APRENDE Y JUEGA CON EA

Electronic Arts y la responsabilidad corporativa

Video games at the institute:

Digital leisure as a learning stimulus

Universidad de Alcalá

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Introduction

During the 2008/2009 school year, an entire Secondary Education school decided to introduce commercial video games in the classroom together with textbooks, photo cameras or traditional blackboards. To explore the educational power of these new technologies, 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.

Why video games at the institute? We were looking to motivate students by using elements that they are usually interested in we all know young people can spend hours and hours at the consoles or the computer. Slowly, we uncovered new reasons. For example, we realized that by using them it was possible to learn new languages, ranging from those associated to the technology of the 21st Century, to the ones present in the contents of the curriculum.

Who participated in the experience? Fourteen teachers in subjects as diverse as Biology, Philosophy, Spanish Language or English. The reflections achieved are derived from the events that took place in the Secondary Education and Bachillerato classrooms when video games were used to learn from and with them.

What video games? Choosing the appropriate game is essential when it is intended to become an educational tool. Sharing the experience with other players, consulting the critics and knowing the opinion from experts in the field will help in choosing it. The teacher's own goals will also have to be taken into account. Ours were the following: To learn and to teach how to think, with *Bloom Box* or *Spore*, to live in virtual worlds with The *Sims* or to learn music and rules for living together with FIFA10, *NBA Live10* and The Beatles *Rock Band*.

How did we work? Creating innovative learning and teaching situations on the basis of the video games was more complicated than just introducing new educational tools into the classroom. The usual activities included dialogue, reflection and communication.

What's the purpose of this guide? To learn and to teach with and from video games opens up possibilities to resolve some difficulties currently encountered by teachers in secondary education. This guide is intended for those who wish to learn and innovate while discovering the possibilities of these new tools. From the web page "Learn and play with EA" www.aprendeyjuegaconea.com/ we will continue to provide new resources. Thank you to all the students who participated, and to the teachers, the centre's management team and the families.

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Why video games at the institute

Because they contribute to teaching and learning from situations that are close to the daily life of teenagers. There are many ways of using them, we will just mention some of the ones that are closely related to the goals we aim to achieve.

Learning the curriculum contents with video games

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 videogames can also play that role. A little further on we will see how Spore was used in a biology class in year 4 of the Mandator Secondary Obligation (ESO). The teacher said it had been her best class .

Acquiring new languages and ways of thinking

Videogames conceal a hidden curriculum from which one can learn. For example, in the Harry Potter Series, the way in which messages are presented, the design of the game or the aesthetic strength of its sceneries enables the acquisition of new skills necessary for the 21st Century. Thinking about their capacity to simulate a reality is a first step towards understanding what can be learned from them.

Combining them with other technologies

Information and communication technologies are not usually mutually exclusive; in fact they rather tend to complement one another. Television did not replace cinemas, nor did the radio disappear in light of the new communication channels.

When the students solve problems in the classroom through a videogame, or discover the plot of their stories, they acquire abilities to interpret reality. If, in addition, by using different technologies, students convey to other people how they played, what strategies they used or what problems they had to resolve, they acquire new skills related to literacy. Many video games, for example the Sims 3, include resources that allow the reconstruction of games by recording the most relevant screens in the game or reproducing, through a video, the scenes of the game.

Making the act of learning more attractive

Students who have used video games in the classroom tell us that they learn while playing. They know it is not the same to play at home than at the institute, they become aware of things that had previously gone unnoticed, and they would like for teachers to use them more often.

Working in the classroom

Shedding the fear

One of the barriers that probably makes it difficult to use video games in the classroom is the lack of information adults have regarding these new means of communication. However, things are easier than they seem.

Suggestion: If we have a console at home we can become familiar with its use. Furthermore, talking with students about their favourite video games will help us to choose an interesting game with which to start working.

Raising questions

The act of playing immediately generates questions about the video game or the player's role. The contents of the video game and of the curriculum can also be related. It's a question of reflecting together upon the possibilities offered by the video game.

The fact of having played previously, before initiating the class experience, will enable us to explore its rules, the strategies one should manage, the possibilities of interacting offered by turning players into "actors" and, above all, the generation of many questions.

Shedding the fear → Raising questions → Playing in a small group → Sharing and publishing

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Suggestion: Search for video game "demos" to discuss them in class. They can be found in the official pages or in pages designed by other players in Youtube.

Playing in a small group

Now it's a matter of actually getting to play, of discovering the rules of the game. Slowly we will discover the way in which we can act on the screen, the decisions that should be taken and the cognitive and social strategies implemented during the game.

Suggestion: With help from a student or at home, we can become familiar with the controllers and the console before coming to class. One can consult a guide with hints and clues about the game on the Internet.

Sharing and publishing

We look to present what has been learned and the reflections that have been generated. To create a simple multimedia product (videos, attractive presentations, photo-montages, etc) will help to accomplish this task.

Suggestion: In class, analyze already existing productions uploaded in Youtube, produced by other youngsters.

The rules of the game

If there's one thing that defines certain types of games, and undoubtedly video games, it is their rules. They will tell us what a player can and cannot do. For example, to play *Trivial Pursuit* in the physical world, we need a board with a wheel in which we can place the famous wedges, with different colours, which we will have to earn to win the game. We can earn them by answering a series of questions. All these elements make up the rules of the game.

How are they defined?

Without them, the game wouldn't exist. They confer sense to the player's actions, who must respect them to be able to continue playing. Among their most important features we should highlight the following:

- They limit the player's action. They are a set of instructions.
- They are explicit and not ambiguous.
- They are shared among all the players.
- They are fixed.
- They are intertwined and they limit the space in the game.
- They can be transferred from one game to the other.

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Rules of digital games

In a digital game, rules are the conditions that shape the player's conduct. There are different types:

- Those that are not always evident for the player but limit his or her actions from the inside. The designer of the video game has defined them; they refer to the functioning of **the video game's logic.**

- The ones that are clearly set by the digital game, they determine the implementation of the game and the player's interaction. For example, *Trivial Pursuit* has several options when the multiplayer mode is selected.

- The ones that are identical to the game in the real world.

Why video games with rules at the institute

- Learning and teaching the rules of digital video games requires the player to be aware of his or her own actions, of how these actions impact the pace of the game and the changes that show up on the screen.

- They help in understanding that in many situations, success is only possible when certain rules are accepted, regardless of what they are.

Learning to think

Strategy video games are tools that encourage reflection, problem solving and the discovery of complex processes to achieve a goal. In these games, planning takes precedence over improvisation. All these activities are present in scientific thinking, something teenage students must learn to use at the institute.

A strategy is a complete plan to act among the wide array of paths offered to achieve the purpose of the game, to be able to pass onto the next screens that pose challenges for the player. Strategies can be simple, such as some of the ones inspired in traditional board games, or complicated, as the ones in *Spore*.

Solving the game's problems

Let's think, for example, about using *Spore*, a game designed from the concept of the evolution of life, in a Biology or Philosophy class. Among other activities, in order to complete the game at least once, the player is required to take decisions over the traits that must be assigned to the creatures that appear on the screen, so that they can evolve through the different stages.

Designing a strategy

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; strategies are the paths followed by the player to advance through the difficulties raised by the game, and they are born from the rules. The efficiency and potential of the different strategies depends upon these rules of the game.

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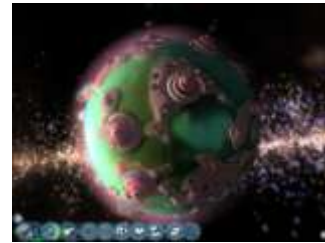
For example, let's look at *Spore* once again:

- The rules of the game indicate that the creatures possess certain traits to adapt to their environment. In their first stages, they can be carnivorous, herbivorous or omnivorous.
- The player's strategy will be the one to guide his/her choices, attempting to pick the most advantageous one when it comes to moving forward through the creature's evolution stages.

Spore in the classroom

Biology and Philosophy classes are a good opportunity to discuss strategies of confrontation or collaboration. After playing, discussions can be focused not just on the experiences within a fantasy world, but on the consequences these actions may have in the real life of social groups.

In addition, analyzing the game by using the possibilities it offers, for example capturing screens and storing them or recording short videos with the most interesting moves, will contribute to fixing ideas and will turn players into expert analysts capable of implementing the capabilities of a biologist or a social scientist.

Living in a virtual reality

To achieve this, there´s nothing better than a simulation video game. A good example is found in the ones created around the Sims universe. In them, the player also has several resources to design his or her characters or build their communities and institutions. Other games, for example *EA Sports Active Personal Trainer*, aim to reproduce a real situation in which the player has to use certain physical abilities.

Why are simulation video games interesting?

Probably, because individuals can decide over the characters´ life and activities. They allow the introduction into the classroom, through virtual reality, of problems present in the real world, which evoke thoughts and dialogue. Some of the games´ features are the following:

- They propose scenarios that recreate social situations, for example, a neighbourhood or a city, even a veterinarian clinic as in *The Sims 2 Pets*.

- Individuals can play different roles and carry out the most varied activities, even travelling when they play *The Sims 2 Bon Voyage*.

- Players must take decisions regarding the characters, which is why they are also considered strategy games. For example, in *The Sims 2 Castaway* they must decide what island

offers the best possibilities for survival, what food gives them greater energy   or if the Sim needs to learn construction techniques to build himself a shack.

- The Sims characters show behaviours and attitudes that are close to one's daily life, going from getting up in the morning to having a shower, cooking, cleaning, etc. To experience this we can play The Sims Life Stories.

Sims City Creator: Learning about sustainable cities.

We deal with a classic game that, among video game players, represents something similar to what the film Casablanca means to a film lover. It gives the player the opportunity to create, modify and re-build a city. It's attractive because it places us in a virtual city where the player takes important decisions.

The game's dynamics encourage reflecting upon issues in the daily life in a city. Using it in class will contribute to widening one's knowledge of the context around us. It will also help us to act in the real world, appreciating positive aspects and trying to modify whatever may be regarded as negative for the city.

Suggestion: The game's tutorials may be used. There, we will find cities that have already been built, and which we will have to maintain in a sustainable way. It constitutes a good experience to find out what it means to live a virtual city.

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Discovering the plot of the story

Adventure video games are interactive, and therefore players must perform the correct actions to get to the finish line. Their 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.

In contrast with other types of games, adventure games can borrow elements from other media, such as literature or film, and also from different genres, such as science fiction, mystery, terror or even comedy.

Telling stories

Until not too long ago, novels and films were the only media that allowed story telling. Sometimes, the same plot was reflected in both. Film adaptations are well known. Today, this phenomenon has widened, and we talk about trans-media processes. For example, nowadays adventures with heroes like Harry Potter are present in more than one medium and appear in multiple platforms.

Interpreting these stories requires implementing new literacy means. Specifically, trans-media phenomena enable a story to be presented transversally, through different formats, and for it to be expressed by using very different languages. Each text will introduce a specific contribution to the plot of the story, viewed as a whole.

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Acquiring new literacies

The presence of different media in our daily lives requires people to be able to implement new literacy skills. Within these new contexts of communication, new elements don't substitute old ones, but transform and complement them.

As a consequence of these social and technological changes, students must combine the use of computers, books and traditional notebooks with, why not, the console's controllers or the television screen. Adventure video games may constitute a good starting point.

Harry Potter in the language and literature class

Harry's video games, films and novels will contribute to students developing new ways of representation and communication. In addition, they will foster the command of narrative thinking and the resolution of problems hidden behind the plot of the story.

Sports video games

With a video game such as *NBA Live 10 or FIFA10,* any player can become a professional basketball or football player and acquire tactics and skills that may prove useful outside of the sports field. In sports video games, a very particular universe is projected on the screens. Often, it is so real that it feels as though we are really inside the stadium or that we have really become professional players.

Reality enlarged

The relationship between our physical reality, the one present in our daily lives, and a simulated universe is an issue that must be taken into account when working with commercial video games in the classroom. All expression and communication media, dating back to ancient times, have tried to look at the reality around us, to imitate and transform it, to understand and explain it. Nowadays, the new software developments, present in video games, open up possibilities for creating and acting in virtual worlds.

To choose good video games that may allow the achievement of educational goals we can raise certain questions, regarding the said virtual worlds, and observe the answers given by the game's designer. For example:

- To what extent do the real objects present in the game **react to the player's activity** in the same way as in real life?

- To what extent do the events that take place in the video game follow the rules present in our daily lives?

- How are the elements that enable advancing through the screens present in the virtual game?

Digital sports in the classroom

Virtual sports video games may encourage working in group situations, problem solving techniques or may even help us to better understand what virtual reality means or the aesthetic principles of its design. They are especially motivating for boys.

Let's see why they can be useful in the classroom:

- They help in becoming aware of certain situations throughout the game that are not easily anticipated in the real pitch. Probably because of this, they are often used as a resource in practices by sports teams.

- Knowing how to establish differences between virtual and real worlds in a skill surely related to the new literacy means necessary in the 21st Century.

- Return situations between what happens on the screen and in reality contribute to being more familiar with these new leisure tools.

The musical language

Rock Band is one of the most popular video games. It was created in 2007 by a small company based in Cambridge (USA). Its great novelty, the element that perhaps turned this game into a success worldwide, was to substitute the traditional console controllers with musical instruments, transforming the player's sensations and contributing to him or her feeling as a real musician. The original game includes 58 songs, but more can be downloaded from the Internet. The player's skills score on the basis of the musical notes produced and it is all reflected on the game's screen. In this game collaborating is more important than competing.

The Beatles: RockBand is a new version of the video game, presented on the 9th of September 2009, at the same time as the re-mastered music from the famous English band was introduced. Up to six people can simulate being the famous band members, with the participation of the drummer, guitarist, base guitarist and up to three singers. Players experiment playing in famous concert venues where the Beatles actually played, such as the Carven Club.

The success of these video games and the way in which they have evolved spur a thinking process and provide powerful reasons to turn them into educational tools. Both are good examples of the new cultural objects of the 21st Century.
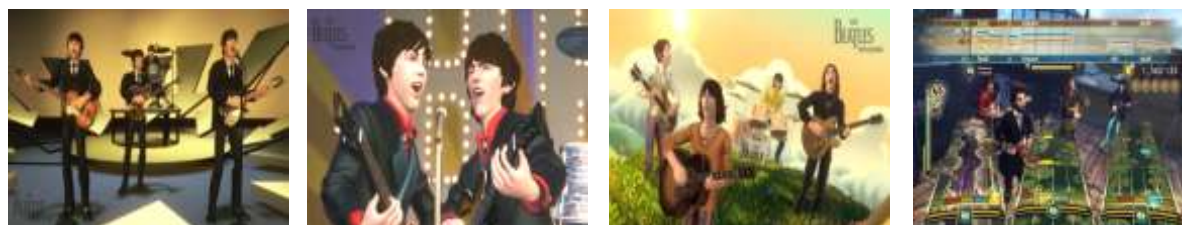
Music motivates and moves

- *Rock Band* enables for the teaching and learning of music to become a living process. Sounds are part of a concert that arises from personal experiences mixed in a collective production.

- Thoughts and reflections are not the only elements to teach the curriculum contents in education. Emotions and feelings also play an important role, and in this case *Rock Band* contributes to channelling these emotions.

Rock Band in the music classroom

- Real and virtual worlds intertwine in actions that turn individuals into a band which, in order to function properly, requires rapport, collaboration and teamwork.

- Boys and girls can prepare the lyrics of their songs, creating and expressing their own ideas and feelings.

- The video game messages are deciphered and players collaborate to produce new ones.

- Experience has shown that their presence in the classroom helps in transforming it. For example, the role of teachers and apprentices is exchanged continuously.

Video games and other media

Screens and communication means

Children and youngsters spend a great deal of their free time in front of the screen.

- The written language shows up next to images and sounds, which become extremely important. All these elements must be interpreted jointly and are also combined when it comes to conveying a message.

- The Internet has gained importance and consoles may even be connected among them through the Net.

- The new media allow going further than a passive reception of information, often turning users into creators of content.

In all, digital tools such as video games, the Internet, photo or video cameras help to create new scenarios for learning and teaching.

Multimedia classrooms

Educational centres cannot continue to ignore these new environments. Turning the classroom **into an innovation centre is one of today's** challenges. Teachers face the task of participating in the development of critical individuals, capable of using the new expression means required by **today's media.**

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Video games and audiovisual creations

Some video games, for example *The Sims 3*, include resources that allow the recording of screens and, even, of the dynamism of scenes to re-build the game. Through these images and sounds the players may communicate with other people interested in the game, convey their tricks, reproduce their game or, simply, share the joy of playing. To achieve this, an audiovisual product may be produced in the classroom through the following stages:

Deciding what one wishes to say and to whom

These are the first two questions that must be answered by a communicator. Students tend to forget them and the dialogue in class, from the go start, will contribute to them always being present.

Planning how to convey the message

Traditionally, audiovisual productions are the result of collaboration between different professionals, the person who writes up the script is very important.

It is necessary to anticipate the message one is trying to convey in order to exercise a particular influence in the target audience.

Selecting the resources

Having recorded the game will provide essential elements for its reconstruction, but not all of them may be valid, or maybe others will have to be searched for.

Editing and publishing

Simple editing programs will enable the output of an audiovisual product that may be published, for example, on Youtube.

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Conclusion

Their presence in the classes at the institute gave us the opportunity to observe what would happen if commercial video games become educational tools. Both practice and theoretical reflection helped us in formulating some conclusions that may constitute a starting point for those who are looking for similar experiences.

A first step will be to carefully select the video game based on the options offered by the market, taking into account the educational goals. A classification of games may be useful to ease the choice between the different types. We include some of the ones that have been used in the classroom.

Type of game	To learn	Examples
Strategy	How to solve problems	*Spore, Boom Blox*
Simulation	Living en virtual worlds	*The Sims 3, Simcity Creator*
Adventures	Telling stories	*The Harry Potter series*
Sports	Team work, practicing sports	*The NBA or FIFA series, Need for Speed series*
Musical	Positive feelings, colaboration	*Rock Band, The Beatles Rock Band*

The situations that arose when playing in class, the dialogues and the reflections generated allowed us to enumerate the following conclusions.

• Video games contributed to creating educational scenarios that motivated youngsters, **maybe because they brought the teachings in the classroom closer to the student's daily lives.**

• Video games enabled the learning of curriculum contents as well as of other skills that students will need in their future life outside of the classroom.

• They contributed to them learning to solve problems and use thinking strategies similar to the ones implemented by biologists, architects or social scientists.

- They helped in telling stories by understanding their structure and how they can be present in the different media.

- They allowed living in virtual worlds, sometimes escaping one's daily reality and generating dialogue situations in which assessments and ways of acting in a society were shared and compared.

- Understanding what sports and rule games imply may be the subject of complex analysis, generating new interests, especially among girls.

- Musical video games allowed the introduction of emotions in class, something that is usually left at the door.

- The introduction of this new technology made it easier for teachers to accomplish their tasks, since they were looking to work with new communication media to develop new literacy means in students.

- Their presence in the classroom transformed the way in which teachers and students related to each other. They eased working as a team made up of peers and the relationship between youngsters and adults was more symmetric.

- They made it possible for the teaching and learning processes to become attractive, because they brought on personal and collective challenges in light of which there was no room for boredom.

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