Video games at the Institute.
Digital leisure as a learning tool
Research Report

Madrid, November 2009
A word of thanks

The project “Video games at the Institute. Digital Leisure as a learning stimulus” would not have been possible without the efforts of all the participants, specially the students, teachers, management team and educational community at the Secondary Education Institute IES Manuel de Falla in Coslada (Autonomous Community of Madrid). Many thanks to all of them.

Thanks also to Electronic Arts España, within the framework of its Corporate Social Responsibility program, for having further developed this project which has allowed close collaboration between the University and the Company. Its contributions have been a continuous source of stimulating ideas and questions within the intellectual field and in our daily activities.

Researching team

Main Researcher
Pilar Lacasa. University of Alcalá

Imágenes, Palabras e Ideas. University of Alcalá and UNED
Web Coordinators and editors: Sara Cortés Didactical support: Laura Méndez and Rut Martínez Collaborating researchers: Héctor del Castillo, Mirian Checa, María Ruth García Permía, Ana Belén García Varela, Gloria Nogueiras, Natalia Monjelat. Audiovisual support: Sergio Espinilla González

IES Manuel de Falla (Coslada)
Coordinator: Rosa Píriz

Web design and IT support: Luis Briso de Montiano Aldecoa. LBM Web Design Graphic design: Rebeca Ochoa Bemabé
www.aprendeyjuegaconea.com

Contact at UAH. grupo.gipi@uah.es
Contact at EA. epalacios@ea.com

Madrid, November 2009
Electronic Arts España & Universidad de Alcalá
Table of contents

Executive summary ..................................................................................................................... 4
Introduction ..................................................................................................................................... 12
Approaching the project ................................................................................................................. 14
  The objectives ............................................................................................................................... 15
  The context and participants ........................................................................................................ 16
  Workshops and video games .......................................................................................................... 19
  Video games used .......................................................................................................................... 23
  Students opinions and beliefs ........................................................................................................ 27
Methodology of the research ........................................................................................................... 33
Practices that transform the classroom ............................................................................................ 37
  Strategy video games ..................................................................................................................... 38
  Living in virtual worlds .................................................................................................................. 47
  Adventure video games .................................................................................................................. 59
  The rules of the game ...................................................................................................................... 70
  The musical language ..................................................................................................................... 79
  Video games and other media supports ........................................................................................ 89
Appendix ......................................................................................................................................... 97
Technical specifications ................................................................................................................... 105
Notes .............................................................................................................................................. 106
Bibliographical sources .................................................................................................................. 108
Executive summary

This report identifies innovative educational practices whenever commercial video games, combined with other new or traditional technologies, are present in the secondary education classroom.

The results of a research project developed during the 2008-2009 school year are presented herein. Its main aim was to generate new knowledge from which to design scenarios that, taking video games as the starting point, may contribute to educating a responsible citizenship that is critical before the new media channels.

Objectives and context of the project

Its specific objectives were the following:

1. To determine the students beliefs and practices toward commercial video games, considered as a learning tool.
2. To identify what certain commercial video games teach and how to learn from their hidden curricular program.
3. To know the extent to which they contribute in transforming the classroom in order to ease the integration of cultural minorities, resolve learning problems among students and encourage collaboration.
4. To design strategies that provide support for teachers and their teachings related to the contents of the curriculum.
5. To explain why they can be combined with other media and information technologies to develop new means of literacy in students.

The research was conducted from an ethnographic approach during the 2008-2009 school year in a public educational centre set within the Community of Madrid. A team of 10 researchers, from the University of Alcalá and UNED, participated together with the centre’s entire teaching and student bodies. Electronic Arts, on the basis of its Corporate Social Responsibility Project, supported the initiative.

The centre’s entire student body is comprised of 952 students, distributed in educational cycles from Medium Level (ESO or Secondary Obligatory Education, 324 students) and Higher level. A very high percentage of students (around 300) and teachers (17) have participated directly and continually in the project. The rest of the school’s students and teachers participated in specific training sessions or sessions to share experiences.

Commercial video games were used in very different subjects: Spanish language, Biology, Social-Linguistic studies, English, French, Philosophy, Attention Study Techniques, Management/Administration, P.E., Physics, Music.

Video games, together with other digital technologies and media, were introduced in the classroom within the framework of specific workshops lasting approximately 8 sessions, inserted in the usual school schedule.
Activities were organized in workshops, coordinated by the subject’s teacher, who determined the objectives together with the research team and the students. During the class sessions, activities were organized in four stages: Dialogue, playing with video games in small groups, reflecting upon it as a large group, elaborating different audiovisual products that summarized the workshop experience or analyzing the video game.

Teachers and the research team, taking into account opinions from students, decided what video games should be used. The final selection included strategy (Spore and Boom Blox), simulation (The Sims 2 Castaway and SimCity Creator), adventure (Harry Potter and the Order of the Phoenix), sports (NBA09, FIFA 09, FIFA10) and music (Rock Band) games.

Types of data and methodology of the analysis

This report uses the case study methodology, combined with the use of certain ethnographic techniques, both quantitative and qualitative. The objective value of their contributions, as in other similar works, is not based on how often a certain phenomenon arises. Its validity is based on the detailed description of the cases in which it is possible to explain how people attribute sense to their activities within defined social-cultural contexts. It is worth mentioning, on the other hand, that these research projects explore what happens in natural situations without introducing modifications that disturb the performance of the activity.

Analyzed data are related with the following sources:

1. **Ecological observance of the work sessions**, carried out inside and outside of the classroom whenever the research team interacted with teachers or students.
2. **Oral discourse** obtained through audio and video recordings, both in classroom sessions as well as in interviews or training sessions.
3. Analysis of **written documents, photographs and audiovisual documents** provided by the researchers and by other participants.

The process of analyzing observations, from a participant and non-participant stance, has allowed determining, analyzing and explaining activity patterns with the aim of comparing and explaining situations.

The most relevant results in relation to the goals of the project are summarized below.

Student beliefs and practices

We analyzed 176 questionnaires collected among the students who participated in the workshops. This population is distributed between both cycles in Secondary Obligatory Education. Of the total, 101 were male students and 75 female. The age of the students interviewed ranged from 12 to 17.

The first issue we could highlight among the answers obtained is that both, male and female students, **have computers and consoles**. Around 97-98% of the students have a computer. This presence is very high in the case of male students (95%) and a little lower among females (86%).

The purpose for which computers are used once again shows differences between male and female students. For example, it is especially interesting to note the percentage of responses that claim to use the computer to play (20% male/6% female). This result shows that a higher percentage of boys than girls considers the computer as a leisure tool.

- Furthermore, another proof that supports this hypothesis: although the different uses are very wide, games are the second most mentioned by boys (20%), after communication tools (chat, email, etc. - 21%).
- On the contrary, in the case of the answers from teenage girls, games are the last use in percentage points (6%), very far from communication tools (21%), social networks (tuenti, facebook, metrolog, etc. - 20%) and other computer applications and uses that are relevant to girls (listen to music, watch movies, etc. - 20%).
With regards to the use of consoles, it is also interesting to see the existing differences in gender.

- Consoles for which there is the greatest difference between boys and girls are the PlayStation 3 (25 boys/9 girls) and specially the XBOX 360 (17/2).

- With regards to individual consoles, there is also a significant gender difference shown: the PSP is the "boy console" (28 boys/11 girls) while the Nintendo DS is the "girl console" (18/32). Relevant reasons to explain this difference include those related to the types of game available through each of the console's catalogue.

There are also important differences with regards to the types of video games preferred by boys and girls.

- In the case of boys, the most valued video games are the ones that involve sports (27.84%), followed by fighting and action video games (24.23%).

- If we look at the preferences from girls, we see that simulation games (24.8%) are the most popular, followed by music games (19.2%).

Finally, we have analyzed the features most appreciated by boys and girls with respect to their preferred video games. Once again, gender differences are clear.

- The most appreciated characteristics for boys are well developed graphic and sound elements (18.55%), the realistic approach of the video game (16.73%) and, with lower percentages, the possibility of competing with other players (10.91%) and for them to allow the release of tension (9.82%).

- However, in the case of girls, the most valued aspects are the posing of challenges that have to be overcome (19.82%), the possibility of becoming involved in a story and adopting an active role (15.67%), the quality of the story line (12.44%).

What do some commercial video games teach?

Through the data obtained it is possible to state that certain commercial video games hide a specific curriculum through which it is possible to develop certain thinking processes, to acquire new knowledge and to generate attitudes of respect for the environment and collaboration with other people.

To understand how, through video games, it is possible to acquire new thinking processes and new ways of learning, similar to those that account for the advance of science, such as the capacity to deduct and reason, we have to differentiate two concepts:

- The rules, which are the limits imposed by the game's system and which have been formulated by its designers.

- The strategies, which are the paths followed by the player to solve the problems posed by the game.

When teenagers face certain video games in the classrooms, they become aware of those rules and, in this way, they are capable of controlling them and moving forward by generating strategies to solve problems.

If we take into account that we are dealing with a virtual reality, one can understand that those thinking processes are related to problems that are absent from their immediate everyday life,
but that are likely to be related to the ones they will have to deal with in their future professional life.

In this project, students worked with simulation video games in the classrooms and the data shows how they learned to consider and solve certain problems, similarly to how a professional would deal with such problems.

Simcity Creator allows the player to become the designer and creator of a virtual city. He/she must plan its development, manage its finances, and control its security and growth and, all of it, through providing the citizens with the necessary infrastructures and social services. The rules of the game direct the player to use certain strategies that enable the design of the best possible city.

- Students worked on this project within the subjects of Language (Spanish and English) and Administration and Management. The way in which they used the game and learned from it depended on the teacher’s interests and the guide that they were provided with, at the beginning or during the game.

- Using the tutorials in the Administration and Management class proved especially appropriate to introduce situations into the classroom in which it was necessary to solve complex problems. For example, for the city to grow, students have to establish the appropriate relationship with services such as electricity, transport and respect for the environment. Students became aware of those relationships during the class dialogues and also showed so in their final audiovisual productions. These were related to the video game and, through them, they reflected upon their own decision taking processes through the screens.

- During the Language, Philosophy and Education for Citizenship classes, this video game allowed the introduction of certain discussion topics related, especially, with the need to create sustainable cities. In these cases, students came directly closer to the game’s challenges, forgetting the tutorials. Difficulties to advance were more evident and required greater work in a small group or whole class discussions. In these cases, the role of the adult contributed towards students being able to present their difficulties in public, to become aware of the differences between their own city and the one reflected in the game, and of the obligation of any city to offer its citizens appropriate services.

The students also learned to reflect using another type of games, at first glance less complex, but that require the player an immediate commitment with the rules of the game. That is to say, if Simcity Creator allows players to advance in the game throughout subsequent days, other video games offer short games and other uses in the classroom.

When the students worked with Boom Blox, a game created by Steven Spielberg, they also reflected upon the rules of the game and their own strategies. This game offers up to 300 types of activities of varied difficulty levels. Screens invite the player to demolish certain constructions of imaginary blocks, which are not found in the real world, although their design is inspired in the traditional construction blocks with which children play. They form shapes of simple or difficult structures that require the player to think and take quick decisions to be able to continue the game.
• This game was worked with at the MAE (Attention Study Techniques) class. Students sometimes come to class without motivation. The teacher, aware of his duty to support and motivate them, usually looks for new resources, and in this case he found them in these types of video games. Students played in class most of the time, and adults raised many questions that encouraged reflection among students that usually resist to thinking in the classroom.

• On the other hand, the fact that the game offers situations that require collaboration or competition also helped to foster group work. In this case, the game’s tasks transformed the classroom and created new situations that not only enabled reflection but also allowed it to be done collectively and in a fun way. Students taught us something that scientists usually say. When making science as a group, thinking and pondering does not need to be so boring.

Commercial video games contribute to transforming the classroom

Commercial video games contributed to transforming the classroom. Classes were transformed from a triple perspective: its physical, social and, to a certain extent, personal context. Maybe this change was more noticeable when sports and music games were used.

Sports games used were FIFA 09, FIFA 10 and NBA Live 10. During the 2008-2009 school year, these games were used in Physical Education classes; in the current school year, they are being used in English and Spanish language classes.

• The classroom transforms itself from a physical perspective because students are going to work in small groups. Although this has always been the case when video games have been introduced, it is now more noticeable. The possibilities offered by the multi-player mode are evident to overcome difficulties that sometimes arise in the classroom when certain students exclude themselves from the group due to lack of motivation. When a console has 5 controllers everyone must participate.

• Furthermore, sport games, especially FIFA, have provided opportunities to work on gender issues. Preliminary data suggested by recordings made during the present school year show how, sometimes, girls show reluctance to playing upon entering the classroom. When they are offered the console’s controller they sit down and observe. Within a few minutes they are part of the team as a player who is totally committed to its new identity, that of a famous sports-person.

We were saying that music games are, perhaps, the ones that have produced the most striking changes. Rock Band allows interaction of players committed to a collective musical production. The game has changed the traditional controllers for musical instruments, drums, a microphone and two guitars. It also allows the multi-player option, so that participants may complement their performances, thus compensating one’s mistakes with someone else’s wise moves.

• The classroom transformed itself as a physical environment. Data shows how a normal music classroom, where students usually take notes and use the traditional furniture in a school, became a stage without furniture where students used musical instruments that had, up to then, been forgotten in a corner. The teacher, researchers and students participated in the concert by playing real and virtual instruments. The video game’s songs generated new opportunities to learn within a different environment.

• The relationship between the students and the teacher also changed, becoming much more symmetric, although she was the one to organize and direct the concert and sometimes she distributed the roles among the musicians.

• The classroom became an environment of social and multicultural integration in which youngsters and adults set off from different but compatible universes.

Previously we talked about these new environments offering opportunities to transform the personal context of players. One of the most interesting results from the study may be how sports and music video games generate situations from which to reflect and experience new identities, an issue that concerns all teenagers.
• Rock Band gave the students the opportunity of becoming an artist and identifying with the song’s heroes. Teenagers shared these new identities and it was not necessary to reflect upon them. **It was enough to live them out.**

• FIFA10 and NBA Live 10 allowed the class to reflect on the personal and cultural identity of players. The fact of having to choose a character on the screen that will perform the actions decided by the player implies complex identification processes that teachers were able to take advantage of to encourage reflection.

Data from the workshops in which these games were used show, on the one hand, that **students are motivated** and that this **motivation grows**. To observe, through the video recordings, how their attitudes change and how they become engaged, not just in the game, but also in any of the teachers initiatives, is proof that motivation for participating in activities from which sometimes they exclude themselves, is progressively increasing.

---

**Commercial video games and curriculum contents**

Using the media to support the teaching and learning of contents of the curriculum through films, newspapers, etc. is a common practice in schools.

This project's data show **what video games can specifically provide and what differentiates them from other educational resources**.

The said data also shows how the different media and technologies can be combined, taking into account the peculiarities of each one, **to facilitate the acquisition of certain knowledge, capabilities and attitudes that are defined in the school's curriculum for Secondary Education and Bachillerato** (the two years prior to entering college - 17/18 years old).

Spore, together with Harry Potter and the Order of the Phoenix, two very different games, became an important support for teachers interested in working the curriculum contents.

Spore is a simulation game that can also be considered as a strategy game. In recreates an epic trip that takes us to the origin and evolution of life, the development of civilization and even allows travelling in outer space. This game became an important ally in biology and philosophy classes.

- The game sessions, programmed by the biology teacher when she was covering the evolution topic, allowed reflecting upon **evolution strategies followed by the video game, together with the ideas from its designers**.

- The contrast between evolution theories presented by the game and those that can be read
in scientific articles became the topic of many class discussions. The aim was to establish relationships among the strategies followed by the game and the major evolution theories, such as Darwin’s or Lamarck’s.

- To design cells and creatures depending on the best strategies to advance in the game was a daily chore that invited to reflect, within the virtual world, upon the value of cooperation and competitive strategies.

Harry Potter and the Order of the Phoenix is a game that is closely linked to the novels related to this English and European hero, famous among youngsters and teenagers, which have shown that Disney is not the only choice when one has to think of a super hero. It became the main educational tool in a Secondary School language class. The teacher, who did not usually play with video games, became an expert player by the end of the year, and even managed to complete it in full, to “completely pass” all levels, using the player’s terminology. His reflection, shared with researchers, contributed to generating theoretical discussions present in the most current investigations on the matter of whether video games are an appropriate means to tell stories.

Analysis of the data obtained at this workshop allow to conclude the following:

- This adventure video game, representing others within the series, allows to put into practice complex processes to solve problems related to the adventures posed by the game and, thus, to its narratives. These two elements are not always associated in curricular subjects. Students faced different challenges that, as in real daily life, are not resolved solely with intellectual strategies but also demand the presence of emotions. Data shows, for example, how music becomes a key element when it comes to solving tasks.

- On the other hand, the game generated opportunities to work the Spanish language within multiple contexts. Students generated several texts published on the Internet through the school newspaper and a blog created by the teacher and kept by the students. Data shows they not only learned how to solve problems, relate stories and use the written language. They also learned in an interactive way with the game’s characters, whether or not they identified with these heroes, and all of it within a virtual reality.

Developing new ways to literate students

Results from this research have shown that video games offer an important starting point to, actively and encouraging reflection, introduce teenagers into the audiovisual world in which they are immersed everyday but which is usually absent from the classroom.

Audiovisual productions represent a specific means of expression that teenagers have access to in their leisure time, but that are scarcely present in schools even today. Technological advances from the last few years have eased access to these creations online through sites such as MySpace, Facebook or YouTube. They have become producers of content and not just recipients. Boys and girls have become not just recipients but also creators of contents, a fact not always sufficiently appreciated by experts, teachers and families.

However, immersion in a multimedia universe is not enough to reflexively use its predominantly visual languages. Using books does not mean knowing how to interpret their contents. Neither does participating in digital environments mean one knows the medium and is capable of efficiently using it in communication contexts. The process of reaching these capabilities is what has been called multimedia literacy.
This project’s data show how video games may contribute to making it easier to provide an education related to new expression and communication channels.

We can confirm that videogames favour new educational methodologies geared towards fostering the development of multiple literacies. They contribute not only to generating a means to reflect upon the strategies that the player chooses in order to advance in the game, but also to communicate those strategies.

- Based on multiple digital resources, such as, for example, photographic and video cameras, coupled with the screens and scenes recorded from the game itself, students created audiovisual productions through which they communicated their experiences.

- **Productions are very varied.** Looking just at their content, we could point out two types, although there are, undoubtedly, others. On the one hand, those that refer to the actual experience they have personally experimented, the change it has represented in contrast to the use of traditional educational methodologies. On the other hand, the capacity to reflect shown when analyzing the game, something that could certainly make them into future professional video game designers or critics.

These student productions we have just mentioned are the ones that drive the reflections that close this executive summary. **The most relevant conclusions reached through this project**, which the reader may expand within the following pages, are threefold, and they refer to the changes that commercial video games have introduced into the classroom, having considered them as educational and intelligent objects:

1. They have allowed learning in an attractive way, similarly to the way in which scientists and researchers approach a job they feel passionate about.

2. They show how, based on them, situations of collective reflection are generated, something essential for professionals within the 21st century.

3. They open the door to experimenting virtual reality in the classroom, something that, for the time being, is not seen very often within formal educational environments. To teach and learn from realities simulated in virtual and real worlds is a challenge faced by the future in education.
Introduction

During the 2008/2009 school year, an entire Secondary Education school decided to introduce commercial video games into the classroom together with textbooks, photo cameras or traditional blackboards. To explore the educational power of these new means, a team of specialists in education and technology from the University of Alcalá and the UNED collaborated with the centre’s teachers. Electronic Arts, on the basis of its Corporate Social responsibility Project, supported the initiative.

These pages introduce, analyze and explain this experience. The goal is to generate new knowledge that may serve as the basis to design innovative educational scenarios in Secondary Education Centres, which may contribute to educating a responsible citizenship that is critical ahead of the new communication scenarios generated by today’s technology. In addition, we intend to find out how commercial video games may foster motivation towards learning and developing a creative way of thinking.

By commercial video games we mean those that can be played with the computer’s console or through mobile devices. All of them introduce the player to a virtual world in which actions are governed by the rules of the game, which were set by their designers. Immersion in the game motivates students to overcome the challenges posed on the screen and, for this, it will be necessary to solve problems or discover the plot of an adventure. All the player’s actions have a consequence on the screen and without them there would be no game.

Commercial video games have been designed for leisure purposes but they can become powerful educational tools. In this context, James Paul Gee or Henry Jenkins, North American researchers, have provided the theoretical framework from which the questions that have driven the investigation were formulated. Their works justify the need to educate the youth to live in a changing universe created by the new information and communication technologies. People are not mere recipients of the messages from the different media, they can also create them.

It is interesting to determine the role of these new cultural objects, video games, within this context. The following questions were at the origin of the present study, all of them related to secondary education:

1. What are the student and teacher attitudes towards commercial video games when they are considered as learning tools?
2. What do commercial video games teach? How can we learn from them, from their hidden curriculum? What can they teach?
3. How do they contribute in transforming the classroom to ease the integration of cultural minorities, resolve learning problems among students and encourage collaboration?
4. How can we use them as support for teachers in their teachings related to the curriculum contents?
5. How can they be combined with other media and information technologies to provide students with new literacy means, related to the reception and production of contents in close communicative contexts and the Internet?

Similar questions had been present in a prior study conducted in a Primary Education environment developed within Electronic Arts’ Corporate Social responsibility program. Other researchers have also studied the issue in more depth. For example, it is worth highlighting the work by the FutureLab team in England or the Agora Centre project in Finland and, to a certain extent, the ones included in the projects developed by MIT and titled Comparative Media Studies. All of them, directly or indirectly, through personal contacts, stays in the centres and readings of their works, have inspired this project.
In short, with this research project we intend to analyze the meaning of learning and teaching with the help of commercial video games and from their stance. We want to contribute to making the work of Secondary Education teachers easier. From the web page “Learn and Play with EA” www.aprendeyjuegaconeaa.com we will continue to provide our opinions and resources related to this project’s contributions or whatever other projects we may develop in the future.
Approaching the project
Objectives

The project’s general objective is to describe, analyze and explain how commercial video games, designed for leisure activities outside of the classroom and present in the teenagers’ daily life, become educational tools.

The specific goals are the following:

1. Identifying students beliefs and practices

With the aim of finding out the context of those participants where the project took place, we will determine certain relevant aspects related to the beliefs and practices with regards to the digital technologies that we would introduce in the classroom.

More specifically, the aim is to determine what use teenagers give to computers, video consoles and video games in their daily lives.

2. Analyzing cognitive and social abilities.

When the students solve problems in the classroom through a video game, or discover the plot of their stories, they acquire abilities to interpret reality.

We intend to specify cognitive and social abilities depending on the types of games as well as on the educational situations in which these arise.

3. Exploring how the classrooms are transformed.

The project considers the classroom as an educational stage and looks at it from a triple point of view: 1) Physical and material environment, 2) social context; 3) multicultural universe.

From this triple stance we want to know how the presence of commercial video games in these environments may ease the integration of cultural minorities, resolve learning issues among students, ease collaboration between the teenagers and contribute towards establishing symmetric relationships between students and adults.

4. Relating commercial video games and curriculum contents

Covering curricular contents is a permanent concern among teachers, but the knowledge that should be acquired does not always motivate students. If, traditionally, the cinema, television, or newspapers were good allies to motivate, today video games can also play that role.

We systematically analyzed how certain commercial video games have been used by teachers with the aim of suggesting educational strategies that make it easier for educators to apply them in the classroom.

5. Creating educational scenarios that generate audiovisual discourses

Video games conceal a hidden curriculum from which one can learn. Information and communication technologies are not usually mutually exclusive; on the contrary, they tend to complement each other. Television did not replace cinemas, nor did the radio disappear in light of the new communication channels.

This project analyzes educational scenarios in which video games combine with other technologies to contribute to the development of new student literacies.
The context and the participants

The Centre and its neighbourhood

- The school's teachers, its management team and the students had requested to participate in the project and showed great commitment towards it.
- It is a centre that tries to continually improve the quality of its teachings, it showed interest in incorporating new media and methodologies in the classroom.
- In addition to the usual subjects, it has a wide variety of programs, diversification, professional training or attention to diversity, which allowed addressing the program to a student body with a wide range of interests and capabilities.

THE NEIGHBOURHOOD

The Institute is located in the Henares Valley, in its crossing with the Jarama basin (Cuenca del Jarama). Situated in the Corredor del Henares, it is the municipality with the greatest density in the Community of Madrid.

The centre is sited in district 2 of the municipality, specifically in the area of the Esparragal. It’s a relatively new area, with single family and town homes, close to the M-45, which is one of the entry roads into town.

THE INSTITUTE

Secondary Education Institute “Manuel de Falla” is a public school dependant on the Directorate of the Eastern Madrid Territorial Area from the Department of Education of the Community of Madrid. Established in 1998, its educational offer includes the E.S.O. (Secondary Mandatory Obligation) in a bilingual option and Bachillerato (2 years prior to college where students choose subjects in preparation for the university studies they intend to follow) in Arts, Nature Sciences and Health, Humanities and Social Sciences. They have 17 Didactic Departments, in charge of organizing and developing the contents of the corresponding subjects. Each one of them has a web page with related information, links, didactical resources and unloadable material. Students live in the neighbourhood. Most of them were born when their families where already living in the area; however, because it is a relatively new area, it does not have deeply rooted habits and customs, and the institute, therefore, acts as an important point of reference.
Students

300 students between 11 and 16 years of age participated in the experience. Most of them were ESO students, although we also saw participation from students in Bachillerato, Diversification, Programs of Initial Vocational Training (PCPI) and students with special educational needs.

All the groups had a balanced number of boys and girls, since parity is one of the centre’s distribution criteria. This range of ages, gender and educational levels meant the experience was offered to a very heterogeneous population.

Most of the students participated in innovation projects that helped them to live through this experience as something integrated within the dynamics of the centre, and not as something out of the ordinary. On the other hand, the project’s purpose, video games, was part of the daily life of most students, a factor that surely fostered their active involvement.

Teachers

One of the most relevant characteristics of this project was the wide number of teachers, a total of 17, among which there were 9 males and 8 females. This large number of participants meant:

- A wide repercussion within the centre, which included this study as part of the institute’s innovation experiences.
- The involvement of 7 didactical departments.

Their teaching experience. Teachers had ample experience, all of them had been teaching for at least five years. Half of them had a permanent contract with the centre, while the other half were substitute teachers or worked under a temporary contract. This circumstance did not, in any case, influence the participation and dedication they showed in the project.

Their experience with video games. None of them had any educational experience with video games and most had never played with one. This reality implied certain difficulties. The most relevant are the following:

- Mistrust over the advantages they could offer as an educational resource.
- The significant attraction shown by students made certain teachers afraid that the experience would be limited to a pleasant and fun practice with the game.
- The self-perception from some regarding their personal ability to use controllers and consoles generated a lot of insecurity and a feeling of lack of control over the class.

The table enclosed specifies the course, dates and subjects that each teacher taught. It also includes the days of the week in which the sessions were held throughout the school year. As it can be observed, organization was complex, especially due to issues such as the schedule, classroom distribution, etc.
Table 1. Participants, subjects, video games and dates

<table>
<thead>
<tr>
<th>Subject</th>
<th>Group</th>
<th>Video Game</th>
<th>Dates (From– to)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MONDAY</td>
<td>Monday</td>
<td>Monday</td>
<td>Monday</td>
</tr>
<tr>
<td>Filosofía y Ed. Ciudadanía</td>
<td>1º Bachiller</td>
<td>Spore</td>
<td>16-02-09 - 27-04-09</td>
</tr>
<tr>
<td>English</td>
<td>3º ESO</td>
<td>Sims 2 Castaway</td>
<td>16-02-09 - 24-03-09</td>
</tr>
<tr>
<td>Diversificación</td>
<td>3º ESO</td>
<td>SimCity Creator</td>
<td>16-02-09  30-03-09</td>
</tr>
<tr>
<td>MAE</td>
<td>2º ESO</td>
<td>Boom Blox</td>
<td>16-02-09 - 23-03-09</td>
</tr>
<tr>
<td>Educación para la ciudadanía</td>
<td>2º ESO</td>
<td>SimCity Creator</td>
<td>23-02-09 - 30-03-09</td>
</tr>
<tr>
<td>Religion</td>
<td>2º ESO</td>
<td>Sims 2 Castaway</td>
<td>23-02-09 a-23-03-09</td>
</tr>
<tr>
<td>TUESDAY</td>
<td>Tuesday</td>
<td>Tuesday</td>
<td>Tuesday</td>
</tr>
<tr>
<td>Servicios auxiliares en Administración y gestión</td>
<td>PCPI</td>
<td>SimCity Creator</td>
<td>17-02-09 - 30-03-09</td>
</tr>
<tr>
<td>Biology</td>
<td>4ºESO A</td>
<td>Spore</td>
<td>17-02-09 - 24-03-09</td>
</tr>
<tr>
<td>Lenguaje</td>
<td>1ºESO C</td>
<td>Sims 2 Castaway</td>
<td>17-02-09 - 31-03-09</td>
</tr>
<tr>
<td>French</td>
<td>2º ESO</td>
<td>Sims 2 Castaway</td>
<td>17-02-09 - 24-03-09</td>
</tr>
<tr>
<td>Educación Física</td>
<td>4º ESO</td>
<td>FIFA 09</td>
<td>17-02-09 - 24-03-09</td>
</tr>
<tr>
<td>THURSDAY</td>
<td>Thursday</td>
<td>Thursday</td>
<td>Thursday</td>
</tr>
<tr>
<td>Clase de apoyo</td>
<td>NEE</td>
<td>Boom Blox</td>
<td>26-02-09 - 07-05-09</td>
</tr>
<tr>
<td>2º TURNO</td>
<td>2º TURNO</td>
<td>2º TURNO</td>
<td>2º TURNO</td>
</tr>
<tr>
<td>MONDAY</td>
<td>Monday</td>
<td>Monday</td>
<td>Monday</td>
</tr>
<tr>
<td>Biology</td>
<td>Year 4 ESO B</td>
<td>Spore</td>
<td>04-05-09 - 25-05-09</td>
</tr>
<tr>
<td>MAE</td>
<td>Year 2 ESO</td>
<td>Spore</td>
<td>04-05-09 - 25-05-09</td>
</tr>
<tr>
<td>TUESDAY</td>
<td>Tuesday</td>
<td>Tuesday</td>
<td>Tuesday</td>
</tr>
<tr>
<td>Lenguaje</td>
<td>Year 1 ESO A y B</td>
<td>Harry Potter “The order of the Phoenix”</td>
<td>05-05-09 - 10-06-09</td>
</tr>
<tr>
<td>Music</td>
<td>Year 4 ESO</td>
<td>Rock Band</td>
<td>05-05-09 - 26-05-09</td>
</tr>
</tbody>
</table>
Workshops with the Video games

This experience is carried out through **video game workshops**. We will describe them by looking at some of the aspects that define them and that are shared with other studies carried out by the research team in other educational stages.\(^2\)

### Multiple technologies in the classroom

The presence of video games in the classroom may contribute to **establishing bridges between what is learned inside and outside of the school**.\(^3\)

The educational goal, shared in the workshops with adults, was to work with video games and other communication media for students to be not just recipients of media contents but also their creators, similarly to what happens in their everyday life.

### INSTRUMENTS USED TOGETHER WITH VIDEO GAMES

Together with commercial video games, the workshops also included multiple technologies and digital tools, such as, for example, **photo and video cameras, mobile phones and the Internet**.

The combined presence of these tools allowed communicating and expressing oneself through multiple languages, not just through the written language but also through the audiovisual discourse. Using the photo camera to compare virtual reality to real life or recording an interview with our opinions and thoughts on the video game is a way of becoming aware of its language, analyzing it critically and conveying our experiences to other players.

### WORKSHOP PARTICIPANTS

Participants of the different workshops developed included the teachers in charge of each subject, his/her students and the research Team Grupo de investigación Imágenes, Palabras e Ideas. The purpose was for the workshops to encourage a **collaborative work scenario**.

Permanent contact among participants, students, teachers and the research team, undoubtedly, allowed a **joint analysis and reflection of the practices themselves**, which made the experience much more attractive and, above all, useful and enjoyable.

### THE PLACE AND DATES

As indicated, **17 class groups** participated, rotating throughout the whole school year. Each group attended the workshop **during school hours for 45 minutes a week**. The number of sessions varied between a **minimum of 4 and a maximum of 8**. In any case, the duration depended on the nature of the tasks and the temporary organization of the subject.

Workshops were carried out in a computer classroom, which became a **games room**. We placed several Wii and Xbox consoles with their corresponding monitors and controllers around the classroom. Moreover, we had laptop computers for those video games that required it.
Table 2. Video games workshop: Number of sessions per workshop and participants

<table>
<thead>
<tr>
<th>GROUP</th>
<th>VIDEO GAME</th>
<th>Nº SESSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MONDAY</td>
<td>Monday</td>
<td>Monday</td>
</tr>
<tr>
<td>1º Bachiller</td>
<td>Spore</td>
<td>8</td>
</tr>
<tr>
<td>Year 3 ESO</td>
<td>Sims 2 Castaway</td>
<td>7</td>
</tr>
<tr>
<td>Year 3 ESO</td>
<td>SimCity Creator</td>
<td>7</td>
</tr>
<tr>
<td>Year 2 ESO</td>
<td>Boom Blox</td>
<td>6</td>
</tr>
<tr>
<td>Year 2 ESO</td>
<td>SimCity Creator</td>
<td>7</td>
</tr>
<tr>
<td>Year 2 ESO</td>
<td>Sims 2 Castaway</td>
<td>5</td>
</tr>
<tr>
<td>TUESDAY</td>
<td>Tuesday</td>
<td>Tuesday</td>
</tr>
<tr>
<td>PCPI</td>
<td>SimCity Creator</td>
<td>6</td>
</tr>
<tr>
<td>Year 4 ESO A</td>
<td>Spore</td>
<td>4</td>
</tr>
<tr>
<td>Year 1 ESO C</td>
<td>Sims 2 Castaway</td>
<td>8</td>
</tr>
<tr>
<td>Year 2 ESO</td>
<td>Sims 2 Castaway</td>
<td>6</td>
</tr>
<tr>
<td>Year 4 ESO</td>
<td>FIFA 09</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>NBA Live 09</td>
<td></td>
</tr>
<tr>
<td>THURSDAY</td>
<td>Thursday</td>
<td>Thursday</td>
</tr>
<tr>
<td>NEE</td>
<td>Boom Blox</td>
<td>7</td>
</tr>
<tr>
<td>2º TURN</td>
<td>2º TURN</td>
<td>2º TURN</td>
</tr>
<tr>
<td>MONDAY</td>
<td>Lunes</td>
<td>Lunes</td>
</tr>
<tr>
<td>Year 4 ESO</td>
<td>Spore</td>
<td>4</td>
</tr>
<tr>
<td>Year 2 ESO</td>
<td>Spore</td>
<td>4</td>
</tr>
<tr>
<td>TUESDAY</td>
<td>Tuesday</td>
<td>Tuesday</td>
</tr>
<tr>
<td>Year 1 ESO A y B</td>
<td>Harry Potter “The order of the Phoe-</td>
<td>5</td>
</tr>
<tr>
<td>Year 4 ESO</td>
<td>Rock Band</td>
<td>4</td>
</tr>
</tbody>
</table>

PRIOR WORK WITH TEACHERS

Before starting the actual workshop sessions, we worked on preparing the teachers for the experience. The activities carried out were as follows:

- **Collective sessions to inform** about the project and discuss proposals. These meetings allowed the sharing of information, to resolve difficulties and contrast expectations.

- **Training sessions**, where the research team shared with the group of teachers the purpose and methodology for the workshops. To induce an experimental learning within the sessions, the teachers themselves played with the video games and designed a multimedia production to communicate their impressions.

- **Individual interviews** between teachers and the research team. Before starting the sessions we held interviews to choose the most appropriate video game for the didactical purposes and to outline the program for the sessions.

- **Practical playing classes**. With the aim of them becoming familiar with the game, a Wii was installed in the teacher’s room and they were provided with different types of video games. In addition, we provided them with specialized magazines as well as manuals to ease their job.
Sessions in the classroom: Stages of the workshops

As indicated, the work sessions with the students were held over a certain period whose time sequence is worth mentioning. The figure that follows shows the time sequence of a workshop at a double level, on the one hand the group of sessions, and on the other, what usually happens within a specific session.

The timeline is, thus, important with regards to the workshop as a whole as well as to the individual sessions.

- As time goes by, students acquire new abilities and there are continuous re-adjustments depending on the interests of all participants.
- We could also say that there is a prior planning of the workshop, but it can end up changing depending on the circumstances. As it can be observed, it is possible to differentiate two stages throughout the workshop that we reveal below.

Figure 1. Structure of the workshops

FIRST STAGE

The purpose of this stage is to foster the learning process in students and interaction among participants, all of it with the aid of commercial video games. By playing and thinking about the game, we discover the cognitive and social strategies that we need to play, the rules of the video game that allow us to take action and the ones that limit our options. We reflect upon our role as players, the way in which we interact with the game and we put it into practice. We will also learn, together, its language and the narrative hidden behind the game we have built.
As observed in the figure below, there are three important moments that follow one another in time, always within a plan that is modified depending on the specific circumstances of each session.

- The teacher and students talk about the purpose of the game and what problems and challenges will have to be resolved while playing.
- We all play together and learn about the video game.
- The session ends with a talk to share what we have done and what we have learned.

The experience during years of participating in many different workshops, always in collaboration with teachers or in non-formal educational situations, has shown the efficiency of this educational methodology which alternates dialogue, play and thinking; all of it within innovative educational scenarios aided by the already consolidated technologies as well as the new ones.

**Figure 2. The session’s sequence**

**SECOND STAGE.**

In this stage, in a creative and critical way and with the help of adults, students became aware of what they had learned and showed so through different multimedia products, which could be seen on the Internet, both on school grounds and outside the school.

Students created these multimedia products to share their experiences at the workshops with others. For this, they used multiple expression media, photo and video cameras, video recorders, mp3 or Internet resources.

To make the productions, they had to respect the following sequence:

- Plan the action.
- Each group had to decide their message, their message’s purpose, and their audience.
- They had to select and combine the resources to convey the message.
Several types of video games were used, each one of them offering different challenges and educational applications. Its appropriate selection is particularly relevant in any project of this nature. On the other hand, the fact that the games had been released recently into the market intended to motivate and interest students. As previously indicated, through these means we experiment the learning of cognitive and social abilities, the acquisition of new means of literacy and curricular contents.

The table that follows includes a classification that can be useful in choosing the different types of video games. Subsequently we will justify why each one of them was chosen for the different subjects.

### Table 3. Types of learning and commercial video games

<table>
<thead>
<tr>
<th>Type of game</th>
<th>To learn</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy</td>
<td>How to solve problems</td>
<td>Spore, Boom Blox</td>
</tr>
<tr>
<td>Simulation</td>
<td>How to live in virtual worlds</td>
<td>The Sims 3, Sims City Creator</td>
</tr>
<tr>
<td>Adventure</td>
<td>To tell stories</td>
<td>The Harry Potter Saga</td>
</tr>
<tr>
<td>Sports</td>
<td>Group work, sports practices</td>
<td>The Need for Speed Saga</td>
</tr>
<tr>
<td>Musical</td>
<td>Positive feelings, collaboration</td>
<td>Rock Band, The Beatles Rock Band</td>
</tr>
</tbody>
</table>

**Strategy**

Strategy video games are those that require players to solve problems with different difficulty levels and, at times, they imply a high degree of planning.

Through reflection, a strategy of action is decided upon to achieve the final purpose of the game. Actions are related to the rules of the game but cannot be identified with them. The efficiency and results of the different strategies depend upon these actions.

Strategies may be simple, such as in video games inspired in traditional board games, or complex, such as the ones required for video games such as Spore.

**Spore**

This video game recreates an epic trip that takes us to the origin and evolution of life, the development of civilization and even allows travelling in outer space. The player can create his own personal universe with different living beings that evolve in the virtual world.
**Spore** is designed from the concept of the evolution of life. Through the different stages (for example cell, creature, tribe, civilization and outer space) challenges and objectives are posed to solve the game’s problems. In addition, the possibilities offered by the creation tools require the taking of decisions over the traits that one must assign to the creatures, so that they can overcome the different levels. Lastly, the video game also allows the photographing and recording of those moments in the game that most interest the player, something that makes it easier to share creations with other players.

Steven Spielberg, renowned film director, designed this video game. With plenty of action and energy, it includes more than 300 levels, activities, characters and an editor with which to reproduce the games.

**Boom Blox**

The player must put the appropriate strategy into practice to find the best way to destroy, dismantle and demolish the different shapes presented on the screen, built by grouping several blocks. Advances achieved allow moving forward toward new levels. This game also allows visiting imagined worlds, full of characters and creations. Lastly, the game allows editing the levels accomplished or re-starting them from the beginning.

**Simulation**

Simulation video games allow us to explore the reality from multiple perspectives. Players are creators of virtual universes, designers of characters or builders of spaces. These video games simulate problems from a real or imaginary world within a virtual reality.

**Sims 2 Castaway**

This game allows the player to live out the adventures of a shipwrecked person in a desert island. It starts when the Sims are sailing on the sea and they find themselves in the midst of an unexpected storm. From there, it is necessary to choose a Sim character to escape the shipwreck and start a new life. The main character must discover the “lost books” in the desert island in order to survive and move forward within his adventure. Players must take decisions with regards to the characters and, therefore, this video game could also be considered as part of the so-called strategy games.

**SimCity Creator**

SimCity Creator allows the player to plan the development of a city, manage its finances, and assure its security and the growth of the population. Sceneries recreated are related to virtual cities where important decisions will have to be taken so that the city works well. For example, the design of electricity infrastructures or water distribution. It will also be necessary to create social services, for example, leisure areas and work areas, shops, etc. All this will contribute to increasing the number of the population inhabitants, since it means that the city is attractive for its potential inhabitants.
ADVENTURES

Adventure video games are new ways of telling stories. In them, characters, objects, time and space are combined to make the adventure of a hero (who has been converted into a virtual character) attractive. Through screens, the player discovers the elements that will allow him or her to interact with the video game’s characters or assume the identity of one of them.

A good example of this type of game is Harry Potter and the Order of the Phoenix. Harry must complete a series of missions that produce secret codes to accomplish the challenges posed by the game. It’s a relatively open game that allows choosing when specific tasks will be performed. The hero’s adventures are not present in one unique medium, but, rather, they appear among multiple platforms.

SPORTS

These video games allow to experiment, through virtual reality, the usual experiences within the sports world. Their graphic design is excellent; the reality they offer gives us the chance to live through the emotion usually felt at a stadium or basketball court. This type of game may foster group work, problem solving and, even, may help in understanding what virtual reality means and the possibility it offers.

NBA 09

The player can become a professional basketball player, acquiring tactics and abilities that will be useful inside and outside of the sports field. It has multiple possibilities, from the most basic such as practices, to the most complex such as championships. The player’s movements and the graphics used are quite surprising. We will have the feeling of being in the physical reality offered by a stadium and a real audience.

FIFA 09

The player can experience the sensation of becoming a professional football player. The player’s style and ability may be personalized. There are numerous improvements with respect to prior versions, conferring a much more realistic approach to the game. The possibility of personalizing the team’s tactics allows the player to become the coach of his own team.
MUSIC

Music video games are quite recent. Some arose together with great design innovations. Becoming immersed in them allows players to have experiences that were unthinkable a few years ago. Collaboration among players is essential to be able to enjoy the game and for the experience to be successful.

Rock Band

The video game allows interaction with the music, singing or playing instruments such as the guitar, the base or the drums. The great novelty in this video game is related to the fact that musical instruments have substituted the traditional controllers. The game is, in this way, more attractive, transforming the player’s sensations and contributing to him feeling as a real musician.

Rock Band allows forming a band group and feeling as Rock and Roll “stars”. The player’s abilities score on the basis of the musical notes produced, which are reflected on the game’s screen.

THE PLATFORM

Wii from Nintendo

This console’s novelties include a wireless controller, the Wii Remote Control, which can be used as a hand-held device with which to point, in addition to being able to detect the acceleration of movement in three dimensions.

From its launch, the console has received several prizes due to its innovative controller, the popularity it has quickly generated and the large number of units sold. Relevant personalities from the video game world, for example Will Wright who created the Sims Universe, have expressed their opinion on this console, which they consider as being in a new generation league: “Someone asked me what was it that I considered as a new generation”, Wright answers that “the only new generation system I have seen is the Wii”.

Microsoft Xbox 360

The Xbox is a video game console that allows playing with complex video games that require a lot of power due to the complexity of the software they include. It includes multimedia possibilities, for example the fact that players may compete online and download content such as demos, films, arcade games, etc. This console stands out for the great variety of accessories it has available, wireless controllers, headphones to chat, web cameras for videoconferences, wireless network adaptor, HD DVD player, CD player, etc.
Student beliefs and practices

From the beginning of the project, we set as a key goal to learn about certain relevant aspects on the beliefs and practices of the teenagers that were going to share this experience with us, with regards to the technologies that were going to be a part of the project.

Approaching reality

To get to know in detail the way in which boys and girls use the computer and video game consoles in their daily lives, we developed a questionnaire that we present and analyze through these pages.

The questionnaire was given to each student group that participated in the experiences by the teacher that was in charge of the workshop, in collaboration with the research team from the University.

In total, we collected 176 questionnaires from students who took part in the workshops. They were distributed between both Secondary Mandatory Education cycles, as explained in Table 4: 103 questionnaires (58.52%) in the first E.S.O. cycle (1st and 2nd course) and 73 questionnaires (41.48%) in the second cycle (3rd and 4th course).

Table 4. Total questionnaires collected by gender and E.S.O. cycle

<table>
<thead>
<tr>
<th>E.S.O. Cycle</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3º and 4º ESO</td>
<td>42</td>
<td>31</td>
<td>73</td>
</tr>
<tr>
<td>1º and 2º ESO</td>
<td>59</td>
<td>44</td>
<td>103</td>
</tr>
<tr>
<td>Total</td>
<td>101</td>
<td>75</td>
<td>176</td>
</tr>
</tbody>
</table>

Within this context, due to the configuration of the groups themselves, we collected a total of completed questionnaires from 59 boys and 44 girls in the first E.S.O. cycle and 42 boys and 31 girls in the second cycle. In total, 101 boys (57.4%) and 75 girls (42.6%).

If we take into account the age range in which we place this study, we see that, in line with the courses in which we developed this experience, the age of the students questioned ranges from 12 to 17.

Table 5. Total questionnaires by gender and age

<table>
<thead>
<tr>
<th>Age</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>13</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>14</td>
<td>6</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>15</td>
<td>17</td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>17</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>31</td>
<td>73</td>
</tr>
</tbody>
</table>

All the results pertaining to this questionnaire are presented here in terms of frequencies and percentages with the sole objective of helping to put into context beliefs and practices of the group of teenagers with which we worked.

Below we will see the conclusions shown by the students’ responses with regards to three main issues: The role of the computer, the console and the games.
The computer and the console as cultural tools

The first aspect we could highlight, with regards to the answers from boys and girls on the role of computers and consoles in their daily life, is the reduced number of teenagers that does not have some of these tools at home.

If we observe Table 6, we can see how both, boys and girls, have a computer at home in very high percentages (97-98%). Thus, we see computers are very generalized tools among the families who live within the context of the Secondary Education School in which we carried out the workshops.

Table 6. Do you have a computer at home? Tabl6 46. Do you have a video game console at home?

<table>
<thead>
<tr>
<th>Computer</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>97.03%</td>
<td>98.67%</td>
</tr>
<tr>
<td>No</td>
<td>2.97%</td>
<td>1.33%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Console</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>95.05%</td>
<td>86.67%</td>
</tr>
<tr>
<td>No</td>
<td>4.95%</td>
<td>13.33%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The same happens with the boys in the case of video game consoles (95%), although in the case of girls, we do see a certain difference, always considering very high numbers, since the percentage of affirmative answers was set at 86%, almost 10 points below that of boys.

MY COMPUTER AND MY CONSOLE

To find an explanation for this difference, we can take as reference the following question we asked teenagers with regards to the computers they have at home: Whose computer is it? Yours or your family’s?

Table 8. Who does the computer you usually use belong to?

<table>
<thead>
<tr>
<th>Ownership</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mine</td>
<td>37</td>
<td>45</td>
<td>82</td>
</tr>
<tr>
<td>The family’s</td>
<td>61</td>
<td>29</td>
<td>90</td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>74</td>
<td>172</td>
</tr>
</tbody>
</table>

If we observe the response frequencies detailed in table 8, we can see the difference between boys and girls. While in the case of boys the computer they use is usually a tool used by the whole family and the "ownership" is shared with other members, girls have their own computers in a higher proportion.

In Graphs 1 and 2 we can see much more clearly this inversely related relationship between the ownership of computers in boys and girls. While in the case of boys the total number of teenagers that have their own computer at home does not exceed 37%, more than 60% of the teenage girls do have their own one.

Graphs 1 y 2. Who does the computer you usually use belong to? Boys and girls
This difference will help us to explain, to a certain extent, the fact that the percentage of girls that have video game consoles at home is lower. Having one’s own computer is an added value to the use of the tool that implies a lower need to come close to other tools, as would be the case of video game consoles.

**HOW LONG IS IT USED FOR?**

Another interesting aspect in the approach to the uses made of computers and video game consoles as cultural tools is the time destined each day for their use.

If we observe graphs 3 and 4, we can see how the amount of time dedicated to computer use is generally higher that the one dedicated to video game consoles. Both, in boys and girls, we observe high percentages in the answers given to time frames of 2 hours a day, without revealing highly noticeable differences.

Graphs 3 and 4. Amount of time spent daily at the computer and console considering gender

However, in the periods over 2 hours a day, we do find significant differences between computer use, reaching much higher accumulated percentages of answers (54% boys/51% girls), and console use (29% boys/7% girls), in both boys and girls.

Within this context, one of the explanations we may find for the differences in the amount of time spent at the computer and the console every day is in the different applications that teenagers find in the purposes for which they use these tools.

**AND... WHAT DO I USE IT FOR?**

If we observe Graph 5 and Graph 6 we will see how the use of computers offers different and more varied possibilities to teenagers from their own perspective. This is why it is possible that the time spent at the computer is higher than the one spent with the console.
Within the different uses, it is especially interesting to note the percentage of responses that claim to use the computer to play (20% male/6% female). This result shows that a higher percentage of boys than girls consider the computer as a leisure tool. Furthermore, another proof that supports this hypothesis is that although the different uses are very wide, games are the second most mentioned by boys (20%), after communication tools (chat, email, etc.– 21%).

On the contrary, in the case of the answers from teenage girls, games are the last use in percentage points (6%), very far from communication tools (21%), social networks (tuenti, facebook, metroflog, etc.– 20%) and other computer applications and uses that are relevant to girls (listen to music, watch movies, etc.– 20%).

**Play, with what? What at? And...why?**

To approach the tastes, as far as games go, of the boys and girls with whom we’ve shared this experience, we asked them about the video game consoles they have at home, their preferred video games and the features that, in their opinion, make a certain game more attractive or interesting.

The most widely used console is the Play Station 2. Without a doubt, a good reason to explain this is the fact that in the last few years, before the introduction of other new generation consoles such as the Wii or Play Station 3, it was the most popular, lasting and valued console for users. In contrast, we have the XBOX 360 that, out of the 3 most important current video game consoles, is the least mentioned in the questionnaires.

However, as can be seen in Graph 7, with regards to video game consoles, the most interesting aspects are the gender differences shown within the context in which we have worked.
In the results obtained, we can see that consoles for which there is the greatest difference between boys and girls are the Play Station 3 (25 boys/9 girls) and specially the XBOX 360 (17/2). On the contrary, the Wii is the console most frequently named by girls (14 boys/19 girls) although there is not such a wide difference as in prior cases.

With regards to individual consoles, there is also a significant gender difference shown: the PSP is the „boy console“ (28 boys/11 girls) while the Nintendo DS is the „girl console“ (18/32). Relevant reasons to explain this difference include those related to the types of games available through each of the console’s catalogue.

**MY FAVOURITE VIDEO GAMES**

In this sense, the question that would help us to explain, to some extent, boy and girl preferences for either console is quite clear: what are the favourite video games of teenagers?

**Graph 8 shows how the answers obtained in the questionnaire reveal the gender differences present in the types of video games they value the most.**

**Graph 8. Categories of teenagers’ favourite video games by gender**

In the case of boys, they prefer sport video games (27.84%), followed by fighting and action video games (24.23%), strategy video games—which include war games (15.98%) and role-playing games (10.31%). Between all four categories they add up to 78.36%, a very high percentage that shows that boy preferences are very focused on certain types of games.

As the starting point to assess the significant gender differences, we can observe that these four categories, in the case of girls, hardly reach 12.8% (sports, 5.6%; fighting and action, 0.8%; strategy, 4.8% and role playing, 1.6%).

If we look at the preferences from girls, we see that simulation games (24.8%) are the most popular, followed by music games (19.2%), platforms (16.8%) and adventures (11.2%). These last four categories add up to 72%, while in the case of boys they are no higher than 17.5% (simulation, 4.64%; music, 3.61%; platforms, 3.61%; and adventure, 5.67%).

Differences are very noticeable and show how the different game catalogues for each console can clearly be oriented towards the preferred population.
WHY DO I LIKE THEM?

Finally, to understand the reasons why these video game categories are more appreciated by boys or girls, we asked them what were the aspects they valued as the most attractive, motivating or interesting with regards to the video games they liked.

As in the previous case, the gender differences are significant and, if we observe Graph 9, we can see a clear relationship between the types of favourite games and the most appreciated features by girls and boys.

Graph 9. Most valued aspects in video games by gender.

Features you value in video games

- That is has attractive characters
- THAT IT USES A LOT OF IMAGINATION AND FANTASY
- THAT I AM ABLE TO LEARN THINGS BY PLAYING
- THAT IT IS REALISTIC
- THAT IT ALLOWS PLAYING MANY TIMES
- THAT IT LASTS A LONG TIME
- FOR THE GRAPHIC AND SOUND ELEMENTS TO BE...

The characteristics boys appreciate the most are: well developed graphic and sound elements (18.55%), the realistic approach of the video game (16.73%) and, with lower percentages, for it to be possible to compete with other players (10.91%) and for them to allow the unloading of tension (9.82%). These characteristics are much more applicable to sports, fighting and action and strategy video games than to simulation or platform video games, for example.

However, in the case of girls, the most valued aspects are: the posing of challenges that have to be overcome (19.82%), the possibility of becoming involved in a story and adopting an active role (15.67%), the quality of the story line (12.44%), or the fact that something can be learned by playing (9.68%). This features, for example, are more connected with simulation, adventure or music games that with games that involve fighting and action or strategy.

Understanding the players

Through aspects such as the ones we have gone over in these pages we can get to know a little better those practices and beliefs teenagers have with regards to their identity as video game players.

We have seen how there are significant gender differences in issues related to the types of favourite games and in the reasons for which they prefer them; they have allowed us to conclude that boys are more oriented towards direct action, realism and pragmatism in their role as players, while girls place themselves more in the imagination and creativity perspective as well as identifying themselves with stories and characters.
Methodology of the investigation

A case study

This report uses the case study methodology, combined with the use of certain ethnographic techniques, both quantitative and qualitative. The objective value of their contributions, as in other similar works, is not based on how often a certain phenomenon arises. Its validity is based on the detailed description of the cases in which it is possible to explain how people attribute sense to their activities within defined social-cultural contexts. It is worth mentioning, on the other hand, that these research projects explore what happens in natural situations without introducing modifications that disturb the performance of the activity. The process of analyzing observations and interpretations in context allows to subsequently determining activity trends, which will aid when comparing and explaining situations.

A fundamental aspect of this project is the fact of working in close collaboration with teachers and combining strategies of participant and non-participant observation, depending on teachers suggestions and the role of researchers in the determination of the subject’s study program, when commercial video games, designed for leisure, become mediating tools in educational situations in the classrooms.

The project has been structured through three inter-related stages as seen in the enclosed figure.

Required data sources

It is important to take into account that we are trying to approach the meaning given to oral and audiovisual languages as tools that contribute to the creation of shared representations in the classroom.

Figure 3. Methodological approach: Stages and tasks in the research study
To start with, we will work with the following data types:

**Ecological observation of the work sessions** with support from audio and/or video recordings of the events. Each of the researchers present in the classroom (sometimes up to 5 people) has kept, in addition, daily narrative registers (summaries) of each of the sessions.

**Oral discourse** that serves as the means of communication among participants in a classroom environment. With a similar methodology, we have also carried out informal conversation of an ethnographic nature between the research team and the teachers and students.

Analysis of **written documents, photographs and audiovisual documents** provided by the researchers and by other participants, in small groups or individually.

---

**Process and techniques of the data analysis**

**THE UNIT OF ANALYSIS**

Analysis will be carried out in different stages, paying special attention to the unit of "analysis": We pay attention to a double dimension:

- **The community environment, when we analyze** the participation of people in relation to others and in environments culturally organized around video games.

- **Analysis of educational practices and determination of activity patterns.** How people relate to one another, with a "face to face" relationship. In this project, educational instruments, especially commercial video games, measure this interaction.

**ANALYSIS STAGES AND TECHNIQUES**

Closely following the classic ethnographic and social-linguistic educational approaches, our analysis is based on qualitative and quantitative strategies, as summarized in the table below.

**Figure 9. Approach of the data analysis**
QUANTITATIVE MEASURES

Data has been obtained from a questionnaire answered by all the participating students. The objective was to have a context in which to place the qualitative data obtained throughout the course of the study. The questionnaire has allowed us to obtain information in relation to the use teenagers make of digital media, especially video games.

OBSERVATIONS IN CLASS AND PROCESS SEGMENTATION

We adopted a combination of ethic (in accordance with the meaning assigned at the completion of the anthropological research) and emic perspectives, the former giving priority to an objective approach, the latter taking into account interpretations from the participants. The use of graphs in combination with quantitative analysis allows us to establish comparisons between the contexts and situations depending on the units of analysis being considered. This analysis methodology is not new to educational and developmental psychology. Silvia Scribner first used it in the 70s, adopting the approach from social-cultural psychology. Other authors have also used it recently, both in the educational field as well as in the study of the media.

ANALYSIS OF THE DISCOURSE AND THE AUDIOVISUAL PRODUCTS

We have carried out an analysis of the conversations that took place in the classroom, following the classic model by James Paul Gee. Topic continuity in conversations is one of the factors that was most taken into account when determining the unit of analysis, defined in this report as fragments. Participation in joint activities has been recognized as one of the most interesting elements that contribute to linguistic development. We can expect something similar to happen when one must acquire abilities related to the new literacy techniques.

The analysis of the discourse has proven to be a powerful tool to find out about the process implemented by participants whereby they construct mental representations and, thus, understand the learning processes that take place in the classroom when commercial video games are present.

Student audiovisual productions have also been analyzed. As indicated previously, these productions summarized their experiences, from their own perspective, at the workshop and in the game. Preliminary analyses performed until now were focused on the content and its formal aspects. Analyses have been performed by adopting the perspective from the authors, who lean on the multmodality concept.
Participatory evaluation

As repeatedly indicated, this report’s objective is to contribute to the introduction of commercial video games in the classroom, by considering them as educational tools. The evaluation of what has taken place in class is backed by the thoughts from the school’s teachers and students. Moreover, there has been fluent collaboration and dialogue between participants, the research team and the company Electronic Arts, on the basis of its Social Corporate Responsibility Program. All this is summarized in the following figure.

Figure 4. A process of joint thinking between different social agents

- With regards to the stage where the project was carried out, we will point out that its interest lies on the fact of working with workshops within school hours and in a project that had the commitment from the entire educational centre. Finally, it is worth highlighting the diversity of learning situations, in light of the different participating groups.

- With regards to the tools present in the educational scenarios we want to point out the innovation introduced by working with video games as educational innovative tools and, in particular, as a channel of communication and expression when its presence in the classroom is combined with other audiovisual technologies.

- At first glance, the interest may be focused on the fact that there is close collaboration between different institutional environments, in this case EA, on the basis of its Social Corporate Responsibility Program, Secondary Education Institute IES Manuel de Falla (Coslada) from the Community of Madrid, and the research team from the University of Alcalá, who coordinated the participatory evaluation process.
Practices that transform the classroom
Strategic video games

Out of the wide variety of video games available in the market, many of them are classified as strategy video games. They suggest certain questions that have guided our work when introduced in the classroom: What is a strategy? Are we aware of it when we play? Do we get better results if we plan the game well?

STRATEGY VIDEO GAMES

Within this type of games, planning takes precedence over improvisation. A strategy is a complete plan to act in the ways offered to achieve the purpose of the game and go through the different screens, each of them with different challenges for the player. Strategies may be simple, such as the ones offered by certain video games inspired in traditional board games, for example Boom Blox, or more complicated ones like Spore.

We will analyze the process followed by students when designing strategies that could be implemented in the classroom under different subjects and, therefore, with different goals.

RULES AND STRATEGIES

These two terms refer to different concepts.

- **Strategies** are the paths followed by the player to solve the problems posed by the game. They are related to the rules of the game, but cannot be identified with them.
- **Rules** are limits imposed by the game; they determine the path that the player may take to move forward through the difficulties raised by the game. The efficiency and potential of different strategies depend upon these rules of the game.

Distinguishing among the two is essential to understanding why their presence in the classroom contributes to developing thinking processes.

LEARNING TO THINK THROUGH VIDEO GAMES IN THE CLASSROOM

Putting different strategies into practice to solve complex problems that arise on the basis of the rules of the game, is the challenge presented by the video games we have mentioned previously. This permanent task may go unnoticed for players who play for hours without being aware of “following a plan”.

Students who participated in the project learned to reflect, to think in the same way science professionals do, and to take decisions based on two types of games: Boom Blox and Spore.

Spore allows the player to control the development of different species by resolving conflicts in an imaginary world. It is necessary to discover what the best strategies are, what actions must be adopted by the player to ease the evolution of its creatures, from their birth as microscopic organisms until they become intelligent and social creatures.

Strategies generated by students when playing Boom Blox are different. In this case, they are associated to quick decision taking processes.
Virtual worlds in the classroom: Surviving with Spore

Who hasn’t, at some point in time, thought about where we come from? What were our ancestors like? In fact, this issue has been the source of important and unpleasant events in history with regards, for example, to dominant races. From the origin of humanity, individuals have tried to survive as best they could and to provide their descendants with the best inheritance possible for a better adaptation to the environment. This is the issue Spore proposes to the players.

We will now explain an example of how classroom activities developed and how the processes that took place may be interpreted. We will see how teenagers and adults jointly explore real and virtual environments in which they ask themselves about the theories of evolution present in the video game Spore.

EXPLORING THE VIRTUAL UNIVERSE FROM A SCIENTIFIC PERSPECTIVE

We present what happened in a biology class when they played Spore. The teacher chose this game assessing all the possibilities it offered to develop the contents of her subject. Her objective, as an educator, were the following:

- To reflect upon the evolution strategies followed by the game.
- To establish relationships among the strategies followed by the game and the major evolution theories, such as Darwin’s or Lamarck’s.
- To design cells and creatures on the basis of the best strategies to advance in the game.

To accomplish these goals, the teacher had previously explained the major evolution theories and teenagers could use written material while playing the video game. The purpose was for students, by small group discussions, to consider the possible relationships between the theories defended by the game and the predominant ones in the current scientific world.
THE IMPORTANCE OF THE BEST STRATEGY TO EVOLVE

During the first class session, students played the video game and immediately proposed the need to choose the best strategies on the basis of the rules provided by the game.

- From the beginning, the rules of the game indicate that the creatures possess certain traits to adapt to their environment. At their first stages, they can be carnivorous, herbivorous or omnivorous. Choosing one option over another will result in them having certain specific characteristics. The game allows starting in different evolution stages, going through the cell, creature, tribe, civilization and space stages.

- The player’s strategy will be the one that will guide his/her choices, thinking of the most advantageous one when it comes to moving forward through the creature’s evolution stages. These strategies are mainly two: chose to be competitive and try to survive by being the strongest or a cooperating one, trying to survive by associating with members from other species, using the unity to be stronger.

Let’s see how decisions to jointly select the best strategy are taken in the classroom. The teacher helps to guide the students.

Fragment 1. Logic in the decisions
IES Manuel de Falla. Year 4 ESO. Session 1, 2009 05 04

Student: If, for example, we had provided it with a kind of speed flippers in the middle of the body and it couldn’t run at all, we put them on the rear and it did run.

Teacher: What does that mean? I mean, the video game has a physical logic, right?

Student: Yes, it’s logical that on the rear it’s going to be faster.

Teacher: So, it is well thought out in this sense,

Students became aware of the need to change the physical aspect of the creature for it to become faster. The images seen in the previous page show this clearly. This reflection is an example of how students learn to think. The video game makes them face problems that require them to compare different options and take decisions to achieve a goal, in this case for their creature to be faster in order to be more competent.

TO CHOOSE A COMPETITIVE OR COOPERATIVE STRATEGY

Moving forward in the game, once the stage of playing in the classroom has been completed, new situations arise that invite us to reflect, also encouraged by the teacher, in this case in a large group situation. At this point it time we see references to the curriculum contents and it is a good opportunity to go deeper into the subject.

Fragment 2 Relationships between the video game and the theories of evolution
IES Manuel de Falla. Year 4 ESO. Session 1, 2009 05 04

Teacher: Ok, well start with Group 3, let’s see what, according to you, it has from each theory.

Student: Darwin’s the strongest survives.

Teacher: Darwin’s the strongest survives. Is it always the strongest that survives? Always the strongest? Is there another way of surviving?

Student: Then also Lamark’s adaptation to the environment and Kimura’s cooperation.

Teacher: And why do you say also Lamark’s adaptation to the environment?

Student: Because it has to improve with each passing generation, so that it can survive better... like the giraffe, whose neck gets longer every time, to be able to eat food that is higher up, for example, ours has a more different mouth each time, to be able to eat larger and stronger enemies.
Firstly, we see how students are aware of the evolution theories that can be found within the video game and justify them. They are capable of reasoning what the characteristics of each theory are and relate them to what happened when they played the game.

- It seems clear that they show, through two different examples, a real one and an virtual one, how different generations must improve in order to adapt to the environment. The real world is represented with the progressive length acquired by the giraffe’s neck. The virtual world, by making a comparison with the aggressiveness they had to confer to the mouth to be able to survive.

- Furthermore, teenagers talk in the third person, which seems to show that they are contrasting the differences between what each one has chosen.

Up to that moment, students tried to find how each theory was represented in the game. The presence of adults makes teenagers advance and be able to:

- Be aware of the strategies used and how their choice has influenced their creature’s adaptation to the environment.

- To reflect, through the different strategies used, upon the options of competitive mode or cooperative mode.

- To appreciate processes carried out by the player of video games, such as planning his actions, an important ability also in real life.

We will now present how the fact of participating in both strategic modalities proposed by the game produces contradictions in one of the groups, since they realize that maybe the most effective strategy is the cooperative one, although they chose the other.

Fragment 3. Making friends helps to survive

IES Manuel de Falla. Year 4 ESO. Session 1. 2009 05 04

Student: At the beginning you don’t make friends, you start to evolve and that is the theory of the strongest. However, when the earth is reached, you can find certain species and if they have characteristics, for example, that they are faster or something, they can be of help to you.

Teacher: So, that survival is also stronger.

Student: If they cooperate, there’s a greater community and greater protection.

Teacher: Have you cooperated at any point in time?

Student: No, we haven’t, but we know it.

We notice that, at first, the player thinks the best strategy is the competitive one, especially taking into account that he is going to be stronger than the rest and, thus, will manage to survive better. However, as the game progresses they realize that making friends, i.e. cooperating with other species, may be of great help, since the creature chosen does not have all the possible abilities and you can look for your shortcomings in other friendly species.
DOES ONE ONLY LEARN WITHIN THE SCHOOL CONTEXT?

Strategy video games offer the opportunity to learn and teach how to overcome specific situations, the mere description, to look for explanations regarding the facts or to justify certain actions.

In this sense, we could analyze how a student from the workshop justifies her thoughts on the game, generated in her opinion, by the educational goals fostered by adults. She doubts that this type of video game possibilities will work outside of the classroom.

Fragment 5 The importance of adults
IES Manuel de Falla. Year 4 ESO. Session 2, 2009 05 11

Researcher: What did you think of the game?
Student: The game is cool, right? But I don’t think that when someone is playing he is going to be thinking about the evolution means he has, I mean, if you play in the classroom, ok, you think about it, but when you are at home you are more like, hey, I’m going to kill that bug rather than, I think this is Lamark’s theory.

If we analyze the previous conversation, students are aware of the history conveyed by the video game, but they stress the importance of adults within the school context.

- This is our goal as researchers and teachers, for them to learn from and with the video games.
- They don’t need us to teach them the use of the controllers or how to pass on to the next screen, but they do need guidance in the understanding of what there is behind the game.

We hope to have shown that in strategy video games there are multiple ways to move forward, progress and learn. They allow apprentices to take decisions, trust their own strengths and styles to learn and solve problems.

In this game, apprentices have many opportunities to practice and consolidate their abilities, transferring what they learn at the beginning of the game towards new challenges, including problems that require adaptation and transformation of the initial learning.

In summary, these types of video games that offer complex strategies are a good way to learn to think and face problems that require us to compare the different options...
Multiple challenges in the classroom: playing with Boom Blox

The complexity of the challenges offered by video games is quite surprising. Sometimes this complexity is really high. Then, why do we keep on playing for hours and hours? What makes us go on, really?

During the different workshops, boys and girls had the opportunity of playing with Boom Blox.

This game, as has been explained previously, consists on blocks that offer different configurations that the player must demolish. But in order to advance in the game and score points, it is necessary to solve the problems proposed by the designers, based on the rules that control the screens.

We stand before a good example of the kind that requires interacting in virtual universes different to the real world. In them, it is not just important to aim well or be skillful in the throws, but also to be aware that, when playing, you are actively participating in the video game, controlling and directing the different strategies to overcome difficulties.

BOOM BLOX: A NEW CULTURAL OBJECT IN CLASS

This game, created by Steven Spielberg, surprises players not just for its challenges and problems but also for the beauty and quality of its design. This is why it is especially appropriate to introduce this game in those classrooms that need a stronger motivation.

The teacher who participated in this workshop is from the Physical Education department, and the class itself is called Measures for Study Attention. The activity we now describe was carried out in the workshop’s first session. The teacher, taking advantage of the video game’s theme, wanted to relate it to his subject. His objectives, therefore, were the following:

- To reflect upon working as a group.
- To encourage cooperative and competitive work and to discover which one of them provides best results.
- To learn, through the video game, to discuss and justify one’s decisions.

To help the apprentices in becoming aware of their activity, adults (the teacher and the researchers that collaborated with the workshops) raised multiple questions that helped in thinking about the actions and decisions. It was not enough to play and take quick decisions. It was also necessary to stop, at certain times, when one had to choose the different types of strategy, the most appropriate piece to knock down or the path towards victory and, ultimately, reflect upon the activity.
To achieve these objectives, adults decided to make a comparison between the rules of the video game and the rules in sports. This implies a constant thinking process with regards to the reality of sports video games.

The key idea in this game is to reach the same goal, following both of the options offered by the game: the cooperative or competitive mode. Which one is most efficient to pass the challenge? The teacher decided for the students to play with both types of strategies, because that would generate questions.

**ONE STRATEGY CONDITIONS THE FOLLOWING ONE**

Help from the adult is essential for students to think before they perform an action.

The teacher intervenes in two important ways. On the one hand, to teach them the execution of the movements, maybe influenced by his role as a P.E. teacher. On the other, showing the importance of good planning in order to obtain the best results.

This implies that students will not just think of the piece they must throw at a certain point in time, but also that the piece knocked down will condition the next player and, therefore, will influence the achievement of the goals. They can’t play in an isolated way, they must take into account that their actions have consequences, both positive and negative. Thus, the strategy they choose will condition the next ones during the entire game.

We will now see an example of what happened in the classroom.

**TO BE MORE COMPETENT IN THE GAME**

Let us see what happened when they were asked to think about what aspects of the game they had reflected upon and whether this had helped them to be more competent in the game. Analyzing the following conversation, we can see how, in certain cases, students seem to have stayed at the level of their throwing skills. Adults helped students to become aware of the strategies implemented.
Researcher: **What did you learn with the game?**

Student: Nothing

Researcher: You’ve learned nothing?

Students: No, no, no, yes...

Researcher: Well then, maybe **nothing of what you learn in school?**

Student: To have a steadier hand

Researcher: To have a steadier hand, what else?

Student: More strength

Researcher: More strength... **but, only mechanical things? You didn’t need to think at all?**

Student: Yes.

Researcher: That’s what I’m interested in.

Student: **There are certain tokens that you have to think where to throw them to knock more down.**

Researcher: You have to solve a problem, right? Does someone need to think more things apart from where to throw it?

Student: The way of throwing it.

The text shows how, at the beginning, students have no concept of what they have learned with the game. The adult makes them reflect over the idea that they have not only learned mechanical aspects of the game, such as throwing or being stronger, but that they also needed to solve the problems posed by the game. To do this, they had to take decisions that they previously discussed as a group, such as, for example, throwing the appropriate token so that the greater number possible was knocked down and thus score more points.
In products elaborated by students from the workshop we see certain strategic aspects that were difficult to identify verbally. Maybe they found it easier to express themselves through a multi-mode product, with the possibility of introducing images, music and written text. Probably, although not through an audiovisual product, they are more used to thinking about what they want to convey and doing so through a specific support that spontaneously talking about it orally.

Fragment 7. Audiovisual product from one of the groups
IES Manuel de Falla. MAE (Measures for attention study) Class Session 9. 2009 04 27. Group 2

The fact that teenagers faced the task of making an audiovisual project and became an active audience encourages them to make an effort in reflecting upon what they have learned in the games. In this case, we see how students are aware of their learning with the video game Boom Blox, including an element that is usually absent from the classroom: to learn while having fun. This fact, without a doubt, has had a positive influence in their motivation. As we can observe, they have become aware of the need to think out the strategies and, thus, be more competent in the game.

What can we conclude?

The dialogues as well as the audiovisual products, produced during the course of the workshops, have allowed us to observe how we can use strategy video games in the classroom to help teenagers to think. We summarize our findings in the following:

- First of all, students have learned to justify their decisions, they have seen the importance of their decisions, since they have consequences that will influence them throughout their entire game experience.

- Secondly, when the presence of the adult guided the dialogue, the apprentices reflected over the importance of problems and how they had tackled the solution to overcome them.

- Thirdly, we see that, with the help of an adult, teenagers are capable of reflecting upon and discovering the strategies they use in the game, and why, when using each one of them, they generate different options to overcome the challenges. In addition, they are capable of considering the rules hidden behind them.
Living in virtual worlds

Play, play, play

This sentence summarizes the wish of many video game lovers. The same passion also turns up in other situations, for example when a reader becomes hooked on a novel. A possible reason to explain these motivations is the need to elope from one’s everyday life. A video game or a novel immerses a person in a magical circle that envelops him/her, whether it be a child or an adult, and which is difficult to abandon.

Simulation video games attract the player because they provide unthinkable experiences in real life. They offer action scenarios that allow us to feel freer than in other types of games. They don’t have a closed or pre-determined end. The player who navigates through the screens builds a story or becomes the creator of fantastic universes that respond to his or her wishes, although they are often limited and controlled by the game’s own rules.

This type of video games, specifically SimCity Creator and The Sims 2 Castaway, were used in the secondary education classes that participated in this project.

- SimCity Creator requires the planning for the development of a city, managing its finances or controlling its security and growth. All this with the purpose of making its citizens happy.
- The Sims 2 Castaway starts when the ship’s crew find themselves amidst an unexpected storm that causes them to sink. From that moment onwards, the Sim will have to survive the shipwreck and start his new life in an unknown island.

The video game starts within this context. From then on, one can act in a lot of different ways depending on one’s own interests, without forgetting the limitations imposed by the rules of the game. An analysis of the activities that took place in the classroom and, above all, the conversations that we have explored, have allowed us to define the educational value of these games. This chapter’s pages are organized around three issues:

1. Its attractiveness to maintain the participation from players and help teachers in maintaining their students interested.
2. The power to generate situations that motivate teenagers to identify themselves with the characters.
3. The game’s capacity to foster the thinking process related to the solving of problems or the dialogue over certain curriculum contents.
Participation

The key for a video game to be attractive is not so much its visual design as the experiences it provides and which invite the player to participate. That is to say, it must offer the user more than one choice among the many existing possibilities, something that encourages one to continue. This will allow the player to participate in the construction of the game while he interacts with the screen through the computer or console’s controllers. Although interactivity makes participation possible, they are not the same thing. All video games are interactive, but only some make the player become committed. Among the features that favour participation we find the following:

- If they have a clear purpose, individuals will participate to accomplish it.
- There are several levels of participation. For example, to watch, apply strategies and move forward in the game.
- Participation starts where interactivity ends, it goes no further. It implies for the user to build the world of the game or story.

As seen, interaction is a feature that grants a different quality to participation when we talk about video games. However, it is not the only one; another differentiating and characteristic element for these environments is that participation takes place in a virtual world.

PARTICIPATING IN A VIRTUAL WORLD

To understand what a virtual world is, we could define it as follows:

“A three-dimensional computer generated scenery where we can experiment an extension of our psychic and sensorial powers: abandon our bodies and see ourselves from the outside, adopt new identities, grab immaterial objects through many senses, including touch, even modify the environment through verbal orders or physical gestures, see creative thoughts, instantly, without going through processes that require to materialize them physically.”

In any case, the author of this text warns that this world is still science fiction. In a simpler way, virtual reality may be defined as an interactive and immersion computer generated experience. It is worth focusing, therefore, in these two characteristics:

1. Virtual reality is experienced in cyberspace. It is an artificial world that shows up on the computer screen. For example, we talk about it as associated to the Internet.
2. Another characteristic is its versatility; we are dealing with different culture products and means, open and diverse worlds in which acting is possible.

THE SIMS SHIPWRECKED FOSTERED PARTICIPATION IN CLASS

Let’s now see how one of the teachers that participated in this research fostered participation by using the video game The Sims 2 Castaway in an English class within Bachillerato’s bilingual program. Reading the conversation transcribed here suggests that the teacher was able to grasp the features of the video game that encouraged participation and wanted to teach based on them. Strategies that are normally used in the classroom to organize a group mix up with others that help in fostering participation from the video game as such.

Fragment 1. Thinking and imagining in order to participate. Introduction to the game

IES Manuel de Falla. Year 3 ESO. Session 1, 2009 02 16

1. Teacher: Before we start to play (...), before we start to play I want to ask you some questions and at the end of the sessions you will have to answer them, ok? The question is: what abilities do you need to survive? Imagine...

2. Student: The brain

3. Teacher: and (...). Remember that this is... imagine, that we are shipwrecked somewhere in the world, ok? Then, what abilities would you need?
We observe two strategies implemented by the teacher at the start of the conversation. On the one hand she tries to encourage students by giving them social strategies: (1) “(... I want to ask you some questions (...)” and on the other, she states the content of the questions related to the game and the abilities necessary in order to survive (3) in a reality that she considers, right then, as “imaginary”.

Students don’t answer quickly, only one (4) dares to answer the first question asked by the teacher with a response that doesn’t seem to satisfy her. The teacher has to re-state the question; she wants them to refer to people’s abilities, not nature’s resources.

4. Student 1: Orientation
5. Teacher: Excuse me?
6. Student 2: Water
7. Teacher: Water? But that’s not an ability, those are resources but, what abilities do you need to survive? ok?
8. Student 3: Physical strength

Up until now they have made references to abilities necessary in individuals to overcome the challenges nature may impose on a shipwrecked person, but social needs cannot be forgotten, even our language.

9. Teacher: Yes (...), you need to be fit. But let's also think about (...) imagine we find other people there.
10. Student 2: Language?
11. Teacher: Language! We have to speak a certain language, that’s why we are going to speak, what language?

The conversation shows how the teacher is going to use the game to place her students before an imaginary reality and, in addition, to make them think and actively participate in the conversation. It is not clear to what extent it is a virtual reality for her. They still haven’t started the actual game. However, the teacher seems to anticipate through her interventions what is going to take place later on. Players, in this case secondary education classroom students, will become shipwrecked and live, in first person, their adventures in a virtual world. We will define what may be understood as virtual, searching within this concept for the power of the video game as an educational tool.

Now, coming back to the conversations analyzed previously, we can think that the teacher has these abilities present when she was trying to encourage participation from students. It is interesting to note how she tries to focus the conversation on the abilities of the character whose actions the player directs through the screen. For example, in paragraph 7 of the previous fragment, the teacher specifically said: “Water? But that’s not an ability, those are resources, but, what abilities do you need to survive? ok? She seems to be thinking about ideas such as interactivity or immersion, which describe the relationship between the Sim character and the player.
Identifying with the main character

Becoming a video game character is another of the possibilities offered by simulation games. This characteristic is especially interesting in secondary education classes, attended by teenagers that seem to be continually defining their own identity. During the interaction with the video game, individuals are transported outside of the real world through the screens, they experience new ways of life through the action, when they act over the console controllers and perceive the games not just as a source of company but also as a substitution for this company. To understand the process, the metaphor of the immersion becomes especially useful. The word comes from the physical experience of being submerged in the water, something that requires a learning process. Several features describe the act of becoming immersed in a computer generated virtual reality:

1. Expectations from a virtual environment must satisfy the player.
2. Actions performed through the screen have an impact in the virtual world.
3. Conventions of this new space must be consistent and not contradictory with one another.
4. In the virtual world, the player has the feeling that the context is immediate and that one lives inside this context.

THE EMOTIONAL COMMITMENT WITH THE CHARACTER

There is not doubt that the immersion in the game is going to favour the identification with the characters. Let’s see, once again, how the teacher contributes to ease this immersion through the emotion of the first day of class.

Fragment 2. Emotional commitment with a certain identity and certain actions.

IES Manuel de Falla. Year 3 ESO. Session 1, 2009 02 16

1 Teacher: The first thing I want to do is create, you all know that games need characters. Marcos is going to start the game and you are going to direct him, you have to tell him what to do. Speak in English, what does he have to do?

2 Teacher: ... ¡Marcos! We have to choose the personality...I think this is important, what kind of personality would you all like to choose? What sign?

3 All students: [Sagittarius, Leo, Aquarius, Capricorn, Virgo, Scorpio... Marcos whatever you are...]
The teacher, with her comment, refers to the action of creating a character (1), something that motivates teenagers. At the beginning, options are very simple, they refer to the Zodiac signs (2,3). It's a way of directing the personality traits that will define the Sim. When one is familiar with the game it is possible to anticipate that these will guide his future behaviour. For example, his relationship with others or his degree of resistance against adversities.

Let us now see how the dialogue goes on, noting the character traits more closely.

5. Student 1: You can take off some “being nice” points and add them to the character being more active.
6. Student 1: And...you can change his temper, more in a bad mood and more active...no, no...that’s making him nicer, Marcos!
7. Teacher: Daramis says that is the contrary...
8. Student 1: and...more bad tempered and more of an extrovert.

We see students cannot seem to reach an agreement (7). The teacher has not intervened; she seems to want them to face their difficulties on their own. Soon she asks for justification.

9. Teacher: Why have you suggested we make him bad-tempered?
10. Student 1: Because he is alone...because to survive on your own you need to think about yourself, in this case, I think...
11. Teacher: Remember he is going to run into other characters (…) Press “enter”.
12. Student 2: He is going to be bad-tempered with animals.
13. Teacher: True, that’s a good point of view (…) Press “enter”.

The traits that will be attributed to the Sims during the game must be justified with regards to their actions in a virtual world. On the other hand, students and their teacher refer to the characters in the third person, the identification with them has not taken place yet.

BECOMING SOMEONE ELSE

We will now see how the discourse changes when we advance in the game. We are now in the second session. Students, distributed in small groups, describe to their classmates the adventures of their characters in the game. They are going to refer to the character in the first person. We will see what happens through the explanations provided by two out of the five groups.

Fragment 3. Identifying with the characters through the discourse. Sharing what was learned in the session. IES Manuel de Falla. Year 3 ESO. Session 2. 2009 02 23

1. Teacher: Listen (...) everyone listen (...). Stop and look and me, we are going to talk about what you did today, everyone in a circle. Can you hear me? Group 1, Who is in Group 1? What did you do in the game today? Today specifically.
2. Spokesperson for Group 1: We arrived at the pier’s beach.
3. Teacher: Anything else?
4. Spokesperson for Group 1: We went fishing, explored, we found things, we have, I mean...clothes.
5. Teacher: Very good, you have survived. Have you found someone else?
6. Students in Group 1: No.
7. Teacher: How many crewmembers are you? How many members of the crew?
8. Students in Group 1: Two.
9. Teacher: Two people, and you’ve found no one else. Very good.
The most striking part of the previous fragment is that, through their statements, both the teacher and the students express a certain identification of the players with his character. For example, the spokesperson for the group says (2) We arrived at the pier’s beach or the teacher asks (7) How many crew members are you? The same dialogue would be unthinkable if the class has worked with a film that related the adventures of someone shipwrecked. Clearly, in this case, the characters would be referred to in the third person, for example: How many crew members were there? The conversations show, by the use of pronouns in the statements, the possible identification with the character.

**THINKING WITH THE CHARACTERS**

We now look at what happened in another group. In this case, the description of what had taken place includes some references to the possible strategies implemented by the players to solve possible difficulties.

10. **Group 3, student 1:** Yes. When we explored the island we discovered we could make a raft and now we were collecting some things so make the boat, to go and rescue our mates, because now we know what we have to do...

11. **Teacher:** What did you do to survive in the island?

12. **Group 3:** We ate, slept and discovered the raft.

13. **Teacher:** Did you find the boat on the other side of the beach?

14. **Teacher:** Our goal for next week, the last day, is that we need to build the boat to go to the other island and find our mate, the member of the group, and?

15. **Student 1:** Be able to go back to our city.
16. Teacher: Go back. It depends on the different goals one may have. Group 4, what did you do?

Also in this case, the student representing the group uses the first person in the plural to refer to their characters. However, perhaps the most relevant thing is the acquired awareness of the strategies used to solve the problems, the statement in which one of the students summarizes their activity (statement 10):

Yes. When we’ve explored the island
/ we’ve discovered that we can make a raft
/ and now we were collecting some things to make the boat
/ to go and rescue our mates,
/ because now we know what we have to do...

If we analyze this statement we observe that it includes a mental representation related to the problems of the game and the way in which they have been resolved through different actions expressed with the infinitive. A clear example of the possibilities offered by simulation video games to help to think and reflect within virtual worlds.

The reality of the game

Up until now, we have referred to how the video game can make students become more active, because it fosters their desire to act and intervene and, on the other hand, how a certain identification of the players with the characters on the screen takes place, something that makes becoming immersed in the game easier. We must now think about the relationship between the virtual world on the screen and the daily reality within the context of simulation games.

We can ask ourselves to what extent the objective of a video game designer is to reflect reality as closely as possible or, in other words, what is the relationship between the reality of the physical world in which we live and the one shown on the screen.

SIMULATION AND REPRESENTATION

The concept of representation is powerful, and for thousands of years it has been associated with the understanding and explanation of reality. Let’s think, for example, about a photograph. It may inform us about the shape and colour of an object, but it cannot be manipulated. However, a flight simulator, or a toy, is not only a sign, it is a machine that generates signs in accordance to the rules that model the behaviour of real airplanes.
Traditional media, for example, a novel or a film, are built on the basis of these representations, but they don’t introduce simulations. A film about an airplane landing is something the spectator may interpret in different ways, but he cannot manipulate it or influence how the plane is going to land. By contrast, the flight simulator allows actions that modify the behaviour of the system, so they are similar to the ones performed in a real airplane.

In short, video games imply an important change in the paradigm of our media culture, because they represent the implementation of complex mass media in which simulation is present.

**LEARNING WITH SIMCITY CREATOR**

We will now explore the educational possibilities of simulation games when we look at their possible correspondence with reality. In this case, we will see what happened in the classroom when we introduced a game that is very different to the previous one, SimCity Creator. This game allows the player to become the designer and creator of a virtual city by controlling the elements that will contribute to the growth of the population and the happiness of its citizens. We will focus on what happened in a class of year 3 of ESO within the subject of Diversification. The teacher knew the game well. Fragments transcribed will allow us to understand the relationships established between virtual reality and the physical world and, above all, the educational possibilities opened.

The class starts when the teacher explains, in a concise way, the possibilities offered by the game. He knows it well and, thus, knows where to begin. He suggests they start playing directly, by choosing the area in which the city is going to be located.

**Fragment 4. Designing a virtual city. Introducing the topic.**

IES Manuel de Falla. Year 3 ESO. Session 1. 2009 02 16

1. Teacher: No, you have three game options, you can choose a small, medium or big city. But you have a map. When you choose the type of city you want, you choose a small one, for now choose the small one. Once you choose the type of city, then you’ll have to place it on the map, ok? Look to see what is most convenient, whether it is better close to a river, or if you want it on the coast, close to a lake, right?

After this brief introduction it is interesting to note how the teacher refers to the elements of the game and their functions, for example the magnifying glass or the police helicopter, something that will be important to observe the city as it grows. It is necessary to keep a global vision to understand the process of building a city and how one can include in it the resources inhabitants will need to live there.

(...)  

2. Student: Now we have to start building?

3. Teacher: Not for now, for now I want you to learn how to use what you have there. The different functions available, ok? Go to the magnifying glass first of all, the icon next to the construction. I want you to select the helicopter, select the helicopter, go to the magnifying glass and there you have the helicopter. The helicopter allows you to move over the city.

4. Student: It’s the police’s

5. Teacher: Yes, it’s the police helicopter. I want you to use the helicopter to learn how to move around the city. We are going to use it a lot later on, whenever we have to place ourselves in the city.

Once they’ve seen this option, they keep going. The teacher sets the objectives for the session; at that point he wants them to start building. But things are not as easy as they seem.

As the game progresses the teacher realizes that students find it very difficult to follow the game and he has to modify the pace of the class. We decide to work with the students using the game’s tutorial, an excellent idea because it will allow them to anticipate and plan the strategies to follow.
It is worth taking a moment to analyze the statement in fragment 8 to see the relationships that can be established between virtual and real contents, from the teacher’s point of view. Although instructions are given without interruptions, we have broken them up to analyze them.

**Fragment 5. Designing a virtual city. Introducing the topic.**

IES Manuel de Falla. Year 3 ESO. Session 1. 2009 02 16

1. Teacher

1.1 With the wrench and once saved you click on abandon.

1.2 Everyone write down how you’ve saved it and the name of the city on your notebook so you don’t forget.

The first two statements refer to the procedures of the game: On the one hand, some elements of the game (1.1 the wrench, which allows them to control the construction) and, on the other, how they have to save the game (1.2). Little by little he will go into more abstract matters to go deeper into the problems posed by the actual game (1.2 and 1.4).

1.3 Let’s go into missions, we have several types of cities in which we have to solve problems, ok? And they give you a city that has already been started.

1.4 What is says is the solution to a problem, later on you will be the ones that will have to solve the problems in your cities, the cities you are creating right now, ok?

Immediately afterwards, the city’s infrastructures are determined, especially electricity and roadways. We observe that each of the suggestions is supported by a justification; for example, without these two elements nothing could be constructed and people couldn’t move around (1.5)
1.5 Ok, the first think it requires is the supply of electricity, without electricity it is clear that nobody will be able to build his or her house. Let’s see it.

1.6 Here you find that they’ve already built the roads, so that people can go to live in those places, besides creating areas we have also to create roads in the middle, ok?

1.7 So, this is essential, once you have your area already assigned, you have to start creating roads and then the electricity supply issue.

1.8 First you’ll have to put together the electricity.

**CREATING A VIRTUAL CITY IS ALSO DIFFICULT**

Let’s now see how students put these instructions into practice during the second session. The goal at that time was for them to understand the necessary infrastructures to build a city: roads, water, electricity, and, on the other hand, the usual services of a social nature, for example shopping areas, cultural areas, etc.

**Fragment 6. Building the city. Specific difficulties**

IES Manuel de Falla. Year 3 ESO. Session 2. 2009 02 23

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

2. Teacher: But did you open a new one or was this one already there...tell Noelia what she needs to do so can learn with you.

3. Student 1: The first thing you have to do is introduce whatever people want, such as water, electricity...Let’s place the electricity station....Teacher! Where are the wires?

Students look at the two elements pointed out by the teacher, they have not forgotten even though that was seen at last week’s lesson. It is interesting to see the justification as well as the procedure to follow, or the sitting of it (7, 9, 12). Once again they explain it with help from the teacher.

4. Teacher: First you have to create a power station

5. Student 1: But...where is it?

6. Teacher: The two you already have, you had both of them there...

7. Student 1: Oh...where do we place them?

8. Student 2: I don’t know...in the middle, don’t you think?

9. Student 1: Now we have to include water...

10. Student 2: Where do I click?

11. Student 1: Click on public service and we’ll include the water right now...

One last comment, at this point of the game, areas rather than specific houses are constructed. Moreover, it is necessary not just to organize the physical space but also social resources, such as, for example, educational centres.

12. Teacher: You’re not building the houses, you’re building the areas. You will only construct those buildings that are needed by the people that are going to live there and who, if those buildings exist, are going to go and live there, and if they don’t, people are going to go somewhere else, of course. If you don’t have a school where you can take your children, you’re not going to move there.

The previous conversations show how the game allows them to move forward in the construction of the city. Only the initial moments of the game have been described, but its continuous presence in the classroom will help in generating numerous educational resources. Using them will not just help them to think, it will also instigate interesting debates, regarding curriculum topics as well as other issues that students need in their daily life and that, perhaps, could be scheduled within tutoring or support sessions, etc.
Contents of the game and its results

We can go back again to the issue of the relationship between the real and the virtual world and ask ourselves to what extent the game offers a replica of our everyday life and, above all, to what extent this increases the value of the game as an educational resource. All the media, for centuries, have tried to look at the reality around us. Realism means that computer images, movements, shapes, have nothing to offer, nothing to add to the world of our daily experience. But beyond reality there are personal interpretations of the world. The new software developments open the possibility to create worlds in which imagination and interpretation are present. The future of games may be found along this line, in our imagination. Reality can be a source of inspiration in content terms, it enriches the virtual world with new elements; however, it may be that the industry of hyperrealism is dead.

Let’s see what happens, again in SimCity Creator, when we look at its relationship with the physical reality, its spaces, its structures, etc. In other words, we ask ourselves what happens when reality becomes virtual. We can talk about two types of realism.

- **Perceptual realism.** Mental representations that give meaning to the world are as important as the stimuli they cause. The exact similarity is not always the most useful: surprises or shocks that show the player the fact that he does not live in a physical world can also be useful.

- **Social realism.** It is accomplished by designing a world that is similar to reality, with streets, houses, and ceremonies that allow players to identify themselves with their social role in the world.

**BEYOND REALITY**

Let’s see how this is reflected in the buildings that students managed to construct. We are now on the third session. This time, comments made by each one of the groups were collected and synthesised in the researcher summaries. Reviewing them suggests, firstly, that the teacher encouraged a collective thinking process on the results obtained; in addition, we can observe the advances made during the game and the way in which players explain them:

**Fragment 7. Synthesis of the situation. Summaries and audios.**
IES Manuel de Falla. Year 3 ESO. Session 3. 2009 02 30

Group 1: Their city burned down and they had to start again, but they don’t know why. They started without inhabitants, but slowly it started growing and improving. They have schools, hospitals, firemen, police, etc.
In this group, students don’t know the reasons for what took place during the game, a fire broke out and destroyed the city. We are faced with a situation that invites to do some investigating, to look for what could have caused the fire. However, despite everything, things improved and it was possible to move forward. Slowly, the population increased, something that could be related to the presence of social services.

Group 5: They’ve built a city with a large shopping centre, but it doesn’t grow. They say some things are missing, because they started from scratch. At the heart of the city they want to build an oil rig because they have some parts where energy does not reach and the electricity station is not very powerful.

In this case, everything is a difficulty, which could be related to the shortage of energy. Undoubtedly, this raises issues for class debate. Let’s think, for example, on the need to build sustainable and enjoyable cities for the citizens. The immediate question, but not easy to answer, is if building an oil rig in the centre of the city is the best option. This provides an opportunity to discuss that everything has a cost and the advantages must be balanced with the disadvantages.

Group 4: First they looked for electricity, so that the whole city could be covered. Then the water pipes throughout the city. They created residential areas so that people could live, with shopping centres and roads. It has 4,800 inhabitants. Now it would be interesting to make more roads so that more people may come.

When the result is positive it is possible to reflect upon it. Description from Group 4 grabs the reader’s attention due to its coherence. It seems like the process followed, which was the same as the one suggested by the teacher, had positive consequences. The process was as follows: Create electricity, water and residential areas, create services of a social nature; finally, wait for the population to grow as a consequence of progressively continuing to create new ways of communication. These little summaries that students were able to verbalize in relation to the game results show many of the numerous possibilities that this commercial video game offers as an educational resource. There are clear differences among what happened in these three groups, each one of them shows complementary ways of working with Sim City Creator in the classroom.
We have seen there are a lot of types of video games. For example, strategy games like Boom Blox or Spore, simulation games like The Sims Castaway or SimCity Creator, music games like Rock Band, or sports games like FIFA10. Especially interesting are adventure games. At least at first sight, the mechanics of the game are related to the possibility of telling stories.

Due to the educational implications, we will highlight two characteristics of these games.

- As opposed to other genres, the adventure told by the video game may borrow elements from other media, especially from literature and films. This phenomenon, that specialists have called “trans-media”, means that a story is presented transversally through different formats. That is to say, it can be expressed and communicated in many ways, using several languages. Each text will introduce a specific and valuable contribution to the entire story line. For example, nowadays, hero adventures like Harry Potter are present in more than one medium and appear in multiple platforms.

- This capability of stories to go from one medium to another turns adventure video games into appropriate tools for teaching and learning purposes. From and with the aid of video games, new discourses associated to multiples ways of becoming literate are acquired. These video games give us the opportunity to reflect upon how different literacy means are put into practice and interconnect between one another.

PRESENCE IN THE CLASSROOMS

The presence of different communication media in our daily life requires the acquisition of new capabilities that allow us to control multi-media discourses. Within the media universe, new things don’t substitute old things, they transform and complement them.

As a consequence of these social and technological changes, students must jointly use a computer, a book or the traditional notebook. In this chapter we will show how adventure video games contribute to the student body developing new ways of representation and communication. We have also reflect over how, using adventure video games, students have managed to dominate, step by step, narrative thinking and some problem solving processes hidden behind the plot of the stories.

From this point of view, two questions may be asked: What characteristics define this type of game? What educational possibilities do the challenges hidden behind their screen hold? What kind of work can teachers develop based on their use? To answer these questions, we’ve analyzed the data collected at the workshop carried out by a teacher from the Spanish language and literature department, with his students from year 1 of ESO (groups A and B) and a video game of the Harry Potter series.
**Harry Potter and the Order of the Phoenix: adventures and problems**

The video game stories are interactive, so that players must perform the correct actions to get to the finish line. Screens include elements that offer the possibility of investigating, exploring and interacting with the characters of the video game, the main characters of the story. Challenges that arise are related more to the story and the solving of problems than to reflex answers.

During the workshop in which we are focusing right now, we worked with the video game Harry Potter and the Order of the Phoenix. The game takes place in a fantasy world where new and challenging missions are discovered through identifying with the main character, a character that comes from the literary world and was also adapted in film.

Let’s see how the game is introduced in the instructions manual that comes with the video game.

---

**HARRY POTTER’S MOST DANGEROUS COURSE**

Live through all the thrilling action of Harry Potter’s fifth year of study at Hogwarts Ministry of Magic and Witchery, from the attack of the dementors in Little Whinging up to the epic battles at the Ministry of Magic.

While the magical world refuses to accept the return of Voldemort, Harry recruits a small group of students and secretly prepares them in defensive magic practices. They call themselves “Dumbledore’s Army” (DA)

Hold Harry’s magic wand and explore the dark corridors, the secret rooms and the extensive grounds at Hogwarts. Compete in mini-games, talk to enchanted portraits and perfect your spell casting techniques.

In summary: sharpen your magical abilities, gather up the courage and prepare to fight Lord Voldemort and his fearful dark forces in Harry’s most dangerous and complicated year until now.
This description shows that, from the beginning, the player faces the game’s challenges, he faces two essential elements that define it:

- On the one hand, the adventures Harry Potter and his friends are going to go through.
- On the other, the problems the player will have to solve in order for the storyline to advance in the game.

This complementation among the problems presented and the fictional experience, ended up being determining factors for what happened during the workshop.

**Programming a workshop with adventure video games**

At first glance, one can be lead to thinking that an adventure video game may be, above all, an educational instrument that helps to tell stories and that, thus, it may contribute to the development of narrative thinking. In fact, both the teacher and the researchers that accompanied him during the workshop believed this.

Events that followed on the screens and the corresponding reactions from students transformed this first hunch. Without solving problems, the game doesn’t move forward. **Harry becomes a character that not only teaches how to tell stories but also how to analyze and deduce.**

The workshop in question took place during the third quarter of the year. These are some of the peculiarities of its context that we should take into account:

- The teacher as well as the researchers had played the game before, and from the stance of having a certain insight of the game, they jointly defined their objectives throughout the sessions.
- The language teacher had participated in a prior workshop with the researchers. This previous relationship had created a framework of shared ideas that, undoubtedly, eased collaboration.

These statements can be confirmed by reading the summary from one of the researchers when he is preparing one of the sessions with the teacher prior to the start of the actual workshop.

**Fragment 1. The teacher’s knowledge**

IES Manuel de Falla. Year 1 ESO. Session 1. 2009 05 05. Researcher’s summary

“(…) the teacher seems very prepared, organized and clear about what he wants kids to accomplish. In fact, he has been playing for quite some time to get to know the game and has searched for Hogwarts map; he has also proposed the areas for each one of the groups, where they should move and act. (…). He is a very prepared teacher with sufficient strategies to develop the video game workshop on his own”.

These ideas from the researcher show that the teacher faces the workshop with great security and he has realized that to teach from or aided by the video game, it is necessary to have played it. In fact, when the workshop concluded he had passed 100% of the challenges posed by the video game. **He had certainly become the greatest expert among all of the workshop participants.** Furthermore, the knowledge on the video game he acquired granted him a new role before his students, he stopped being the language teacher to become the expert, and in many occasions students called him to ask him questions, on a one-to-one basis. In our analysis of the workshop we were able to observe several of these situations that we will show later on.
Harry Potter’s adventures and problems in the classroom

Let’s see what happened in the first session. Data allow us to state that the story and resolution of problems intertwine in the game.

- First we will see how the teacher is aware that his students must **solve complex tasks, understand the goals, and define the problems**. For this they may turn to the game’s guide and the help he personally prepared for them, in a new and more complete guide, more specific and adapted to his objectives.

- But the video game **also has a story that makes one live through the excitement of the adventure**. We will see how the video game’s music and sound help in understand it.

**FACING THE PROBLEMS**

It is interesting to note how the teacher introduces the game to his students.

Fragment 2. The teacher introduces the game to the classroom.

IES Manuel de Falla. Year 1 ESO B. Session 1. 2009 05 05

1. Teacher: I am going to give each group a sheet with the missions you must accomplish. ok? (...) At first it must be a discovery, but after we have discovered how to use the wand and how we’ll place ourselves in the map to snoop around (...) we are going to place ourselves in specific parts of the map, what for? If we don’t do it, Harry Potter and his friends have to run during the whole game, and they don’t have time.

2. Teacher: We need Harry Potter and his friends to get to their goals as quickly as possible. Tasks are related to the search for 38 characters. The faster we accomplish it, the greater the possibility, in just 4 sessions (...) of reaching the final battle.
From his words we may derive ideas that give clues for students to tackle the game in the most efficient way possible. It is the first session, and he has a clear objective for it: “At first it must be a discovery, but after we have discovered how to use the wand and how we’ll place ourselves in the map (...) we are going to place ourselves in specific parts of the map.” These two objects, the wand and the map to prowl, will be the basic elements to understand the game’s mechanism and carry out actions, without ever forgetting our final goal. “Tasks are related to the search for 38 characters”. Giving students this information will allow them to structure their thoughts so that they will know were to go and how to act to attain certain objectives and not get lost along the game’s story line.

**THE GAME’S GUIDE AND THE TEACHER’S GUIDE**

The game’s guides are valuable resources to be able to advance. In this case we had the one provided by the manufacturer, including the game’s box and a CD, and the one prepared by the teacher.

The game’s guide or instructions manual: Although it is impossible to know for sure how many players read the instructions manual, it offers help to participants and can serve as a reference tool when it comes to playing. If we analyze the manual we will see that it has been created with the aim of facilitating information for beginners. The tone and language also suggests that the reader is the one in charge of directing the game, even if the “rules” place certain limits to his imagination and wishes.

This guide gave students certain information about the game, which was essential to face its missions, as we can see in the images shown below.

![Game's guide](image1)

![Teacher's guide](image2)

**The teacher’s guide:** At the same time, another important guide came to life: the one created by the teacher with the aim of placing students in different spaces and tasks within the game.

**Fragment 3. Usefulness of the teacher’s guide**

IES Manuel de Falla. Year 1 ESO Group A. Session 1. 2009 05 05

Teacher: Ok, listen to me for one second, and as I promised yesterday, today we’ll start playing. (...) whenever it is possible we will follow an itinerary, not an itinerary, some cues I will give you, ok, as soon as you are able to choose tasks you will follow the map I am going to give you. (.) I am going to give you the maps, ok? And you start, if at the beginning you can’t work in the areas of the map I have given you, keep going until you can, and from then on choose the tasks (.)

In this case we can see how the guide written by the teacher had a very specific goal, to help students move through the game quickly and solve as many tasks as possible.
Researchers’ summaries reflect the problem encountered when the kids played with the sound turned off.

At the beginning of the sessions nobody seemed aware of his or her role. At a certain point in time is was necessary to turn up the volume of the TVs to be able to listen to the clues provided through sound.

In summary, sound makes it easier to carry out the activities that the game’s characters must perform to advance in the game.

Fragment 4-. The value of music and dialogues.

IES Manuel de Falla. Researcher summary. Session 1. 2009 05 05

“(…) in the game, the dialogue between the characters and the music are an important element to follow the game’s story line. Therefore, all students started to turn up the volume of their TV, and when we realized it was chaos and we were going to go crazy we told them to turn on the game’s subtitles, so that everything they

Even so, some students resisted to turning off the volume. I think this means that the game’s music, in this case, plays a really important role and is full of meaning, both for the students and for what it represents in the film and in the game”

Elements such as the dialogues between characters or the music are more that a mere accessory within the context of the story. They are very valuable resources to place the player within the story line of the adventure that takes place through the different scenes.
Narrative and problem solving

We are now in the second session and the dialogues between the teacher and researchers indicate the interpretations that each one of them has made of the game.

- The professor struggles before the idea of what didactical resources to use. While before he had thought they could establish a relationship between the video game and other media, such as the films or the novel, he now finds it difficult. In fact, students have dedicated the class time to solving problems rather than to telling stories.

- On their part, researchers also express their opinions in a similar line, maybe more worried about theoretical issues related to whether this video game includes a story or not.

We will analyze some fragments of the interviews they hold. We observe how both of them seem to struggle with the challenges of a theoretical problem, whether the nature of video games allows a story to be told, but each one of them sees it from their own perspective, conditioned by their training and immediate interests.

In the first dialogue transcribed below, the teacher’s ideas can be analyzed in detail.

Fragment 5. Teacher’s objective with the video game.

IES Manuel de Falla. Audio between researchers and teachers. Session 2, 2009 05 12

1. Teacher: What I have looked for with the game and activity, I don’t care whether I’ve accomplished it, is for them to have all the tasks available and for them to perform them. Maybe that gives me a lead, for me to take the book, the film, make the cuts, because I still haven’t been able to watch (…)

2. Teacher: The thing is that from now on I am going to cover, things related to writing, i.e., narrative, description, dialogue, and (...) literature.

3. Teacher: So, that is what I want to link, I have already talked to them, they are going to prepare the topics which is also a good exercise and then it will all be very practical and, afterwards, one of the practices will be precisely that.

This teacher’s reflection is a whole work program for the future, which includes a revision of what they have done. This reflection was expressed without interruptions, but we have fragmented it to ease its analysis.
His goal until then seems clear: He wanted, from the beginning, for students to advance in the game by performing the tasks proposed. It was a matter of solving problems: he wanted them to have all the tasks available. But now he is aware that a language teacher must work on text formats (2), narrative, description, dialogue, all of it related to writing. Maybe he realizes he doesn’t have much time and decides for the students themselves to prepare the topics (3).

The following week, before starting session 3, the teacher has given up on comparing the video game to the novel. He has realized, and he says so, that it doesn’t make much sense.

Fragment 6. Evolution of the teacher’s prior ideas.

IES Manuel de Falla. Year 1 ESO. Session 3. 2009 05 19. Audio between researchers and teachers.

1. Teacher: I have an opinion, I don’t know what their opinion is, because I have also been with them, but (...). Well, on the one hand what I said yesterday about writing, all that about comparing, I think we will pass on that because it doesn’t make much sense, the book is very (...)

2. Researcher: It follows a different path.

3. Teacher: (...) yes, I will bring some passages and we will play some parts of the film, but just as a complement.

Slowly, the teacher’s idea will change when he discovers, through his experience with the game, that this Harry Potter video game had little connection to stories with the same title in other supports. We can see how it becomes evident in the third workshop session in a conversation with researchers. “I have an opinion (...) all that about comparing, I think we will pass on that because it doesn’t make much sense”. Although this connection is not as direct, the teacher understands that both supports convey stories and, therefore, are an important complement to be able to work narratives in the classroom, “I will bring some passages and we will play some parts of the film, but just as a complement”.

Now it will be the researcher’s turn to express her opinion, perhaps more focused on theoretical explanations, but suggested by the teacher’s ideas.

Fragment 7. The game’s main quality.

IES Manuel de Falla. Year 1 ESO. Session 3. 2009 05 19. Audio between researchers and teachers.

1. Researcher: I think the video game, and you have seen it, is about the permanent solving of problems (...)

2. Researcher: On the type of text they could write (...) I have the impression that the narrative is always intertwined with the solving of problems

3. Teacher: More things can be done, I intend to do more things than narrative (...) Even work on an exposition type of text, sort of like the one included with the game where it explains how to play.

4. Researcher: That would be very interesting because it’s a text related to the solving of problems.

The paragraph above clearly suggests not just that things can be learned from the video game, whether it is to tell stories or solve problems, but also how it can be done. We can’t forget that the teacher teaches Spanish language, and his ultimate concern is for his students to learn how to write. Once they have decided that maybe Harry Potter books and films may be used as an additional support, he decides to propose that students should write different types of texts that can be published in the school newspaper, created solely to talk about the experience with Harry Potter.
Reflecting upon the video game: a trans-media experience

Covering curricular contents is a permanent concern among teachers, but the knowledge that should be acquired does not always motivate students. If, traditionally, the cinema, television, or newspapers were good allies to motivate them, today video games can also play that role. But playing it not enough, the fact of considering them educational instruments requires teachers to use strategies that foster reflection processes.

Moreover, if we take into account that this was a Spanish language teacher, we will understand it was necessary to look for resources that allowed them to reflect upon the game and also to put into practice certain linguistic abilities and, why not, within a trans-media experience in which the video game could co-exist with other types of text and other types of discourse.

All this drove the teacher to propose the creation of the newspaper “The prophet” in which, based on the adventures experienced in the game, students could tell the story or describe the characters. They could also tell about their experiences at the workshop.

We will include some of the texts from students to show that solving problems and telling stories is not contradictory, it is complementary. Let’s recall that this type of dichotomy had been continually present in the workshop sessions. The work by these students, published in their newspaper on the Internet, shows what Jerome Bruner had already said some years ago in relation to these two human capabilities, to analyze and to tell.

If we stop to read one of the creations written by a student, published in the newspaper, we see that the video game contributed context to his story. The text is as good as any from a writer of novels.

Fragment 8.  Narrating the adventure of Harry Potter.

Student Year 1 ESO A. Newspaper “The Prophet” http://www.uahgipi.org/aventuras/category/namativa/page/6/

The gigantic Great Dining Room at Hogwarts School was full of people. Large windowpanes at both sides lit the room in which four rows of tables were situated along the dining room. Teachers had their own tables, in front of all the others. Harry was with Ron and Hermione. Ron Cheevey wanted to enrol in DA, Dumbledore’s army, but they had to perform a task for him. They must find an apple that could only be found in the Forbidden Forest, to use it in making a potion.

It could be possible to state that it’s actually one of the detailed descriptions from the author of the novel, since it is likely that this student resorted to the book to create his story. “The gigantic Great Dining Room at Hogwarts School was full of people. Large windowpanes at both sides lit the room in which four rows of tables were situated along the dining room.”
We have to point out, on the other hand, that the episode recounted by Jaime in this text is not one included in the film or the novel, but it is actually one of the missions they accomplished in the game. “They must find an apple that could only be found in the Forbidden Forest, to use it in making a potion.”

Now we will see another text written by another student.

Fragment 9. Interview with Harry Potter.

Hello everyone, we have a very special guest today. He is someone that has achieved a lot of success among teenagers with his books and films. Without further ado, here is Harry Potter. Hi Harry.

Hi Pablo, I am delighted to be here with you.

As you know, you have achieved a lot of success worldwide thanks to the books and films that tell about your adventures. How are you coping with such a luxurious life?

Well, don’t think it’s just a matter of luxury and easy life. People think it is very easy to do this, but that is not the case. I wake up at 6:30 every morning. Life at Hogwarts is not just adventures and parties: there are also things like in any other school, there are millions of exams and homework. (…)

The text shows that students are aware of the presence of Harry Potter in different media from which to read and live his adventures. “He is someone that has achieved a lot of success among teenagers with his books and films”. In addition, we see he adopts the character’s perspective, by turning him into a “real” character that can be interviewed. “How are you coping with such a luxurious life?” Well, don’t think it’s just a matter of luxury and easy life. People think it is very easy to do this, but that is not the case.” In the newspaper we can also find opinion articles on how the workshop went and what they discovered. These opinions also include the existing relationship among the different media.
In conclusion

Accepting the idea that we are digital citizens means incorporating into our lives new ways of representation and communication related, at least, with two specific abilities:

- On the one hand, to solve problems through play by applying different strategies.
- On the other, to understand and live through Harry Potter's story and adventure.

This workshop also allowed students to realize that Harry Potter is a trans-media narration. His stories develop in multiple platforms (novels, films and video games) and each text makes a specific contribution to all the adventures as a whole. To play with Harry Potter and the Order of the Phoenix encouraged students to discover the existing relationships among the different supports. On the other hand, the final product in the form of a newspaper helped them become aware of the value of words and images when they are addressing others.

Fragment 10. Opinions on the workshop written by students.

Students Year 1 ESO A. Newspaper “The Prophet” http://www.uahgipl.org/aventuras/category/narrativa/page/6/

In this article I will try to explain my personal experience with the Wii game that takes place on Tuesdays at the Institute. (…) The characters of the game are very similar to the characters in the film, especially Harry Potter. The scenes are also very similar to the ones in the film.

(Agatha Aliaga, year 1 ESO A)

(…) the game we have played is Harry Potter and the Order of the Phoenix, which I think is a very good thing, because those who had not read the book are probably now curious and I hope they’ll start to read it.

(Maria Palomo, year 1 ESO A)

These two texts are again proof of the presence of Harry Potter in the different media, of the interconnection existing among all of them, for example, as stated by Agatha when she says “All the characters of the game are very similar to the characters in the film, especially Harry Potter. The scenes are also very similar to the ones in the film”. Finally, her words show that the video game became such a motivating tool for students that some even expect their classmates to start reading Harry Potters books to discover more things “(…) those who had not read the book are probably now curious and I hope they’ll start to read it”.

All video games have their own language and rules that shape them, a context in which the player takes an active part by coming up against the game’s story line. However, sometimes the players need a series of resources in order to be able to continue playing. We are talking about the importance of the video games narrative or the guides that tell the player what paths may be followed. What value do these instruments have? It depends on the use people make of them and on how their influence encourages the acquisition of abilities and new learning or it does not.
Of the different categories in which we can classify video games, one of the most popular ones is sports. Its close relationship with the immediate reality of professional sports and the identification of players with their favourite teams or sports-people make them especially attractive to teenagers. In the following pages we analyze how some of the aspects present in sports video games are a good opportunity to learn from them.

**Game and sports**

Both, sports and games, play an important role in the life of teenagers. Whether it is as active participants or as mere spectators, the interest for both activities occupies a space within their leisure time, either by combining both concepts or developing each one separately.

**Games** foster the development of practical and psychological abilities by contributing to mental and physical stimulation. Thus, in addition to providing entertainment and enjoyment to participants, they can play an educational role.

**Sports**, however, imply carrying out a physical activity where a set of rules is respected and participants do so in an organized fashion. Ideally, sports amuse and entertain, and they provide an intense way of play that tends to coordinate muscular efforts for a physical and psychological improvement of the human being. In addition, in the sports world there is always a competitive dimension that in some games ends up being totally diluted.

**Sports video games**, in short, are activities that combine, to a greater or lesser extent, different aspects of games and sports, such as entertainment, physical development, psychological stimulus and competition.
Real and virtual sports: the rules of the game

The analysis we are now focused on is centred on the work of a teacher within the Physical Education environment. In this context, we use sports video games related to team sports, such as Sports FIFA 10 or NBA Live 10. Let’s see how, through the characteristics of these games, we get closer to the ideal situation of joining a real and a virtual sport within the classroom.

One of the most interesting characteristics presented by sports video games is that they combine two types of rules simultaneously: On the one hand, the rules of the game, i.e. the ones that have to do with the options offered by the video game, the controllers, the different modalities to compete, etc.; and on the other, the sports own rules that show up on the video game, i.e. the ones that have to do with the sport itself, in this case football (offside, bookings, number of changes, etc.) or basketball (time of ball possession, travelling with the ball, 3 seconds in the area, etc.).

Fragment 1. Rules of the video game and rules in football. Physical Education. FIFA09. XBOX 360


Students (E1, E2, E3, E4 and E5 from left to right) are sitting in front of the screen (in this case the image projected on the wall). They play with a controller, which is passed around among them so they can all play.

E4 just finished his turn and gives the controller to E3. A student from another group (Ex) comes over to ask:

1. Ex: Hey, who are you playing? Who are you playing with?
2. E4: We’ve kept going ....with the teams they had...they are really bad teams...
3. E2: Hey, we’re going to re-start the game now (when it’s finished)
4. E3: Yes, yes...
5. E4: No! We’ll choose other teams!
6. E3: It’s to gain time
7. E2: Yes, yes...
8. E5: Yes, it doesn’t matter...
9. E3: (looking at the screen) Wow!
10. E5: Expelled...he just did an aggressive entry with his player).
11. E2: Foul
12. E5: Penalty
13. E4: No, foul, thank goodness
14. E3: I just saved you from being scored a goal, (while passing the controller onto E2).

This fragment shows how players start talking about the possibilities offered in a virtual world (statements 1, 3, 5) but where one can carry out activities usual to the real world (statements 11 to 14). That is to say, they start talking about the rules of the video game (they can re-start the game) and they quickly turn onto football rules (they discuss whether a foul was inside or outside of the area).

Another interesting aspect, regarding the connection between the rules of the video game and the ones for the sport is that, in the game, the real rules can be modified temporarily to play a specific game or competition. This allows an adaptation from the game to the player’s ability or to the objectives he is looking to accomplish in a specific game.

That is to say, by introducing personalized elements, a new space is built, designed by the player himself, games that transform the scenery of the game. For example, it will be possible for players not to be injured, to modify the number of changes or to eliminate the “offside” in the case of football, or the possibility of “returning the ball to the backcourt” not being considered as an offence. Other elements may also be changed, such as the number of personal fouls or the time ball possession.
In many cases, this strategy responds to the need to adapt the purpose of the game to the specific needs of a player at that point in time, with the aim of making it more attractive.

If the objectives are unreachable, there could be a lack of motivation that could lead onto abandonment. This is associated to the so-called achievement principle:

“For apprentices, at all ability levels, there are intrinsic rewards from the start of the game, different for each level of learning, effort and skill, as well as the recognition of the achievements attained.”

Certainly, this principle is related to the possibility of attaining prizes or rewards, but also with the adaptation of the game to a level of difficulty appropriate for the player. And this doesn’t just depend on the player’s skill in the video game itself, but also in relation to his control of the technique and tactics of the sport in which the game is taking place.

Who are we? Identifying with the players

As we have already mentioned, we have observed one of the interesting aspects provided by sports video games in particular, and that is the way in which players identify with the characters of the game. We are analyzing two video games that recreate team sports, in particular football and basketball. In both cases, and in contrast with other types of games, the game starts with choosing a team or player (depending on the playing mode) with whom we’ll play against different rivals.

What we ask ourselves at this point is: How does this choice take place? What criteria do players use? How do they identify with the teams they choose? The data analyzed, including all the classrooms in which sports video games were present, make it possible for us to relate the building of one’s identity with the processes that stress personal as well as collective traits in players.

INDIVIDUAL IDENTIFICATION

One’s identity is a very important issue for teachers that work with teenagers, and it can be approached with the help of sports video games. James Paul Gee²⁹, perhaps the most relevant author when it comes to looking for theories that support the use of video games in the classroom and to whom we have referred previously, explains that learning with these tools implies assuming and playing with different identities so that the apprentice has to make real “choices” (in the development if his virtual
identity), having multiple opportunities to think about the relationship between the new identities and the previous ones.

This perspective implies that students will have to relate and reflect upon their multiple identities in the real and virtual world. That is to say, apprentices participate by committing themselves fully (giving it a lot of time and dedication) because they feel that their real identity has expanded into a virtual reality that makes them commit.

Let’s see an example of how this identification can take place, which is probably the simplest and clearest way of explaining it.

Fragment 2. Using the video game controllers. Physical Education. FIFA09. XBOX 360


Students (E1, E2, E3, E4 and E5 from left to right) are sitting in front of the screen (in this case the image projected on the wall). The session starts and once the console has been turned on, two of the students (E2 and E3) are each holding one of the controllers.

The screen shows up the game’s initial image: a player with the ball at his feet in the middle of an empty football pitch. The student starts to move the player.

1. E3: Look, look, look!!!... (While he moves the controllers)
2. E4: That’s not you!
3. E3: Yes, that is me!! Look, look!!! I swear!!!... (While E4 shakes his head in denial, he points at the screen and continues talking)
4. E1: Hit it...hit...
5. E3: Look!...Forwards...backwards... (He moves the directing button in the controller)
6. E1: Go on, great...hit it, hit “start the game” or something like that...
7. E3: Look, wait...press “Start” and that’s it... (The game’s options menu shows up on the screen) “Quick game” (One of the options)
8. E4: Ok.... yes, “quick game”.

In the previous text we observe how players identify with one of the virtual characters that shows up on the screen and attribute their actions onto him. This identification may explain one of the many motivating elements of the game, to become their favourite idol and behave like him.

IDENTIFYING WITH A TEAM

Sports video games also create situations that favour identifying with a group. In this line, Manuel Castells, Spanish sociologist working in the USA, explains the process of building a social identity. In his opinion, all identities are built, and to analyze how the different types of identities are built, by whom and with what results, it cannot be approached in general and abstract terms: it depends on the social context in which people carry out their activities.

Also, James Paul Gee defines a `socially situated identity´ as a way of acting, interacting, believing, valuating and using signs, symbols, objects and technologies to build and promote a specific and socially recognizable identity as a certain “type of person” doing “certain types of things”. For example, the identity as a video game player, a football fan, a real Madrid follower or a Messi admirer. This relates to the idea that an identity is shaped within a group, i.e. it is built as a member of the different groups to which a person belongs, or of which the person is part. In this sense, each person has different socially situated identities and, throughout a lifetime, these identities are created and sometimes lost.

Let’s see a fragment from the summary of one of the researchers who observed the process of building one’s identity when students played in small groups with FIFA10.
Fragment 3. Identifying with the team at hand


“I find it interesting that they always speak in the first person when they refer to the teams they are playing with in the video game. In the canon group, for example, they are playing a game with Real Madrid and Barcelona, and when asked they answer, “I am Real Madrid” and “I am Barcelona.” Even taking into account that my question said, “What teams have you chosen?”, etc., to which it would have been easy to respond, “I chose...”, “I’m playing with...”. They always refer to the team they are playing with as “I am...”

“Another one of the groups is playing together in the same team. In this case they are playing with the Spanish team. I ask the same question and they answer (almost all at once) “We are Spain”. Moreover, at that point another student from the neighbouring group comes by and asks them “Who are you?”. They talk about themselves, not about the team... if they are Real Madrid, then “we are Real Madrid” and not “I’m playing with Real Madrid” or “I’ve chosen Real Madrid”. Even when someone else asks he says “Who are you?” And not “Whom are you playing with?”

The researcher is already interpreting his observations. He shows how students, individually, identify with a collectivity. All this is observed by noticing that they talk in the first person. The researcher’s question was asked in an impersonal way, and thus we could have expected an answer that implied a greater distance with respect to the virtual character; for example, we have chosen Spain’s team and not “we are Spain”.

CULTURAL IDENTITY: MY COUNTRY

Sports video games also allow identifying not just with the group but also with a country’s culture. We have already pointed out that one’s identity is something dynamic, something that is constantly being shaped and modified. In addition to virtual and real identities, James Paul Gee talks about a projective identity that relates to the player’s wishes. Furthermore, a certain individual, or a group, can have multiple identities, even if this plurality becomes a source of tensions and contradictions both in one’s own representation as well as in the social activity.

Let’s now see an example of this projective identity, maybe related to the player’s wishes, in this case an immigrant student whose family is from Ecuador. Once again the data are taken from the researcher’s summary.

Fragment 4. Choosing a team


“I approach a group with two girls and a boy to ask them with what team they are playing. The girl that has the controller says “I am playing with Ecuador...I think it’s very unfair, because Peru is not there and I can’t choose it. I wanted to be Peru”. It is interesting because when referring to Ecuador she does say “I am playing with...” and when talking about Peru she says “I want to be...” (the girl is from Peru). She says she has chosen Peru because “of the ones included in the list that are close by it is the one I like the most”.

“The boy playing against her is from Morocco and he has chosen Holland. Likewise, I ask him why and he says Morocco is not on the list either, so he has chosen Holland because “they have a good team” and he wanted to pick a “good one, but not too good, to not take advantage”. The criteria to choose a team can be very varied, depending on the goal of the game, but its starting point almost always seems to be the identification with one’s team or country”.

They always have to choose a team to play with. They not always choose their own team or their own country. What makes someone choose one team over another? Sometimes, as we have seen, for the team to be good...or bad. The selection has to do with the player’s level and the challenge faced: you can choose a bad team to see if you are able to beat that team. But there is something else, our wishes and who we would like to be.
The teacher’s perspective

Undoubtedly, adults, and especially the teacher, condition life in the classroom. This is what happened in our workshop. Once the most relevant characteristics of sports video games have been analyzed within the context of our study, we will now focus on the role of the teacher.

When implementing experiences that intend to connect the use of digital or multimedia tools with the learning process, the role of adults is essential. In this case, with video games, the adult acts as a guide to encourage a reflection process while playing with game, because the use of video games on its own does not lead on to reflecting about them. From this point of view, understanding how the teacher approaches the situation in the classroom allows us to understand what has taken place. Thus, we have a better understanding of how the experience has developed, what problems may arise, what attitudes favour learning, etc.

Our data is taken from interviews held with the Physical Education teacher who participated in the classroom experience along with the University team. Interviews took place before (in the preparation stage) and during the work process. In addition, we have analyzed the summaries written by the participants in each of the sessions and the final report written by the teacher once the workshop was completed.

The teacher’s prior ideas are going to be essential for the experience to work in one way or another. His beliefs will determine, to a great extent, how activities are carried out.

From the teachers’ point of view, their first concern is how to adapt the topic covered in the video game to the contents of the subject, so that it makes sense with relation to the curriculum. The issue discussed with the teacher may be expressed as follows: How, then, must we approach the objectives that we intend to achieve with this experience?
PLANNING IN ACCORDANCE TO PREVIOUS IDEAS

If we focus on the previous conversations with the teacher, his learning expectations through video games were quite clear and aimed at very specific goals. By observing his expectations before starting the experience, we realize that he intends to convey to students some of the curriculum contents of the subject he teaches. On the other hand, these goals are very specific and refer to what he expects to accomplish in a specific session, i.e., the goals are not directly related to more general ones, or with abilities that go further than the curriculum contents.

Table 10. The goals proposed by the teacher for specific class sessions.

<table>
<thead>
<tr>
<th>Session</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st session</td>
<td>In the first session they will play on the Wii console with the aim of thinking about eye-hand coordination. The idea remains open and RESCHR2 suggests they may compare their motor skills in the real and virtual worlds. It’s an excellent idea, and the TEAC welcomes it with interest, so we propose this as the axis for working during the session.</td>
</tr>
<tr>
<td>2nd session</td>
<td>In the second session they will play FIFA 09 and NBA Live 09 in the XBOX 360, divided into groups. The teacher asks us that, within the general idea of thinking about specific aspects of the rules in each sport (maybe also in the real and virtual worlds) and, in addition to thinking about issues related to tactics (for example, choosing the best positions for the team you have etc.), that we let him think a little more about the topic in order to discuss it at a later time.</td>
</tr>
<tr>
<td>3rd session</td>
<td>Similarly to other short workshops, this session will be dedicated to creating a multimedia product that will be uploaded into the virtual community.</td>
</tr>
</tbody>
</table>

THE REALITY IN THE CLASSROOM

From this perspective, once work in the classroom has started, the initial objectives are transformed and they adapt themselves to the particularities of the group and the situation present at the time of playing. The process is not simple. Let’s see some fragments from the researcher’s summary and from the conversation with the teacher and the researcher in the classroom during the first session:

Fragment 5. Session summary and interview teacher-researcher during the first session

IES Manuel de Falla. Year 4 ESO. Session 1. 2009 02 17. Researcher summary

‘The general impression I had was that kids believed the classroom was the playground where they could practice physical activities. It was a difficult class for us because we didn’t understand it, they just played, I don’t know if they’ll talk about it somewhere else.’

IES Manuel de Falla. Year 4 ESO. Session 1. 2009 02 17. Audio researcher

1. Teacher.: I’ve divided them into five groups, and I’ve assigned a monitor to each group, whomever was more familiar with the Wii, so that queries... could be resolved.
2. Research.: Yes...
3. Teacher.: And then, applied to my stuff for the time being for this session (she shows a card for students to fill in) what I have written down, related to my stuff eh...
physical fitness, technique, tactics and strategy...rules, educational objectives and values...

4. Researcher: That’s great!

5. Teacher: And the whole group has to achieve these.

6. Researcher: And each one has chosen the game they wanted or what?

7. Teacher: To start with I’ve told them to try to play with all the games, the thing is I’m not sure if there’s going to be enough time...

8. Researcher: That’s ok...they’re coming back another day...

We observe how the teacher seemed worried about the curricular aspects. Sometimes, interaction between teachers and researchers is complex during the first sessions, and progressively their goals tend to converge. We will see this in the following section.

**RE-THINKING THE OBJECTIVES**

However, slowly the teacher started to re-think and re-build the objectives and, with each passing day, to appreciate new possibilities offered by this working method.

**Table 11. New general objectives proposed by the teacher**

<table>
<thead>
<tr>
<th>1.</th>
<th>To incorporate ICTs (Information and Communication Technologies) into the classroom within the subject of Physical Education.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>To apply the subject’s theoretical content in a new and recreational way through the use of different video games.</td>
</tr>
<tr>
<td>3.</td>
<td>To recognize the basic physical abilities most used in the different sports in video games.</td>
</tr>
<tr>
<td>4.</td>
<td>To appreciate the difference that exists between the reality of one’s own physical capacity and the virtual reality of the game and derive one’s own conclusion.</td>
</tr>
<tr>
<td>5.</td>
<td>To discover the wide range of existing techniques in each sport.</td>
</tr>
<tr>
<td>6.</td>
<td>To value the need for constant practice in a sport in order to improve and, therefore, to make the game more fun and interesting.</td>
</tr>
<tr>
<td>7.</td>
<td>To discover the wide range of existing tactics in each sport.</td>
</tr>
<tr>
<td>8.</td>
<td>To solve the different driving situations of the problem by choosing the appropriate tactic.</td>
</tr>
<tr>
<td>9.</td>
<td>To differentiate the different types of sports by classifying them into 3 types: cooperation, opposition and cooperation-opposition.</td>
</tr>
<tr>
<td>10.</td>
<td>To learn the rules of the different sports and consider them as a driving agreement to allow the confrontation.</td>
</tr>
<tr>
<td>11.</td>
<td>To distinguish the educational values that develop through the use of video games.</td>
</tr>
<tr>
<td>a.</td>
<td>To learn psychomotor skills.</td>
</tr>
<tr>
<td>b.</td>
<td>To learn and become familiar with new technologies.</td>
</tr>
<tr>
<td>c.</td>
<td>To learn the rules and norms and a correct way of coexisting.</td>
</tr>
<tr>
<td>d.</td>
<td>To improve socialization.</td>
</tr>
<tr>
<td>e.</td>
<td>To help in the taking of decisions.</td>
</tr>
<tr>
<td>f.</td>
<td>To occupy one’s leisure time in a constructive activity.</td>
</tr>
<tr>
<td>12.</td>
<td>To make a multimedia product with different technologies available: pc, projector, digital camera, digital video, video game consoles, etc.</td>
</tr>
<tr>
<td>13.</td>
<td>To value the use of new technologies with regards to sports for its use by disabled individuals and injured sports people, and even students exempt from P.E.</td>
</tr>
</tbody>
</table>
For example, let’s see how, when the workshop was completed (see table 11), the teacher wrote a report which included a series of objectives that had been met at the workshop and others that, in his opinion, one could possibly tackle from the video games with which we worked.

We observe that the initial objectives have disappeared, or at least they have been transformed and maybe they are included in some of the ones listed now. In this new approach, we see different types of objectives:

- The ones that derive from the introduction of the video game in the classroom have to do with literacy itself (1, 2 and 12)
- The ones that arise from the curriculum as learning objectives connected to the subject of Physical Education (3, 5, 6, 7, 8, 9 and 10)
- The ones that have to do with the contribution of video games as learning tools (11 and 13)

And a especially interesting objective that could not be easily classified among any of the prior categories number 4: “To appreciate the existing difference between the reality of one’s physical capacity and the game’s virtual reality and to reach one’s own conclusions”, which is the only one proposed by the teacher that derives from the video game itself to become a learning objective. In this goal, the teacher connects the real and virtual dimensions, establishing a bond that expresses the possibility of directly learning from the video game.

**In conclusion**

Data analyzed shows that sports video games offer possibilities as learning tools that are sometimes difficult to predict. With regards to their role of establishing a relationship between the real and the virtual world:

- The idea of rules that is present in the real game as well as in the virtual one opens a discussion field, which is especially relevant in adolescence.
- These games are interesting to work with teenagers in the classroom, a point in our lives when perhaps it is difficult to accept the rules or norms that imply living in a society.
- Constructing one’s identity takes place in a triple level: Individual, collective and cultural.
- Each one of these levels has its own characteristics and, even, different levels of complexity that we will have to take into account.

With regards to the potential to transform the classroom and discover new learning objectives for the class:

- Undoubtedly, sports video games allow a better understanding of the sport in which the game is based. In this sense they can be useful to any Physical Education teacher, understandably concerned about the curricular contents of their subject.
- Their presence in the classroom encourages a re-visit to the curricular contents with the aim of considering the need to work other types of abilities, going further than the knowledge itself.
The musical language

Musical video games: a different kind of game

Music is an artistic language. It allows us to describe situations, express sensations, emotions or feelings. Its power to convey things is so strong that it is currently used in all the communication media. For example, a film would not be the same without the music that helps the spectator to understand the story line.

And the music in a video game? Just as in films, it boosts sensations that an image by itself is not able to express. In this case, it is also a means of expression and communication. It may be the message in itself or the reinforcement of information.

How can we make teenagers aware of the power of this musical art? Can we teach music to secondary education students so they find it a motivating and useful experience? Do boys and girls know how to use music as a language?

The teacher and researchers raised these and other questions before starting the project, and they are the ones we will try to answer in the pages that follow.

GOOD INSTRUMENTS

Music video games are quite recent. Some arose together with great design innovations. For example, Rock Band substituted the traditional controllers with musical instruments, making the game much more attractive and, above all, more real. Without a doubt, immersing yourself in their world allows you to live through experiences that just a few years ago were possible in very rare occasions. Also Rock Band: The Beatles, presented on the 9th of September 2009, offers the player the opportunity, not just of listening and watching how The Beatles make history within the rock world, but also of being part of the group thanks to a simulation experience. It can be sang in three voices, like the band did originally, or one can play each of the instruments that made them famous. With the video game we will be able to experiment the Beatle’s legacy from within, even feel their way of making history, creating cult records and conquering the world, as a member of the group.

Specifically, this type of musical video games situates the player before the challenge of maintaining the rhythm of the song through the accompaniment with an instrument. This is why most of them include a wide variety of simulation controllers (drums, guitars, microphone...). These peripherals allow players to sing, dance and play an instrument to the rhythm of the music.
Virtual and real concerts in the classroom

What roles may music video games play when it comes to learning or teaching music as a language? Some transcripts of what happened in the sessions will help to understand it.

Fragment 1. Making music with Rock Band

IES Manuel de Falla. Year 4 ESO. Session 1, 2009 05 05

1:20 Teacher: Obviously for a music class, we will make music and we have this video game called Rock Band.

The teacher who introduces the game to students, within a music class, had realized that musical games such as Rock Band offer the opportunity of making music in a simple and fun way, while we create a band and emulate our favourite musicians within a virtual world.

What we would now like to stress is that real and virtual worlds intertwine in activities that turn students into a group, which requires rapport, collaboration and teamwork to sound properly. All this will influence the transformation of the teaching-learning environment. The fact of living between two worlds, the real one (music classroom) and the virtual one, in which we run no risks (our Rock group tour), allows us to discover and experiment new sensations.

In our workshop, students enjoyed the possibility of continuously living between the real and virtual worlds. Each game was a different stage, in which the player could adopt different identities by choosing the character he/she was going to represent and the instrument he/she was going to play. One time you could become a singer, the following song the drum player or choose the guitar if it was an instrument you liked even if you had never played it. This situation allowed students to experiment new sensations and emotions, sometimes pleasant and joyful ones, for example when controlling the instrument, and at other times a feeling of impotence for not being able to play it. In any case, without any further consequence than trying again or deciding to change instruments.

For example, let’s see how a student that had already been the singer and guitar player now wanted to make her debut as the drum player of the group. When she sees she can’t do it, she decides to change instruments with one of his classmates to try not to be eliminated even though they are aware that “this could not be done in a concert”.

Fragment 2. In a concert, this cannot be done

IES Manuel de Falla. Year 4 ESO. Session 1, 2009 05 05

32:17 Student 1 (drums): Teacher, I don’t know this
Student 2: Shows her and sets the rhythm to the drums
Student 1: It’s not working
Student 2: You are hitting it there (points to the edge)
Rest of students: Laura, keep hitting the yellow, hit it, hit it.
Quickly, the drum player changes with the guitar player
Student 1: (guitar 2): Which one am I?
Student 2: (guitar 1): The one on the right. In a concert you can’t do this, just letting you know

This situation is an example of the psycho-social moratorium principle based on the use of simulation video games in the classroom. Return situations between what happens on the screen and in the classroom offers participants the opportunity to think about the differences that separate the virtual and the real worlds without any kind of additional consequence.

We will now see how the introduction of this game in the classroom contributed not just to the participants feeling the power of music in a virtual world, but also in transforming the classroom’s physical space and the relationship among the participants.
Classrooms or rock stages?

Let’s observe for a moment these photos of the classroom and let’s reflect upon the impressions that one of the researchers writes down in her summary after each session: What happened that enabled them to go from one situation to the next? **How can we transform the real world of the classroom for the class to take place in a virtual context?** Henry Jenkins would, perhaps, explain it through his idea of participatory culture associated to the youth’s world.

---

**Fragment 3. The music classroom**

IES Manuel de Falla. Year 4 ESO. Session 1, 2009 05 05 Researcher summary

We went to the music classroom, which turned out to be a great choice. The class is really appropriate, full of music instruments. I had the feeling that it was not a classroom (...) the key was that it did not feel like a classroom, but rather like a non-formal learning environment”.

---

**Fragment 4. An acting stage**

IES Manuel de Falla. Year 4 ESO. Session 4. 2009 05 26. Researcher summary

They start to play. It’s another classroom. Real-virtual instruments are introduced. There are no small groups, they all play in one group with both real and virtual instruments.

---

Several singers, a choir for voices, dancers, real instruments (coconuts, bongos, drums, cymbals, tambourine...) and virtual instruments.

Tables are not spread out; there is only a "stage", the place where the group is going to perform.

Students, Teacher and Researchers come together, dance, play and act. Who is who?
The researcher’s impressions after her participation in the first and fourth sessions show some of the factors that influenced in the transformation of the classroom. But, how did we go from one scene to the other? The process was progressive.

First of all, the usual furniture was put to the side: chairs, tables, etc., to favour movement and interaction between the musicians and the audience that cheered them up during the performance. Subsequently, the behaviour in the classroom was transformed. As observed in the following fragment, the researcher is in charge of giving the cue that influenced the change.

**Fragment 5. We can stand up and dance**

IES Manuel de Falla. Year 4 ESO. Session 1, 2009 05 05

07:59 Teacher: Let’s start, Dani, take the controller. Samuel, drums or guitar, who else was with you? (..)

Researcher: You can’t be shy, this is fun because we can all dance

Stud.: We can get up?

Researcher: Of course, totally.

With these two elements, the classroom had become an informal situation where, for example, the audience applauded and cheered their classmates as if they were real fans in a concert. But the key moment came with the merging of virtual instruments that had influenced the transformation and "real" instruments. In the example that follows, we see how these instruments stop being an ornament and play a fundamental role in the participation from all students in the same group, including the teacher.

**Fragment 6. Real and virtual instruments in the performance.**

IES Manuel de Falla. Year 4 year ESO. Session 2, 2009 05 12

35:22 Teacher: Give me a Spanish one, give me a Spanish guitar. (The class becomes a band)

36:10 Teacher: Ok, are we ready? (The teacher also picks up the electric guitar)

Teacher: Let’s go. Are we ready? Everyone tambourines and instruments.

Cristina you can take the drums (referring to the “real” ones in the classroom)

In this way, while some continued with the virtual instruments shown on the screen, the rest improvised with tambourines, drums, electric and Spanish guitars, cymbals, etc. This generated a different atmosphere, not just due to the collaboration, but also to the improvisation of new versions of the songs that took on a special feeling.
A band in the classroom: The value of a team

If the use of musical video games can contribute something in the classroom, it is the transformation of the social relations that take place in it, especially among students. Probably, more than any other type of game it allows collaboration among peers. This ability of the game to favour relationships allows us to consider it as a social game. If we notice its design, we see it allows the creation of music in a group situation through the “multi-player mode”. Playing alone is also possible, but if we play with someone else it will be more fun. We relate, interact and exercise our emotional, social and affective capabilities.

In our workshop, from the first moment, students made up their music groups. As we can see in the example, playing in a group is difficult. In the real world, members of music groups rehearse for hours in order for everyone to play with the same rhythm. In the virtual world, the situation is not very different, as we can see students also found it difficult to play as one.

Fragment 7. My first Rock Band

IES Manuel de Falla. Year 4 ESO. Session 1, 2009 05 05
15:49 They start to play.

Teacher: Samuel you can’t complain (it’s in easy mode and the boy is playing the real drums, we can see it is very easy for him in comparison to his classmate at the guitar, for whom it is the first time)

7:17: The rest of the students applaud because the whole group has managed to join in and play well, before it was just the drummer and the singer that were in tune.

In the fragment above, words are just as important as gestures. The group has become close and they applaud their classmates. We have to take into account that applause are frequent in the classrooms to celebrate the success of others.

But here, there is something else. The group has formed a band, as suggested by the game’s rules. Within this context, playing in a musical group means bringing in the best from each one so that the result is a success. This is the goal set by students at the workshop. As observed in the example included below, at first classmates show support for each of the individuals so that they make an effort and are not eliminated. But once this point is reached, the strength of the team becomes more important than ever. Overcoming the difficulties together is easy, because the video game offers the possibility to enter into “a trance”, to rescue their mate and make him/her join the game.
Fragment 8. We work as a team

IES Manuel de Falla. Year 4 ESO. Session 1, 2009 05 05

37:47 Teacher: Yolanda, don’t fail because this is teamwork
38:44 Researcher: Come on, that guitar is lagging behind
   Stud.: Oh! I’m getting lost. Go on, go on (...) 
39:37 Researcher: Now the drums
   Teacher: Go on drums!
   Researcher: You can recuperate her, you can save her. He can recuperate you

In the previous fragment we see how the difficulties or mistakes of a player can be excused by actions from other players. And even more, it doesn’t matter if they are teachers, students, researchers or assistants. They all cheer and participate in the group at the same level.

We will still take new steps forward to see that this type of video games can aid in teaching and learning within group situations. Playing allows players to develop a series of abilities related not just to social capabilities but also to thinking processes. The fact of having to take quick decisions in collaborating situations or of having to think of possible strategies to solve problems, even when observing how others play, is a good example. We will see this through the transcription of some fragments included below.

TAKING DECISIONS

There is no doubt that the game poses issues that the player faces from the beginning. The decisions adopted by each player individually or agreed upon with the group are going to have consequences in the development of the game as well as in the accomplishment of the goals. For example, choosing the level in which one is going to start playing is a decision that will impact the achievement or failure of the goal and the scoring. In the example that follows, we observe how students value their possibilities and knowledge and decide to opt for the most basic level. In contrast, other classmates choose the intermediate level from the beginning, being eliminated in less than one minute.

Fragment 9. What level do we choose?

IES Manuel de Falla. Year 4 ESO. Session 1, 2009 05 05

   Teacher: We have to follow the screen, let’s see if we can play in concerts. OK, attention Laura, Laura guitar.
   Student: I don’t know this. Is it based on colours? Let’s choose easy, because we have no clue.
   11:42 Student: Yes, let’s choose easy, because we have no clue (...) 
   12:09 Student: Let’s see, it’s green, red, yellow, blue and orange (Repeats it to herself again)

In this case, the students and the teacher realize that the game offers resources to play the music with different skill levels. Let’s choose easy, says a student, realizing that they have never played before, or only a little: we have no clue, she says. At this point, the decision was to choose the easiest level.

DESIGNING STRATEGIES

We mentioned, when talking about strategy games, that they consist on paths chosen by the player to solve the problems that arise. In any case, in one way or another they are present in all games. In our workshop, students created defence strategies to deal with their frustration when they lost. They almost always preferred to adopt the same role, as observed in the example. For this, they always choose one of the different possibilities (singer, drums, guitar or base) to do it best and score more points.
Fragment 10. I call singer
IES Manuel de Falla Year 4 year ESO Session 1. 2009 05 05

05:30 Student: In groups
Teacher: Ok, come on, in groups
Student: I think it’s better because this way we practice a little

06:46 Teacher: Let’s start. Afterwards you have to play (the teacher tells the singer, who always picks this role)
Student: (Singer): I don’t know how to. I’ve tried twice and we have failed miserably, both with the guitar and the drums

In this case, one of the students recognizes that she was not successful with the instruments and that she would rather sing. The teacher encourages her to change roles. Using instruments and singing requires different abilities and strategies to move forward in the game. In the case of the singer, it is a matter of controlling one’s own voice, and when using the instruments one must control their sounds.

The teacher’s role as the engine of change

The presence of music video games in the classroom contributes in transforming the relationships between the one teaching and the ones learning, becoming much closer and symmetrical. How can we achieve this in a more formal context?

In formal contexts, the distance between the adult and the student is usually quite wide, not just due to the physical distance separating one from the other, but also because of the one-way relationship typical in the teaching-learning process. The use in class of media present in the daily lives of teenagers, such as commercial video games, allows for the reduction of this distance. Students are usually experts in the use of these supports and the teaching-learning process becomes collaborative and two-way, with everyone learning from everyone else.
In our workshop, these roles also came closer and contributed to the transformation in the classroom. On the one hand, the researcher (expert in the game) helped teenagers several times so they could become familiar with the virtual instruments. On the other hand, the teacher, at all times, offered collaboration to her students, supporting them in the process of “making music” for example, setting the pace or indicating the drummer when he had to press the pedal.

In summary, the fact of introducing commercial video games in the classroom directly influenced the role of the teacher. During music workshop, the teacher, the usual conveyor of knowledge, became a motivated guide who was looking for new ways to teach and learn. What could she do to transform the classroom? How could she modify the teaching-learning process? What was her role with the video game present? These and other questions helped the teacher as a starting point and served as continuous thought-provoking proposals throughout the workshop.

Let’s observe for a moment the following images where the teacher appears in different situations.

Just as in the process of transformation of the classroom, the teacher’s role also changed as she became comfortable with the methodology. She adopted different roles, as teacher, journalist, musical artist, etc. But if her attitude had something in common throughout the sessions, this was her power to motivate. In the following fragment, as an example, we can see more specifically what her role consisted on.

**Fragment 11 The teacher: driving engine for the transformation in the classroom**

IES Manuel de Falla. Year 4 ESO. Session 1, 2009 05 05

25:45 Teacher: *You can’t sing with a humped back and a serious face, you have to put some life into it.*

Look what it says, for you to go into a trance (she refers to the video game and she is telling a student)

26:57 Teacher: *Then we have to design the choreography, ok? Very good*

Teacher: *Move some more, Dani*
As we see, the teacher, from the first session, became the driving engine for the transformation of the context: she encouraged the students, applauded, danced, helped them to manage the songs by setting the pace, she became integrated as any other member in the rock bands. This attitude helped students become uninhibited and actively participate in the workshop.

**We make a music video clip**

Working with commercial video games in the classroom goes further then the game itself. Despite their content being very related to the curriculum, as in the case of music, if we stop at the first stage students would learn hardly anything, they would just see it as another moment of leisure. Henry Jenkins often insists that people become literate when they produce. This is why it seemed important for players to be able to go beyond the screen, deciphering video game messages and conveying their experiences to other people.

As in other workshops, students produced different audiovisual products that helped them to reflect upon the video game, their participation in it and the language of music. The teacher invited teenagers to participate in this task with the following words.

---

**Fragment 12. Thinking about what we have done**

**IES Manuel de Falla. Year 4 ESO. Session 1, 2009 05 05**

46:22 Teacher: Now what we have to do is think, think about what we have done, what we have seen, what we have listened to, write it down somewhere to then do something with it.

Based on the information that students had collected in the workshop as journalists, music artists, etc. they were offered the possibility of making a multimedia product (N7) through which they would think about their experience and they would convey it. Some opted for the making of a video clip, an idea that the teacher had contemplated since the first session. Others opted for a music and photomontage. We will now see what elements were present during the process of creation. We will focus on the example of the video clip.

---

**THE MUSIC**

Although not all groups chose the idea of a video clip, it’s true that they all used the same songs they had been performing, as if it were a “registered brand” that differentiated them and granted them a group identity. As proof, the following conversation in class between the members of two groups regarding the performance of Blondie’s song “Call Me” (See Appendix).

---

**Fragment 13. Call Me, it’s ours**

**IES Manuel de Falla. Year 4 ESO. Session 3, 2009 05 19**

08:35 Student 1: **Teacher, play Call Me**
Teacher: Not *Call Me*, no
Stud. 2: **No, Call Me is ours, that one is ours**
Stud. 1: **Please, play Call Me**
Teacher: This is already the competition
Stud. 1: **Then play Call Me, please, it is easier to sing and dance**
Teacher: Ok, there you go (the teacher plays it)
Stud. 3: **Copycats**

The group who claimed this song as theirs went on to make the video clip as if they were real rock stars. Their idea was to show the audience not just what had taken place during the sessions, which they subsequently did by inserting photos, but how they had felt as rock starts, their identification with the song and their adaptation, interpretation and performance.
THE MESSAGE

Analyzing the words of the song “Call Me” a little deeper, we see that students have deciphered its message and have re-shaped it by adapting it to their intentions. This fact is very interesting. Teenagers were not satisfied with just interpreting the meaning but, instead, they took the original idea of the song “Call Me” as reference and they created their own script.

THE FORMAT

If we look at the images, the product reminds us of a real video-clip. Its structure and situations depicted (the group playing on the one hand and images related to the story that they have created from the song’s message) are extremely similar to the ones produced by music groups. This is a sample of the great influence that popular music has on the adolescent stage.

The making of products as a closing activity for the workshop lead them to reflect upon and become aware of the experiences they had lived through. This process of literacy allowed students to deploy their imagination through the creation of characters and stories, inviting them to convey their feelings and re-express them by using different languages.

In summary, we think audiovisual productions such as these ones justify the value of the final product and offer reasons for teachers, sometimes reluctant to introduce them, to be able to recognize their importance.

What can we conclude?

Throughout these pages we have tried to show the importance for boys and girls of “making music”, to get to know music as a language. In this sense, we have seen how music video games reveal themselves as a possible tool to aid in classroom work. We will now highlight the ideas we believe have been the most relevant out of this experience.

- Firstly, students have learned to work as a group. In a band, everyone has an individual role, but it becomes important for all the members to work as one for the final result to be successful.

- Secondly, the continuous resolution of problems takes the group in the same direction. Along this path, difficulties arise, requiring the generation of new strategies.

- Finally, making a multimedia product allowed students to become aware of the message conveyed by the video game and the different songs performed in the classroom.

- The students developed their creative capacity following the interpretation of those messages and their re-making, to convey their experiences as Rock musicians through a music video clip.
New languages, new literacies

Audiovisual productions represent a specific means of expression that teenagers have access to in their leisure time, but that are scarcely present in schools even today. Technological advances from the last few years have eased access to these creations online through sites such as MySpace, Facebook or YouTube. They have become producers of content and not just recipients.

These practices mean we live in a reality in which different types of languages are combined, images, sounds or texts. However, immersion in a multimedia universe is not enough to reflexively use its languages, predominantly visual. Using books does not mean knowing how to interpret their contents. Neither does participating in digital environments mean one knows the medium and is capable of efficiently using it in communication contexts. The process of reaching these capabilities is what has been called “multimedia literacy”

NEW DISCOURSES IN THE CLASSROOMS

Taking this reality into account, we wonder what role the school plays within these new means of expression and literacy. Proposing students to use new ways and resources to express themselves, in addition to more traditional languages, may become an innovative path for educational centres, which may be updated permanently. This idea was behind our project of turning the institute into a recording and editing studio. We had two main goals:

1. We were looking to foster the awareness in students and teenagers of the learning processes that take place when video games are present in the classroom.
2. We wanted the experience with video games to serve as a bridge to develop the necessary capabilities to enable them to work within the new digital universes.

Designing multimedia scenarios

To achieve these goals we created innovative contexts in which the use of video games was combined with other audiovisual supports. Digital video and photo cameras were introduced into the classroom, as well as audio recordings, laptops, and some tools provided by students, such as the mobile phones with which to capture images or incorporate music to their production. Nonetheless, the process was not carried out without difficulties. For example:

- It was difficult to get sufficient material means. The research team, Electronic Arts and the school’s management together contributed in solving this problem.
- Not all participants knew how to use the technology with the same ease.

Classrooms as multimedia scenarios
Create together

Small groups of 4 or 5 people were created. Adults tried to solve the possible problems that arose, both at a technical level and among the social relationships between students. The dynamics of each group was different. Sometimes, albeit not always, roles were clear, for example a student was an expert at using the editing program, another one would be in charge of selecting the photos or the music. The group work encouraged students with different leaning styles, and even with different capabilities, to share a task and carry it out in collaboration with each other.

CREATIVE STAGES

In order to make a production that really represented a vehicle of expression and communication, they had to respect the three elements that make up the creative act: the message, the audience and the resources. The process was developed in three stages.

PLANNING THE ACTION

The first thing any creator must think about is what does one want to convey and who is the creation aimed for. Each group had to decide their message, their message's purpose, and their audience. For example, did they want to convince other teachers to also use video games?

SELECTING THE RESOURCES

Before creating, it is necessary to decide the most appropriate expressive resources. In this case, the main difficulty was the precipitation and impulsiveness. Having different resources available such as photos, text, videos, implies knowing the keys of a language, a language that is mainly visual; for this, it was necessary to stop to think with what types of images or music they conveyed the message they wanted to communicate best or how to combine photos with the written text to achieve this.

EDITING AND MOUNTING

A good montage will allow the combination of available resources. Then, it will be necessary to do some editing. In our case, to ease the task, we suggested they use Movie Maker.

Most of the students found it difficult to understand the importance of organizing images in one way or another, or the relationship between the music and the message they wanted to convey.

Once again it was adults, through their questions or showing them examples taken from advertisements, who took charge in guiding students so they became aware of the role of each element in the final montage and how the way in which they were combined boosted the message or, on the contrary, created confusion among the audience.
Multimedia producers: a semiotic analysis

From the approach with which we tackled this project, multimedia productions made by students were considered as a message-entity. This means we understand them as a type of text, one that is coherent internally and which includes elements from the "visual grammar" typical of the audiovisual discourse.

Semiotics allows us to analyze these products from a double perspective: the meaning authors have wanted to confer upon their creation and the semiotic resources used. Let’s briefly explain the meaning of each one of them.

THE MEANING OF A CREATION

Any text has meaning for his author as well as for the person who interprets it. The meaning is the epicentre of the analysis, since the rest of the elements gravitate around it.

We will study the meaning for the creators of the audiovisual productions made at the institute in more depth, and what their relationship with the context in which the experience was carried out may be. We are interested in finding out what differentiates them from the ones they make in their leisure time and share with their friends through YouTube or Tuenti.

At first sight, we may anticipate that differences are related to two aspects:

1. The scenario where the activity takes place. In our case it is an institute that represents a formal educational environment.
2. The goal for teachers and students: to convey to other people their experience with video games, a tool that is present in informal communication environments.

We want to show that the cultural reality of both worlds comes together in the student productions, even if they differ in the way in which they reflect it. This diversity has to do with meanings built by their authors based on the elements and resources chosen, as well as with the way in which they have used them.

SEMIOTIC RESOURCES AND THEIR FUNCTIONS

We refer to images, music or movement effects. The people that use them within a specific cultural context share their meaning. The resources used by students in their creations are intimately connected with the school context and the leisure context represented by the video games. These were the three resources most used in their productions:

- **Images.** They are threefold, depending on the message and the meaning of the audiovisual text created. Some represent workshop scenes where students and teachers are depicted while playing and reflecting together before and after the games. Others show video game screens where the elements that define their structure and rules are represented. Finally, we have the video recordings. They consist on small original clips that are inserted in their productions.

- **The music.** It consists on musical pieces linked to certain moments of the creation. They belong to different genres and they have been obtained from different sources, mp3 archives available on the web, or songs stored in their mobiles or in a CD.

- **The written text.** It consists on sentences written by the authors that accompany, anticipate or explain the images.

It was important to examine how they are combined in the “audiovisual text”, i.e. what is their goal-function and how do they contribute to the building of meaning. Its meaning is not unique; it depends on the meaning and role conferred by the creator when building the meaning one wanted to convey.

We will now see two types of creations that can be representative of the students’ productions in the workshop. The first ones represent the changes introduced in the classroom by the video games, and the second focus on the video game as such and interpret it.
Video games changed the classroom

The fact that productions were made within a formal environment implied that some of them have focused on a school’s cultural meanings. In them, students show some of the elements defined in class, such as the relationship between teachers and students, the space or the tools used. Once these elements have been mentioned and taking into account the meaning granted upon them by a school culture, they show the difference between the traditional class and the one created after the introduction of the video games in the school. To do this, they resort to multiple semiotic resources such as music, images, colour or movement effects. Each one of them has a meaning and plays a role in the building of the meaning that the authors want to convey. Let’s see an example.

STRUCTURE AND MEANING

In the production Learning to play or playing to learn?, students in year 1 of Bachillerato who had played with Spore in their philosophy class wanted to reflect how the class had changed when the video game was introduced. We now analyze the meaning and the way in which they used semiotic resources to convey it.

Sequence of the audiovisual production: A vision of a traditional class

After watching the production, the spectator is clear on the author’s intention, namely conveying the idea that there may be another way of learning other than the traditional classes and that introducing video games may enable this change. To achieve this, the creators make up a structure divided in two clearly differentiated blocks of meaning but which complement each other to communicate the final message.

The first block (minutes 0:0-1:41) is comprised of a short clip that represents the typical and traditional class. The second block, however, (minutes 1:42-2:46), shows a very different scenario whose main topic is the presence of the video game. How do they manage to make the spectator understand the meaning of each block and the relationship between them? Clearly, the explanation has to do with the resources chosen and the way in which they have used them.

On the other hand, in the second block (lasting 1.05 mins, start 1:42 and end 02:46) they use photos that show teenagers and adults playing with the video game and reflect a significant change in the class. Students and adults play together and they are smiling. Their attitude is active, conveying a more symmetric idea of the teaching-learning process. Desks have disappeared and the blackboard has been substituted by a screen. All this contrasts with the image of the traditional class.

USING RESOURCES

Images

One of the most powerful semiotic resources is the use of images. In this case, students who made this production chose to use two types of images clearly differentiated, both by their format, film and photography, and by their content. All this contributes to conveying two types of different meanings that, coupled, build the final meaning. In the first block, (lasting 1:41 mins), images used come from

Sequence of the audiovisual production: The change is possible with the help of an adult
a video recording made by themselves in which they represent, aided by their teacher, one of their usual daily classes.

If we analyze the still shots we see they contain all the elements that define a classroom: a teacher, students, individual desks in a row and the blackboard. The teacher is the only one speaking while students are sitting down in a passive attitude.

**Colour and music.**

These elements can be very powerful tools within a multimedia creation. In the work we are analyzing, both resources gave a clear role in the building of the meaning that the authors want to convey. The sepia colour of stills in the first part help to “read” the class images as something in the past and old-fashioned, which is the exact meaning they want to convey to the spectator.

In addition, the music also plays a role together with the pictures, the colour or the written texts: they all help in communicating the meaning. Incorporating a song from the 60s to the traditional class helps in reinforcing the feeling of something old and in the past, also reflected by the sepia colour.

After the second part, the music changes radically to a modern song accompanying the images of teenagers playing with the video game, and together with the vibrant colours of the photographs it tells the spectator about the idea of innovation and current times.

**The text**

Furthermore, and to help in conveying the meaning, these images are accompanied by written text. In the first block of meaning, the first sequence of stills is introduced under the text “Remembering how it is”. If we analyze its meta-function or, in other words, how it contributes to the meaning, we see it has an anticipatory role, since it warms the spectator that the classroom he is about to see represents a shared experience that we can all recall. Later, and over imposed on the desks, the text “always the same” appears, which reinforces the fact that in the traditional class there are certain behaviours that are always repeated, the teacher speaking and the students listening. The first theme block concludes with another text “there has to be another way...”, “or there could be”, which introduces the next one, dedicated to the change instigated by the introduction of the video games.

But, what did the change consist on? Authors explain it with a text “learn to play or play to learn” that appears next to the photos of them playing Spore. The text refers to two concepts, learning and playing, which have traditionally been separated and now come together to communicate to the spectator that, with experiences such as this one, we can learn while playing in an enjoyable and fun way.
Odyssey: An account of the game

We will now analyze another type of creation that focuses on the actual game and centres around recounting how the game developed. Their authors titled it “Odyssey”. They looked at their experience with Sim City Creator, a video game that allows players to become amateur architects since it consists on building and designing a city. The students in the Diversification group focused their creation on a player’s actions and decisions and this player’s relationship with the features of the video game.

This video clip is structured in three blocks whose meaning complements the building of the final meaning. We will see how resources are used in each of the blocks to build meaning. The use of written texts intertwines with the use of images. Music is also used to back the sequence of the events narrated.

In summary, successes and difficulties succeed one another continuously around the challenges posed by the video game.

Table 12. Structure of the audiovisual production

<table>
<thead>
<tr>
<th>BLOCK</th>
<th>DESCRIPTION</th>
<th>RESOURCES</th>
<th>PARTIAL TIME</th>
<th>TOTAL TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Decision taking</td>
<td>Photos+dialogue</td>
<td>0:00:0:55</td>
<td>0:55</td>
</tr>
<tr>
<td>2</td>
<td>Implementing the strategies to manage to build the city</td>
<td>Photos+video game screens+music</td>
<td>0:56-1:32</td>
<td>0:76</td>
</tr>
<tr>
<td>3</td>
<td>Loss of control that destroys the city</td>
<td>Photos + video game screens+ music</td>
<td>1:33-3:09</td>
<td>1:76</td>
</tr>
</tbody>
</table>

BLOCK 1. DECISION TAKING
Minutes 00:00 to 00:55

This block starts with a written text – “at the beginning we were lost, there were many opinions” - which reflects the state of mind of the player while conveying the idea that in order to play one has to take decisions that are not always easy. To stress this meaning, the authors have chosen images that show the group in a circle in front of the screen. Their position and gestures (looking at each other and pointing to the screen) tell the spectator that they are interacting and that the issue of the interaction has to do with whatever is taking place on the screen and in the video game. In this case, in addition, an oral text has been incorporated in the shape of the dialogue and debate carried out by the players, and where we can hear the concerns about where to start to build the city.

The following sequences develop this idea further and convey another mood that a lot of players experience, i.e. the frustration when finding no way of accomplishing the goal of the game. For the spectator to be able to capture this idea, the creators have used images and text. The sentence “frustration flooded our minds” is seen together with a close up of…
a player taking up the whole screen with a serious and concerned face. This is a good example of how the combination of two semiotic resources, the written text and the image, may boost the significance of each one of them.

**BLOCK 2: OVERCOMING DIFFICULTIES AND SUCCESSFULLY BUILDING**

Minutes 00:56 to 01:32

At minute 00:56, the second block starts. The text over a black background “our efforts started bearing fruit” announces that something is about to change. Furthermore, the fact that in this second group music has been inserted stresses the meaning that the images and text want to convey to the spectator.

In this part, in contrast with what happened in the first one, images do not depict players but the video game screens. The type of images changes because the meaning the creators want to convey also changes. Now they want the spectator to understand that they overcame the difficulties and they want to show how this happened.

If we look at the photographs we see that they show the advances in the construction of the city and they do so with pictures that refer to the internal structure of the game and its rules. For example, the screen shows a population icon with the number 792, which means inhabitants have increased and that, according to the rules of the video game, the city has the required elements for people to live in it.

In case this meaning was not completely clear, they add a blunt text that expresses their satisfaction for having accomplished their goals. If we analyze the terms chosen to express this we see it conveys a feeling of control.

**BLOCK 3: NATURAL CATASTROPHES AND THE DIFFICULTIES THAT HAD TO BE OVERCOME**

Minutes 01:33 to 03:09

We could say minute 1:33 is the start of the last part of the video clip, with a very eloquent text “but it slipped through our fingers” which, again, announces a change in the development of the game and whose meaning has to do with the idea of losing control and how this fact takes them far from accomplishing the goal.

The mentioned text introduces a series of video game screens that show different natural catastrophes that take place in the city, caused by natural forces or by fantastic events.

The succession of images, preceded by a word that advances and describes what the spectator will see next, fires and space rockets, helps in communicating the narrative sequence of what happened at the end of the game and how these events destroyed the city.
Some conclusions

The introduction of video games together with other audiovisual resources has also implied some changes related, on the one hand, to the creation of innovative educational scenarios and, on the other, to the learning of digital literacy processes. That is to say, multimedia productions offer students the possibility of using different expression means other than the written language, and all of this by participating in new teaching and learning scenarios.

We will now list the most significant results.

With regards to the use of a multimodal language in the classroom, we can say that:

- It increases motivation in students by proposing a channel of expression that is closer to what they use in their leisure time.
- The relationship between students and teachers becomes more symmetric, since this type of languages encourages a more active participation from students within their own learning process.
- The collective production of multimedia works offers opportunities to work as a group and submit a collaborative work that is difficult to accomplish in traditional classes.

With regards to the multimedia productions from students we can state that:

- They promote creative thinking processes.
- They also imply learning about the different stages and elements that structure the creative process. In addition, and to communicate the message, they have to learn and know the keys of multimodal language and the role that the different semiotic resources play in the building of meaning.
- The complexity of a collective creative process contributes in developing social abilities such as negotiation, decision taking and problem resolution.
Appendix 1. Data collected

# BLOOM BOX VIDEO GAME

<table>
<thead>
<tr>
<th>Year</th>
<th>Subject</th>
<th>Sessions</th>
<th>Dates</th>
<th>Photos</th>
<th>Audio</th>
<th>Products</th>
<th>Time Product</th>
<th>Video</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2º ESO</td>
<td>MAE</td>
<td>8</td>
<td>16 Feb.09 - 27 Abr.09</td>
<td>225</td>
<td>1:38:44</td>
<td>3</td>
<td>0:06:50</td>
<td>8:04:31</td>
<td>8:11:21</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td>437</td>
<td>3:51:29</td>
<td>6</td>
<td>0:10:49</td>
<td>14:46:54</td>
<td>14:57:43</td>
</tr>
</tbody>
</table>

Table 1.
Data collected at the Bloom Box workshop, IES Manuel de Falla school year 2009.

# HARRY POTTER VIDEO GAME

<table>
<thead>
<tr>
<th>Year</th>
<th>Subject</th>
<th>Sessions</th>
<th>Dates</th>
<th>Photos</th>
<th>Audio</th>
<th>Products</th>
<th>Time Products</th>
<th>Video</th>
<th>Total</th>
</tr>
</thead>
</table>

Table 2.
Data collected at the Harry Potter and the Order of the Phoenix workshop, IES Manuel de Falla school year 2009

# ROCK BAND VIDEO GAME

<table>
<thead>
<tr>
<th>Year</th>
<th>Subject</th>
<th>Sessions</th>
<th>Dates</th>
<th>Photos</th>
<th>Audio</th>
<th>Products</th>
<th>Time Products</th>
<th>Video</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>4º ESO</td>
<td>Music</td>
<td>4</td>
<td>05 May.09 - 26 May.09</td>
<td>553</td>
<td>1:03:32</td>
<td>3</td>
<td>0:14:18</td>
<td>8:00:42</td>
<td>8:15:00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td>553</td>
<td>1:03:32</td>
<td>3</td>
<td>0:14:18</td>
<td>8:00:42</td>
<td>8:15:00</td>
</tr>
</tbody>
</table>

Table 3.
Data collected at the Rock Band workshop, IES Manuel de Falla school year 2009

# FIFA09 / NBA09 VIDEO GAMES

<table>
<thead>
<tr>
<th>Year</th>
<th>Subject</th>
<th>Sessions</th>
<th>Dates</th>
<th>Photos</th>
<th>Audio</th>
<th>Products</th>
<th>Time Products</th>
<th>Video</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td>258</td>
<td>1:09:13</td>
<td>3</td>
<td>0:06:45</td>
<td>4:42:04</td>
<td>4:48:49</td>
</tr>
</tbody>
</table>

Table 4.
Data collected at the Fifa 09 and NBA 09 workshop, IES Manuel de Falla school year 2009
### SIM City Creator Video Game

<table>
<thead>
<tr>
<th>Year</th>
<th>Subject</th>
<th>Sessions</th>
<th>Dates</th>
<th>Photos</th>
<th>Audio</th>
<th>Products</th>
<th>Time Products</th>
<th>Video</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2º ESO</td>
<td>Ciudadanía</td>
<td>6</td>
<td>23 Feb.09 - 30 Mar.09</td>
<td>335</td>
<td>1:00:38</td>
<td>5</td>
<td>0:13:21</td>
<td>5:11:38</td>
<td>5:24:59</td>
</tr>
<tr>
<td>3º ESO</td>
<td>Diversificación</td>
<td>7</td>
<td>16 Feb.09 - 27 Abri.09</td>
<td>208</td>
<td>2:05:43</td>
<td>1</td>
<td>0:06:48</td>
<td>7:24:11</td>
<td>7:30:59</td>
</tr>
</tbody>
</table>

**TOTAL**

<p>| | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

*Table 5.*

Data collected at the Sim City Creator workshop, IES Manuel de Falla school year 2009.

### The Sims 2 Castaway

<table>
<thead>
<tr>
<th>Year</th>
<th>Subject</th>
<th>Sessions</th>
<th>Dates</th>
<th>Photos</th>
<th>Audio</th>
<th>Products</th>
<th>Time Products</th>
<th>Video</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1º ESO</td>
<td>Lengua</td>
<td>10</td>
<td>17 Feb.09 - 28 Abr.09</td>
<td>1199</td>
<td>5:24:00</td>
<td>2</td>
<td>0:04:21</td>
<td>9:30:49</td>
<td>9:35:10</td>
</tr>
<tr>
<td>3º ESO</td>
<td>Inglés</td>
<td>6</td>
<td>16 Feb.09 - 23 Mar.09</td>
<td>417</td>
<td>2:08:35</td>
<td>5</td>
<td>0:11:32</td>
<td>5:52:18</td>
<td>6:03:50</td>
</tr>
</tbody>
</table>

**TOTAL**

<p>| | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2082</td>
<td>13:01:23</td>
<td>16</td>
<td>0:46:50</td>
<td>30:19:49</td>
<td>31:06:39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Table 6.*

Data collected at the Sims 2 Castaway workshop, IES Manuel de Falla school year 2009.

### Spore Video Game

<table>
<thead>
<tr>
<th>Year</th>
<th>Subject</th>
<th>Sessions</th>
<th>Dates</th>
<th>Photos</th>
<th>Audio</th>
<th>Products</th>
<th>Time Products</th>
<th>Video</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2º ESO</td>
<td>MAE</td>
<td>4</td>
<td>04 May.09 - 25 May.09</td>
<td>169</td>
<td>1:13:26</td>
<td>2</td>
<td>0:04:39</td>
<td>5:29:07</td>
<td>5:33:46</td>
</tr>
<tr>
<td>4º ESO</td>
<td>Biología</td>
<td>4</td>
<td>04 May.09 - 25 May.09</td>
<td>209</td>
<td>1:27:24</td>
<td>3</td>
<td>0:17:25</td>
<td>5:18:00</td>
<td>5:35:25</td>
</tr>
</tbody>
</table>

**TOTAL**

<p>| | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>718</td>
<td>8:09:16</td>
<td>11</td>
<td>0:50:50</td>
<td>16:39:57</td>
<td>17:30:47</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Table 7.*

Data collected at Spore’s workshop, IES Manuel de Falla school year 2009.
Appendix 2. The Questionnaire

QUESTIONNAIRE

PROJECT ‘VIDEO GAMES IN THE CLASSROOM’

IES MANUEL DE FALLA, COSLADA

GROUP: _______ Boy / Girl (circle) Age: _______

As a participant of this Project, we would like you to share with us your thoughts about
the following issues:

1.a. Do you have a computer at home?
    YES/ NO

1.b. Is it yours or the family’s?
    MINE/ THE FAMILY’S

1.c. How long do you spend on it on a daily basis?
    ______ HOURS MORE OR LESS

1.d. What do you use it for?

________________________________________
________________________________________
________________________________________

2.a. Do you have a video game console at home?
    YES/ NO

2.b. Which one(s)?
    ______________________________________
    ______________________________________

2.c. How long do you spend on it on a daily basis?
    ______ HOURS MORE OR LESS

2.d. What are your favourite video games?
    ______________________________________
    ______________________________________
    ______________________________________
2.e. Of the following features, check the THREE you most value in your favourite video games:

<table>
<thead>
<tr>
<th>Feature</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>That it has well developed graphic and sound elements</td>
<td></td>
</tr>
<tr>
<td>That it poses challenges that the player has to overcome</td>
<td></td>
</tr>
<tr>
<td>That it lasts very long</td>
<td></td>
</tr>
<tr>
<td>That it is comprised of short challenges</td>
<td></td>
</tr>
<tr>
<td>That it allows the player to become part of a story (adopt a role)</td>
<td></td>
</tr>
<tr>
<td>That it allows the player to play many times</td>
<td></td>
</tr>
<tr>
<td>That it allows the player to compete with other players</td>
<td></td>
</tr>
<tr>
<td>That it is realistic</td>
<td></td>
</tr>
<tr>
<td>That it has a good story line</td>
<td></td>
</tr>
<tr>
<td>That you can learn things from it by playing</td>
<td></td>
</tr>
<tr>
<td>That you can de-stress, release energy</td>
<td></td>
</tr>
<tr>
<td>That it uses a lot of imagination and fantasy</td>
<td></td>
</tr>
<tr>
<td>That it is not very complicated</td>
<td></td>
</tr>
<tr>
<td>That it has a high level of complexity (you need to pay a lot of attention)</td>
<td></td>
</tr>
<tr>
<td>That it has attractive characters</td>
<td></td>
</tr>
<tr>
<td>That it can be finished in little time</td>
<td></td>
</tr>
</tbody>
</table>

3.a. Do you thing something can be learned from commercial video games?  
YES / NO

3.b. Could you tell us why?

4.a. Do you use any of these tools at the Institute?

<table>
<thead>
<tr>
<th>Tool</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Computers</td>
<td></td>
</tr>
<tr>
<td>Internet</td>
<td></td>
</tr>
<tr>
<td>Video game consoles</td>
<td></td>
</tr>
<tr>
<td>Mp3, mp4, ipod, etc</td>
<td></td>
</tr>
<tr>
<td>Mobile phone</td>
<td></td>
</tr>
<tr>
<td>Photo /Video digital camera</td>
<td></td>
</tr>
<tr>
<td>Traditional media (television, press, radio)</td>
<td></td>
</tr>
</tbody>
</table>

4.b. If you’ve used them in any subject, what for?

<table>
<thead>
<tr>
<th>Tool</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Word processor</td>
<td></td>
</tr>
<tr>
<td>Other work tools (spread sheets, etc)</td>
<td></td>
</tr>
<tr>
<td>Image and sound editing and processing etc.</td>
<td></td>
</tr>
<tr>
<td>Programming</td>
<td></td>
</tr>
<tr>
<td>Internet</td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
</tr>
</tbody>
</table>
### INTERNET
- Search for information (Google, Yahoo, etc)
- Multimedia portals (Youtube, iTunes, etc)
- Blogs
- Social networks (Facebook, tuenti, etc)
- Web page design
- Online games
- Electronic mail
- Other (specify)

### VIDEO GAMES
- Play
- Reflecting on the content
- Designing scenarios
- Writing stories
- Do schoolwork, or homework, etc.
- Other (specify)

### Mp3, Mp4, iPod, etc.

### MOBILE PHONE

### TRADITIONAL MEDIA

4.c. What did you think about using them in class?

5.a. Would you like to study a subject with the help of video games?
- YES/ NO
5.b. Why?

Thank you very much!
Annex 3. Musical video games

We now include the lyrics to the song, in its English and Spanish versions:

<table>
<thead>
<tr>
<th>English</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour me your colour, baby</td>
<td>Coloréame con tu color, nene</td>
</tr>
<tr>
<td>Colour me your car</td>
<td>Coloréame tu coche</td>
</tr>
<tr>
<td>Colour me your colour, darling</td>
<td>Coloréame con tu color, querido</td>
</tr>
<tr>
<td>I know who you are</td>
<td>Sé quién eres</td>
</tr>
<tr>
<td>Come up off your colour chart</td>
<td>Sal de tu gráfica de color</td>
</tr>
<tr>
<td>I know where you’re coming from</td>
<td>Sé de donde vienes</td>
</tr>
<tr>
<td>Call me (call me) on the line</td>
<td>Llámame en la línea</td>
</tr>
<tr>
<td>Call me, call me any, anytime</td>
<td>Llámame, llámame en cualquier momento</td>
</tr>
<tr>
<td>Call me (call me) my love</td>
<td>Llámame amor mío</td>
</tr>
<tr>
<td>You can call me any day or night</td>
<td>puedes llamarme cualquier día o Noche</td>
</tr>
<tr>
<td>Call me</td>
<td>llámame</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Cover me with kisses, baby</td>
<td>Cúbreme de besos, nene</td>
</tr>
<tr>
<td>Cover me with love</td>
<td>Cúbreme de amor</td>
</tr>
<tr>
<td>Roll me in designer sheets</td>
<td>Cúbreme de sábanas de diseñador</td>
</tr>
<tr>
<td>I’ll never get enough</td>
<td>Nunca tendré suficiente</td>
</tr>
<tr>
<td>Emotions come, I don’t know why</td>
<td>Llegan emociones no sé por qué</td>
</tr>
<tr>
<td>Cover up love’s alibi</td>
<td>Disimula la coartada del amor</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Call me (call me) on the line</td>
<td>Llámame en la línea</td>
</tr>
<tr>
<td>Call me, call me any, anytime</td>
<td>Llámame, llámame en cualquier momento</td>
</tr>
<tr>
<td>Call me (call me) my love</td>
<td>Llámame oh amor mío</td>
</tr>
<tr>
<td>When you’re ready we can share the wine</td>
<td>Cuando estés listo podemos compartir el vino</td>
</tr>
<tr>
<td>Call me</td>
<td>llámame</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Ooo-oo-oo-oo-oo, he speaks the languages of love</td>
<td>Ooh, el habla el idioma del amor</td>
</tr>
<tr>
<td>Ooo-oo-oo-oo-oo, amore, chiamami, chiamami</td>
<td>Ooh, amor, chiamami, chiamami</td>
</tr>
<tr>
<td>Ooo-oo-oo-oo-oo, appelle-moi mon cherie, appelle-moi</td>
<td>Oo, llámame querido, llámame</td>
</tr>
<tr>
<td>Anytime, anyplace, anywhere, any way</td>
<td>En cualquier momento, lugar, donde sea, como sea</td>
</tr>
<tr>
<td>Anytime, anyplace, anywhere, any day-ay</td>
<td>En cualquier momento, lugar, donde sea, cualquier</td>
</tr>
<tr>
<td></td>
<td>día Como sea</td>
</tr>
<tr>
<td>Call me! (call me, call me, call me, call me)</td>
<td>llámame mi amor</td>
</tr>
<tr>
<td>Call me (call me) my love</td>
<td>Llámame llámame a cualquier hora</td>
</tr>
<tr>
<td>Call me, call me any anytime</td>
<td>Llámame para pasear</td>
</tr>
<tr>
<td>Call me (call me) for a ride</td>
<td>Llámame llámame para algo de tiempo extra</td>
</tr>
<tr>
<td>Call me, call me for some overtime</td>
<td>Llámame mi amor</td>
</tr>
<tr>
<td>Call me (call me)In my life</td>
<td>Llámame llámame en un dulce diseño</td>
</tr>
<tr>
<td>Call me (call me) in a sweet design</td>
<td>Llámame llámame para tu coartada de amante</td>
</tr>
<tr>
<td>Call me (call me) for your lover’s lover’s alibi</td>
<td>Llámame en la línea</td>
</tr>
<tr>
<td>Call me (call me) on the line</td>
<td>Llámame llámame en cualquier momento</td>
</tr>
<tr>
<td>Call me, call me any, anytime</td>
<td>Llámame Oh,</td>
</tr>
<tr>
<td>Call me (call me), ah</td>
<td>llámame, ooh ooh ah</td>
</tr>
<tr>
<td>Call me, ooh-ooh</td>
<td>llámame mi amor</td>
</tr>
<tr>
<td>Call me (call me) my love</td>
<td>llámame llámame, Llámame a cualquier hora</td>
</tr>
</tbody>
</table>
Although the lyrics to the song are a little confusing, the message is clear: the person that sings wants someone else, whom this person knows, to call.

If we analyze the sequence of the video clip made by the group, we can observe it includes several scenes, namely:

1. The singer at home with her friends, trying out clothes to go out. Her friends giving advice on what looks better on her.

2. They leave the house in groups, accompanied by a male, who acts as a bodyguard, since he protects them and keeps the camera from taking their photo. They get into a van.

3. Then they are seen singing. The singers (a boy and a girl) plus a guitar player and a drummer, who, it turns out, are the singer’s friends. In addition, we can see “extras” (a student’s siblings) who pretend to be the audience.

4. Then we see a fight between the singers (who are also a couple and, as I said, have a kid) after which the singer leaves. Again, here we see this "double life".
5. Faced with this situation, the female singer is devastated and cries next to her son, and the male singer tears up a photo of the couple and goes off with one of his fans (since we saw her before as part of the audience).

6. Then the female singer is shown pondering and remembering past times with her partner (in fact, this part is edited with a special effect that makes it look old).

7. The band continues playing without the singer, but her microphone is shown on the floor (it seems like with the aim of stressing her absence).

8. The male singer places a paper on the floor that says “call me” and a mobile number. The female singer calls and then they get together.

9. In this way, the band regains the original members, and the family is reunited.
Technical specifications

Methodological Approach

Ecological and ethnological approximation, qualitative and quantitative. Case study.

Scope and participants

- A Public Secondary Education Centre in the Community Madrid (IES Manuel de Falla), with researchers participating for the first time. This project was conducted during the 2008-2009 school year, specifically between the months of February 2009 to June 2009. Several groups of students participated, ranging from 1st year of ESO (Secondary Mandatory Education) up to 1st year of Bachiller and a PCPI class (Program of Initial Vocational Training) and their corresponding teachers.

Video games and Platforms

- Boom Blox, The Sims 2 Castaway, Harry Potter and the Order of the Phoenix, Sim City Creator, FIFA09, Rock Band.
- Games for PC. Spore,
- Consoles: Wii and Xbox

Types of data required

- Audio, video recordings.
- Summaries of all the sessions carried out.
- Photographic material obtained for the analysis in accordance with the following information

<table>
<thead>
<tr>
<th>Game</th>
<th>Summaries</th>
<th>Hours/Minutes/Seconds video recordings</th>
<th>Hours/Minutes/Seconds audio recordings</th>
<th>Photographs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boom Blox</td>
<td>35</td>
<td>14:57:43</td>
<td>3:51:29</td>
<td>437</td>
</tr>
<tr>
<td>Harry Potter</td>
<td>24</td>
<td>11:59:35</td>
<td>1:47:53</td>
<td>523</td>
</tr>
<tr>
<td>Rock Band</td>
<td>10</td>
<td>8:15:00</td>
<td>1:03:32</td>
<td>553</td>
</tr>
<tr>
<td>FIFA09/ NBA09</td>
<td>17</td>
<td>4:48:49</td>
<td>1:09:13</td>
<td>258</td>
</tr>
<tr>
<td>Sim City Creator</td>
<td>62</td>
<td>20:22:20</td>
<td>7:38:35</td>
<td>883</td>
</tr>
<tr>
<td>The Sims 2 Castaway</td>
<td>80</td>
<td>31:06:39</td>
<td>13:01:23</td>
<td>2082</td>
</tr>
<tr>
<td>Spore</td>
<td>64</td>
<td>17:30:47</td>
<td>8:09:16</td>
<td>718</td>
</tr>
<tr>
<td>TOTAL</td>
<td>292</td>
<td>109:00:53</td>
<td>36:41:21</td>
<td>5,454</td>
</tr>
</tbody>
</table>

*Table 1.* Secondary Education Centre. School year 2008-09
Notes

(1) http://www.educa.madrid.org/web/ies.manueldefalla.coslada

(2) A detailed description what be found in a work that collects the experiences carried out by the research team in different contexts (Lacasa & GIPI, 2006) and though the project Learn and Play with EA 2007 (http://www.aprendeyjuegaconea.net/uah/php/index.php)

(3) In other studies we have shown how it is not always possible to establish these bridges. When people use commercial video games in different situations, interpretations are different to the ones that take place in the classroom. The transfer from one context to another is an issue that is currently open to research (Lacasa, Méndez, & Martinez, 2008).

(4) Numerous studies have approached the planning of expert and novel teachers. The issue is a classic in education psychology that dates back to the 60s (Lacasa, 1994).

(5) The total number of subjects considered as the sample analyzed in these pages corresponds to the 176 ESO students who participated in the video game workshops and who voluntarily answered the questionnaire. With regards to the Bachillerato and PCPI students that participated in the project, we took the decision of not taken them into account for this analysis due to the reduced number of groups that participated in the project (a Bachillerato group where we got a total of 11 completed questionnaires and a PCPI group where we collected 12 questionnaires).

(6) In this case we did not include the percentages of answers but the total accumulated frequency of boys and girls for each of the consoles with the aim of appreciating more clearly the notable differences existing between ones and the others in absolute values.

(7) Different relatively recent studies contribute an in-depth view of this approximation. An example can be consulted in Toomela, 2008; Ratner, 2008.

(8) Dressman (2006); Erickson & Schultz (1981); Green, Camilli, & Elmore (2006); Thommen (2008).

(9) To distinguish clearly between these two concepts, one can consult a classic work by Barbara Rogoff and collaborators (Rogoff, Mistry, Goncu, & Mosier, 1993).

(10) Silvia Scribner (1985/1997), in her pioneer studies in the field, intertwining elements from the cognitive and the social-cultural psychology adopted this research methodology.

(11) For example, see Ratner (2008).

(12) Classical and recent works but this author constitute a starting point for the analysis of conversations when relationships among people are established on the basis of commercial video games (Gee, 1999, 2006).

(13) One can consult studies by Gunther Kress and collaborators (Bezemer & Kress, 2008) and Carey Jewitt (2008).

(14) The work of Katie Salen (Salen & Zimmerman, 2004), video game designer, are an excellent starting point to deepen the study of the concept of rule within the context of the system of the game.

(15) Works by Jesper Juul (2005) are, perhaps, the best starting point to study this issue in more depth.

(16) The text by Shaffer (2004) in an excellent introduction to the issue of how we can transfer onto other contexts what was learned with the video games.

(17) To study the concept casual games in more depth, one can consult the recent work by Jesper Juul (Juul, 2009).

(18) Researchers use this concept to refer to the magic that video games exert on players from an emotional perspective (Salen & Zimmerman, 2005).

(19) To learn more about the power of video games on the player one can also see the book by Ian Bogost (2007).

(21) An excellent work on virtual reality is the one by J. Laird and M. van Lent (2005)

(22) A volume that includes the work from different authors may be consulted with regards to this issue is the one by Williams & Smith (2007)

(23) Jenkins (2006a) widely defines and analyzes this concept. An exhaustive review is included in the work by Long (2007)

(24) The question of whether video games tell stories has been the subject of numerous studies, Henry Jenkins offers and interesting review of the problem and expresses his own stance within a context that looks more to complement rather than to contrast different theoretical positions (Jenkins, 2006b). Maybe the farthest positions are the ones offered by Ryan (2001b) and Frasca (2003). A relatively recent volume that includes numerous works is the one by Borries, Walz, & Böttger (2007).


(26) Bruner (2002)

(27) An excellent review of the types of video games and their classification is included in Wolf (2003)

(28) Gee (2003) describes 36 principles of the learning process in relation to the video games. The possibility of adapting the rules to the player's ability (either through the handling of the video game or through the technical or tactical skill in the sport), allows accomplishing goals and rewards they encourage the player to keep being engaged with his task. The achievement principle is principle number 11 (p. 208).

(29) Gee (2008)

(30) Castells (1997)

(31) Gee (2001)

(32) It is interesting to consult the work by Holland, Lachicotte, Skinner, & Cain (1998) on this issue and the one by Holland & Lave (2001), both from an anthropological perspective.

(33) Gee (2003), principle number 6.

(34) (35) Jenkins, Clinton, Purushotma, Robison, & Weigel (2006)

(36) Speaking of literacy means going further than the functional knowledge of the medium, it means achieving communicative knowledge, skills and attitudes, of personal autonomy and a critical spirit, to use them as communication and social transformation means. For some authors such as Buckingham (2008) within this type of literacy we would have to include digital literacy. To explore this issue further one can consult numerous works (for example, Lacasa, Méndez, & Martínez, 2008; Rivoltella, 2008; Willoughby & Wood, 2008)

(37) This is a very simple video editing software that is included in recent versions of Microsoft Windows. It has features such as effects, transitions, titles or credits, audio track, chronological narration, etc. With this program they can create and edit just by selecting the image and dragging it with the mouse to the correct place. More information can be found in http://es.wikipedia.org/wiki/Movie_making or in the program manual http://www.moviemaker.es/es/manual.htm.

(38) Michael Halliday (1989) is a classic works, and defines “visual grammar” as a way of interpreting the elements that define it as a multimedia work (type of images, position in space) size, colour or sound effects) and that configure the meaning in this particular means of expression. Both, the type of elements and the way in which they are used confer certain regularities that have to do with the social-cultural context and with the meaning that this audiovisual means has in our culture. Other authors that have inspired the analysis are Metz (1968/2002), Bezemer & Kress (2008) y Kress (2003)

39) http://www.youtube.com/watch?v=WgGXR9mX1Z


109


