punishing, which usually doesn't really help me in real life, but it actually helped me like persevering and killing a boss which you've been stuck on for hours, right, and in doing it gives you so much satisfaction that I kind of felt like, 'Hey, if I can do this, maybe I could also tackle the issue in real life and maybe get that same kind of enjoyment and motivation.' So I think things like that could help. (LSD28793)*

Other answers were more nuanced, but still positive and highlighting the distinctive mechanisms of behavioural and attitudinal changes possible through gameplay:

I think that's a complicated statement. I think it's too large to have a simple answer. I think it's potentially there in the same way that books and film can change behaviour. I don't know, I think it depends on the game.[…] Yeah, I think games do something really different. I don't think we even really understand what they're doing yet like on the generalised sense. They're cultural tools. (LSD28823)

This final point ('I don't think we even really understand what they're doing yet') manifested in many forms throughout the interviews. There is a widespread acceptance that games can be highly pro-social in their impacts, but also that there is currently not enough understanding of how video games, as 'cultural tools', function in society. This lack of research knowledge, particularly about the leisure games sector, is discussed further in the 'Views on the value of academic research' subsection (section number 3.2.4.6).

Some developers also highlighted the potential for negative outcomes from playing video games. This topic typically occurred as a response to prompting from the interviewer, but at times did also emerge from general discussion. Interviewee LSD28786 noted that there are particular questions regarding 'compulsion and psychology' in video game models, and that this was 'not only how do we keep people playing our games, but how do they keep spending money and how do they not want to stop.' The interviewee went on to give examples that related to mobile gaming and micro-transactions related to their own experiences gaming in South Korea.

> *When you do act upon Skinner's Box techniques, when you do act upon becoming, making your game a critical part of a regular part of someone's life, there's a level of responsibility there that I think gaming does have to come to terms with.* (LSD28786)

The interviewee related these problematic outcomes to the problems faced by games industry workers (detailed further below in the 'Occupational pressures on game developers' subsection). Their opinion was that considerable progress needs to be made in responsibility of game developers towards negative patterns of social engagement from

the industry as a whole, both in terms of impact on players and for the workers creating the games:

> *We've come to terms with our responsibility as creating mature narratives, and in many ways we've come to terms with our responsibility to create engaging experiences in many ways. Things that stand on their own feet, aside from simple graphical capability. But as far as our responsibility as creators, about the effects on our players, in terms of addiction or compulsion, I think those are – we haven't seen the real damage that can cause to peoples' lives, and I don't think – and I think until we even come to terms with the fact of taking more care of our own health as creators in making these games, because a lot of people sacrifice themselves to making these things, I don't think that that responsibility will really come to light, or really be held in fruition.* (LSD28786)

In reference only to the impact on players, these compulsion-inducing design 'dark design' (LSD28823) patterns, that feed into unhealthy compulsive play, were linked to micro-transaction purchases and general 'capitalist' (LSD28823) goals of shaping purchasing behaviour and/or influencing players to give away personal data for free. Discussion of 'dark design' was linked both to gambling and to the term 'gamification':

> *It is awful, gamification is one of those words that needs to be lit on fire with gasoline. I think gamification is really a capitalist structure for – it teeters on dark design, right? So it teeters on the same stuff that gets people pulling slot machines in Vegas. And we have a lot of documentation about how to design in those contexts and how you create those kind of dopamine with word cycles, but I don't think that's necessarily a great thing. I think we also named something that people have been doing for a very long time, like rewards and coupons and all kinds of commercial strategies. And that's really concerning to me.* (LSD28823)

> *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.* (LSD28783)

For the developers interviewed, the optimism for the future of games is balanced by caution about their potential abuse too. However, the overwhelming response was positive regarding the beneficial, pro-social impact that entertainment games could have on the lives of players. Many interviewees also highlighted that there was further potential to be reached yet:

> *I still think we've got a long way to go. I think there's a lot more potential than we have embraced. Games resonate on a different level to anything else. You can argue that, okay, TV, movies, books, they're sort of interactive a bit, but they're largely passive. There is an interactive element, but it's sort of minor. […] But with games, you're shaping the story, you're right there in the middle of the story, you are the story, and that's very powerful. You're put into the shoes, not all the time, but into the shoes of different characters and different worlds and different experiences, and that can be very powerful.* (LSD28796)

Uniformly across the developers interviewed, there was a belief that entertainment games either do change the behaviours and attitudes of players positively, or that they have the potential to do so. There are policy implications in the commonly expressed belief that such functions are not properly understood, and it was expressed that these functions were often left unacknowledged or excluded from research by funding bodies.

3.2.4.6 Views on the value of academic research compared to industry conferences

We asked the developers ‘are you aware of any research, academic or otherwise, on entertainment video games that has influenced your games development directly or indirectly?’ With a few exceptions, the developers interviewed had very little or no exposure to academic research:

> *I'm sure there was but I can't think of any (laughs). I'm sure there is some sort of academic thing that I've internalised but I can't think of any off the top of my head.* (LSD28826)

One expressed point that other developers (outside of this data set) have also stated:

> *A lot of academic language is also very, how should I say this, specific. Almost to the point of inaccessibility.* (LSD28786)

This point of accessibility through the language and communication channels may underpin many of the answers regarding the lack of contact with academic work, such as a preference for industry websites as research sources over formal academic sources such as journals.

Many interviewees questioned the relevance of the current approach and insight of academics:

> *[There is some academic work relevant to games development] but it's mostly from an engineering perspective and not as much on a literacy or literary value perspective. I would love to bring the humanities into what we're doing more.* (LSD28825)

> *For all the wonderful things that do happen between academia and games the studies that are most useful to game developers from academia seem to rarely be actually directly related to games; they seem to be more related to human psychology and general human computer interaction. I haven't seen that many studies of – to be honest with you, I just haven't seen that many great studies about computer games over the past few years.* (LSD28782)

> *As for academia in general, I don't [remember any academic influences on my work] – unless it's articles that come up on places like Gamasutra, [a games industry community website] where I do read keenly, 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. I'm more driven to focus on people that have been making the games and their insights into that process.* (LSD28830)

Another developer also cited the non-academic, professional industry website 'Gamasutra' as their main source of research:

> *[Interviewee:] I try to stay up to date with research. I couldn't name a specific group that does research. […]*
>
> *[Interviewer:] Where do you go when you look for that?*
>
> *[Interviewee:] I will frequently go to Gamasutra to see if there's anything posted there, or the GDC Vaults [an online archive of talks from GDC] even, because people will talk about where they get their research and it's sort of the Wikipedia rabbit hole but for gaming (laughs).* (LSD28831)

One developer stated that the work of practising artists was more influential on their work than the research produced by the academic community:

> *Not specifically academic research but I'm inspired by a lot of my friends who have some really specific ideas. Most of them are artists, so they come from this entirely different background of wanting to express themselves.* (LSD28827)

A different reason to not use academic research is the limited amount that exists based on entertainment games. One developer of romance-story games states that they were unable to find game research on their topic:

> *So, pitching the very first lesbian route of our company's history, I needed the research to prove people would buy this, people would support it, we would see an increase in sales, […] but there wasn't any research that I could find for games that showed this. So I turned to television and movies, that main field of entertainment. Not so much books. We're doing that now, where we turn to books more, but they had so much more statistics and articles and was just easily accessible on 'this segment has done x, y, z for this genre'. Bringing those forward did end up helping.* (LSD28832)

In the above statement, the developer looked for academic research on video games for the pro-social activity of including non-heterosexual romance options in their game, but was unable to find research that was relevant from the video game sector. This absence could have prevented the developer from being able to increase the social value of their game.

A minority of the developers reported positively that video game research did have an influence on their game development. There was a very high correlation between these responses and academic connections (typically either/both teaching or previously/currently studying game development at university level):

> *A resounding yes. A bunch of books and texts. I mean, that's why I have a Master's in game design from ITU, where I actually studied – well it's technically a Master's in game analysis, and I ended up mostly focusing on design but from a somewhat academic angle. I read a bunch on player communities and transgressive behaviour and transgressive play, how players like to break games and that sort of stuff. […] There was, at the time, really only one or two good resources on this type of super transgressive player behaviour.* (LSD28824)

After this developer graduated and moved into the commercial games production, their interest in traditional research and 'academic language' declined significantly:

> *I'm definitely interested in theorising and learning and critically looking at things. I'm less interested in the traditional academic language of things and the lengthy writing and sourcing and stuff, that I see the value of but that costs me a lot of energy.* (LSD28824)

Another stated that the impression of the lack of relevance was a factor dissuading them from engaging with existing research:

> *Maybe I might start to get more into it, if I find something that appeals to the kind of thing I like to read about.* (LSD28827)

Game developer conferences (such as GDC and Game Happens, two of the locations of the developer interviews) were described by several interviewees as the main way of exchanging practical research information, as well as being important for supporting a healthy development community:

> *I think probably the most direct influence comes from places like GDC when we've come here to soak up the knowledge of other developers.* (LSD28830)

> *I come to learn, I come to find out what other people are doing. I come for inspiration, I come to just soak it all up and get a sense of that connection to everybody here making games and it's just – I don't know, it's an inspiring place and it's an invaluable resource.* (LSD28830)
>
> *[Interviewer:] How do you go about sharing that knowledge with other developers? Or researchers?*
>
> *[Interviewee:] I basically do talks as much as I can in conferences. Game developer conferences or academic conferences. […] I wish there were more ways I could share my experiences with people.* (LSD28828)
>
> *I feel like we can move faster at conferences than you can with writing, writing and reading papers and books.* (LSD28824)

The pace of change in the game development field was also cited by LSD28799 as a contributing reason for funding bodies not keeping up with changes in industrial needs (see section on 'View on applied/serious games and gamification'). In the previous quote from LSD28824 we see that sharing knowledge of cutting edge techniques and cultural developments are largely happening at professional conferences. Others echoed a similar sentiment, that conferences are a practical area for learning about games development, both at generalist conferences and at conferences with specific themes, while others also value conferences for their social, community building aspects:

> *There's conferences on games in terms of sexuality and gender and people of colour and everything nowadays and I want to go to them because I do want to open up more of where my blind spots are of what I don't know about things and I think going to conferences of games for people who are not me would be really educational for that. […]Networking and expanding your knowledge can go hand in hand a lot of times because if you're networking in the right groups then you meet new people from new places, learn new things.* (LSD28826)
>
> *I'm mostly here to see my friends, I know a lot of people in game development and they live all over the world and this is the one time that we can all get together in the same place and hang out. […] To come here and for everyone*

> *to be in the same place despite the fact we live thousands of miles away is something that I can really only do once a year.* (LSD28827)

An American developer, who was not being interviewed at GDC, talked more extensively about both the value of GDC and the problem of the main global developer conference being in America:

> *There's a difference between sharing your talent and sharing your time and your talent, and I think that's what GDC is about, like people are sharing their time and their talent together and that's very powerful. I think that, yeah, learning best practices objectively is important, the ability to learn what's going on in your craft and in a very condensed, efficient way. It's very powerful; what's the process of that, there's no other place to do it, truth; and there's no GDC Europe anymore. So in fact as a global citizen it's super-critical, both from a USA, like respect-the-world point of view, or from anyone who's not from America. Now if you want to learn the best of what's going on in the craft, you've got to go to GDC San Francisco, unfortunately.* (LSD28788)

The accessibility of both practical and academic knowledge is a background theme in many interviews. One developer reported having searched for practical research, and found studies looking at results of serious/applied games but no public research on their practical development or detail of their techniques:

> *Maybe I haven't looked in the right places, but when my colleague and I were doing research on whether to become an applied game company or not, we couldn't really find research from the game industry into applied gaming. I think it was mostly research from actual healthcare instances and business companies. It wasn't really specific. It was always a general representation of an applied game.* (LSD28802)

Research is not entirely dismissed by game developers, but there is awareness that large AAA companies can have access to private research which smaller indie companies cannot afford or generate, and that confidentiality in the industry makes sharing private research challenging:

> *I'm trying to think of things that are public versus non-public which is always the thing in industry (laughs).* (LSD28829)
>
> *[Interviewer:] Have you shared any of the statistics that you have from your titles?*
>
> *[Interviewee:] I have not, mostly because I don't know where the confidentiality line is there. It's something that I would like to do, and by them allowing me to do interviews like this – and I do ask for permission first, to be safe.* (LSD28832)

Knowledge that is available to only private, and typically larger, organisations could create a commercial landscape which is very challenging for smaller developers. One developer had specifically attempted collaboration with researchers, but found the experience frustrating and ultimately fruitless, and they believe that a lack of funding for games research was possibly the cause:

> *[Interviewer:] You say you've tried to get your games to academics to test, how has that worked out? Has it actually happened?*
>
> *[Interviewee:] No, it has not. I've talked to a lot of people who said they were excited to do that, we could probably collaborate and it always stays in these super excited conversations where we're like, oh man, we love the same things, and you have the research part and I have the practical experience, we can merge it and it's going to be perfect. Maybe it's a money issue, maybe it's the time, I'm not quite sure what it's like to do academic – like do PhD research. I think the resources are probably pretty limited for people.* (LSD28828)

The developers interviewed had a highly consistent view of the academic research presenting little value to their professional practise. While some expressed little interest in the area, many were pursuing research knowledge through non-academic platforms, such as the website Gamasutra, where professional peers share their insights in a semi-formal tone. Others were interested in collaborating with traditional academic researchers

and had actively tried it, with no success, and one was open to the idea but had only considered when prompted by the interviewer:

> *[Interviewer:] Would you be interested in publishing in academic journals? [Interviewee:] Potentially, yeah. It's not something I've thought about doing but yeah.* (LSD28830)

While the relevance and value of traditional academia was considered to be very low by developers, conferences were valued from multiple perspectives: learning, sharing, networking, and community building. These results correspond with attitudes seen outside of this body of research data, but it should be noted that there is significant potential for bias in favour of conferences in the sample set: 16 of the interviews were performed at a conference and so will likely produce results that are positive towards conference attendance. The location is unlikely to impact on attitudes towards academia, and may even bias attendees to be more favourable-than-average views regarding academia, but the attitudes towards conferences is at risk of contamination due to the sampling method. These results should be confirmed by further research conducted outside of conferences.

3.2.4.7 What is important to the industry currently? Stakeholder views on future priorities and recommendations

When asked about the important trends in the games industry, both currently and that are likely to be influential in the upcoming decade, there was significant variety in both the framing and content of the answers. Four notable topic fields of agreement emerged: storytelling, user-centric design, the increase in gaming as a use of leisure time, and the increasing ubiquity of video game devices, but these were approached from many directions. Virtual Reality ('VR') was the fifth common topic, but there were mixed opinions of its place in the future of games development.

Regarding the developers' opinions on storytelling (also referred to as 'narrative') in games:

> *I really hope this trend of more narrative, emotional games, like* Life is Strange *and* Journey*, which is basically just there to be super-pretty, I hope that trend continues.* (LSD287891)

> *I think there's going to be more integrated narrative, more diversity as well, I think. It's definitely coming for games in the future because newer generations have grown up with these topics and find them more natural to themselves, and these people are going to work in games as well.* (LSD28792)

> *I think as more writers are getting involved and more writers are getting more power in the industry, we'll see games coming out with more to say for themselves and more of a narrative consistency throughout their world.* (LSD28796)

As an aspect on having 'more to say for themselves', many developers directly discussed the representation of women and minorities at greater length, particularly in a storytelling context, and its growing importance to the narrative content of games.

Regarding user-centric design and understanding player psychology, developers showed a desire for an increase in research into the area:

> *I'm seeing a lot more developers look to academic research for answers to some of these questions because they are questions about psychology, there are questions about human physiology and how we respond to visual cues, things like that.* (LSD28782)

> *I think narrative games and psychologically challenging games would be the next step.* (LSD28802)

> *If you look at the mobile industry that is very much designed around the psychology of the player and how to make it more engaging for that players using real world analytical data and the AB testing.* (LSD28783)

> *There are a lot of interesting fields that could be explored; obviously psychology is one big area that is useful and can be applied to games; if*

> *that research is focused on the psychology within games, entertainment games, that could really enhance that because previously the psychology side of things is taking unrelated to games, psychology research papers and trying to apply those theories to games. So something that connects those two too would be very useful.* (LSD28783)

Regarding the increase in gaming as a use of leisure time, this was considered a current and future trend, and commonly viewed as a socially neutral change:

> *[Interviewee:] I'm not sure if that is good or bad, but it's a hobby like another hobby, right? So it's just like saying a hobby is taking time away from hobbies, but it's still a hobby.*
>
> *[Interviewer:] Yeah. Do you think there's – that playing games brings something different to a person's life from other hobbies, such as painting or reading books or watching films?*
>
> *[Interviewee:] I think everybody can find these sources of relaxation or stress relief and games can be any really; it can be a stress-relief moment, it can be a relaxation moment, it can be a learning moment, it can be, how do you call it? Get together moment. Games can be anything really, depending on what the game is itself.* (LSD28790)
>
> *There are so many games that can appeal to so many different people that more people have started playing games and more people find games they enjoy so they'll play more.* (LSD28791)

Regarding the increasing ubiquity of video game devices:

> *[Video game devices are] just so commonplace. It's not like a box in your room somewhere that you sit in front of. It's literally wherever you are all the time. […] Everybody's got access, yeah, and it's cheaper.* (LSD28801)

Regarding VR, there were some very positive opinions of developers that were involved with it, particularly with regard to 'social VR' play and experiences:

> *[Interviewee:] I think it's very funny, with virtual reality the narrative has moved from, I think, the fear of people getting ill. Right, it's very basic, like will it make me ill, to now, how can it actually enhance my life. […] I think VR has a different opportunity to provide, well not only like co-presence that we were talking about, but different types of engagement that actually makes peoples' lives better.*

> *[Interviewer] So for you social VR is the way forward in VR?*
>
> *[Interviewee:] Absolutely* (LSD28788)

Others were more sceptical about the entertainment possibilities of VR and favoured Augmented Reality ('AR'):

> *I think big things that are currently in the beginning stages are mainly VR and AR, which I think will definitely settle down in the coming ten years. And I think AR is gonna have more future than VR. I think VR is gonna be more towards the serious applied gaming side rather than the entertainment side due to the various problems with it, whereas AR gaming I really see becoming more prevalent in games altogether.* (LSD28792)
>
> *I mean, I think VR is going to be interesting. I don't think it's going to revolutionise storytelling.* (LSD28796)

VR was also seen as a potential multiplying factor for content in games, both for its positive (narrative and storytelling) and negative (traumatic fear) potential:

> *Obviously the settings, the characters, the environments are becoming a lot more realistic; combine that with VR it's becoming very much more immersive. So that will bring its own challenges, not least from a development budget point of view but also from how much effect these experiences will have on the individual. Some horror games for example on VR are a lot scarier.* (LSD28783)

Overall, the topics that were discussed the most were the hopes for an increasing focus on storytelling and narrative in games, and research to gain a deeper understanding of how to convey powerful experiences (narrative and non-narrative) through games. This was often associated with a desire to address social issues respectfully, particularly the representation of women and minorities that often have been under/misrepresented in games.

3.2.4.8 Mature themes: representation of women and minorities in games, and violence

Video games are, like many aspects of the media, under scrutiny for their representation of topics such as violence, sexism (particularly towards women), and poor representations of a range of minority groups. Many companies have felt that this is a reasonable criticism and this has resulted them investigating how they can respond to the needs of all members of society. Microsoft has been a leader in this field. They have built internal teams specifically focused on the issues of women and minorities in groups related to Xbox operations:

> *One of the other things I do is I also lead the Team XBox LGBTQ group that is focused on better inclusion of queer and trans employees and players and content in our products.* (LSD28829)

Other Xbox groups also examine the representation and treatment of, for example, women, and people who are Latino or Black in the activities of Microsoft's Xbox division.

When the developers were asked 'have you deliberately addressed gender, minority representation, political culture, or other serious or socially educational topics in your work?' they almost uniformly said that they have, despite the significant majority of them not working in the serious or applied games sector of the games industry. The answers about how this was included in their work varied greatly:

> *Generally speaking I don't think I've ever worked in an environment that wasn't progressive enough to at least aim for gender inclusivity. Unfortunately, the majority of my work was related to existing IPs where we're bound by the characters that we're given basically. It's something that definitely is in the forefront of our minds when we're looking at character design.* (LSD28782)

> *Yes, I made a game about intrusive thoughts. Something I deal with myself, mental health and fear, and it was probably the hardest thing I've ever done.* (LSD28786)

> *Oh my gosh, yes. Oh wow, so, and all those issues are not topical for me, they're identity. So feel different when I address 'them' I'm actually addressing my existence on earth. So yes, from the very beginning of my career I have actively taken the opportunity to address what, I guess others call 'inclusiveness' but I'll just call 'me-clusiveness'. […] If I don't take a leadership role, well then, whoops, what a wasted opportunity. So yes, continuously.* (LSD28788)

> *That's basically the whole point of the game we're working on is that we wanted to address people's personal problems.* (LSD28791)

Three developers stated that they were not directly addressing these topics, often due to the type of games they made, but including them to an extent through 'gender neutral' player-characters. As previously stated in the section on views of serious/applied games, it was felt that directly addressing a topic head-on could lower the quality of both the game and its impact on the lives of players:

> *Yeah, I do try to – to tackle the issue, but I don't wanna focus too much on represent – representing women or other minorities because I feel like if I focus on it too much it might become forced and not flow naturally any more.* (LSD28793)

Although the almost all of the developers had consciously addressed topics of gender and minority representation in their games, some highlighted that a group of players felt that this inclusion was intrusive and deliberately prejudiced against the 'cis-het white male', (LSD28791) meaning cisgender, heterosexual, white men. The developers interviewed expressed the choice to include women and minorities in their games as a matter of personal choice or ethics rather than a broad political statement:

> *Originally we wanted the human protagonist of the game to be female because that was consistent with the movies, but […] at the time originally we got word from on high that players didn't want female protagonists, they didn't want to play as women. Which was obviously nonsense, it was someone's opinion somewhere who was on a higher pay grade than all of us. Yeah, it seemed to neglect some of the characters like Lara Croft and things. We kind of went, well, if we're not going to have a female protagonist then let's make him black. It was a small act of I guess rebellion on our part. But we were keen to take not the obvious choice of going gruff, white male, which happens a lot. […] It's not even apparent that he's black until quite a long way into the campaign where they actually see him for the first time. So it's not something we tackled in the narrative or dealt with any themes of race of anything like that. The only meaning behind it as far as the game was concerned is just the fact that he's there and it's up to the player and their own cultural considerations what that means to them, if anything*. (LSD28830)

The same interviewee gives an archetypal statement about their choice to include women as playable characters in another combat-focused game (a genre that would typically in the history of video games only feature male playable characters):

> *We just thought, oh yeah, it's cool, we'll do female characters, because it doesn't get done enough.* (LSD28830)

This trend towards inclusivity was part of the stimulus for the 'Gamergate' series of online attacks and events, which largely manifested in the abuse and intimidation of women and minorities. One developer described that they were outside of the main targeted group, but still felt the threatened by this occurrence:

> *I don't always feel safe in video game spaces. Gamergate made me feel, like affected friends of mine who had to move house, or friends of friends who were like, were seriously attacked and put in danger from it. Like it didn't directly affect me, but I did spend a lot of time upping all my online security and taking precautions.* (LSD28789)

Another developer believes that Gamergate stimulated a counter-response from the industry because it increased introspection and questioning of sexist or other stereotypes

in game content. Asked if they felt this was only them changing or part of a wider movement, they responded:

> *It's definitely growth in the industry. I think that's not just me. I'm pretty sure – I mean after the whole Gamergate thing exploded, I'm pretty sure a lot of people took a whole – at least I'd like to think that a lot of game developers took a look at themselves and what they want to do.* (LSD28794)

Interviewee LSD28796 was involved with the development of the recent Tomb Raider games, and discussed one of the controversies about the story of the game: more people of colour in the cast survived compared to the multiple deaths of characters that were white. The interviewee states that this pattern was unintentional, but a small group of players felt this was a deliberate statement regarding how the developer values of the lives of people who are white:

> *[Interviewee:] In Tomb Raider, we actually got fallout because our characters of colour survived, which they thought was some kind of big statement, and it was sort of vaguely coincidental. […] They all made it out and we actually had people having a problem with this (laughs).*
>
> *[Interviewer:] So player response was not very positive?*
>
> *[Interviewee:] No, it was in general, but people will kick off at anything really, particularly in this current climate with Gamergate and everyone being super-kneejerk about representation and diversity and feminism and things like that. It was a really weird thing to get het up about and sometimes you have to think, okay, I'm going to annoy someone; who don't I mind annoying? The racists and the sexists, don't mind annoying them (laughs), if I have a choice. (LSD28796)*

The sentiment that 'people will kick off at anything' was indicative of comments regarding both player groups holding some extreme right-wing and left-wing values. Although there was unanimous approval among the interviewed developers of increasing inclusion of women and minorities in games content, culture, and creation, there was also

discussion that highly reactionary elements from across the political spectrum may have a divisive effect that lowers the democratisation of access to technology, particularly effecting women and minorities (see the subsection regarding 'Occupational Pressures' – section 3.2.4.9) One developer discussed the impact of this on transgender developers and stressed the importance of understanding the multiple cultural factors involved in limiting their access to tech industries such as games development:

> *Somebody needs to do some real research there because that's terrifying.* (LSD28823)

Another developer also commented on the strong passions involved in these discussions:

> *I think that the discussion about ethnicity and sexism, like equality across all genders, equality across all races, will become more, I wouldn't say more violent, but will become more prominent over the coming ten years. It has been rising, like the last four or five years maybe, steadily and it will increase.* (LSD28787)

Despite the risks of controversy, developers reported that they feel their work at inclusiveness has had a positive social impact on the acceptance of players towards minority groups:

> *[Interviewee:] I have had users say they didn't think non-binary was a real thing until they played my game.*
>
> *[Interviewer:] Cool. So how would you characterise their changes in behaviour after playing?*
>
> *[Interviewee:] It's frequently just introducing them to topics they aren't necessarily exposed to. A lot of them are cisgendered heterosexual women and it's introducing them to queer characters, characters whose gender identities don't fit the binary, and slowly easing them into it has helped a lot.* (LSD28831)

Others said that they had personally been influenced positively by playing games with lead women characters when they were growing up:

> *I mean a lot of women are now positively portrayed in – in games, like Lara Croft was one of my idols when I was younger and I was like, 'I want to be tough like her.' So it might have had more of an influence on me than I initially thought.* (LSD28793)

Another interviewee commented that they had observed the importance of representation in games:

> *For all sorts of different reasons, something as simple as just allowing people to play as someone of their own gender or indeed race or ethnic group or whatever is a big deal for people.* (LSD28830)

This attitude may be phrased somewhat flippantly, but it is representative of a generalised acceptance of the importance of social diversity in games content, culture, and creation. Although the study of violent content in games is a key topic for many academic studies (Persico et al, 2017), many of the developers did not focus on violence as a key topic of concern for them, and even fewer discussed violence unprompted by the interviewer, resulting in one third of developer interviewees not mentioning violence in games at all. Several developers showed recognition of a tension between entertainment and reality in their work, particularly in regards to games that are based on recent and current world events. One developer expressed some regret about their earlier work:

> *I think we trivialised a whole bunch of aspects of the Vietnam War and I actually kind of did a lot of research for it, then you sort of – you realised that it was a very serious and horrific episode. And that to kind of turn that into entertainment was actually really quite difficult. And I think for the type of budget that we had didn't then allow us to do that because we only realised, you know, kind of three quarters of the way through or two thirds of the way through that actually it – the subject needed to be approached in a much more sensitive manner.* (LSD28784)

Interviewee LSD28783 has worked on the 'Grand Theft Auto' (GTA) series, which has historically been associated with violent and anti-social gameplay:

[Interviewee:] If we talk – specifically say, the topic of violence, if it's cartoony and make believe and not very realistic then it would have less impact than if that violence is very realistic looking. Obviously it would have a much, much higher emotional impact the more realistic it gets, so.

[Interviewer:] Well, sorry to go back to GTA again but obviously that one has gone a lot more realistic [as the series continued]. Do you think there's a point where it would be sensible for it to kind of go less realistic again?

[Interviewee:] It depends on the market. Obviously GTA is a title aimed at adults. If you wanted to do a similar sort of game play for a younger market then it would have to be less visually real, it'd be more cartoony to make it more palatable for that market. […]

[Interviewer:] [While making GTA] how much thought was there about thinking of a younger audience or is it always kind of 18 plus all the way?

[Interviewee:] It was always 18 plus, yeah. (LSD28783)

Questioned specifically regarding the impact of violent games, such as GTA, on physical-world violence in the player groups, the developer did say that they have looked at studies on the topic:

The evidence, obviously I've looked into it, the evidence shows it might have a short spike on aggression. But actually on a longer term basis violent games generally reduce aggression. (LSD28783)

This developer expressed an unusual view, not expressed by others, that market forces would naturally restrict harmful game content:

At the end of the day the market will decide and so obviously an economic goal is to make these successful entertainment products. So something that is harming a player or is uncomfortable for a player will not maximise its commercial success. So the market forces are at play here in many ways. (LSD28783)

Another developer was hopeful that academic work could allow video games to be more responsible in their representation of violence and mental health, but argues that the current inaccessibility of academic research prevents this:

> *Imagine if an impending creator wants to make a game about, going back to it, gun violence and mental health, and how, the way you see a gun affects your perception of it as a victim, or as a perpetrator, or whatever. If they can't even read the basic academic journals, the potential message, the potential truth that that piece is founded upon, is very much lost. That doesn't have to be the case, we can fix this, and I do think it's something worth fixing.* (LSD28786)

The issue of mental health was also raised in the context of vulnerable players potentially being more heavily impacted by violent content in games:

> *I don't really think that things like violence or sexism necessarily have a bad influence on players, unless that player specifically has already been prone to like, anger management issues, or other issues.* (LSD28787)

Developers were typically circumspect on the topic of whether violent content, and other anti-social attitudes and behaviours in games, were impactful on players. When asked if they had ever deliberately constructed a game to promote physical-world anti-social consequences, every developer said that they had not, including the developer from the GTA series. Despite the potential sales that controversial levels of violence could bring to a game, no developer in our data set said that they had actively pursued promoting anti-social behaviour in the lives of their players.

In general, regarding violence and anti-social content, many of the developers believed that non-violent mechanisms of play are increasing in game design:

> *Whilst the game industry has historically had a problem with certain types of behaviour that we could consider to be negative or antisocial to be reinforced by both the mechanics and the narratives of the games, while other kinds of behaviour that we might see as being more socially and individually positivistic around building strong social relations of collaboration and mutual emotional support are not yet being supported by certain aspects of game culture, I do think that we've made tremendous strides over the last ten*

> *to twenty years around this, and that year on year we're seeing more and more games that do less of the former and more of the latter.* (LSD28797)

The entertainment games industry is deeply informal in its discourses, and frequently creates games that have with on anti-social themes, but this data set indicates that there is a strong pro-social instinct across indie, AAA, and art-game developers, and that many of these developers choose to reflect this in their work, either as the centrepiece or alongside other content.

3.2.4.9 Occupational pressures on game developers

Many developers reported that there are currently problems facing game development staff. Primarily this was related to workload and working long hours, far beyond 40 hour weeks (termed 'crunch'):

> *In the entertainment games industry there's a huge pressure on workload in a lot of companies; a lot of overtime so a lot of kind of stress and overwork, burn out.* (LSD28783)

> *I guess crunch is kind of a part of the game industry because I've seen it also with friends who work in the industry and some people crunch for a year and others, thank God, only do it for a couple of weeks. And it's very socially expected that you do it. If you don't do it, you're kind of the lazy bum so you do feel pressured to do it. And it was even so bad for me that I stopped taking medication I took, which – which caused me to – like that – that medication gave me side effects of being tired and I was like, 'Well, this week I really need to finish this or my team is going to be really mad at me because I feel shit-tons of pressure, so maybe I'll just skip it one day so I can…' you know, and that was the moment when I thought, 'Oh, damn, this is an issue.'* (LSD28793)

> *[Crunch is] very disastrous for families, especially single parent families, and it has been responsible for a lot of families breaking up. It's very difficult getting that work-life balance sometimes, and that can change from studio to studio and some have better and healthier working cultures than others.* (LSD28796)

Three developers commented that the number of people desiring to join the industry created an additional pressure:

> *People feel like they're going to be replaced.* (LSD28823)

Variations on the theme of work/life balance were cited by many developers and anecdotally (beyond this data set) this has widespread support as a key occupational pressure for video game developers.

The financial risks of game development also create difficult situations for workers, with studio closures or staff cutbacks forcing frequent relocation:

> *I think it's quite difficult to achieve sustainable employment. […] Many people move around every 1 to 3 years, so financial stability I think is an important factor.* (LSD28784)
>
> *We have a very real pressure to make sure that we have something that is mass market enough, where we can appeal to enough people and actually stay alive.* (LSD28785)
>
> *When you think of projects like even* Firewatch *or* What Remains of Edith Finch *[two notable artistic games that are narrative focused and non-violent], these stunning titles that have a lot of nuance and experimentation within a two-three runtime and you realise that these have taken three or four years' of peoples' lives to create. It hits you just how much work is involved to create a new game, even more so than a lot of other creative mediums.* (LSD28786)

There is a distinct tension between the need for originality, creative/artistic vision, and the needs of creating enough market success to support the creation of the next game. Like the film industry, the games market is dominated by hit games that generate the largest revenue share but, unlike the film industry, there is no mature studio system where these large titles pay for the creation of small auteur games, i.e. 'We don't have the whole

Hollywood system'. (LSD28786) The inequality of the distribution of revenue adds to the pressure on developers:

> *When you start counting up the man-hours, yes gaming is like a ten-billion dollar business, or if not, more, but if you look at the time and energy spent by people making them, that figure probably starts to seem a little bit small in terms of the effects, not only on peoples' lives, but on their families and on their health.* (LSD28786)
>
> *[Interviewer:] What do you think are the main pressures on games developers? […]*
>
> *Capitalism, like the fact that we have to earn money pretty much stops a bunch of people making good work. Like artistic limitations are useful, financial limitations are not.* (LSD28789)

As mentioned in the section on how mature themes are reflected in games, social media and general media coverage can magnify problems in how a game handles a topic:

> *There is always going to be one person already that is absolutely deeply offended by what you do. And it's more than – I think we should really try to do as much as possible to not – like to offend less people as possible, but I think as a developer it's also hard to realise that at some point you're going to have somebody raging at you and you not even know where it's coming from and you're just going to have to apologise and keep it in account for the next time.[…] How can you know about everything, you know? So, yeah, that, I think, is kind of one of the most pressure factor nowadays, I think, I feel at least.* (LSD28790)

Although this social pressure was only mentioned by a small number of developers, it may represent an emerging trend.

3.2.5 Conclusions concerning the interviews with developers

The developer interviewees come from a wide variety of geographical locations and cultural, ethnic, and class backgrounds. They represent a modest spectrum of gender and sexualities. They have very different levels of experience in the games industry,

education, and genre specialisations. Despite this, many notable points of alignment were found between the views that the developers expressed on the themes of the Gaming Horizons project.

As a group, the developers recognised that there was a preponderance of people who are cisgender, heterosexual, white men making video games, but also that steps were being taken to diversify this in the interests of better reflecting the needs of the diverse player-base. The interviewees uniformly stated that video games have grown to be a mass-media of comparable influence and social presence to television and films. There was also awareness that both players and developers were hindered by stereotypes such as entertainment games being for 'nerds'. The interview group included practising artists that use games as part of their work, and their approaches clearly defy such stereotypes, along with emphasising the increasing ubiquity of play as an expressive tool that is permeating other creative industries.

There was a very high degree of uniformity in condemning the current quality and effectiveness of games that are intentionally addressing education and training in pro-social or commercial behaviours, i.e. serious and applied games. However, the intention of addressing pro-social behaviours with games was widely approved of, but almost all developers cited personal examples where such themes had been included in their entertainment games work as a natural outcome of their creative process or reflection of their personal identity or ethics. This creative-process-led approach for pro-social content was framed as potentially more effective than serious or applied games, but also notably difficult to measure and so presenting a challenge for funding bodies to understand, especially alongside the rapidly evolving technologies and cultures of game development.

Games with pro-social elements or themes were widely approved of, but the approach of aiming for a didactical impact was viewed as deeply flawed and largely (but not wholly) resulting in substandard social outcomes with minimal impact on small audiences. Balanced against the pro-social aspects of entertainment games, the developers also discussed some possible negative outcomes of the video games industry. Factors such as addiction, abuse of compulsion to use micro-transactions, and other 'dark design patterns' (LSD28823) were recognised as a risk that game developers will need to moderate in the interests of the health of their players. These design methodologies were associated most closely with free-to-play games, where addiction is leveraged into small transactions that allow further play. The overall genre of free-to-play was not overtly condemned as being automatically abusive of players, but the risk of slipping into dark design and gambling models was most noted in this genre.

Most developers had very little connection or experience with academic research. Those that did connect with academic research had other links, such as teaching or student experience related to games. The applicability, writing style, and accessibility of research were all challenges to developers seeking to gain formal insights that could support the development of their creative industry. Those that had attempted collaboration with academic researchers felt that a lack of funding prevented the collaboration from continuing. Many developers stated a desire to learn more about their field, and currently use industry websites and conferences as methods of learning and sharing their knowledge, presenting the possibility that academic research should aim for inclusion on/with these platforms, not competition with them. It was noted that the largest of these events is GDC, held in San Francisco, and so both promotes American dominance of the

games sector of the creative industries, and also excludes developers from around the world that cannot afford access to GDC. There are significant policy implications from these results: the industry desires meaningful and accessible entertainment-focused research and collaboration, but currently this is not occurring.

Developers regard key trends in the future to be both the growth in importance of narrative and storytelling in games, and the diversification of content, culture, and creators of games. These are seen as linked factors, and also relate to reflecting the social realities of the broad player-base.

Poor representation and treatment of women and minorities in the tech industry, and in games content, culture, and creation, was not a theme that was discussed at length, but it was referred to in passing several times:

> *I think there's also a lot of games, or at least the community of those games, that still don't really respect it [i.e. the need for diverse representation of women and minorities] and still treat it like it's not important. But I do think it's getting better. It just needs to get there a bit quicker, maybe.* (LSD28800)

Instead of focusing on the poor representation of these groups, the interviewees focused on the progress being made. One interviewee believed that the abuse related to Gamergate events appears to have stimulated the industry to improve their representations of women and minorities in their games. In general, there was acknowledgement of some low standards in the video game industry, but also that there was a growing goodwill and a recognition of need for improvement in areas of social diversity.

Developers' views of violence in video games are broadly aligned with those of the player and educator interviews, i.e. that it is possible that links with violent behaviour

could be genuine, but also might not be, and currently the research has been unable to prove this in a substantial or reliable manner. Many developers discussed the increasing amount of games where the primary interactions are non-violent, particularly in games that have a strong narrative or storytelling focus.

Opinions regarding the future importance of Virtual Reality to entertainment games were divided. Although no developers stated that they believed VR would disappear in a similar manner to that seen in the 1990s, the importance of VR varied between seeing it as an essential new medium for social play experiences to seeing it as a tool that would recede from the entertainment field to become predominantly an education, training, or other practical workplace tool.

As with many industries, work/life balance was a significant worry for developers. Many developers stated that the source of this pressure was an unstable financial base for game studios which pushed employees to work harder in an effort to avoid the company-wide repercussions of failure. The results of this pressure were exemplified in personal stories of impact on physical and mental health, as well as destabilising relationships with friends and family. The seriousness of these impacts on workers in this creative industry suggests that engagement with policy groups and further research would be desirable to find ways to mitigate this situation.

3.3 Interviews with researchers and policy makers

3.3.1. Methodological specificities

This section reports on some general data about the 16 interviewees whose interview transcripts were coded and analysed in depth as part of the data set in this area. These interviews were conducted and analysed by two researchers from the GH project. Research and policy focussed interviewees were sourced in a number of different ways. We requested interviews with the project's Advisory Board members who had involvement with research or policy making. In addition, all researchers working on the GH project were invited to suggest potential interviewees, consisting of individuals from professional networks, as well as those whose work was considered influential or relevant in the field. All individuals suggested were contacted with a request for interview; we interviewed all of those who agreed to our request. One interview was conducted face-to-face, whilst the rest took place via Skype or telephone call. Interviewees were located in the UK, elsewhere in Europe and, in one case, in Australia. All interviews were conducted in English.

	Total Transcribed / Coded	**Male Transcribed / Coded**	**Female Transcribed / Coded**
Researchers (R)	14 / 12	8 / 7	6 / 5
Policymakers (P)	4 / 4	2 / 2	2 / 2
Total	18 / 16	10 / 9	8 / 7

Table 4 describes the sample for researcher and policy aspect of this deliverable

As shown by Table 4, all of the interviews with policy makers were coded. We did not code all researcher interviews; some interviewees had a less direct relationship with video games than others. For this reason, and due to time constraints, after initial revision of the interview transcripts we only coded in detail those interviews that were considered to offer rich perspectives that were relevant to the deliverable. This resulted in a consideration of 16 of the 18 transcribed interviews, from which the following themes are drawn.

3.3.2 Outcomes from researcher interviews

3.3.2.1 An emerging ethical sensibility

As noted in our Discourse Analysis study of EU funding calls (Perrotta et al., 2017), discussions of ethics and social responsibility in relation to gaming, and technology more broadly, are mainly concerned with compliance during the process of Research and Development, for instance to ensure privacy, gender equality in research teams and informed consent for participants. While this perspective is important, our work in Gaming Horizons is based on a different assumption, i.e. that ethics and social responsibility may also represent overarching principles, or a proactive 'philosophical' stance, to inform the design and the study of technologies from the outset.

This assumption was examined in depth during the interviews carried out with researchers, as they often are the key stakeholders involved in the negotiation and implementation of ethical requirements in R&D projects. Perhaps predictably, when talking to most researchers about the ethics of video games, the interviews developed into a discussion about the ethics of their research (e.g. getting permission from children, schools, and so forth), rather than honing in on the ethical problems (or possibilities)

inherent to the medium of video games. For example, in one case ethical concerns were also clearly understood as relevant the research process, rather than the inherent ethics of gamification as a process in itself.

> *We have to comply with an ethical manifest as a researcher, which is about integrities, the professional requirement, actually [...] equality, gender equality, non-discrimination and things like that. More recently, there is this data protection issue, it's a very hot topic. (R07).*

Another interviewee also addressed the ethical aspect of the research process, as defined by the institution under which the research was to be carried out.

> *[...] especially when we are working with children in schools. We had to make sure that we had to adhere to the ethics processes that we have at the university. So we had to go through the ethics approval before we engaged with them. Even if we want to engage with the teachers and engage with any other stakeholders, we have to make sure that we have the ethics approval in place, which is from the university. [...] we needed to got through the ethics process to make sure that whatever we were collecting would adhere to the procedure of data collection... (R08).*

In spite of the prevalence of this interpretation of ethics, some interesting nuances could still be observed. For instance, when prompted to expand consideration of ethics to gamification, this participant's response began to address ethics as an inherent consideration in relation to the subject of study.

> *So there will definitely be some ethical issues in terms of we are using game mechanics that would focus mainly on the extrinsic factor in terms of rewarding people for doing something which will create a behaviour that would require rewards all the time in order for the person to actually complete a task that is given to him or her. And there'll be a lot of issues in terms of note the attitudes and behaviours that we will produce from the experience itself. (R08).*

This led to discussion of *'dosing or dosage of a project'* (R08), an invocation of medical terminology in relation to ethics that suggests a consideration of addiction or the potential

of over-exposure in relation to gamification, crossing the boundary between ethics as process, and the ethics in relation to a psychological perspective on gaming.

R03 addressed the use of educational settings as ethically problematic in terms of video games research.

> *And you know for me, what you've got to think about carefully is the amount of time, I mean if you look at some games, some educational games and they can be spending eighty-percent of their time doing something that's not educational, in that educational game. So in a classroom environment, what you're basically saying is, well let's, let the children spend eighty-percent of their time playing a game in the classroom. Now you can design games where eighty-percent of their time is spent doing the learning. [...] you've got the Ethics of Control Groups there, so you know, often if you're doing experimental design you want to have some kind of comparison where there is no learning content, and that, of course that's unethical. (R03)*

Even though the notion of ethics as process remains strong, we noted in our interviews further signs of a different sensibility emerging in relation to gaming, and we came across accounts where the ethical dimensions of video games were explicitly considered in terms of their use as artefacts and experiences.

R08 suggested that there is a need for researchers to focus on more ethically and socially minded games, away from bigger budget, largely console based titles. Here, researchers were perceived as a group with the power to shape a more ethical and perhaps inclusive research agenda around gaming.

> *I think one of the things that we do in academia is define the canon, whether we like it or not [...] so I would say that we would need to embrace the fact that we are canon-makers [...] we should be aware that we are canon-makers […] both commercial games and more artistically minded video games, are the place where I think change can happen. (R01).*

This *'change'* in focus is illustrated with a number of examples of the kind of ethically minded games that already exist but are perceived by this participant to be largely sidelined in terms of research, in favour of serious or bigger budget games:

> *I think these video games made with the game engine called Twine, which are sort of text-based, hypertext-ish interactive experiences, they have been instrumental in opening up the discourse in video games to the queer community, so there's a queer games scene that is also acknowledged and deeply contributed to growth in what we can say with games. (R01);*
>
> *[...] there was this game some years ago called Cart Life, which was a fantastic exploration of poverty [...] in the North American economic conditions in a really interesting and deep way. And the scholarship about Cart Life has been minimum. So, you know, that's the kind of game that I think we should be writing about… (R01);*
>
> *[...] there's this fantastic game about fake news [...] It's educational but it's just really good, and I don't see many scholars submitting papers saying like, 'Hey, by the way, look at what this game is doing with the media'. (R01).*

At the same time as identifying a need for research to explore the type of games mentioned above, there is also an acknowledgement of the parallel 'need' for Games Studies to continue to critique big-budget games such as Grand Theft Auto. Therefore, the recommendation here seemed to be that more ethical practice could involve the expansion of the researchers' collective gaze to consider a wider range of game and gaming experiences, rather than necessarily shifting the focus entirely away from existing concerns.

Similar signs of a more 'sophisticated' perspective on ethics were observed in another interview, where the ethical dimension was described as an umbrella notion framing the entire design process and, crucially, shaping decisions about inclusion and exclusion at the outset.

> *I mean, I feel that ethics is something so broad that, in a way, it is an umbrella to anything you do in the design. So for example, when you're deciding, as you were saying before, the outcome, what learning you're going to prioritise, you're making a decision about what you're excluding. So there is kind of a decision there about what is more valuable in children's learning. (R01);*
>
> *So it spans from these initial decisions to how you think— I mean, a lot of the games, of course… well, I would say all of the games are collecting data about their players. So you can span it to data ethics, which I find quite surprising, at least in my awareness. There's not that much research or debate that I have seen around privacy and data ethics for these applications. So the idea that education is for good purposes, yeah, it's a good enough statement, but that does not mean that you do not need to take into account these issues. (R01).*

Another interesting perspective on ethics was concerned with the collaborative nature of research and development, and the need to build on the potential for diversity and positive interaction offered by game design in particular. Here diversity in development is framed as a prerequisite for the definition of broad ethical guidance, rather than a criterion within an already established framework that can only be used in an evaluative capacity. This distinction is rather important, given GH's specific stance on the matter. In the former position (as illustrated by the excerpt below), diversity opens up a discussion about the possibilities of ethics and social responsibility; in the latter one, it becomes a normative measure which can only be complied with.

> *From what we understand about human development is that our ethical and moral makeup is very much constructed through social interaction. And so, you know, I think if you've got somebody – it's very important that people are creating these in teams, in a way, because if it's a large community where there is some diversity in that community, you're more likely to end up with outcomes that acknowledge that and represent it, that diversity. (R11).*

A notion of *'play as privilege'* was also raised by one researcher, highlighting a specific ethical concern around the assumptions made about the use of video games in particular contexts.

> *I'm writing quite a lot about play as privilege and the critical pedagogy side of play that, what we are actually teaching by using play and how play can be very exclusive, particularly with computer games, ideas around gender, ideas around gaming don't really get picked up that much. (R09);*
>
> *[...] I think it's about recognising that the very act of playing becomes, 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. (R09).*

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 the act of gameplay. It therefore positions ethics as 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.

3.3.2.2 Literacy, narrative and gaming's potential for education and cultural expression

A number of interviewees discussed the potential for considering and applying videogames in relation to particular notions of literacy, both in and out of the classroom. In such cases, a broad definition of literacy was employed, expanded to include multiple

modes of meaning making, moving beyond common conceptions of schooled literacy as involving purely written texts.

> *I'm very, very interested in games as embodiments of multimodal forms of literacy and literacy as design. So that notion from the New London Group of those six elements of different symbolic meaning-making forms and the ways in which multimodality combines all those dimensions, for examples, seem to me that they're kind of a living version of that… (R02).*

This researcher makes reference to the 'New London Group' and their concept of multiliteracies, which understands communication as being enacted using multiple modes including, spatial, aural and gestural modes of meaning making. This, therefore involves bringing a particular perspective to examining video games and video game play that is perhaps not overtly present in our literature review (Persico et al., 2017).

R05 referred to the influential work of James Gee (a member of the New London Group), on literacy, learning and video games, suggesting that the literacy dimension of his work has been sidelined, in favour of a reading of his work that privileges the gamification approach to games and learning.

> *[...] literacy has got kind of overlooked [...] although he wasn't saying literally that we should turn the curriculum into video games, that's what people have understood his as saying [...] his arguments are much more subtle. (R05).*

Regardless of the origins of this approach, in these interviews this perspective relied on a conceptualisation of games as multimodal texts that can be actively read but also 'lived' and experienced by players, as a kind of cultural experience. This was framed as a valuable perspective to take in terms of literacy research.

> *[games] support an enormous number of things we've always valued in literacy and literacy education, and they're tremendously exciting and tremendously enabling [...] for example, the kinds of understandings that are needed in order to play, for example, narrative structures, for example, about*

> *the role of characters, the role of logic [...] the sophistication of the reading process is, I think, massive… (R02).*

There was also a suggestion that, in terms of research, the changing nature of games makes them particularly fruitful in terms of literacy research and pedagogy, as a means of examining the player's interactions with the texts and the understandings that they derive from it.

> *I think that games [...] are evolving and changing and pushing the boundaries so fast that I suspect there are semiotic forms in there that we don't even recognise yet or we can't put a number on yet… (R02).*

The consideration of games as multimodal text was, in itself, presented as multidimensional in these interviews. Here, as already mentioned by R05, games are positioned as valuable texts *'in their own right',* not framed as a hook or a way to elicit some kind of gateway interest in more established, paper based literary texts.

> *I think it's another way of telling stories, of representing the world through a narrative. The difference is of course you get to play a part in the narrative to same extent. (R05);*
>
> *[...] it's about a playful engagement with the way the world's represented through various cultural forms. It's part of what it is to be human, I guess… (R05);*
>
> *[...] a sense of being involved in a narrative form is a serious purpose in its own right. (R05).*

It is worth noting that this view was not distinct to those who approached gaming from a literacies perspective but was also echoed by another researcher, from a computing and game development background, who acknowledged video games as *'a kind of culturally relevant media in the same way as television or anything else.'* (R03). In some instances, this perspective involves the game as a narrative that itself has valuable meanings to be offered to the player, through a kind of reading or experiencing of the game text.

Examples from the interviews include the game Cart Life[8] (R01) which conveys a specific social message concerned with the hardship of modern underpaid employment, but also more commercially visible games that playfully explore the potential of narrative to engage and emote, within their own fictional settings, such as Prince of Persia[9], (R02) or the smaller-scale exploration game Gone Home[10] (R01).

> *I think that those kinds of games, commercial games and more indie games, are quintessentially what games are and might be [...] I think some games lend themselves more to elaborated versions of literacy than others, or in their narrative parts… (R02).*

There was also a consideration of the process of gameplay involving the player's role in the creation of the text, akin to what R02 talked about as '*literacy as design*'. It is suggested that this is possible through a particular type of open-world video game.

> *[...] games that have a sort of implicit narrative but where you need to also create your own narrative within that, like World of Warcraft. (R02).*

Similarly, R05 took up this idea of video games as narratives, locating them in relation to a historically situated notion of performed narrative. Here, the literacies involved are not necessarily fixed by a predefined narrative; there is a sense of potential for active involvement in the development and telling of a story.

> *there's something about the way the audience of the oral performing, the performative oral poets resembles the playing of a game, as well as participatory and they can join in, you know, they may demand a reordering of the sequence and so on and so forth. (R05).*

As well as the literacies involved directly in playing a specific game text, R05 also mentioned games, more generally, as *'an art form'*, considering them alongside other

[8] https://en.wikipedia.org/wiki/Cart_Life
[9] https://en.wikipedia.org/wiki/Prince_of_Persia:_The_Sands_of_Time
[10] https://en.wikipedia.org/wiki/Gone_Home

media such as film, graphic novels and comic books. Here, video games were also considered as significant in relation to *'the field of media literacy'* in children's education.

> *(this requires) a critical understanding of the media on one hand, but an ability to create and produce their own media on the other hand, so it's an aspect of media literacy in relation to games, they need to have some way of making their own games for that reason. (R05).*

Here, as well as reading and adapting game narratives as a literacy practices, the creation of games themselves was also positioned as a (media) literacy practice with educational and research potential.

Finally, R02 suggested an additional way in which literacy relates to the game text with a focus on player's interaction. Whilst this could elsewhere be seen as a focus on generic skills development in relation to gameplay, here there is potential for a focus in relation to literacy and language that accompanies on-screen gameplay. This also includes the texts associated with the game (*'paratexts'*) which the player might engage with in association with their gameplay, and is also not restricted to video games with an inbuilt narrative element.

> *[...] the social practices and other practices around the game [...] all those sorts of interactions that are a purposeful use of language, I find really kind of impressive. (R02).*
>
> *[...] even with something like Tetris11, you're still doing that kind of reading and interpretation and responding as you go along, and of course, whatever kinds of paratext around that or whatever kinds of discussions that are going on. (R02).*

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

3.3.2.3 The 'unique' nature of video games

The notion of games as a 'performed narrative' described in the previous section is linked to a similar theme running through the interviews, that is, the idea that the mechanisms and dynamics associated with video games represent a unique development in the connected landscapes of media and technology. Such uniqueness stems from their pervasive role in the lives of many - not only young – people from diverse backgrounds. It is however video games' ubiquitous presence in the sociocultural worlds inhabited by children that was, in our interviews, unequivocally related to the need for a more sophisticated and mature ethical debate. In this sense, some policy developments in the UK (and Europe) were commended for trying to move the overall discourse beyond classic concerns for linear cause-effect relationships, and towards a more complex set of issues. This arguably more sophisticated approach still accepts that some forms of content are inappropriate for a young audience, but is equally interested in the social relevance of gaming cultures and practices, and in opening up the conversation around ethics and social responsibility in relation to gaming.

> *[...] a reasonable debate about age appropriate games, which intruded for instance to the Byron Review12, that was instigated by Gordon Brown about video games and the internet and their effects on young people, and while disputing the effects of them, I think that kind of review concluded that, you know, games were an important part of young people growing up and their culture and their adult culture, but then there might be age appropriate games that you wouldn't give. You wouldn't give Call of Duty, Blacks Ops to a six-year old, and I think that's fair enough. (R05).*

The notion of games' unique features warranting a specific discussion about ethics was particularly strong in a long exchange with a very experienced and authoritative

[12] https://en.wikipedia.org/wiki/Byron_Review

researcher. Here, the respondent reflected on his own long trajectory of empirical research spanning from the study of young people's use of social networks to gaming.

> *(with other technologies) there was a sense, in terms of most types of digital technology that people are getting excited about and are enjoying using, really this is not something terribly special [...] it's essentially it's the same deal [...] when you look at the research and what we know about social network sites, really the advice and the support that children need to cope with those sorts of sites really boils down to the sorts of advice that you would give children, strategies that children need to avoid being bullied in the playground, for example [...] I think the interesting thing about video games though is I felt at the end of doing that review that actually maybe video games is going to be one area where I couldn't say that, where I had to admit that actually, this might be something special, this might be something different. (R11).*

R11 further elaborated on this point, arguing that games are 'special' because they can easily achieve outcomes that scientists have struggled with for a long time. Here the reference to games' inner mechanisms becomes an acknowledgement of their influence on cognitive functions and brain plasticity, but this is always part of an empirically informed and balanced argument.

> *What there is, you know, what seems more clear is that some of these off-the-shelf video games have been influencing some basic cognitive functions [...] So there's a huge sort of irony to that really that Call of Duty are achieving – you know, Call of Duty is achieving something that scientists have failed to achieve consistently over decades. And that is very striking, I mean it's to the extent that scientists are really questioning this and trying to understand what's going on. And I think that's – you know, so then suddenly we're in a situation where we might have to say, well, actually video games are a bit different. You know, there is something more powerful here that you can't fit in the normal, everyday processes. (R11).*

Following on from this acknowledgement is the likelihood that games' potential might be quite problematic and possibly even exploitative under certain circumstances, thus

necessitating a separate ethical examination beyond the usual concerns for technological access, inclusion and safety. This possibility is framed however as an open question that should be shaped by a robust empirical understanding of the underlying social and biological processes.

> *So do we think about that in terms of an educational ethical framework of how issues should be presented or maybe like a media one, where how should issues be presented in newspapers and magazines about gender and identity? You know, we have these discussions all the time; maybe if we could just transfer those ethical discussions to video games [...] Or maybe we say, 'Actually, hang on, video games are much more serious as a source of changing the brain and how we think about things,' and therefore, you know, there is not just an extra degree of care and attention required, but actually through understanding the processes, perhaps the way in which we think about them should be mediated by our understanding of those processes. (R11).*

In addition, as acknowledged by another interviewee, the complexity of developing such an approach or framework relating to ethics is also compounded by the diversity of the media itself.

> *I think one of the problems with games as a researcher, is that 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 3[13] and Candy Crush[14], it is a completely different kind of experience, we call those 'games', but actually the interactions are completely different and the experience is completely different, and where you might play that is completely different. (R03).*

If, as suggested here, there is to be an acceptance that the diversity of available video games means it is not useful to consider the medium as singular form, then it is perhaps also necessary to begin thinking in terms of *multiple* ethical approaches.

[13] https://en.wikipedia.org/wiki/Uncharted_3:_Drake%27s_Deception
[14] https://en.wikipedia.org/wiki/Candy_Crush_Saga

3.3.2.4 The enduring 'rifts' between research perspectives and commercial perspectives

Despite signs of an emerging interest in the unique ethical and cultural significance of games noted in the previous sections, our engagement with researchers also highlighted enduring issues and contradictions that are particularly relevant to this stakeholder group. These include long-running tensions within the research community itself, and between research and industry, where gaming remains thoroughly shaped by commercial interests and the rules of the market. In a previous round of interviews conducted with game developers from the mainstream and 'indie' sectors[15], we highlighted that academic research on gaming and the practice of developing games seem to exist in two, very much separate, planes - each with a different audience and different success criteria. In the interviews described here, it became clear that deep divisions also exist within the academic world itself, in particular between:

a) a psychological or social scientific perspective still vigorously seeking to confirm or debunk the causation argument ('video games cause x'), focusing mainly on commercial, off-the-shelf games;
b) an outcome-oriented, engineering and computer-science perspective working mainly with applied or serious games, often with an educational focus;
c) An emerging critical media or sociocultural perspective interested in cultural practices, identities and politics, largely focusing on commercial games.

These perspectives have already been documented in our literature review (Persico et al., 2017), hence it is not necessary to describe them further. In this context, we are interested in their symbolic significance for the development of a more mature discourse about games' social role. While such distinctions can be quickly dismissed as the unsurprising

[15] http://www.gaminghorizons.eu/studying-the-value-of-games-at-gdc-2017/

result of the disciplinary territorialisation that dominates academia, they emerged during our interviews as problematic, as they were in fact framed as the consequence of incommunicability, rather than constructive disciplinary differences. In particular between engineers, instructional designers and experimentalists on the one side, i.e. those who represent the most established academic perspective on gaming, backed by 'prestigious' research journals and conferences and more likely to receive research funding; on the other side, there are sociocultural perspectives that emphasise participation over outcomes, and the understanding of cultural processes over the measuring of effects.

> *I guess the other thing to say is that, unlike some of the games research that I tend to come across where researchers are really interested in 'does a game increase this, does a game lead to more motivation or better outcomes', what I'm more interested in in asking about games is more a process point of view, trying to understand what it is that games… kind of inside that black box, what is happening, and actually really looking more closely at the role of interactions, social interactions that are happening around games. So, more a sociocultural perspective, perhaps [...] [the dominant academic perspective] would be the outcome oriented perspective. And it seems, actually, or it appears we know what funders want [...] the kind of evidence that many funders are asking to really prove is, I guess, that games are effective learning tools. (R13).*

A similar view was expressed in another interview, where questions about the complexities of game-related research led to a discussion about enduring biases in the existing funding frameworks in Europe and the UK, despite some signs of change (also noted in the previous section). The main point in this case was that funding bodies still tend to heavily favour outcome-oriented and confirmatory perspectives above others, in particular those focusing on *'questions of violence and social dysfunction'* (R05), while

only recently they opened up to research questions more interested in games as artistic and cultural forms of expression.

> *On the whole I guess maybe in Europe and in the ESRC16 the relationship with games, to questions of society in particular, you know, questions of exclusions, questions of violence or questions of social dysfunction of one kind or another, I guess that, those are the kind of topics that are more likely to be funded. The AHRC17 in the UK has been interesting because I think they've caught onto games rather belatedly. You know I think they see them as a social issue for the ESRC, not really recognise them as an art form until more recently. (R05).*

> *[...] the argument I'm making for studying games as a cultural form in their own right, it's tiny in the national debate. I mean by and large the debate is about how can we teach geography or maths better by using games [...] I think (one reason) is James Gee's work in the States, and his book on, you know, what can we learn from video games and literacy and learning, where literacy has got kind of overlooked. (R05).*

Compounding the problem of enduring divisions in the research community, some interviews also confirmed the existence of a gulf between the worlds of research and industry, with little to no communication between the two outside of large European programmes and cooperation frameworks. One interviewee with experience spanning across research and development painted a harsh picture of life in the serious and applied games sector, where profit margins are small, resources limited (*'you are literally trying to squeeze out'* (R16)), and where a research-oriented approach is described almost as an unaffordable luxury.

> *now you get a lot more games that are sponsored by various organisations. So you get a lot of sponsored games. And there are companies that make a living out of that. I think for us, for my journey, having survived in the cruel,*

[16] UK's Economic and Social Research Council
[17] UK's Arts and Humanities Research Council

commercial world as an applied game developer [...] But it's a thrill and it's fascinating and it's really exciting. Because you have to go in in a short period, understand something, turn it into a game, deliver it in a way that it works. Otherwise you're not going to get the next gig. And that all happens in three, six months if you're lucky. Nine months if you're really lucky, but most of the time three, six months. Which isn't quite the same pace as the applied game, which isn't quite the same applied game research because applied game research is looking at pushing the boundaries. Whereas when you're working commercially you're not pushing the boundaries, you are literally trying to squeeze out. (R16)

3.3.3. The policy perspective

Our sample included four individuals involved in different aspects of European policy making and delivery in the areas of research and innovation, digital skills and responsible research and ethics, all in senior positions. Insights from these experts integrate the research perspective discussed previously, while providing a small window onto the diversity of views in the EU policy space.

3.3.3.1 The tension between science & technology and social sciences & humanities

The policy context directly or indirectly concerned with gaming and gamification appears mostly based on a mainstream position, which reflects a pragmatic and 'instrumentalist' view that favours science and engineering, and is very much industry-oriented. This position is moderated by another perspective, more marginal but nonetheless vocal, that seeks to highlight the ethical implications of technological innovation 'beyond compliance', and is more open to contributions from the social sciences and the humanities. The tension between these two positions is illustrated below.

The mainstream policy view appears based on an overarching belief that might be called the 'gamification tenet': games are made of movable parts and assets that not only transfer

across technological and social arenas without losing their potency, but can also be repurposed through the addition of 'serious' components, such as disciplinary content and a focus on learning outcomes. This belief operates at an implicit discursive level, like an 'interpretative repertoire', i.e. a line of argument supported by a taken for granted set of assumptions which are discursively framed as obvious (Wetherell and Potter, 1988, 1992).

> *So we realised that the role of emotion was growing and analysis of the psychological underpinnings was also growing. And so somebody started to create this new kind of approach to gaming [...] We do take some of the characteristics that engage the kids when they play games, which is that you have a quasi-professional game [...] They said, okay, we know how to do this, so we know how to engage the kids [...] And somebody said, okay, let's put them together and [...] let's see whether we can actually free a princess in a tower – this is the game, this is the narrative and this is the adventure and that challenge that they put forward. So let's see whether we can explain a concept related to optics by letting the players engage and embrace the challenge of freeing this princess. (P12).*

This eager, pragmatic enthusiasm in the potential of video games was counterbalanced by a more critical perspective, represented by one interviewee speaking from a rather 'detached' policy position, as somebody not directly involved in shaping strategies around gaming and gamification, but interested in the overarching ethical implications of the entire European R&D agenda. This individual highlighted the risks of an approach to gaming too disconnected from personal/social meaning and 'enjoyment', and too focused instead on pursuing instrumental outcomes through means implied to be morally unclear (*'is often fictional in a non-useful way. It's a screen. All this instrumentalisation is a screen*' (P14)).

> *But there again this I would call the instrumental approach to gaming and I think that this I would not agree. Because for me if you are engaged in designing games it's because you enjoy doing it. And I'm also very much for valuing the present instead of putting everybody in the name of the future, which is stepping out of reality. I think when people play games because they enjoy and people develop games because they enjoy doing it. And also to have to argue that when what you do is in order to improve the things [...] is often fictional in a non-useful way. It's a screen. All this instrumentalisation is a screen. (P14 SSH).*

This more 'critical' interview was noteworthy also because it was the only one, among our policy subset, where the tension between 'ethics as compliance' and 'ethics as a guiding principle' was acknowledged as relevant.

> *So my point was to say that you can only do that if you go beyond compliance. So it is not just ticking the box about what our colleagues in [anonymised] are asking to do, 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. So it was really a call to think to all engineers and social science. (P14 SSH).*

3.3.3.2 gaming/gamification between industry and education

Another interesting tension in the policy interviews concerned the institutional context that shapes the gaming/gamification agenda in Europe, especially in relation to education. According to one policy expert from an educational background, this agenda is extremely industry-led, while the focus on the social and educational aspects comes across as somewhat secondary, compared to the need to stimulate growth and jobs. Indeed, our interviews confirmed the existence of different policy positions with a stake in gaming and gamification: one interested in market demand and entrepreneurship, the other one focused mostly on negotiating with individual education ministries the adoption of broad policies to support digital skills, without interfering too much with national curricula.

The two positions are illustrated by the following quotes, the first one emphasising market demand, target groups and organisational barriers; the second the political complexities of EU education policy in general and in relation to digital innovation.

> *the real issue is whether the number of titles that are sold, of games that are sold, in Europe or worldwide testify that this is an environment which is very engaging for the kind of target group that we are targeting for learning purposes. And it also revealed, research, that they are very good at leveraging certain emotional reactions. So our point was, okay, so why these kind of – the same emotional reactions are not used when it comes to education and training? Some says that it's a matter of demand, some say that there are organisational barriers. (P12 Industry)*

> *[...] the gaming industry is a big job creator and an engine of growth in Europe and we have a lot of leading firms working on gaming, some of it in the education space and some of it just in the leisure space. So I think that department is definitely more industry led and driven, whereas our stakeholders tend to be more within the ministry of education. Now, that blurs a little bit because their departments are working more in the education space, but just to say that, historically, their funding would have much more closer contacts with industry than ours would have [...] I think there's a lot of willingness, but it takes a lot of effort to overcome those kinds of bureaucratic barriers that all kinds of government departments have, don't they? You know, you have your own language, your own stakeholders and… you know [...] So I think we are making more of an effort [...] (but) their department would be also more focused on industry. So, industry needs and also encouraging start-ups [...] We're really looking at the quality of education systems, and they're looking at stimulating growth in terms of a digital single market and opportunities for European business. So our departments were definitely starting from a different place but, ultimately, they're all European Commission policies. (P15 Edu)*

Related concerns were also addressed directly by another interviewee, highlighting potential tensions between the market-driven priorities of big business and those involved with policy development around video games and other technologies in educational contexts.

At the moment a lot of the technologies have promise, but also threat, and that's been more so than in the past I think. Ten or twenty years ago it was all about opening doors and a brighter future. I think now with the global reach of Google, Microsoft and Amazon and the others, the issues of privacy and being manipulated for commercial gain are worrying, I think. (P04);

[...] we're all working for Facebook, Google and the rest [...] in a way it might all come to a head in games, if people are engaged in simulations and so on, or what they are giving up in exchange for entertainment. (P04);

Probably in our heads we think of games developers as little people, or consortiums, or small businesses, as enthusiastic geeks or whatever, but behind that part of the model is big mega players with interests that are not necessarily those of the individual. (P04).

3.3.4 Conclusions concerning the interviews with researchers and policy makers

In this section, interviewees offered a number of rich insights, illuminating the multiple ways that those with experience and expertise in research and policy are conceptualising contemporary issues around video games and gamification.

Throughout the interviews, participants demonstrated a developing and increasingly nuanced take on ethics, in relation to video games. For the researchers, this included, and then moved beyond, the need for compliance with procedural and institutional driven ethical concerns. An emerging desire to pursue a sensitive ethical approach in relation to gaming was evident, in parallel with a growing critical awareness of the ways in which video games and gamification approaches can be culturally and socially problematic, as well as potentially valuable. Interviewees considered the research and implementation of games *in context*, showing an increasing understanding of how the medium itself could benefit from careful ethical scrutiny in relation to development processes and player engagement. External agendas of big business and industry, as well as historically

persistent concerns (and potential misgivings) about video games as a medium, were positioned as potential barriers to ethical implementation. Moreover, there were suggestions that situated social factors need to be taken into account, with the idea of *'play as privilege'* (R09) highlighting an understanding that games and game mechanics are not necessarily neutral or free from prior-association.

In terms of policy implementation, this tension is framed as a conflict between 'instrumentalist' industry-oriented perspectives and potentially more ethically-driven understandings of video games that draw on sociocultural understandings of (the value of) play. Here, we have seen that there is a point of contention between ethics as compliance and ethics as a fundamental driving principle, acknowledging the need for appropriate content whilst also demonstrating an interest in the social relevance of video games and associated cultural practices. This tension is heightened by the perception that it is the former approach is favoured by funding bodies, due to the pervasive desire for measurable, quantifiable outcomes.

In spite of the understandable hesitancy necessitated by the consideration of ethical concerns there was also an underlying sense of enthusiasm from many of the interviewees that video games provide a potential that is perhaps yet to be fully realised. For some, this potential comes when video games are considered in relation to broad notions of literacy. This perspective, which is perceived as currently being *'tiny in the national debate'* (R05), reveals a possible tension between how video games and gamified approaches are often positioned in terms of research (as a means of motivating a learner towards a defined learning outcome) and how they might instead offer potential for learning as forms of media *'in their own right'* (R05), as a kind of narrative

multimodal text to be explored or adapted by the player, or *'literacy as design'* (R02) through players' own game creation. Here, games are understood as being culturally enriching, particularly when considering particular types of narrative game that enable the player to experience, encounter and adapt both fictional and nonfictional representations of the world, as a kind of playable literature or performed narrative. As we have see in the GH literature review (Persico et al., 2017), a significant body of research seeks to define or isolate a particular psychological effect of a specific rule-bound, *ludic* (Caillois, 2001) game implementation or structured mechanic, described by one interviewee as the '*outcome oriented perspective*' (R13). However, a number of researcher voices here express the importance of exploring the possibilities of the more playful, *paidic (*Caillois, 2001*)* dimension of video games.

In spite of the clear commitment from many interviewees to pursue an ethically driven, inclusive and socially considerate direction in terms of research around video games, some of the responses highlight that there remain persistent barriers to those who intend to take such approaches. Constrained by funding, lack of opportunities for cross-disciplinary collaboration and a continuing institutional and industry driven emphasis on ethics as procedural compliance, there is an implication that policy and research decisions that foreground ethics as a driver do so in spite of, and not because of, wider frameworks. If such ethically grounded, socially responsible and responsive approaches are to be valued more widely in relation to policy and research then more needs to be done to accommodate, support and even *encourage* perspectives that move beyond instrumental, purely outcome oriented concerns.

4. General Conclusions

As outlined in the Grant Agreement, this report (Deliverable 2.3) reflects the culmination of a research process based on one overarching goal: to examine the current state of the art and suggest how mutually supportive connections between the ICT and Social Science and Humanities (SSH) communities can help gaming and gamification move towards more mature and responsible integration in society. The research outputs produced so far (Perrotta et al. 2017; Persico et al, 2017) approached this goal from different perspectives. The present report complemented the picture by providing an insight into the views, opinions and beliefs held by a carefully selected group of 'experts' belonging to five key stakeholder groups: educators, players, developers, researchers and policy makers. These interviews, and more generally the GH landscape analysis, were not intended to find solutions or guidelines for a 'better' role for games in society. Rather, the aim is to promote awareness of the problems faced by these stakeholders and highlight the variables that should be considered for making informed decisions. The way ahead is still rather long, and it will lead to the scenarios and the manifesto by the end of the project. However, this deliverable, the last of the landscape analysis, is laying out the basis for building these scenarios, since the interviews analysis allowed the project partners to investigate the concerns of the relevant stakeholders, and also to identify a range of alternative, sometimes epistemologically divergent, viewpoints. We could call these concerns and viewpoints 'areas of tension' identified by the GH project.
Here are examples, but others will be identified during the next GH activities.

Moving beyond the 'positive vs. negative impacts' debate

Taken as a whole, our interviews suggest a deep level of awareness of the complex and mediated ways in which people interact with games. The outlook across the interviews is therefore mostly positive, and at times surprising for its levels of reflexivity, especially among those that could be described as mainly users (educators and players). For instance we noted a general tendency to move beyond traditional debates about negative vs. positive effects. For example, several respondents perceptively argued that aggression and antisocial behaviour in gaming should no longer seen by researchers and critics as associated with specific games and depictions of violence, but with the frustrations of competitive gameplay and the 'toxic' nature of some online gaming subcultures. Crucially, these reactions were framed as transitory and specific to certain instances, rather than having negative impacts more 'permanent' in nature. Whether this is actually the case remains to be proven empirically, but these suggestions certainly open up interesting lines of enquiry. Our study also points to shifts in the public discourse around negative outcomes, with some expressing concerns for 'dark design patterns'. The fact that games (and many gamification techniques) often aim to influence behaviours by exploiting psychological reward systems was framed by some as problematic, possibly even manipulative, thus necessitating a separate ethical examination beyond the usual concerns for access, inclusion and safety.

Still in the context of this 'tension', the value of cooperative vs. competitive gameplay was explored in depth by several interviewees. While the positive value of collaboration skills is undisputed, the same cannot be said of competition. Some educators, for example, told us how they try to avoid the use of highly competitive games, because they can cause distress to individual students, make the class more difficult to handle and do

not favour inclusion. Even when they do appreciate the positive effects of competition in terms of increased commitment and of learning to live in a competitive world, they try to mitigate its negative effects with a blend of competition and collaboration.

Inclusion: are games an asset?

We noted a general positive approach towards games and inclusion, where inclusion refers to more complex and multifaceted notions of gender, as well as race. It is important to acknowledge that, as a research project, Gaming Horizons is set against a backdrop of fraught debates and very problematic tensions about equal representation and progressivism, which started in gaming and then overflowed into other areas of popular culture[18]. In our interviews, echoes of these debates could be heard distinctly, although we noted, across the entire dataset, a willingness to move the discussion forward, building on the goodwill and the progress made in this regard over the past few years.

A few specific points from our analysis of educators and players are worth reporting again here. While some of our players have mentioned how games have facilitated the inclusion of Special Educational Needs students, they were aware that in the recent past games have been criticised for unwittingly or purposefully nurturing intolerant attitudes towards minorities, and for suffering from gender bias. However, our interviewees also mentioned a range of scenarios where the inclusive power of games was taken advantage of. Several interviewees reported differences in game preferences between girls and boys. Often these differences reflect social stereotypes, e.g. girls tend to prefer wearable computing to Arduino programming and boys the other way around. What should

[18] https://en.wikipedia.org/wiki/Gamergate_controversy

teachers do in these cases? Should they respect these preferences or try to encourage girls to overcome the invisible barrier that separates them from 'boy's games'? As mentioned already, the project does not seek to provide easy answers to such important questions, but simply to open up the debate and, ideally, to encourage the formulation of other, more critical questions. Questions focused, for instance, on why and how these differences come about in the first place. There is certainly a compelling argument in favour of research that explores the reasons why underrepresented groups may choose alternative forms of engagement with games and technology in general: is it because of genuinely different inclinations and interests, or to avoid the tensions that would result from trying to join the various 'white boys only' clubs that still dominate in technology?

The motivating power of games: a new role of narrative?

Gaming is a very enjoyable activity, and for this reason its engaging power has recently being harnessed for serious purposes. However, it is debatable whether this attempt has been successful on all fronts: while there is evidence that serious games are effective for learning (Clark et al, 2016), our interviews reveal that acceptance of game based learning and specifically the use of serious games at school is not particularly welcomed by players, at least adult players. This was echoed by similar accounts from game developers, although these were speaking mainly from a mainstream gaming industry perspective. These stakeholders almost unanimously expressed doubts about the quality and effectiveness of games explicitly focused on education or training. However, they also decisively approved of the intention of addressing pro-social behaviours with games, but more as the natural outcome of a creative process, or a reflection on personal or shared experiences. This creative process-led approach for pro-social content was framed

as potentially more effective than serious or applied games, but also harder to quantify and, therefore, posing a challenge for funding bodies to understand, especially alongside the rapidly evolving technologies and cultures of game development.

There are possible alternative solutions to this problem, that range from involving independent, creative developers familiar with the design trends and narrative storytelling in the development of serious games, to giving up altogether the use of serious games in formal educational in favour of the use of entertainment games.

Are games the eighth art?

Although some interviewees recognise the artistic potential of games, to the point that some talk of games as a hyper-art, most of them had no reflections about it. Does this mean that we are only at the beginning of the development this potential? Can (and should) we do something to favour it? Something can certainly be extrapolated from our interviews: there are growing signs of a more nuanced understanding of the strengths and the limitations of the medium, and an awareness of its tendency to limit itself creatively and culturally when it prioritises commercial appeal over everything else. Alternative approaches range from sensitising policy makers to favour investments, to raise awareness among players and teachers about the cultural relevance of gaming, something akin to fostering 'critical game literacy'.

What is the future of gaming?

Some respondents seem to believe that game-related culture is expanding thanks to e-sports and streaming sites, and refer to this phenomenon as the 'new frontier' of gaming. Others indicated virtual and augmented reality as the technological advances that will

revolutionize the world of gaming. These two possible directions represent the two extremes of a continuum in terms of user agency and immersion. And yet, when it comes to recommendations to developers for the future of gaming, many players do not mention technological advancements, but rather express a desire for more engaging and innovative game narratives, going beyond the traditional emphasis on compelling mechanics and graphical fidelity. The potential of narrative to increase engagement in a positive and socially responsible way is, arguably, one of the most interesting findings to emerge from our study. It is mirrored in debates in the mainstream and independent gaming industry, as evidenced in our interviews with developers, and it is reflected in the growing interest in new forms of game literacy among researchers. Narrative-oriented games like That Dragon Cancer or the recent What Remains of Edith Finch[19] were indicated by many as expressions of a design movement open to themes of cultural relevance and social responsibility.

Final remarks: a few thought-provoking suggestions for policy makers

A final set of remarks is concerned with how the themes discussed in this report (and the project in general) connect with other attempts to enlarge the cultural scope of video games. These remarks have implications in terms of how institutions (including the EU Commission) could support alternative forms of research and development involving video games. One example in particular is worth examining here. The outcomes of our interviews strongly mirror recent research conducted by Karol J. Borowiecki and Hasan Bakhshi for the Nesta innovation foundation in July 2017. Our interviewees have

[19] https://en.wikipedia.org/wiki/What_Remains_of_Edith_Finch

reported a high level of engagement with a broad range of cultural influences and a generally high engagement with topics of social value. The underlying motif was that playing well-crafted, creative and interesting games (not necessarily those with big budgets and massive audiences) is associated with cultural openness, curiosity and tolerance – all qualities worth encouraging in the context of education and citizenship. Borowiecki and Bakhshi's results support our own, showing players are more engaged with creative and social culture than non-players:

> *Those who played [video games] when growing up also participated in other forms of culture, in particular, they were more likely to read, paint, attend performing arts and visit heritage sites or libraries. We also observe a path-dependency in playing video games: those who played when growing up are also more likely to do so nowadays.* (Borowiecki & Bakhshi, 2017)

This should be viewed, alongside the materials from our own study, as a lens through which to review funding policies supporting the research and development of games. Several of our interviewees (especially users and developers) were critical of games that tackle educational and 'serious' matters too bluntly, without an appreciation for artistry, creativity and narrative engagement. Some developers, in particular, expressed reservations in relation to the support that these games are given at an institutional level, and criticised the tendency of most public bodies to prioritise, through funding programmes and initiatives, overt and measurable pro-social outcomes. They argued that these restrictions do not promote creativity or impact in games, but instead that developers are less motivated and create lower-quality work:

> *Somebody puts up a fund and makes special rules to basically exclude other people, make sure that the pool is rather small. People tailor their applications for this specific funding but not really because they're passionate about making games in that way or because that's the best for the product.* (LSD28828)

The study by Borowiecki and Bakhshi for Nesta found that video game play is highly correlated with many pro-social activities and, like the interviewees in our research, those players do not view video games as a distraction from other forms of cultural engagement because, for them, video games are already a form of cultural engagement. Borowiecki and Bakhshi noted that this was contradictory to the perceived views of many funding bodies and policy makers, where video game play was often viewed as a negative influence on the lives of players:

> *The complementarities we have detected between games playing and other forms of cultural participation however challenges policymakers' conceptions of what constitutes 'culture' from the viewpoint of policy and public funding.* (Borowiecki & Bakhshi, 2017)

Borowiecki and Bakhshi's research and this Gaming Horizons study have broad implications for how important policy decisions in relation to gaming are made. Although we must acknowledge that games can be misused, and their essential components exploited to pursue ethically questionable ends, there is a need to review underpinning assumptions about the social contributions of games and their creators, particularly the funding and policy division between serious/applied games and entertainment/arts games needs closer examination. Policy makers can support pro-social outcomes through

supporting leisure video games, and through supporting research into how video game play impacts on players.

Such a pro-social view of leisure-focused entertainment and arts video games is, to some, revolutionary, but it was the lived-experience of our interviewees. The same arguments that have supported funding for the serious/applied games industry appear to also be applicable to the leisure sector – especially those parts of the leisure sector that do not pursue mass appeal and profit, but instead strive to be socially and culturally relevant, while still operating within a market dynamic to remain financially independent and support their livelihoods. Perhaps the helpfulness of labels like 'leisure' and 'serious' should be rethought in light of the changing landscape. At any rate, the gatekeeping between these categories may be not only invalid, but might even be counterproductive to pro-social outcomes. Leisure games do not have the same focus on measurability in their impact as serious/applied games, but the difficulty of measurability does not mean that the impact is not there, and this report, alongside Borowiecki and Bakhshi's research, indicates very strongly that entertainment and arts games' pro-social impact is, both *en masse* and anecdotally, very visible in players' lives and cultural activities.

5. Acknowledgements

We would like to thank all the interviewees who gave their time and allowed us to tap into their expertise, enthusiasm and beliefs. This report would not have been possible without them. Those who consented to their names to be made public are listed in Appendix 4.

6. References

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7. Appendices

7.1. The Entity-Relationship diagram underlying the design of the interviews with educators and players

An entity–relationship model (E-R diagram or model) is a graphic formalism used in software engineering to describe complex domains consisting of inter-related objects of different nature in a specific domain of knowledge. An ER diagram is composed of entity types (which represent the different types of objects of interest) and specifies relationships that can exist between instances of those entity types.

In software engineering an E-R diagram (also called E-R model) is commonly used to illustrate the logical structure of a database, typically a relational database. Consequently, the E-R diagram becomes an abstract data model that defines an information structure that can be implemented in a database. E-R models are also used in the specification of domain-specific ontologies.

Entity–relationship modelling was developed for database design by Peter Chen (1976). Several graphic variants are in use, but for our aims we limit ourselves to the basic symbols, listed below.

- **Entities** may be defined as objects or concepts existing and uniquely identified. An entity is an abstraction from the complexities of a domain. When we speak of an entity, we normally speak of some aspect of the real world that can be thought of as a noun. Example: a singer and a song can both be entities. In an ER diagram they are represented with a rectangular shape.
- A **relationship** captures how entities are related to one another. Relationships can be thought of as verbs, linking two or more entities. They are represented as diamonds. For example, the relationship between singers and the songs they perform may be represented may be called ‘performs’. Relationships can link

together two or more entities.

- Entities and relationships can both have **attributes**. The attributes enrich the description of the entity or relationship they belong to. Attributes are represented as ovals and are linked to their entity by a straight line, joining the two.
- Finally, **arrows** are used to indicate which entities are related between them though a relationship. Arrows cannot link directly two entities: there must be a relationship between them. Cardinality constraints can also be represented by changing the shape of the arrow, but in our case we haven't used them.

The diagram in fig. 5 shows how the example of the singer and the song can be represented through an ER diagram.

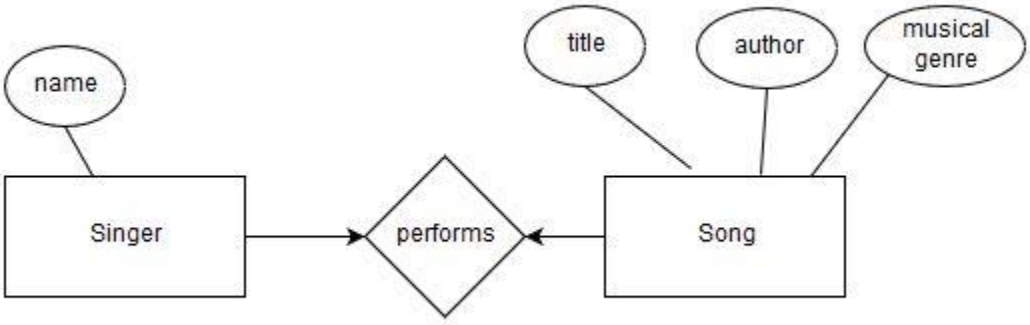


Figure 5 An example of a simple E-R diagram with one relationship and two entities

The E-R diagram used in Gaming Horizons to represent the complex relationships existing between the various variables involved in the project Methodological Framework and emerged from the Literature Review is reported in fig. 6. According to this diagram, the interviews elicit from interviewees information about their experiences with games and their views on the Overarching Questions. Both such experiences and views relate to the four project perspectives: the educational, psychological, ethical and cultural-artistic.

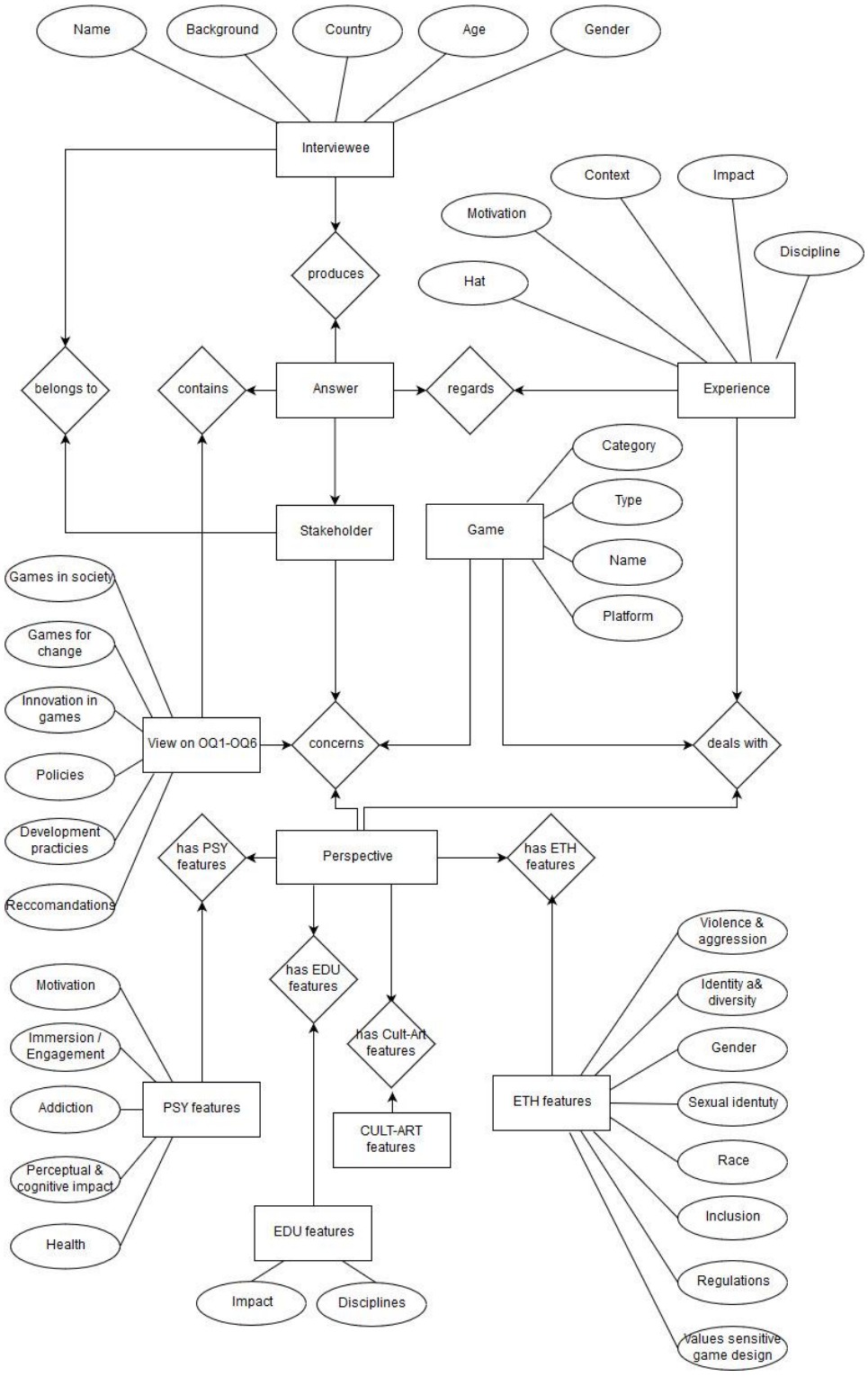


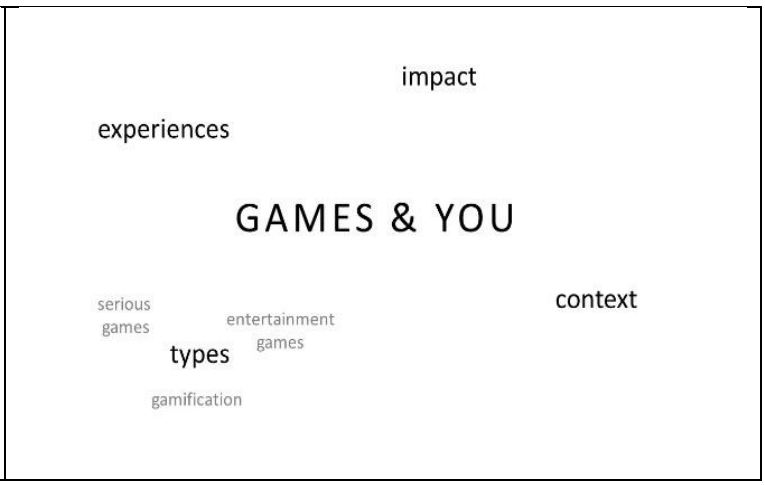
Figure 6 The GH E-R diagram representing the entities involved in the interviews and their relationships

7.2.The Visual Stimuli used for educators and players

The Visual Stimuli consisted in four sets of slides, two for educators (one set in Italian and one in English) and two for players educators (one set in Italian and one in English), because the interviews were different according to the type of stakeholder and the preferences of the interviewee in terms of language. There were two slides for each topic: the first presented the topic 'stand-alone' (e.g. Games and learning) so that the interviewee could speak freely about it, the second had the topic in the centre and a set of key words around; so that the interviewee could add more information prompted by the keywords.

The slides were shared with the interviewees through the screen sharing function of skype, so that - besides the question asked by the interviewer - the interviewees were supported in expressing their ideas with limited influence on the side of the interviewers.

The slides proposed to (a) educators and (b) players appear hereunder.



GAMES & LEARNING

2

knowledge attitudes impact collaboration competition skills

GAMES & LEARNING

serious games entertainment games types motivation gamification

GAMES & THE INDIVIDUAL

3

physical activity addiction

GAMES & THE INDIVIDUAL

engagement & immersion memory cognitive abilities & perception attention problem solving

GAMES & ETHICS

4

gender identity race monetisation age & diversity

GAMES & ETHICS

inclusion social equity violence & aggressivity

GAMES & SOCIETY 5	social change marketing GAMES & SOCIETY cultural change policy game-related innovation
SUGGESTIONS 6	policy makers educators players SUGGESTIONS developers researchers parents

you & games 1	experiences How much time? other players Which games? you & games platforms game types money

games & the individual 2	physical activity collaboration and competition addiction games & the individual memory immersion and engagement cognitive and perceptual abilities attention problem solving
applications of games	earning with games gamification school applications of games serious games learning sport and rehabilitation
ethical Issues 4	gender identity and diversity race monetization ethical issues inclusion social justice piracy violence and aggression

games and society	art and games social change marketing games and society cultural changes regulation innovation in games
suggestions	institutions educators players suggestions developers researchers parents

7.3. The codebook used for educators and players

'A codebook is a set of codes, definitions, and examples used as a guide to help analyse interview data. Codebooks are essential to analysing qualitative research because they provide a formalized operationalization of the codes' (DeCuir-Gunby, Marshall, & McCulloch, 2011; p.136). A codebook typically contains at least three components: the code name/label, a definition of the code, comprising inclusion and exclusion criteria, and examples. The codebook adopted to analyse the interviews with educators and gamers in the GH project consists in a taxonomy of nodes derived from the methodological framework of the project, the project previous results and the goals and research questions of this project task. The first two column contains the code and sub-code labels, the third contains the description and the examples. This codebook for

analysing the interview scripts with educators and gamers was developed by the six researchers involved in the analysis through an iterative process that necessitated revising the definitions as the researchers gained clearer insights about the interview data. In the following, its final version is reported.

‘Deductive taxonomy’ for systematic coding

Codebook for analysing educators and gamers interviews

How to use this codebook

This codebook comprises a first part entitled ‘Information to be included in the case classification sheet’, that reflects the structure of the case classification sheet to be filled in before or after tagging. These are information about the interviewee that are not part of the tagging system proper.
The subsequent parts are: ‘Experience’, ‘View’, ‘Perspective’ and ‘Game’.
Tagging should consist of finding parts of text describing an experience of the interviewee with games, or views of the interviewee about games and their use, and tagging them with the appropriate tag ‘experience’ or ‘view’ or both (when there is a mix of them). These parts of text will generally be rather large, because the interviewee might talk at some length about the same experience or view. The general rule for tagging is to tag a self-consistent part of text, so that, when carrying out the query, the excerpts found are readable without needing to go back to the source text.
For each experience, there are some sub-codes (hat, motivation, context) to be used to better specify the experience. As a consequence of the above general rule, when using these sub-tags, the whole text of the concerned experience will be tagged. (for example, if a teacher describes an experience carried out as a parent with his/her children, the tag ‘hat=parent’ should be applied to the whole experience). Similarly, the sub-tags of views (stakeholder involved and overarching questions) should also be used to tag the same text as the view. However, if a view contains a self-consistent portion of text concerning an overarching question, and another concerning another overarching question, then the tagged text for each overarching question be shorter than the whole view.
The ‘Perspective’ section allows to add tags concerning either the experience or the view with the concerned perspective. The sub-tags of the perspective include the four perspectives considered by the Gaming Horizons project and allow to provide relevant details, if mentioned by the interviewee, through the relevant sub-tags.
The last section of this codebook is devoted to games. These tags should be used to tag the text only where the interviewee provides the relevant information. So, for example, if the interviewee mentions the name of a game, only the name should be tagged ‘game name’. If the interviewee mentions an entertainment game and says he/she used it for learning, the game category tag ‘entertainment for learning’ should be tagged referring to the text where this type of use is mentioned.
Tags between parentheses are general tag categories but should not be used for tagging. The tag context, for example, should not be used: only its sub-tags will be used. When using a sub-tag whose father is not in parenthesis (e.g. the ‘Pre-school’ sub-tag of the ‘Academic’ context, then the father tag should also be tagged).
Throughout the interview the interviewer asks a question and the interviewee answers that question. In general, only the answer should be tagged. However, when the question

is needed to understand the answer, by virtue of the above general rule of tagging self-consistent parts of text, the question should be tagged too. When the interviewer interrupts the interviewee with a short comment (such as 'Of course', 'yes', 'Can you elaborate on this?'), then the tagging should include these comments. In other words, if the description of an experience is briefly interrupted by the interviewer comments, only one tag experience should be used.

Information to be included in the 'Case Classification Sheet'

ATTRIBUTE	Value(s)	Notes
Gender	Unassigned[20]	
	Not Applicable[21]	
	Female	
	Male	
	Other	
Age	Unassigned	*The value's type for this attribute is 'integer'. It means you can insert a number with no decimal places.*
	Not Applicable	
(Country) Nationality	Unassigned	*Interviewee's country of origin (type it in the available space)*
	Not Applicable	
	Italy	
	Other	
(Country) Residence	Unassigned	*Interviewee's country of residence (type it in the available space)*
	Not Applicable	
	Italy	
	Other	
Stakeholder category	Unassigned	*Choose the category of stakeholder the interviewee belongs to (in the case of ITD's interviewees, only educator or player).*
	Not Applicable	
	Educator	
	Player	
	Researcher	
	Policy maker	
	Developer	
	Other	
Gaming frequency (if player)	Unassigned	*If an interviewee is classified as 'player' with regards to 'stakeholder category', and s/he states that s/he plays less than one hour per*
	Not Applicable	
	Less than 1h /week	

20 'Unassigned' is used to indicate that the value of this attribute has not been assigned yet. This is the default value for the attribute, unless you select another value for the default. [The same applies to all the table.]

21 'Not Applicable' is used to indicate that the value is not applicable for the source or node that you are classifying. [The same applies to all the table.]

	From 1h to 5h /week	*week, then you can select the value '*Less than 1h /week*'.*
	From 6h to 10h /week	
	More than 10h /week	
Degree	Unassigned	
	Not Applicable	
	Mathematics and computer science	
	Physics	
	Chemistry	
	Earth Sciences	
	Biological Sciences	
	Medical Sciences	
	Agricultural Sciences and Veterinary Medicine	
	Civil Engineering and Architecture	
	Industrial and Information engineering	
	Ancient Civilisations, Philology, Ancient literature, Ancient history and Archaeology	
	Historical, Philosophical, Pedagogical and Psychological Sciences	
	Juridical Sciences	
	Economics and Statistical Sciences	
	Political and Social Sciences	
	Other	
(Occupation) Academic - Researcher	Unassigned	*Select all the relevant occupations of the interviewee (past and present, including 'teacher' for educators). For example, Manuela Delfino would be Academic/Researcher [select the value 'Yes' under* **(Occupation) Academic – Researcher***], Teacher Trainer [select the value 'Yes' under* **(Occupation) Teacher trainer***] and Teacher [select the value 'Yes' under* **(Occupation) Teacher***].*
	Not Applicable	
	Yes	
	No	
(Occupation) Developer	Unassigned	
	Not Applicable	
	Yes	
	No	
(Occupation) Teacher trainer	Unassigned	
	Not Applicable	
	Yes	
	No	
	Unassigned	

(Occupation) Teacher	Not Applicable	
	Yes	
	No	
(Occupation) Student	Unassigned	
	Not Applicable	
	Yes	
	No	
(Occupation) Other	Unassigned	
	Not Applicable	
	Yes	
	No	
Taught school level (only educators)	Unassigned	*Junior high and high school should both be tagged as secondary*
	Not Applicable	
	Pre-school	
	Primary school	
	Secondary school	
	Higher education	
Taught disciplines (only educators)	Unassigned	
	Not Applicable	
	STEM	
	Languages and Humanities	
	Other	

A. Interviewee experience with games

FACET	Tag(s)	Notes
Experience		*Tag the whole part of text where the interviewee describes a single experience, comprising all of the information provided about that experience. Use this tag even when the interviewee talks about his/her personal experience, without referring exactly about one specific experience (e.g. 'I like to play games because they help me to relax'). Typically, the involved text will be quite large, and include or overlap with all of the following tags of this section. This tag can overlap with the view tag.*
(Hat)	Player	*An educator could have experience as a player, and a player could have used games to teach something to somebody. In these cases, specify the hat the interviewee was wearing. with this This should be specified even if the hat is the same as the type of stakeholder (e.g. if an educators tells an experience as parent, hat= parent, if he/she tells an experience as teacher, hat=teacher.) Tag the whole text concerned with this hat, that is, the whole experience.*
	Teacher	
	Learner	
	Researcher	
	Policy Maker	
	Developer	
	Parent	
	Other	
Motivation		*This is the reason why the interviewee uses the games. For example, why the player likes playing or the teacher used games with his/her students. Tag the whole text concerned with this motivation, that is, the whole experience.*
(Context)	**Academic**	*Type of situations where they used games. Academic and training will mostly apply to educators, the rest to gamers. If the interviewee specifies the school level, tag the school level (e.g. primary, or secondary, that includes junior-high and high school) in conjunction with 'academic', if he/she does not specify, but talks about game use at school, use the tag 'academic'. Tag the whole text concerned with this context, that is, the whole experience.*
	Pre-school	
	Primary	
	Junior-high	
	High	
	Higher education	
	Training	
	Home	
	Alone	
	With friends	
	With strangers	
	Health	
	Other	

B. Views

FACET	Tag(s)	Notes
View		*Tag the whole part of text where the interviewee provides his/her view on a game-related topic, comprising all of the information provided about that view. Typically, the involved text will be quite large, and include or overlap with all of the following tags of this section. This tag can overlap with the experience tag.*
(Stakeholders involved)	**Educators**	*Tag one or more stakeholders concerned by the view or addressed by the recommendation (target stakeholder). Tag the whole part of text concerning the stakeholder.*
	Players	
	Researchers	
	Policy makers	
	Developers	
	Parents	
	Other	
Overarching Questions[22]	**Role of gaming in society**	*Use this tag when interviewee talks about impact of games on society, past, present and future. Tag the whole part of text concerning this OQ.*
	Games for change	*Use this tag when interviewee talks about social change and cultural change determined by games. Tag the whole part of text concerning this OQ.*
	Game-related innovation	*Use this tag when interviewee talks about games and innovation, including technological innovation in games or innovative marketing strategies. Tag the whole part of text concerning this OQ.*
	Policy	*Use this tag when interviewee mentions policies at institutional, social, national, international level. Tag the whole part of text concerning this OQ.*
	Development practices	*Use this tag for both ethical or political considerations concerning future developments. Tag the whole part of text concerning this OQ.*
	Recommendations	*Use this tag both for explicit and implicit recommendations. For implicit recommendations add a memo 'implicit'. Tag the whole part of text concerning this OQ.*

22 Use this tag if sub-tag is used or if uncertain about which overarching question is appropriate

C. Perspectives

FACET	Tag(s)	Notes
Educational perspective	**Discipline**	*Use this tag if the interviewee mentions the disciplines involved. Use this tag also when the interviewee mentions interdisciplinary learning. Tag the whole text concerned with these disciplines, that is, the whole experience.*
	Impact	*Tag both the perspective involved (Educational, Psychological, Ethical and Sociocultural/Artistic) and, if appropriate, also the sub-tags. If none of the sub-tag applies, tag only the parent. For example, if the described impact is not one of the options, simply tag impact and educational perspective. Tag the whole part of text concerning the perspective.*
	Knowledge	
	Attitudes	
	Skills	
	Competition	
	Collaboration	
	Motivation to learn	
Psychological Perspective	Motivation	*As above*
	Engagement & Immersion	
	Addiction	
	Perceptual & Cognitive impact	
	Health	
Ethical Perspective	Violence & Aggression	*As above*
	Identity & Diversity	
	Gender	
	Sexual Identity	
	Race	
	Inclusion	
	Value sensitive game design	
	Monetisation	
	Regulations	
Sociocultural/Artistic perspective		*Use this Tag when interviewee talks about games and art, games in culture, etc*

D. Games

FACET	Tag(s)	Notes
Game name		*Game name as used by interviewee, tag only the name. E.G. I play 'Minecraft', tag only the part between inverted commas. When you tag a game name, always tag the purpose by choosing also a game category. For example, 'I have used Minecraft with my students for teaching problem solving' should be tagged as game category 'Entertainment games for learning' and 'Minecraft' should be tagged 'game name'.*
(Game category)	**Entertainment games**	*Game category as defined in terminology section of literature review: tag only the part of text where the category is specified. E.g. 'I have never played serious games': tag the part between inverted commas.*
	Applied games	
	Entertainment Games for Learning	
	Serious Games	
	Game Making	
	Other	
	Gamification	
Game type		*Game type as mentioned by interviewee (e.g. RPG, Art Game, etc). tag only the text where the interviewee specifies the game type (e.g.' I mostly play RPGs': tag only the part between inverted commas.)*
Platform used	PC	*Game platforms used by interviewee. Tag only the text where the interviewee specifies the platform. E.g. 'I often play games on my cell phone', tag the part between inverted commas.*
	Cell phone	
	Console (not portable)	*e.g. Playstation, Xbox*
	Hand Held Console	*e.g. Nintendo, Gameboy, etc*

7.4.List of interviewees

EDUCATORS

NAME	ORIGINS/LOCATION
Yasemin Allsop	Turkey/United Kingdom
Ann Arleth	Denmark
Laura De Biaggi	Italy
Marzia Boccone	Italy
Marcello Bozzi	Italy
Manuela Delfino	Italy
C. Ross Flatt	USA
Sonja Gabriel	Austria
Tore Neergaard Kjellow	Denmark
Mirco Labbri	Italy
Nicola Lettieri	Italy
Armanda Magioncalda	Italy
Enrica Maragliano	Italy
Giovanna Pastorino	Italy
Andreas Riepl	Austria
Tammie Schrader	USA

Rita Tegon	Italy
Halvor Thengs	Norway

PLAYERS

NAME	ORIGINS/LOCATION
Joshua Agnew	United Kingdom
Rosie Ball	United Kingdom
Diana Bardon	Spain
George Bullen	United Kingdom
Andrea Ceregini	Italy
Patrick Coady	USA
Cristian Convertino	Italy
Brian Fuller	USA
Federico Giuliana	Italy
Mark Johnson	United Kingdom
Chester King	United Kingdom

Sarah Knight	USA
Valentina Miozzo	Italy
Nele Van de Mosselaer	Belgium
Pratheep Kumar Paranthaman	India/Italy
Beatrice Penco	Italy
Pietro Persico	Italy
Alfredo Profumo	Italy/Netherlands
Dominic Sacco	United Kingdom
Brett Steinberg	USA
Daniel Wood	United Kingdom