

## Adolescents Media Experiences in the Classroom: SimCity as a Cultural Model

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Received: August 30, 2013 Accepted: September 13, 2013 Online Published: October 21, 2013

doi:10.11114/jets.v2i1.246

URL: <http://dx.doi.org/10.11114/jets.v2i1.246>

### Abstract

The main goal of this paper is to analyze adolescents' experiences when they play SimCity (EA, 2008), a commercial videogame, in an innovative learning environment designed around the concept of participatory culture. By using this video game in the classroom and machinima productions created in relation to the game, we sought to generate a critical and reflective approach, related both to the content of the game and to the audiovisual discourse through which its messages are formulated. Adopting an ethnographic, action research and discourse analysis approach, we analyze the practices, conversations and multimedia productions generated in a workshop where the teacher and the research team worked together. The students were in their third year of high school, and the group comprised boys and girls in a language compensatory program. All sessions were video recorded. The analysis of the conversations and activities in the classroom revealed a process in which the teacher and the researcher shared difficulties and participated to facilitate the students' learning through the use of digital instruments. From this perspective, this article aims to provide educational strategies that help foster critical thinking by using commercial video games in the classroom.

**Keywords:** video games, transmedia, cultural models, cinema, machinima, adolescence

### 1. Introduction

Commercial video games are digital products which are present in young people's everyday lives, but which are not common tools in the classroom. Their educational potential and their ability to generate reflection processes are not well known. The power of these cultural objects to facilitate learning can be explored from two perspectives. Firstly, video games are objects of teaching and learning in themselves, in the same way as photographs, movies and novels are, and can be used as educational instruments. Those who justify this approach refer to their potential to generate specific thought processes and in-depth knowledge related to specific information. Their second use (and this is probably the most common) is to support the delivery of curriculum content. Teachers often use movies, comics and photography to enhance their teaching methodology. In this paper, these two perspectives are intertwined.

The *main goal* of this paper is to analyze adolescents' experiences when they play SimCity (EA, 2008), a commercial video game, in an innovative learning environment designed around the concept of participatory culture (Jenkins, 2006; Delviche, & Henderson, 2013). We will look at how innovative educational scenarios were created around SimCity, a video game where gamers build their own cities, taking into account physical, social and cultural aspects. In this context, students developed multimedia productions by combining virtual and real life (Coleman, 2011). The experience was carried out in a school context in which teachers, researchers and students worked together.

The *specific objectives* were as follows:

- *To generate a critical, reflective approach to the game and audio-visual resources through the creation of new educational settings.* In these scenarios there are different media: the Internet, video games, game trailers, photographs and machinima productions. *Machinima* is used to refer to virtual filmmaking, based on the recordings gamers made from their game play in real-time.

- To develop the ability to establish relationships between real and virtual worlds, facilitating the acquisition of certain curriculum contents. This involves the use of virtual reality and the game world to make the curriculum relevant to students. We understand that there is a far more gradual differentiation between the real and virtual worlds rather than strict borders separating the two environments.
- To propose educational strategies supporting the acquisition of new literacies, understood as a critical approach to the game and an awareness of the relationships between real and virtual worlds. *New literacies* are understood as processes involving awareness of the discourses that people use when they move into digital universes.

## 2. Theoretical Framework

In this study we consider video games as educational tools that contribute to the development of new forms of literacy and allow for a different kind of access to curricular contents from written texts, the most widespread method in schools. Playing is a human activity in which the symbolic capabilities of human beings become apparent. Video games add something to the traditional concept of play: they immerse the player in a virtual world. When these games are simulation games, as is the case of SimCity, they allow for reflections that help us understand the reality in them, in this case how a city works. However, this reflection on the game does not always take place when the players use the game in an entertainment context. By bringing this video game into the classroom, we sought to generate a critical and reflective approach related both to the content of the game and to the audiovisual discourse through which its messages are formulated. Figure 1 outlines the fundamental concepts we shall use as a starting point in the framework described above.

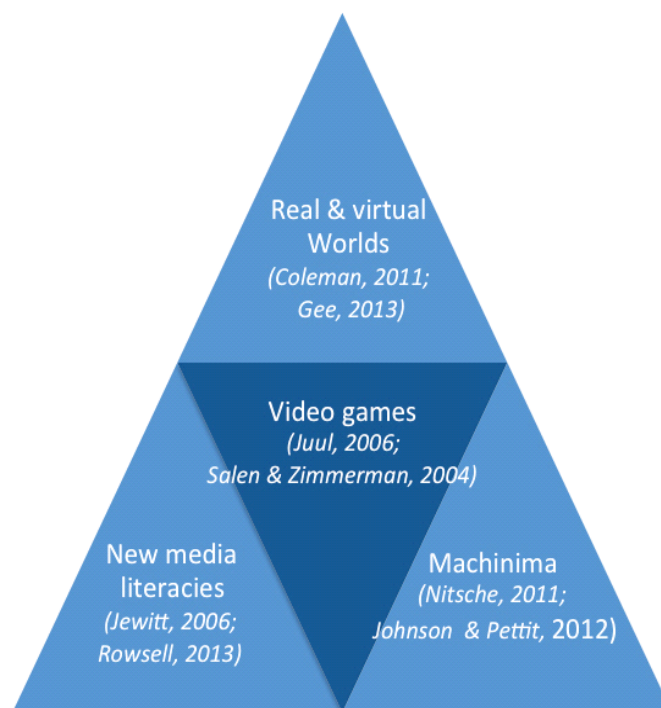


Figure 1. Theoretical model

### 2.1 Playing Video Games in the Classroom: Real and Virtual Worlds

Play has been an object of study in psychology and education and its role in human development has been broadly explored. Those who have researched subject, in connection with video games, usually quote the work of Johann Huizinga (2000), a Dutch anthropologist who published *Homo Ludens* in 1938. This was his definition, which is considered valid for both real and virtual games:

“[Play is] a free activity standing quite consciously outside “ordinary life” as being “not serious”, but at the same time absorbing the player intensely and utterly. It is an activity connected with no material interest, and no profit can be gained by it. It proceeds within its own proper boundaries of time and space according to fixed rules, and in an orderly manner. It promotes the formation of social groupings, which

tend to surround themselves with secrecy and to stress their difference from the common world by disguise or other means” (Quoted in Salen & Zimmerman, 2004: 75)

Furthermore, when players start the game, this becomes part of a cultural and social world from which other rules emerge. Jesper Juul (2005) defines these as having the following characteristics:

- The rules must be sufficiently clear for the player to act in accordance with them. They describe what the players may and may not do and what happens as a result of their actions. The game offers several options, which are clear from the beginning.
- The rules of the game define a machine state, which responds to the player's actions. Handling the controls could make the player advance in the game. That machine state may be continuously explored.
- Manifold results are possible in the game. We can control the player (or not) because we must not forget that the machine offers resistance. It is commonly more difficult to obtain a positive rather than a negative result. This is what makes the game appealing.
- The way in which the player tries to overcome these challenges is the nucleus of the game. There is interaction between the rules and the player's attempts to overcome difficulties. The player may improve his skills in the game.
- The rules, suggesting challenges, make the game more attractive. Different rules provide different experiences.

To summarize, learning and teaching the rules of digital games opens up a whole range of opportunities where the player has to be aware of his or her own actions and how these affect not just the way the game advances, but also the changes happening on the screen. In this sense, the code is not the only "law" on the screen; the representations the person has of the game are also projected. The games set limits but they are not the only ones; the player's own reconstruction is also influential.

For the purposes of this research we worked with SimCity, a simulation game in which the player becomes the creator, designer and constructor of a city. He can be an architect or mayor. Friedman (1999) pointed out a few years ago that rules and players' expectations have not always fully crystallized, and this fact is especially relevant in SimCity. According to him, simulation games may possibly bring intrinsic motivation into learning. Simulation games help understand abstract relationships in situated activities, for example economic and social relationships. From that point of view SimCity, like other simulation games, contains an ideology. Simulation allows for more fluctuation compared to other models.

## 2.2. Looking for New Literacies in the Digital Context of Communication

The concept of literacy has long been part of exploring how people communicate in specific contexts. Powerful voices that provide alternative models of literacy concepts rooted in processes of reading digital media are emerging. We encounter a variety of opinions when we explore different positions about how to teach digital literacies.

### 2.2.1 New Communication Contexts

*The first issue to highlight is the communication context new media have generated* and the idea that new media changes are related to the new role of consumers (Gee, 2013; Lemish, 2013). The communication context model Jenkins (2006) proposes is defined, at least, by three characteristics. First, we find a *new model of source and receiver of the information*. According to this author, convergence represents a cultural shift, as consumers are encouraged to seek out new information and make connections among dispersed media content. That is, people receive large amounts of information they need to select and reconstruct in order to transform it into knowledge.

Second, traditional users become *producers and not only consumers*; there is a *transmedia context* in which content is transmitted through different platforms, a message or story appears in different channels and people construe representations from all of them, a new perspective of the world. This perspective means that people belong to a community from which meaning is generated.

Third, in this context in which people are message producers, certain relationships are established with the audience, which Jenkins chooses to refer to through the concept of *spreadability*, related to the way in which messages are transmitted through new communication channels and formats (Jenkins, Ford, & Green, 2013). Commercial interests are intertwined in this context with the message to be communicated. Schools have traditionally ignored this world of brands, corporations and interests, but the new environments require students to be able to transmit messages for new audiences and new niches.

### 2.2.2 New Tools for Communication

For people (young people, in this case) to be able to produce messages efficiently, they must be able to use new media competently. Studies based on the concept of multimodality provide a framework from which educational strategies are generated that favor the acquisition of new literacies in a digital world. A *multimodal approach* focuses on the idea of meaning-making and situated practices when people interact with technologies (Jewitt, 2006). What is the meaning of young people becoming producers in this context? It may be useful to consider Kress's proposal (2003), which comprises four essential concepts:

- *Discourse*: He considers discourse as socially-constructed knowledge of some aspects of reality. It exists independently of its mode of realization, for example the mode of language, among many others. Discourse can be related to image, color, speech and sound effect, movement, gesture and gaze. All of these are resources for created meaning and are considered *modes*.
- *Design*: This stands mid-way between content and expression. The resources on which design draws, the semiotic modes, are still abstract, capable of being realized in different materialities.
- *Production* refers to media and material resources, and includes the body, the voice and the tools, which may extend to bodily communication and expression, for example, musical instruments as well as materials used in producing artifacts. Production is always physical work, whether by humans or machines.
- *Distribution* is the process through which modes and media are further modified by what may be considered as a new media of distribution. For instance, a music video modified by the broadcasting apparatus of television.

This perspective emphasizes, therefore, the processes that are present in the construction of meaning within specific communicative contexts. In the context of our work it is of interest in terms of how different aspects of media discourse need to be considered when multiple exchanges, present in everyday life, are explored.

### 2.3 Developing New Literacies through Machinima

Here, we shall explain the reason for introducing machinima techniques in the classroom to favor digital literacy by using video games. In our opinion, this technique allows for reflection on the game. Favoring thought processes and the awareness of one's own activity, of the strategies used, of the world model presented in the video game or the discourse through which its messages are conveyed, *became the main educational aim of the workshop through the use of commercial video games*. We consider machinima to be an especially useful technique to favor literacy related with critical thought processes which, in the case of video games, bring the gamer closer to both its content and its rules.

Machinima, according to Paul Marino (2004) is *the art of creating animated movies in real-time by using a 3-D game engine technology*. The Gamasutra review of this book explains that machinima has evolved into a film-making genre in its own right. We believe that, in using this technique, people will be made aware of the rules of the game, its content and the audiovisual discourse of this digital universe. Machinima could be analyzed as an artistic practice outside gaming as well, as it is an offshoot of the larger digital revolution. If we look for reference points other than gaming, machinima can be conceived in terms of *"performance in the world of moving images"* (Nitsche, 2011). We can contemplate machinima through the lens of the players' performance (McKenzie, 2001) because they control the avatars (Cameron & Carroll, 2009) and the camera operators when they monitor the point of view of the scene in the dramatic tradition.

Both demos and trailers, as machinima formats, relate to the players' recording of their own game sessions. By doing this, they can play back inside these games by saving them and by loading and running demo files afterwards. *The product can be like a trailer, using a film format*. The game engine loses its value as a replay engine and becomes a simple production tool. *In this study, we consider the making of machinima as if it were part of a film-making process in which the author is immersed in taking creative decisions and has direct feedback of his/her activity*. It is not the final image that is important, but the control filmmakers have over aspects such as character movement and camera placement in that final image. Characters react to the user's input in real time and allow them to sketch their own ideas on the fly, leaving room for improvisation and flexibility in the overall production process (Friedrich, 2011).

## 3. Methodological Approach

### 3.1 Ethnographic and Action Research

Adopting an ethnographic and action research approach (Green, Camilli, & Elmore, 2006), we explore the conversations and multimedia productions generated in a workshop designed to bring the discourse of video games into the classroom, using these tools for educational purposes. We are interested in observing, analyzing and explaining these personal and collective practices and learning their meaning; hence, our results may help to enable educational and innovative scenarios in schools and families (Chase, 2011).

The validity of this approach is based on a detailed description of the cases explaining how people make sense of their activities in specific socio-cultural contexts. We focus on ethnography because we observe people's activities in a certain environment, the classroom (Denzin & Lincoln, 2011). We are interested in the social nature of this phenomenon (Lacasa, Méndez, & Martínez, 2009). In this case, we explore how games can be used in the classroom, in connection with cinema and machinima, so that students become aware of the content of the game, its rules and its language. We will examine the possibilities and features they have, and how teachers, researchers and students work together, focusing on multimedia discourses that allow the interaction of young people and adults with mass media.

The project was carried out in a *secondary school environment* where very different workshops took place, each of them being defined by the following features: a) the participants, namely boys and girls, their teacher and the research team; b) the school as the physical and social context in which the activity takes place; and c) the video game around which the different activities are organized. In this paper, we define workshops as innovative scenarios where new technologies coexist with consolidated technologies. In these scenarios, opportunities are created for boys and girls to gain new abilities related to digital literacy.

### 3.2 Data Sources

The research is part of a larger project carried out in a Spanish secondary school (2008-2011) aiming to introduce commercial video games in the classroom as educational tools. We will focus on one specific workshop (2008-2009), defined as an innovative educational scenario involving both new and old technologies, which provided opportunities for students and teachers to acquire digital literacies. Video games were present in the classroom, together with movies, the Internet, video cameras and photography in order to develop multiple communication codes among the students. The students were in their third year of high school. It was a small group of boys and girls in a language compensatory program. The research team collaborated with the teacher in order to define and develop specific activities. Moreover, they recorded all the sessions and supported students whenever they asked for help. The teacher had some experience in playing *SimCity*, but none of the students did. Throughout the course of the workshop, some differences were found among the students regarding their expertise, probably due to the fact that some of them got to play it at home.

All sessions were video recorded, photographs were taken of the most relevant moments and each of the researchers wrote a daily summary of each session, allowing for different interpretations of the same activities. Here, analysis is seen as a circular process which began during fieldwork (Holstein & Gubrium, 2011). Once all data had been digitized and the recordings segmented and transcribed, we used the qualitative software program Transana. With this program, two analyses were performed: 1) Conversations in the classroom were explored from a discourse analysis perspective (Gee, 2010), and 2) machinima productions and the trailer of *SimCity* were segmented and analyzed in order to propose a relevant model in media education.

### 3.3 *SimCity* in the Classroom

*SimCity* (for the Nintendo Wii) was used in the classroom and activities were organized around it. The game offers an action scenario where players build and manage a virtual city. They act according to their own interests within limitations imposed by the rules of the game. As discussed in the following sections, the analysis of the activities that took place in the classroom and, above all, the conversations we explored, allowed us to define the game's educational value.

The official trailer of *SimCity* shows that the gamer will build a city from scratch, and it also shows possibilities for its evolution. The city designed by the player will become a futuristic and suggestive universe with a huge population. Looking at the images of the game will allow us to understand its challenges and identify the goal to be achieved by following its rules, as defined by the game designers. The teacher used the game tutorials with the students in order to explain its content and workings.

We shall now present one of the trailers created by Electronic Arts, the company distributing the game, as it is an excellent summary of its contents, its rules and the goals players can achieve. This trailer is relevant to this study because it gives a global and synthetic view of the game and helps us understand how the teacher used the tutorials, although analyzing them in any depth is beyond the scope of this work. The trailer length is just 1

minute 21 seconds. Figure 2 reproduces its segmented frames every 2 seconds:



Figure 2. SimCity trailer. Sequence of the frames

The official trailer begins with an image of the company logo, Maxis (a division of Electronic Arts), and not the title of the game. The title will appear at the end of the video to make it more attractive and engage the future player. After the logo, there is a transition (a frame in black) aimed to give more space to the frames that follow and to give the audience the idea that something new is about to appear. The goal is to generate excitement and expectation.

Focusing on *the sequence of images in the clip*, the scenes that follow the company logo, including a travelling camera, show a cargo ship. The music comes in progressively, providing greater agility and dynamism to the scene. The authors try to generate specific meanings for the audience in order to attract them. The city is growing progressively. The following frames are long shots, which seek to reflect the grandeur of a city that is built from scratch. Twelve perspectives of the growing city appear, with extraordinary coherence (something the students' video lacked). *Both the trailer and the tutorials are great models for students to find out about the content and the rules of the game and also about how professionals create their messages.*

#### 4. Learning from the Workshop

We will now show what happened in a specific workshop by looking only at those moments that are relevant to show how participants approach video games in a meaningful manner. Timing is important, both in terms of the whole workshop and each of the sessions, as time is associated with the students' acquisition of new skills and continuous adjustments in the interest of all participants. We will focus on the reconstruction of the workshop and what happened in each of its phases, according to the activities that took place in the classroom.

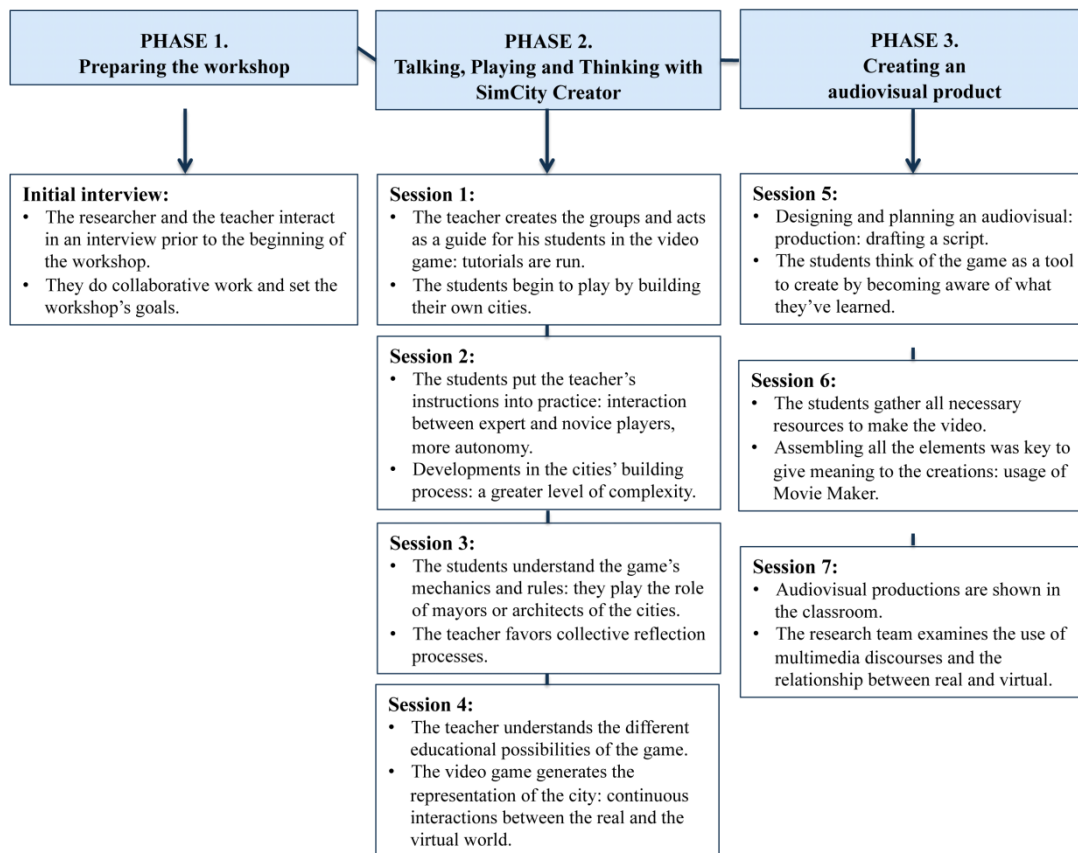


Figure 3. Workshop reconstruction

4.1 Phase 1. Organizing the Workshop

The workshop began with a preliminary meeting between the teacher and one of the researchers in order to identify and share common goals. Previous research had shown that this process is not simple. In this case, the two sought an agreement that would help to explicitly define the goals they had regarding the workshop. Usually, while the teacher seeks to advance the curriculum content, the research team aims to develop students' new literacies (Lacasa, Méndez, & Martínez, 2008). Some excerpts of the interview are transcribed in order to show how mutual understanding was gradually achieved. Figure 4 summarizes this situation.

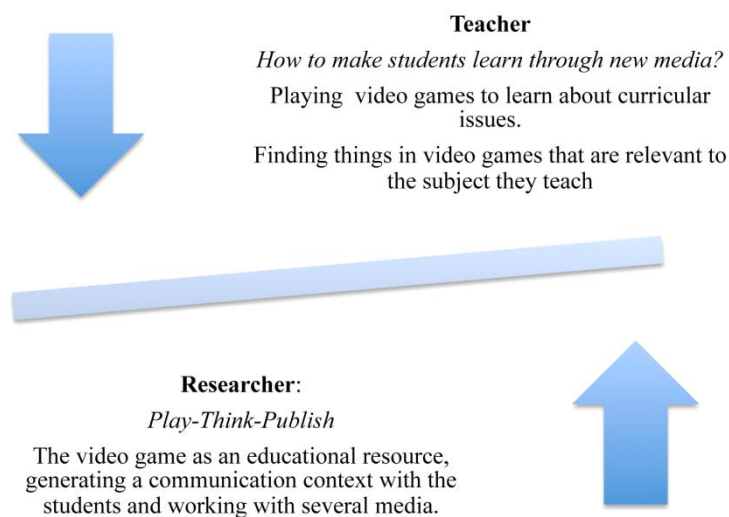


Figure 4. Main goals for the researcher and the teacher

The teacher's goal was to cover curriculum content in a subject related to language and society. The research team's aim was to generate new ways of making the video game an educational tool in the classroom, despite having originally been designed for entertainment. One important element for the success of the experience was the fact that the teacher believed in the potential of the game and knew it well. He was a good gamer and had many ideas on how to work with it in the classroom. The researcher listened and advised on the organization of the sessions.

#### Fragment 1. Teacher and researcher interview

Audio recording. February 12, 2009

Teacher: First, I want to introduce the game a little bit and make sure they understand how it works, I want to play first so that they can see and then take over and do some things with it. I want them to situate themselves, my main goal for the first session is for them to situate themselves in that space because I want this to be clear for them from the beginning, and this is one of the ideas I want to work with: spatial location (...) Also, I want all of them to try the game and play as much as possible.

This fragment shows part of the conversation in which *the teacher expresses his goal for the first session: to situate the students in specific spaces*. We need to consider the fact that the game is related with the city-planning process. The teacher's approach reflects his interest in having well-planned sessions. Through this interview, the teacher was aware of how reflecting on and discussing the gamers' activities needed to be part of the workshop sessions. In order to achieve that goal, shared by both the teacher and the researcher, they decided to alternate moments of dialogue, play and reflection to ensure that students became aware of everything that happened during the experience.

Researcher: After playing, do you think it would be interesting to have a general discussion before the end of each session?

Teacher: Sure, sure. We will see what they have noticed and what problems they have had moving around the map, navigating, searching and finding places, as I am going to ask them to go around the city. Well ... that is what I'm going to ask them to do.

Researcher: (...) Once the first session is over, how do you plan to move forward?

Teacher: In the second session, I want them to begin solving problems. Then I don't really know yet, it'll depend on how the first session goes, on how they do during the first [session].

Throughout the interview, the teacher and the researcher agreed and negotiated a plan for the workshop. They shared the aspects in which they had most expertise, although it was clear that it would be the teacher who would have a more important role.

Here is another excerpt from the interview. At this point, the researcher asked the teacher about *possible relationships between the real and virtual world*. Although this idea came from the researcher, they both tried to think of what could be the best final product and how these two dimensions would be presented during the workshop.

Researcher: Have you ever thought about the contrast between the game and real life?

Teacher: Yes, yes, I was thinking of bringing a real map or a city in 3-D, real images so that they can get an idea of the contrast, using Google Earth, for example.

Researcher: (...) What multimedia product were you thinking they could create at the end of the workshop?

Teacher: Well... I'm thinking about it...

The teacher and the researcher seem to share an interest in comparing real and virtual worlds. These relations are closely related to the limits imposed by the rules of the game (Juul, 2005) forcing players to solve problems in a virtual world, with no clear difference between this environment and a real-life city. Moreover, these problems will be resolved in the context of a game (Salen & Zimmerman, 2004), which both the teacher and the researcher consider a learning environment (Gee, 2003, 2006). Also, they wanted this concept to be reflected in the multimedia products they would develop at the end of the workshop. The goal was to introduce students to the visual discourse as a teaching and learning object in itself, seeking new forms of literacy and integrating different media discourses without forgetting the specific characteristics of each (Lemish, 2013; Rowsell, 2013).



#### 4.2 Phase 2. Talking, Playing and Thinking

The second phase of the workshop (from session 1 to session 4) began once the students were *organized into small groups*. The teacher introduced the game by showing its basic elements, such as the main menu, the levels of complexity and especially how to begin building a city. After the students had played for a while, they were asked about the game and the player's role. *Guided by the teacher, they reflected* on the possibilities offered by *SimCity Creator* and they focused on the main problems that could arise in the development and management of a real city. *Gradually, they tried to discover how they should act on the screen*, the decisions they should make and the social and cognitive strategies they would have to design during the game.

#### Fragment 2. Designing the virtual city

##### Video recording. Session 1. February 16, 2009

Teacher: You have several options, OK? Free mode, missions, tutorials, a photo album, options, etc...By running this tutorial you'll learn fast, I've done it already and it's pretty easy, I managed to learn.

In this conversation, the teacher tried to get the students to forget about the fears they might have when playing (Gee, 2003). *He spoke of his own experience as a player and noted the importance of the tutorials* as an interesting way to start. It is unusual for teachers to talk to their students about how adults also need to learn. In any case, in these first moments the teacher had control of the activity and the students listened carefully:

Teacher: (...) Let's go for the missions option. We have several types of cities where you have to solve problems, right? The city has already been started for you so that you can begin. The game asks you to solve a problem, which you will have to solve at a later stage in the cities you build. For example, one of the first things it demands is for us to supply electricity; if there is no electricity, it's obvious that nobody is going to build a house there. Now, we will see more so that you can learn how to build your own...

Using the tutorials allowed the participants to anticipate and plan strategies. It also facilitated the introduction of situations in which it was necessary to solve complex problems, for example supplying electricity to the city, as a first step to move forward in the construction of other elements: *"If there is no electricity, it's obvious that nobody is going to build a house there"*, the teacher explains.

Once they had learned the basics of the game, the students began to build the city on their own. *In the first session, the teacher helped to establish relationships between the real and virtual worlds*. Throughout the game, the students were situated in increasingly abstract plans, looking at the issues raised by the game in depth (Hayes& Duncan, 2012). *After the second session, the problems building the city raised the level of difficulty* and the students were forced to make complex decisions in order to achieve their goals.

#### Fragment 3. Students help each other

Video recording. Session 2. February 23, 2009

**Student 1: Now we have to build the city, right?**

**Teacher: But have you opened a new one or was it already built? Show Noelia so that she can see that.**

**Student 1: The first thing you have to do is build what people want, such as water, electricity... Let's build a power plant...Teacher! Where is the power line?**

**This conversation shows how the students began to implement the teacher's instructions. They helped each other and sought to advance in the game, exploring its mechanics (Juul, 2006). They needed to build the infrastructure of the city: on the one hand, roads, water and electricity; on the other, regular social services such as cultural centers, malls, etc.**

So far, we have described *the first moments of the game* (Session 1 and Session 2), when they learned and advanced towards working more independently. By learning the rules and the mechanics of the game, they gained autonomy. *In the following sessions* (Session 3, February 30, 2009 and Session 4, March 9, 2009), as well as advancing in their understanding of game mechanics, the teacher generated discussions about cities in everyday life. He was aware that the game would give rise to an imagination and interpretation process; real and virtual worlds could be present in the discussion (Coleman, 2011). At that point in the workshop, they tried to finish their cities, before they began to create the final machinima production (Johnson, & Pettit, 2012).



Figure 5. The teacher and researcher supervise the first moments of the game

For information about their cities, a synthesis of each group is presented in the summary of one of the researchers. Each group had specific problems to solve and the relationships between physical infrastructures and social life were clear. Social life is possible only if there are appropriate infrastructures.

#### Fragment 4. Specific problems in each group

Research summary. Session 3. February 30, 2009.

Group 1: Their city burned down and they had to start over, but they don't know why this happened. They started out without inhabitants, but it gradually improved. They have schools, hospitals, a fire station, a police station, etc.

Group 5: They've built the city with a mall, but it's not growing. They say it's because there are things missing, because they started from scratch. They want to build an oil refinery in the middle of the city because there are some areas without power and the power station is not enough.

Group 4: First they looked for electricity, so that the whole city would have a supply. Then they put water pipes all over the city. They created residential areas for people to live in, with malls and roads. The city has 4,800 inhabitants. Now they want to build more roads so more people can come.

These three texts, which summarize the researcher's viewpoint as to what happened in each group, show two approaches to the game related to the gamers' strategies (Juul, 2006). *According to the rules of the game, which gamers have to discover, the population will only increase once the city provides the necessary infrastructure to accommodate its inhabitants.* The students were not always aware of this rule. This is what happened in Groups 1 and 5: the students faced difficulties they were not able to overcome. By contrast, students in Group 4 advanced quickly; they understood that the population could only grow if water and electricity were provided. Then, they created malls and roads with the aim of attracting new residents.

#### 4.3 Phase 3. Creating the Final Audiovisual Production

As we've already mentioned, the use of machinima in the classroom was aimed at promoting awareness of the game and of its rules, the process involved in the construction of a city and the discourse through which their messages are made explicit (Friedrich, 2011; Nitsche, (2011). This task is complex and the students needed the help of the teacher and the researcher. Based on the results of this study, *some strategies can be suggested to facilitate the work of teachers and researchers* seeking to develop new literacies through the use of commercial games in the classroom as a way to improve digital literacies.

This last phase of the workshop, from Session 4 to Session 7, begins when new activity is proposed. *The students have already spent several sessions playing; now their work will also be related with the video game but they will be creating machinima productions by re-creating their recordings of the game.* The goal of the researcher and the teacher was that the students should become aware of the rules of the game, its discourses and the perspective of the city that was present there. Moreover, they wanted them to express their experiences in the workshop and share them with close and distant audiences through an audiovisual production. The educational goal was to promote the combination of multiple discourses to express a message.

#### Fragment 5. Planning the final machinima production

Video recording. Session 5. March 16, 2009

Teacher: Let's plan the final production. I told you we had to do that at the end of the workshop so that we could discuss what we have done and seen. So, today mostly I want you to begin to sketch what happened during the game, what we can do and how we can do it... Think of an interactive product. You can use cameras, the computer, whatever you want... You can take all the material we have, you have already generated part of it

and you can use it in what could be an interactive product... Do you understand what I'm saying?

Students: Yes.

This transcript includes the teacher's explanation about the final product. He wanted the students to understand the explanation and tried to be clear about the final video. *We notice that he is looking for an interactive product by re-mixing several pre-generated parts. The researcher jumped into the conversation at that point; from her perspective, the video would be away to express specific messages, but she did not refer to interactivity.* These differences in the messages coming from the teacher and the researcher show how it is not always easy to generate the same goals; even if these goals were broadly shared at the end of the day, we found subtle differences. In any case, these goals were never incompatible, but complementary (Lacasa, et al., 2008).

Researcher: The first question we are posing is the following: Why are we making this final production? What do you think?

Student: So that we can play games and learn at the same time.

(...)

Teacher: Making a video is very interesting because you can tell other people things... We can tell stories, you can take pictures, make a video, mix it with photos...

Researcher: Sure, and music... The goal is to look for creative things. Some people are doing that with computers and they use the Movie Maker program.

The dialogue above between the teacher, the researcher and the students helps to find a meeting point between all of them in terms of how to approach the final product. At this time, the main point was for the students to become aware of what they did and become creators. The researcher tried to reinforce this idea with comments such as: "*Why are we making this final production?*" and "*The goal is to look for creative things*". Moreover, they needed to think of their audience: "*You can tell other people things,*" she said.

Researcher: So, the most important thing for you to do now is to think of the script (...) Well, the main thing is to have an idea of what you want to talk about and to whom it will be addressed, and once you have that, we'll think of something and get the cameras or whatever you want. It doesn't need to be set in stone, we can improvise with the camera and we can do several takes or whatever.

Teacher: It'll be like making an ad or a movie. The first thing you need is an idea, and then we can move forward with the script...

Bearing these ideas in mind, after sharing his thoughts and discussing them with the researcher, *the teacher put the students into two groups to work on the final productions.* They understood how important it was to have a *previous script*, and in order to write it, *they discussed several topics:* what had happened during the workshop, how they had played the game, what strategies they had used and what they had learned from it all. They also considered *possible audiences* from the perspective of a participatory culture (Delviche & Henderson, 2013). It should be noted that the presence of the researcher was more evident in this session than in previous ones. This might be easier to understand if we consider that developing new literacies related to the use of communication tools was the main focus of the workshop for the research team.

During this session, the researcher insisted on how important it was to *transmit a message to their audience*, but the two topics were mixed and there was insufficient emphasis on either one of them.

Fragment 6. The creation of the final production

Audio recording. Session 5. March 16, 2009

Teacher: Are you just going to address it to students?

Student 1: To grown-ups too... To everybody.

Teacher: For example, do you think your parents would be interested in watching it? (...) And who else? Can you think of anyone else?

Student 2: The teachers, so that they can do it.

We observe that it seemed to be clear for the students that the video needed to be situated beyond a school context, but this happened only when the teacher and the researcher helped them to understand that any message needs to be created with a specific audience in mind.

Finally, we should remember that we introduced machinima productions for students to become aware of the rules of the game, the process that building a city involves and the discourse used by the game designers to transmit their messages, as the researcher who set these goals gradually explained (Cameron & Carroll, 2009).

Further along in the workshop, during the sixth session, the discussion focuses on the need to convey a particular message (the researcher constantly insists on this):

Fragment 7. Looking for new messages

Researcher's audio. Session 6. March 23, 2009

Researcher: What were the messages we wanted to convey?

Student: You can learn better through games... You learn more with games than with books.

Researcher: Oh, right, because we went to the library to take these pictures.

As we can see, *the message they want to convey is related to the workshop environment and not so much to the game itself*. Considering the previous fragments, we must accept that the *students struggled to develop particular messages for specific audiences*, which stemmed from two problems: First, the objectives of the workshop were not completely consistent between the teacher and the research team, *even if they were complementary*. The researchers wanted the students to be able to control new discourses through an awareness of the elements of the game. However, for the teacher, the final audiovisual production was intended to be the result of a class project to expand knowledge in relation to the curriculum context. Second, the students were playing the game, discussing its rules and the image of the world presented there, but they did not have any special training to improve their machinima techniques or to develop an appealing audiovisual product. However, the students' video shows that they did become aware of the rules of the game and how to build a city.

We can deduce, from these results, that video games, trailers and media productions create opportunities for training in the use of new discourses, whether they are created by the students or by professionals. For example, the trailer and the tutorials could have been discussed in class not only in relation to their content related to the city or to the rules of the game, but also how audiovisual codes are used for expressing these messages. This is a task for future workshops. Entering a classroom with students and their teacher not only helps to understand what happens there, but also allows for the suggestion of strategies as to how to move forward together to teach and learn new forms of literacy.

## 5. Brief Conclusion

Western society demands new forms of communication beyond the use of oral and written language (Lemish, 2013). Audiovisual discourses emerge frequently in everyday life and demand new kinds of literacy. Using commercial video games in the classroom, along with other digital resources, can help to develop specific digital literacies (Gee, 2016; 2013). This study offers an example of how teachers, researchers and students can face challenges together and build "new" schools in the twenty-first century by exploring new ways to employ digital technology in the classroom. It also notes how they all need to recognize the specific characteristics of different media and learn how to establish relationships between them to communicate effectively in this digital context

To facilitate the development of digital literacy (Jewitt, 2006), we created a video game workshop working with SimCity in the classroom in collaboration with the teacher. Our goal was for the students to become aware of the rules of the game (Juul, 2006), its content and the discourse that it uses to express messages. In addition to this, the students would use machinima techniques, recordings of the game in real time, combined with other audiovisual resources to express their thoughts when reflecting on game situations.

To formulate the objectives of the workshop, we focused on the game concept, considering how the gamers are outside of everyday life in a universe governed by certain rules and without which the game would not exist (Huizinga, 2000; Juul 2005). The fact that video games allow for the construction of virtual worlds creates specific learning environments where students interact with new communicative tools (Jenkins, 2006; Gee, 2010). People need multimodal resources (Jewitt, 2006; Kress, 2003) which traditional schools do not provide. In this context, we believe that working in the classroom with machinima productions, a genre for building bridges between film and video games, could facilitate the acquisition of the resources that the students need to communicate in new communicative environments.

An analysis of the conversations (Gee, 2006) that were held in the classroom in the context of the main goals proposed in this paper allow us to support the following conclusions.

Our first goal was to generate a critical, reflective approach to the game and to audiovisual discourse through *the creation of new educational settings where digital technologies and new media were present*. These scenarios have proven to provide positive contexts in the classroom for the introduction of innovative educational experiences in which teachers, researchers and students work together. Their goals may be different, but complementary (Gee, 2003). While the teacher was looking to use the video game in the classroom to make learning easier for certain curriculum contents related to the way Western cities function, the researchers wanted to develop new forms of literacy through a reflection on the game. The conversations show that the two

objectives were achieved and that games are powerful tools for reflection and learning curriculum content. In any case, this workshop does not seek to become a recipe for other teachers or researchers, but a possible model from which to move forward into new cultural and social contexts. Moreover, the game prompted the creation of a play environment that enabled learning processes (Huizinga, 2000). Problem solving took place in a motivating context parallel to everyday life where new media— usually absent from school —were present. In this context, the use of machinima techniques (Johnson, & Pettit, 2012) to teach students the content and rules of the game allowed an approach to new forms of discourse.

Delving into our second objective has enabled us to define different ways of establishing relationships between the real and virtual worlds (Coleman, 2011). For example, it was important to link the city with its spaces, so that the students understood the importance of this in the design of real-world cities. He used the tutorials in the game to achieve educational goals, as shown by the conversations that took place during the first part of the workshop. Also, the teacher was an excellent source of support for the students when the game became complicated and difficulties arose, as was the case in the second part of the workshop. Once more, his previous experience as a player was important to achieving educational goals. The students established relationships between real and virtual cities. A simulation allowed them to understand the problems faced by cities in the XXI century, which is made clear through the game tutorials and the trailers created by the distribution companies when the game was launched. Beyond distinctions between these two worlds—real and virtual—the game allowed for problems to be solved by being aware of, and using, certain strategies (Gee, 2013). People playing games need to understand their mechanics and their rules (Juul, 2006) to solve the problem that arise. The students were aware that, if they did not follow the rules of the game (such as providing the necessary infrastructure), the population couldn't grow. This example shows that, when students approached the game in the classroom, not only were they aware of their rules, a goal sought by the researcher, but it also became a way to establish relationships between the real and virtual world. The situation involves a critical approach to the game and its mechanics (Juul, 2006); from this point of view, all participants reflected on the relations between the virtual city and the problems faced by real cities.

Our third objective was to *propose educational strategies supporting the acquisition of new literacies* (Rowse, 2013; Hayes, & Duncan, 2012). In this respect, we consider the goals of the researchers to be more focused on the development of digital literacy. On this level, as shown in the third part of the workshop, the machinima productions made by students were useful, as they helped students to express their experiences during the workshop and their progress as players not only through the written language, which is most common in the classroom, but also with audiovisual discourses. We are speaking here of an experience related to digital literacy, because students approach the messages of the game through various online platforms. In addition, they are active audiences, because they respond to the challenges of the game and also become producers of messages using machinima techniques (Johnson, & Pettit, 2012), which brings them closer to the demands of a film production made in a virtual world. Previous recordings of the game play were the starting point of their films. In some cases the focal point was the city that they built and recorded during the game. Other times they themselves were the central characters, as they focused on the players of the game, and their challenges and achievements, from a personal perspective. To make this possible, we used a multimodal language (Jewitt, 2006; Kress, 2003) that combines different expressive units to result in meaningful texts, immersed in audiovisual discourse, which cannot be identified with the written language.

In short, this research shows that commercial video games, originally designed for entertainment, can become educational tools used in the classroom when approached from a double perspective: first, as tools to support learning through innovative experiences that contribute to the acquisition of curriculum contents, and second, as learning objects in their own right from which to generate critical literacy discourse and audiovisual content in the classrooms of the twenty-first century.

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