

Development of Civic Competence through Digital Game Experiences: Perspectives of international videogame designers

Desarrollo de la competencia cívica desde experiencias de juego digitales: Visión internacional de los diseñadores de videojuegos

Desenvolvimento de competência cívica com jogos digitais: A visão de designers internacionais de videojogos

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Abstract

In light of the value emergent technologies seem to place on participation and collaboration, video games, more social and mobile than ever, have become a convergent media whose possibilities for developing critical and democratic citizenship have not been explored. This work collected the viewpoints of international video-game designers who have participated in the development of videogames of a civic nature, regarding the promotion of civic competence through this medium. In particular, it focused on the possibilities and limitations of the medium, suggestions for designing such experiences, the interpretation of several educational uses—in both formal and nonformal contexts—and the designers' perceptions of their professional role in the creation of these products. After the completion of emergent purposeful sampling, we conducted interviews with relevant game designers from the United States, Poland, and Bulgaria. The results confirmed that game experiences could promote civic competence, provided they fulfilled several design principles. Designers also identified best practices in formal and nonformal educational contexts. Finally, they expressed their willingness to work with other agents in the creation of educational experiences.

Key Words: Videogames; Civic competence; Game experiences; Serious games; Game design

Resumen

En un contexto en el que las tecnologías emergentes parecen fomentar la participación y colaboración de los ciudadanos, los videojuegos, cada vez más móviles y sociales, se presentan como un medio convergente cuyas posibilidades para el desarrollo de una ciudadanía crítica y democrática apenas han sido exploradas. Este trabajo recoge la visión de diseñadores de videojuegos de carácter cívico sobre la promoción de esta competencia desde experiencias de juego digitales. Se centra en el análisis de las posibilidades y limitaciones de los juegos, en posibles orientaciones para su diseño, en la interpretación de los distintos usos educativos tanto en contextos formales como informales y en la percepción que los propios diseñadores tienen de su rol profesional en la creación de estos productos. Tras un muestreo propositivo emergente, se realizaron entrevistas a diseñadores de referencia de Estados Unidos,

Polonia y Bulgaria. Los resultados confirman las posibilidades que ofrecen las experiencias de juego para promover la competencia cívica siempre que atiendan a una serie de principios de diseño. Los diseñadores, además, identifican buenas prácticas en contextos de aprendizaje formales e informales y muestran su disposición a trabajar con otros agentes en la creación de experiencias educativas.

Palabras clave: *Videojuegos; Competencia cívica; Experiencias de juego; Juegos serios; Diseño de juegos*

Resumo

Num contexto em que as tecnologias emergentes parecem incentivar a participação e a colaboração cidadã, os videojogos, cada vez mais móveis e sociais, são um meio de convergência cujas possibilidades para o desenvolvimento de uma cidadania crítica e democrática não foram ainda praticamente exploradas. Este trabalho reúne a visão de designers de videojogos cívicos sobre a promoção desta competência através de experiências com jogos digitais. Centra-se na análise das possibilidades e limitações dos jogos, em possíveis orientações para o seu design, na interpretação dos diferentes usos educacionais, tanto em contextos formais como informais, e na percepção que os próprios designers têm do seu papel profissional na criação desses produtos. Após uma amostragem intencional emergente, foram realizadas entrevistas com designers de referência dos Estados Unidos, Polónia e Bulgária. Os resultados confirmam as possibilidades oferecidas pelas experiências de jogo para promover a competência cívica, desde que atendam a uma série de princípios de design. Os designers também identificam boas práticas em contextos formais e informais de aprendizagem e mostram disponibilidade para trabalhar com outros agentes na criação de experiências educacionais.

Palavras chave: *Videojogos; Competência cívica; Experiências de jog; Serious games; Game design*

1. Introduction

Our current context requires studying whether technical development (e.g., exposure to multiple screens, use of mobile devices, and the appearance of new com-

munication tools) fosters critical citizenship or selfishness. Video games, a form of media in which video, music, literature, and interactivity converge, are constantly controversial both for their growth (the industry moves more than \$10 billion per year [New Zoo, 2016]), and their educational possibilities. In any case, it is clear that they constitute a cultural product that needs to be studied.

In recent years, various authors have reflected on the possibilities that game experiences offer to promote civic competence (Carrubba, 2018; Coronado-Escobar & Vasquez-Urriago, 2014; Lugo Rodríguez & Melón Jareda, 2016), which the European Commission has defined as the competence that “equips individuals to fully participate in civic life, based on knowledge of social and political concepts and structures and a commitment to active and democratic participation” (European Commission, 2007). As other *key competences* (such as communication in one’s mother tongue and digital competence) it should be targeted by every educational experience (formal, informal, and non-formal) in the framework of life-long learning. In the European context, competence-based learning is grounded in work in the late 1990s by the Organization for Economic Co-operation and Development (OECD) and its analysis of the skills demanded in the workplace, which, by extension, should be covered in school contexts—a transition, in other words, from traditional *content* toward “a transferable, multifunctional package of knowledge, skills and attitudes that all individuals need for personal fulfillment, and development, inclusion and employment” as mentioned by the European Commission (2007).

Hunicke, Leblanc and Zubek (2004) considered designers and players the most important actors in game experiences. Several studies have focused on players, analyzing themes such as the relation between violent behaviors and video games (Markey, Markey, & French, 2015), reasons players stay in games (Neys, Jansz, & Tan, 2014), and gamification possibilities to promote behavioral changes (Choi, Noh, & Park, 2014). However, educational research has historically overlooked the visions of video game designers. As agents responsible for game-design processes and talented at generating transmedia narratives, listening to their voices is critical in the educational field.

With this work, we aim to understand the visions of designers with proven experiences creating civic-minded video games to obtain practical guidelines for designing transforming digital game experiences.

As civic products are not the most played and often emerge from the independent game-design scene (Cantano & Pérez, 2019), finding and accessing their designers was not straightforward. We based this research on an earlier work with 610 university students in which we discovered that only 10 of their favorite games promoted civic competence (Oceja and González-Fernández, 2020). To confirm this finding, we applied a classification system to all the games mentioned by the students based on the following criteria: *constitution* (full-fledged games vs. gamification) (Deterding, Björk, Nacke, Dixon, & Lawley, 2013), *pervasiveness* (pervasive vs. non-pervasive) (Montola, Stenros, & Waern, 2009), *programmatic focus* (formal vs. informal) (Coombs, 1985), *complexity* (basic vs. advanced) (Egenfeldt-Nielsen, Smith, & Tosca, 2016), and *main purpose* (inform vs. entertain) (Bogost, Ferrari, & Schweizer, 2012). Thus, the present study shifts the focus to the views of the designers of these games: the simulators *Sim City* and *GeoPolitical Simulator*, the strategy games *Age of Empires*, *Europa Universalis*, *RUSE*, and *Trópico*, the adventure *This War of Mine*, the role-playing game *Kakfu*, and the platformers *Inside* and *Never Alone*. Based on interviewing their designers, we tried to answer the following research questions:

1. What perceptions do they have of the possibilities and limitations of game experiences to promote civic competence?
2. What recommendations do they offer for designing such games?
3. How do they think such games can be used for educational purposes in both formal and informal contexts?
4. What is their opinion of the role of their profession and workspaces in the creation of these experiences?

2. Methods

The current study is qualitative and mostly inductive, with categories emerging from the data themselves, as commonly happens in new analytic induction (Sosa, 2019) and grounded theory (Glaser & Strauss, 2017). Although not systematized by all the theory's protocols, we considered some of its central features. For instance, we combined open codification with subsequent axial codification, in which we established hierarchical relationships between categories. Also, category construction was influenced by constant comparison (Smith & McKeever, 2015), which suggests to compare incidents in the data, compare incidents to categories, and categories themselves with other categories. For instance, reviewing the left branch of the first semantic network (see Figure 1) from top to bottom reveals that designers consider game experiences to offer several possibilities, including *attitudinal learning*, such as *empathy*. Thus, codifying and interpreting the concept of empathy as a category is an emergent process based on literal quotations from the designers' interviews, such as D1 saying, "Games provide players agency to step into different roles,"

This work employs purposeful sampling (Martínez-Salgado, 2012), and because it is based on earlier results provided by university students, it is also emergent, despite being considered from the first stages of the research. To contact the game designers of the aforementioned games (often through their studios or publishing companies), we used all available resources: emails, phone calls, social networks, etc. We ended up collaborating with Alan Gershenfeld (designer of *Never Alone* and co-funder of Eline Media in USA), Pawel Miechowski (co-designer and scriptwriter of *This War of Mine* in 11 Bit Studios in Poland) and Bisser Dyankov (codesigner of the *Trópico* series in Haenimont Games in Bulgaria).

Several authors (Hawkins, 2018; James, 2016) have explained that email interviews have advantages, such as accessing geographically distant individuals and allowing deeper reflection. Accordingly, we designed an email interview with eight questions grouped in four blocks: 1) possibilities and limitations of game experiences for promoting civic competence, 2) game experience design, 3) education and game experiences (formal and informal contexts), and 4) the roles of designers and studios in the production of game experiences.

| | |
|---|---|
| GAME EXPERIENCES AND CIVIC COMPETENCE. POTENTIALS AND LIMITATIONS | <ol style="list-style-type: none"> 1. What potentials and what limitations do you think game experiences may offer for promoting civic competence? 2. If you look at the definition provided of civic competence, what kind of learning do you think that are more suitable to be targeted though game experiences?? |
| DESIGNING GAME EXPERIENCES | <ol style="list-style-type: none"> 3. Why do you think it has been this meaningful? (Think on aspects such as its origins, development, design principles, reasons why it may appeal so much to the players, etc.). 4. Considering that the boundaries between the different game experiences are getting very blurry, how do you think that new game forms can influence the design of game experiences that promoting civic competence? |
| GAME EXPERIENCES AND EDUCATION. FORMAL AND INFORMAL CON-TEXTS | <ol style="list-style-type: none"> 5. ¿What are your thoughts on the educational uses of videogames in formal settings? (Elementary, high schools, university, etc.). Think on aspects such as the use of educational games, use of commercial games under the teacher's supervision, students designing their own games, etc. 6. ¿And in the context of informal (outside the educational institutions) and lifelong learning, where individuals choose by themselves in what experiences do they participate? |
| PRODUCTION OF EXPERIENCES. ROLE OF DESIGNERS AND STUDIOS IN THE PRODUCTION OF GAME EXPERIENCES | <ol style="list-style-type: none"> 7. ¿What role do you think studios/companies like yours may have for designing game experiences that can promote civic competence? Think for example on the viability of the products, the possibilities of collaboration with other institutions. 8. At a personal level how do you think professionals like you may contribute (and may be willing to do so) to create meaningful experiences that promote civic competence? |
| OTHER | <ul style="list-style-type: none"> • Is there any other thing or issue that you want to add? |

Table 1: Structure of the interviews of the game designers (GDs).

Following Leung's guidelines (2015), we brought the interview script to an expert panel and improved the interpretation of the qualitative data by analyzing the results separately (Saldaña, 2015).

Once the designers' participation was confirmed, besides attaching the interview in a .doc format to the final email, following informant verification criteria (George & Apter, 2004), we advised them that they could access and modify the data and their interpretation at any time.

For the expert panel, 12 professionals (eight women and four men) were selected after confirming that they had professional experience or academic expertise related to emerging trends in education and game experiences. Their assessments of the instrument were favorable; its structure was deemed adequate for the participants (16.7% of the panel considered it good and 83.3% excellent) and its length appropriate (33.3% considered it good and 66.7% excellent).

We imported the interviewed designers' answers to the computer-aided qualitative data analysis tool [ATLAS.ti](#) 1.6.0, and we codified the data in search of relevant concepts (Tesch, 2013). We then grouped codes to avoid overlapping and collapsed them into categories to establish relationships between them. Finally, we created diagrams with a hierarchical tree structure for each block.

3. Results

The following shows the results of the interviews with Alan Gershenfeld, Pawel Miechowski, and Bisser Dyankov, to whom we refer using the references D1, D2, and D3, respectively.

In the first block, participants focused on the possibilities and limitations of game experiences to promote civic competence. The designers mentioned that they could help players put themselves in others' positions to modify their attitudes and values toward certain groups (D1: *Games provide players agency to step into different roles. By bringing a game with a different perspective to a mass audience, it helps build empathy and introduce different worldviews*). They also mentioned procedural benefits, such as the abilities to take responsible decisions (D1: *Games help to make meaningful choices, and explore the consequences of these choices*) and practice skills in non-risky scenarios (D3: *The interactivity of the games make it a nearly-ideal "what if" tool, where the Player can make different decisions and see the results of his actions*). However, they also mentioned limitations, such as the influence of designers' political biases (D3: *The political philosophy of the developers will be reflected in the game itself and it is most likely that the game will reflect a specific school of political philosophy*) and the quality of gameplay, which is as important as game themes (D2: *You need to keep in mind one very important*

thing – games speak language of games which is gameplay. Honestly speaking, if gameplay is boring, you're not going to convince anyone to the message hidden in a game).

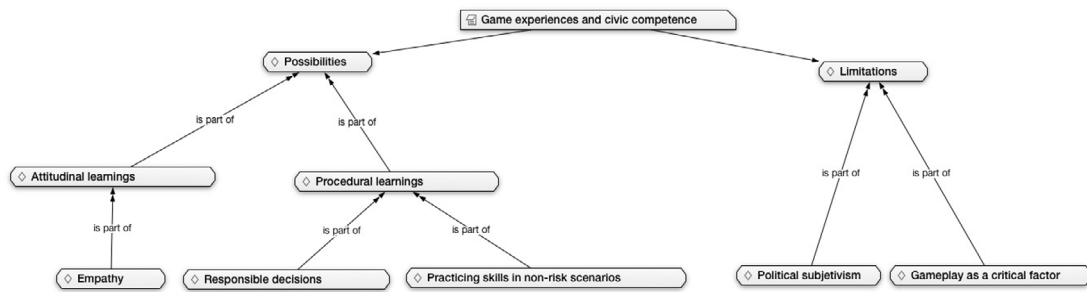


Figure 1: Semantic network of the block “Game experiences and civic competence”.

In the second block, the game designers shared how good experiences are related to design elements, such as offering players the possibility to take different actions and then allowing them to see their consequences (D3: *The player can make different decisions and see the results of his actions*) and eliciting emotions like challenge (D1: *Well designed, games offer a delicate balance of challenges and rewards*) and fellowship (D1: *In general games that do not end and build robust communities have a greater opportunity for impact*).

However, they also shared considerations beyond using particular game elements; they mentioned that games are, above all, artistic pieces, entailing that their potential lies in their capacity to emotionally move players (D2: *Games are from of art, so you can speak about anything and as long as your art is appealing to people, they will give it a try*). They also emphasized promoting player autonomy (D1: *They need to provide a balance that can drive deep levels of engagement and enables players to advance at their own pace (individually or collectively)*), and the benefits of providing players with clear context (D1: *Designing games requires a strong understanding of the context of implementation*). They also mentioned that game experiences need to supply constant, well-balanced feedback (D1: *The player*

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can be able to repeat actions according to copious feedback from the game, peers, teammates, mentors, and communities), and they acknowledged the increasing influence that emerging game forms have, such as virtual reality (D3: *I guess at some point somebody will make a VR game like “Wall Street Artillery” (Molotov throwing simulator at the police)*), pervasive games (D1: *I think there is great potential for live-action role-playing game design to bring a fresh energy to existing civics programs like Model UN*), and transmedia experiences (D2: *I think simply that the more space for designing games, the easier it would be to design experiences able to promote civic competence. Expanding boundaries or vanishing boundaries can only help*). Finally, in their own games, they exemplified the need to overcome taboos through humor (D3: *Tropico is memorable because of its humoristic approach, which enables it to play with a lot of taboos and dark moments – which would be untouchable by a game if it was more serious in nature*), intergenerational relationships and oral traditions (D1: *Never Alone explored why certain stories have been passed down for thousands of years and attempted to bring them into the new medium of games*), and exposure to human suffering (D2: *This game somehow broke the taboo of not showing suffering of civilians in war*).

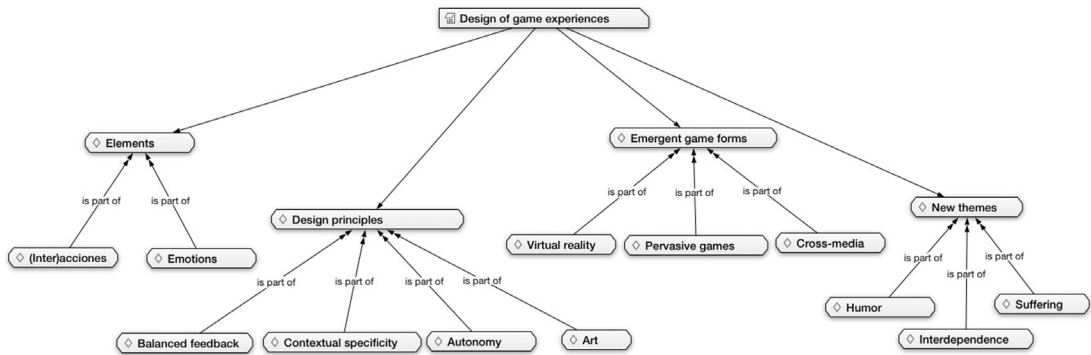


Figure 2: Semantic network of the block “Design of game experiences”.

The interviewees then focused on the formal and informal contexts of learning through game experiences. First, they confirmed the limitations of the traditional uses of games in formal contexts. For instance, the acquisition of games by schools can be costly (D1: *If the school is going to make an investment, ideally it can*

leverage that investment across multiple classes and grades), and teachers often lack the skills needed to use games productively (D2: *We do not know how to teach these kids*). Many games used in formal contexts are also simply not good (D3: *Educational games are not really rated and paid by its end customer (or its parents) and therefore suffer by the whole EU-grant type of philosophy*), although the designers admitted that high-quality educational games exist (D1: *iCivics (which we consulted on) has been successful at penetrating many schools in the US because it is carefully tuned to reduce friction for all teachers and it covers required material across multiple grades*). As developers of commercial games, they reclaimed the potential of these products (D2: *I do believe commercial games have a bright future in the educational process, but we have not discovered it yet*). They also cited how students designing their own games can foster project-based learning (D1: *These underlying design and engagement methodologies offer insights and effective practices for all forms of hands-on, project-based learning*) and a global, complex way of thinking (D1: *If the latter is the goal, then the impact is very much in the process, well scaffolded by a teacher or mentor, rather than the end result*). They claimed that the key role of teachers was generating dialogical processes when using games. Finally, they pointed out that game experiences need to be social (D1: *I also think there is opportunity for mobile and social games where advancement in the game involves real-world civic engagement with vetted local partners and mobile check-in/validation*).

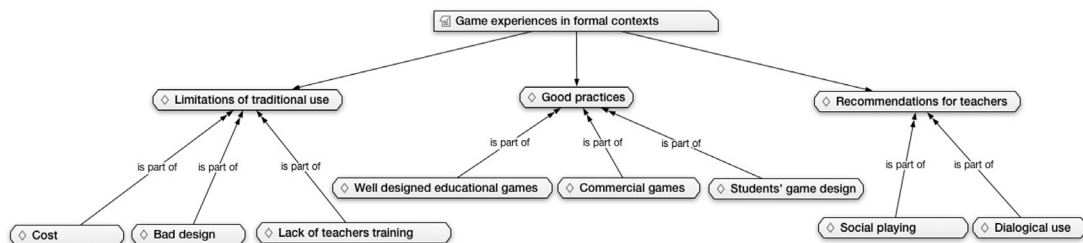


Figure 3: Semantic network of the block “Game experiences and education (formal contexts)”.

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Afterward, they supplied information about learning through game experiences in informal contexts, that is, where players choose what and when to play. First, they mentioned the importance of creating and maintaining communities (D2: *I think success is driven by the environment and the community*). They also pointed out how the abundance of games makes marketing and communication strategies necessary to consider (D1: *The bar is very high to rise above the noise when attempting to engage gamers in their discretionary time or have them pay with their discretionary dollars. Over the past few decades I have seen hundreds of game companies come and go because they were unable to compete with all of the other entertainment options available to consumers*). Nevertheless, the designers demonstrated the possibility of finding market niches for such games with their own products, such as *This War of Mine* (D2: *Our game has been designed to be rather personal experience*), *Trópico* (D3: *Our light-hearted approach is enabling it to break away with some taboos and give the players the taste of being evil oppressive dictators, not just benevolent democratic rulers*), and *Never Alone* (D1: *It introduced different worldviews - which is a strong foundation for applying civic discourse*).

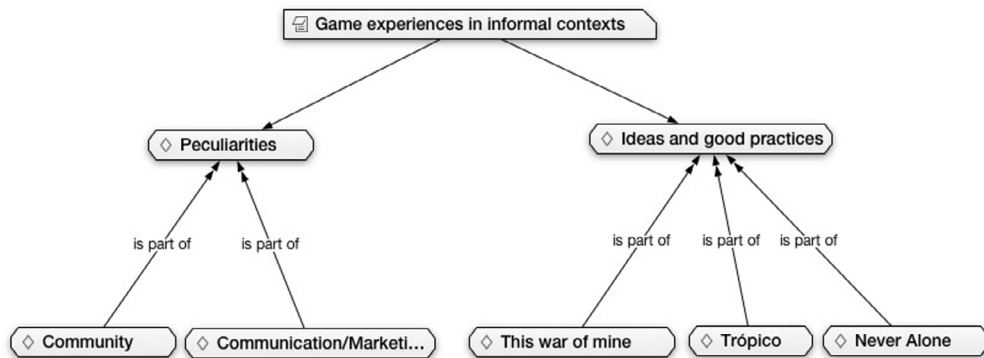


Figure 4: Semantic network of the block “Game experiences and education (formal contexts)”.

The last block centered on the roles of game designers and their studios in developing civic experiences. The interviewees mentioned some difficulties, such as the risks of working with unqualified teams (D1: *Risk can be reduced by selecting experienced teams with platform/genre experience, a proven commercial track record and a strong vision for the entertainment/impact alignment*), access to funding (D1: *Philanthropic dollars tend to be bounded for more impact funding of*

mission-driven social impact game franchises that can become self-sustaining), and excessive bureaucracy (D3: *The bureaucratic limitations in terms of time are staggering to the point of pointlessness – the time it takes for the EU Media program, for example, to respond to game application is so long, that by the time the application is approved, the game is already obsolete*). Some designers claimed they could help by finding and managing talent (D1: *My interest is building the partnerships and methodologies for finding talent with passion*), but they mainly referred to their professionalism and ability to design good games (D2: *We can contribute by making good, honest games, and try to keep the game balance but still do our best to deliver meaningful messages*). Finally, they affirmed their will of collaborating with other agents (D1: *All of our projects are ‘inclusively developed’ with leading academic, research, government, philanthropic organizations and social entrepreneurs*).

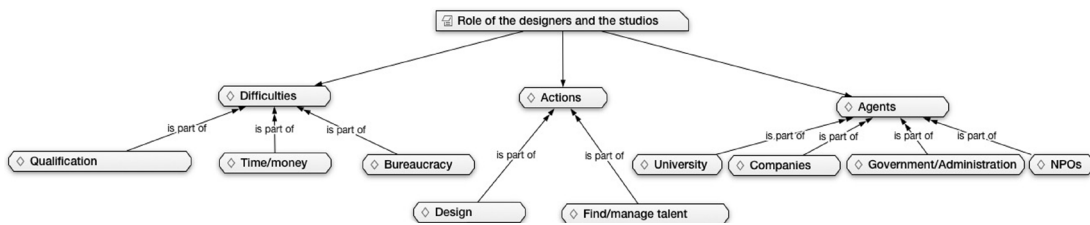


Figure 5: Semantic network of the block “Production of experiences”.

Discussion

The designers were optimistic about the possibilities that video games offer, especially to generate attitudinal and procedural civic learning, which connects with the contributions of authors who have highlighted the power of game experiences to foster values and skills (Dalisay, Kushin, Yamamoto, Liu, & Skalski, 2015; Oceja & González-Fernandez, 2017; Saldanha, Pinto, & Ferreira, 2018). This connection is important, as video games have traditionally been used to promote conceptual knowledge even though civic competence includes dimensions linked to procedures and values (European Commission, 2007). As a representative example, one designer pointed to video games allowing players to assume various identities—to

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be in others' "shoes"—as an example of promoting empathy (D3: They allow players to adopt different roles).

The designers also mentioned that games can be useful for practicing skills in non-risky scenarios (D1: *They can test test different political hypothesis and see their imagined results*) as pointed out by Gee (2014), and taking responsibility for decisions (voting, consuming responsibly, etc.), as indicated by Sanfey (2007). One feature they mentioned (the ability to solve complex social problems) could be useful to promote the civic-competence indicators articulated by the European Commission, such as the ability to negotiate and generate trust, communicate effectively with others, and take responsibility for one's actions. The limitations they cited, such as the influence of designer bias and the political positions, should remind us, along with Deterding (2011), that design is never neutral and always ideology-bearing. Also, the importance they gave to gameplay and game quality (D1: *The question is making a game good enough to attract people*) reminds us that besides good intentions, games do not motivate players unless they are well-designed (Egenfeldt-Nielsen et al., 2016).

When we asked the designers to share their design guidelines, they pointed out the need to provide players with both meaningful actions to execute and emotions to experience, such as fellowship, challenge, and discovery, as is also mentioned by several authors (Hamari et al., 2016; Zagalo, Carvalho, & Araújo, 2016). For instance, D3 said that "The challenges need to be present and increase dramatically".

They also mentioned the importance of balanced feedback and the convenience of adapting experiences to players' contexts, as suggested by Brookes and Moseley (2012). Fostering participation in the public sphere, then, requires considering real, viable actions that players can execute in their lives. They also claimed that player autonomy must be strengthened and, echoing theoretical contributions to the academic literature (Costikyan, 2013; Jenkins, 2005; Schell, 2014), they highlighted the importance of the artistic and emotional dimensions of design, as in other visual and plastic arts (D2: *We want to transform people thoughts as other artists do*).

Furthermore, one designer mentioned the relevance of emerging game forms (D2: *The more space that we have, the better*), particularly pervasive games (Montola et al., 2009) and transmedia experiences (McGonigal, 2004) which combine languages, not just digital ones. These products, originally present in cinema, television, and literature (Scolari, Jiménez, & Guerrero, 2012), have transcended these spaces, even arriving in the corporate world, as Costa (2014) has pointed out. The commercial success of location-based experiences, such as *Ingress* and *Pokémon*, and the appearance of hybrid products combining different media, such as Simogo's *Device6*, confirm the importance of these new ways of playing. The designers also pointed out the need to transcend clichés when selecting themes and moods. In the difficult balance between conventions and creativity mentioned by Tschang (2007), the success of the products they represent (e.g., *This War of Mine's* vision of civil suffering, *Trópico's* satirical view of dictatorships, and *Never Alone's* vindication of oral tradition and intergenerational cohesion) illustrates how innovative insights can be viable in even commercial contexts.

Regarding game experiences in formal educational contexts, the designers confirmed that traditional uses have not been positive due to most products' lack of design quality and the absence of teacher training, as mentioned by Hanghøj and Brund (2010). In fact, studies in Spain (Almerich, Suárez, Orellana, & Díaz, 2010) have shown that teachers' media competence correlates with their pedagogical competence. This lack of training could be the reason teachers have not traditionally fostered either social game-playing—with some exceptions (González & Izquierdo, 2011)—or the dialogical situations required to take advantage of games.

Interestingly, the designers also mentioned that adopting an educational model based on games—specifically, acquiring the games themselves—could be expensive for schools. The faint penetration of scalable game-based models into school curricula, besides projects such as *Quest to Learn* in New York City, confirms this observation. However, they also stressed the opportunities for good educational uses of games (D1: *They offer possibilities as long they understand the contexts in which they will be implemented*), such as well-designed educational games, commercial games with a sociocultural perspective (e.g., journalism games by Hanghøj and Meyer [2010]), and students designing their own games (Fullerton, 2018).

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Even though strictly educational games have been criticized for their simplicity, these contributions may raise their potential.

Game experiences in informal contexts are particularly relevant. Coinciding with the claims of several authors (Reng, Schoenau-Fog, & Kofoed, 2013), the designers mentioned that building communities through marketing and communication was critical in order to promote these products (D2: *If people tell other people what to play, they will give it a try*). Recent successes, such as Pokémon's universe or Nintendo's *Amiibos*, may confirm this.

Finally, we found that the designers were willing to collaborate with other agents despite bureaucracy and budget limitations, which several media have mentioned (Tahir, 2010). They also mentioned the importance of working on highly qualified teams (as mentioned by specialized media [Barnes, 2010]), which connects to the idea of optimizing company talent.

Accordingly, the designers were eager to share their professionalism and creativity for interdisciplinary work with other agents such as NPOs, companies, schools, and administrations (D1: *I really love working with others on creating meaningful experiences*). These collaborative models with different profiles working together seem efficient for creating high-quality games (Duncan, Hieftje, Culyba, & Fiellin, 2014). As educational researchers, we consider this disposition remarkable and expect to confirm that other stakeholders reciprocate it in future studies.

Conclusions

Designers think that game experiences offer great opportunities for promoting civic competence, as they facilitate acquiring procedural and attitudinal learning when they follow certain design principles. The interviewed designers expressed the importance of providing players autonomy, emotional experiences, chances to execute meaningful actions, feedback with clear context, and, above all, considering games an art form. They also suggested exploring new game forms without fear of touching sensitive themes.

Interestingly, from their perspective, games offer not only opportunities in formal contexts under social and dialogical perspectives (well-designed educational games, commercial games, and/or games designed by students) but also in informal contexts, which they exemplified with their own games. Finally, they shared how, barring bureaucratic obstacles, they were eager to work with other agents doing what they know best: designing games.

The designers' visions this article illustrates show confidence in the educational possibilities of games as cultural products in which different languages and media converge and that, as mentioned by Raessens (2006), are particularly representative of the ludification of culture that characterizes this historical moment.

Although researchers and students share this confidence (Oceja, 2017), data show that media literacy (particularly gaming literacy) is requisite to teachers exploiting all their pedagogical benefits. We expect the appearance of educational resources and programs that deal with this need by helping teachers create transformative, sustainable experiences through games.

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