

Developing Skills in Digital Contexts: Video games and Films as Learning Tools at Primary School

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Abstract

The use of commercial video games in combination with other media can provide opportunities to learn skills related to critical thinking, digital literacy, and media production. These media tools offer opportunities for users to participate in the new emerging forms of participatory culture. By means of an ethnographic study carried out in a Spanish primary school, this article presents an analysis of the skills that can be developed through the use of the *Harry Potter and the Goblet of Fire* video game and movie and how education professionals can use them at school in order to change the way students learn. The results show how students can develop their critical capacity by comparing these two media, and that this enables them to develop processes geared to digital literacy at the same as it helps them become producers through the creation and publication of blogs.

Keywords

commercial video games, digital literacy, thinking skills, participatory culture, transmedia

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Introduction

The constructivist and sociocultural view of learning and teaching define the former as an active and conscious process of the construction of meanings. This process requires the attribution of meaning to the contents and the experiences of the learner, while the approach as a whole entails a different way of conceiving and carrying out teaching (e.g., Joseph, 2006; Novak, 2003) and amounts to an inexorable revolution in education which is already under way.

The learning process is the result of actions of pedagogical mediation which implies a coordinated activity of intention–action–reflection on the part of both students and teacher and with the aid of particular languages and instruments (Mezirow, 2000). Among these instruments, video games (Gee, 2004) and other tools such as films (e.g., Parker & Faulk, 2004; Toman & Rak, 2000) allow students to engage in their own learning process by taking the sort of active and critical role which is so necessary in the current social context.

More specifically, worth pointing out is the existence of some commercial video games which share their stories with other media such as films or written literature and come to conform sagas which are available in different media (e.g., *Star Wars*, *The Lord of the Rings*, *Matrix*, or *Harry Potter*). Jenkins (2007) uses the term “Transmedia Storytelling” to describe this systematic dispersion of the different elements of a fiction across multiple channels of distribution with a view to creating a unified and coordinated entertainment experience.

The use of this kind of transmedia saga in schools offers several benefits to various aspects of the educational process:

- i. It develops competences related to critical thought, as well as the capacity to solve problems given that if pupils are to attribute meaning to and deepen their understanding of the world of the saga (Burn & Durran, 2007), they need to analyze, compare, investigate, deduce, induce, and form critical judgments on the basis of information obtained from the different channels by which the stories are transmitted.
- ii. Immersion in the fictional world made available by video games enables children to create their own stories about the various characters on the basis of their idiosyncrasies as portrayed in the saga. This represents a powerful learning resource since children are transformed from merely passive consumers to protagonists of the action in the different media (Williamson, 2009).
- iii. It enhances the pupils’ digital literacy by bringing them into contact with the sort of instruments which are not usually present in schools.
- iv. In the classroom, these tools, in combination with channels of diffusion available on Internet (YouTube, blogs, etc.), enable pupils not only to make the stories as diffused their own, but also to become producers of information who communicate their own ideas and engage in what Jenkins (2009) calls “participatory culture.”

The aim of this article is to examine the improvements in each of the foregoing aspects as a result of working in a primary class with the *Harry Potter and the Goblet of Fire* video game and film. To this end, an ethnographic study (e.g., Anderson-Levitt, 2006; Pink, 2006) was carried which analyzed the results of an 8-week workshop with 13 pupils between the ages of 6 and 7 from a state primary school in Alcalá de Henares, Madrid (Spain).

Background

Video Games in the Classroom

The educational potential of commercial video games has increasingly become a subject for discussion and research during the past few years. A number of overviews (e.g., Egenfeldt Nielsen, Smith & Tosca, 2008; Mitchell & Savill-Smith, 2004) describe the educational advantages and disadvantages of such games when they are used in the schools.

Although a considerable number of studies center on the use of serious games or educational video games in learning contexts (e.g., Annetta, Minogue, Holmes, & Cheng, 2009; Papastergiou, 2009), only a few deal with the use of commercial video games in the classroom (e.g., Egenfeldt Nielsen, 2005; Robertson & Miller, 2009) because they have not been designed or developed for a specific educational use and the ambit of their contents is deemed a priori to lie off the school curriculum. Nevertheless, some time ago different researchers studied the impact of play on distinct areas of development from a variety of perspectives (e.g., Bruner, 1987; Piaget, 1951) while more recently there is a growing consensus among those researching new technologies in the classroom that the ludic, that play, is ideal for enhancing learning processes (Prensky, 2007). Indeed, learning reaches its highest pitch in video games since a good commercial video game turns learning into a real pleasure (Gee, 2004).

In this regard, many authors have emphasized the positive aspects of using video games in school when compared with traditional teaching methods. One such benefit is the development of certain cognoscitive skills: video games “can stimulate the learning of facts and aptitudes such as strategic reasoning, creativity, cooperation, and innovative thinking” (Greenfield & Cocking, 1996, p. 5). Furthermore, players are able to engage in active explorations, formulate, and test hypotheses within the virtual world of the game, and, based on feedback, confirm or reject them (e.g., Gee, 2008; Rayala, 2005). Moreover, video games allow the game itself to be customized by adapting the level and the learning style to the player, thus offering numerous ways of solving problems until a degree of mastery, consolidated through repetitions, is achieved—mastery being the basis of the acquisition of experience in any field (Schwartz & Bransford, 1998). This tool can be used to explore new forms of teaching and learning and is very enriching on account of the diversity of pupils in schools. Finally, good video games can serve as support for written materials and other texts since their languages signified is always associated

with actions, experiences, images, and dialogue. In short, video games can lead to the integration of educational contents, which in turn yields better results (Prensky, 2007).

Among these benefits, one which has been the subject of our research are the competences related to critical thinking which may be developed thanks to video games in so far as they enable pupils to give meaning to and deepen their understanding of the world of the game. Dewey was the first to introduce the concept of critical thinking at the start of the 20th century. What he termed reflective thought included processes such as investigation, deduction, induction, and judgment (Dewey, 1933). Toward the end of the 20th century, experts decided to agree on a single conception, which they defined as “the formation of a self-regulated judgment,” a process calling for distinct cognitive skills such as interpretation, analysis, evaluation, inferencing, explanation, and self-regulation, all of which are of use when it comes to comprehending the certainties of knowledge (Facione & Facione, 2007).

In this connection, some researchers state that children who play video games achieve better results for critical thinking than those who do not (e.g., Mandinacht, 1987; Okagaki & Frensch, 1994). This may be due to the fact that video games not only represent reality, but also allow it to be modeled through simulations (Frasca, 2001). Accordingly, a video game’s representations of reality extend the scheme of traditional communication on account of the opportunity to interact with them. In so doing, the player needs to subject to a critical reading the tool which permits him or her to dismount the apparent naturalness of the images and to interrogate the supposed transparency of the medium. Consequently, the active role of the receiver of any message is expanded when operating with those representations since he or she is enabled to issue critical judgments regarding the messages and contents transmitted to a greater extent than is the case with other noninteractive media (Buckingham, 2000).

In the light of the foregoing, once immersed in the fictional world, video games permit their players to actively build a significant story through their own decisions and preferences in what amounts to “Interactive Storytelling” (e.g., Cavazza, Charles, & Mead, 2002; Klimmt, Roth, Vermeulen, Vorderer, & Roth, 2012). This concept can be defined as the endeavor to develop new media in which the presentation of a narrative, and its evolution, can be influenced, in real time, by the user (Cavazza, Lugin, Pizzi, & Charles, 2007). This is a key feature since it requires pupils to analyze what is happening and what they expect to happen and to analyze and form judgments about the results obtained. What is more, players can share real and virtual experiences in a customized fashion, and this amounts to a powerful learning resource since they cease to be merely passive consumers and become the very protagonists of the action (Williamson, 2009).

Nevertheless, it should be remembered that all those aspects may go unnoticed by the player who is not conscious of the process and the kind of decisions he or she is taking in order to achieve particular goals while actually playing the game. That is why the school context offers a unique opportunity for teachers to act as mediators or

guides to learning by giving educational structure to the actions of the player, who may therefore become aware of what he or she did and how, put it into words, rethink it and dimension it on the rational plane with the result that, at last, he or she may use cognitively what has been learned in other contexts than those of the video game (Gee, 2004).

To conclude this section, we may say that video games are tools designed for entertainment which, if introduced into the classroom and properly mediated by the teacher, can become instruments which facilitate learning and digital literacy (e.g., Fromme & Unger, 2012; Hutchison, 2007).

Toward Digital Literacy at School: How to Transform Pupils into Media Producers and Critics?

The increase of these technologies has facilitated the formation of what Jenkins calls participatory culture (Jenkins, 2006) where users feel some degree of social connection between themselves and can circulate media content in powerful new formats creating a new form of democratic culture. As an educator, Jenkins defends encouraging young people to develop skills, knowledge, ethical frameworks, and the confidence necessary to fully participate in contemporary culture.

Other authors have argued that these new participatory cultures represent ideal learning environments (e.g., de Freitas, 2007; Leonard, Van Scotter, & Pakdil, 2009). From this cultural perspective, what is required is to generate a general change in ways of learning, communicating, and producing (Gros, 2005). This involves moving from the concept of teaching to learning, from the curriculum to needs. We should therefore select those video games which provide players with quality learning and allow them not only to consume but also to produce (Gee, 2008). For this reason, throughout the game good planning is necessary in the classroom, where teachers can facilitate situations that encourage creative exploration, research, and significant discoveries.

All this implies a reappraisal of the model of formal teaching. If pupils are to be encouraged from the classroom to form part of democratic culture, educational activities need to be designed which foster original contributions, whether individually or as a group, by means of the various tools which are freely available on the Internet for society as a whole (Novak, 2003).

That would require rethinking school routines so that they foment creativity and communication; also suitable conditions for receiving would be needed. The recent success of blogs and channels on the World Wide Web like YouTube or My Space which are devoted to publishing and disseminating contents is proof of the increasing importance attached to creating, distributing, and receiving knowledge by other than traditional means, above all among young people. The potential is great and needs to be harnessed in schools if pupils are to acquire the grammar, so to speak, of digital systems and thereby fully grasp and ascribe meaning to the discourses on offer (e.g., Griffiths & Light, 2008; Juul, 2010).

Before children can integrate into this culture, they have to be literate to become critical citizens. Literacy is the interpretation that people make of cultural products and the generation of products and ideas thanks to that interpretation (Mills, 2010). To be more precise, digital literacy would mean being able to interpret the new media of mass communication such as film or video games. Nevertheless, from a cognitive perspective we should bear in mind that images do not have the same effect as words, since they are distinct processes. Although decoding written texts requires complex analytical operations, decoding images is practically immediate (Burn & Durran, 2007), albeit that does not necessarily mean the messages transmitted have been understood. Accordingly, a series of specific mental skills need to be developed, and the school would seem to provide the ideal setting for encouraging the use of these media and, therefore, to attain digital literacy (e.g., Gee, 2004; Kirriemuir, 2002).

Thus, if children are to be active participants of popular culture (e.g., Berger, 2002; Squire, 2005), digital literacy becomes a competence which needs to be inculcated in them at school through the creation of *spaces of affinity* (Gee, 2004) which enhance learning through active and engaged participation in that culture. In this sense, video games need to be interpreted as being part of this media culture. What is more, their educational potential can be increased if used in combination with other communication media in the classroom (García, Checa, Monjelat, del Castillo, & Herrero, 2012). Thus, the combined use of such tools in school settings will enable pupils to appropriate the different narratives each transmits, to compare them, and then use them to construct their own discourses; and this is an opportunity which until recently was only available to those who worked in the mass media (Kress & van Leeuwen, 2001).

Research Design

The study consisted of two phases. The first phase, data collection, took the form of an eight-session workshop in a second-year primary class. The second phase, data analysis, took the form of an ethnographic study (Anderson-Levitt, 2006) of the participants' discourses and creations. There follows a detailed description of these two phases, as well as of the materials used and of the participants in the study.

Participants

For the purposes of this study, pupils between the ages of 6 and 7 (second year of primary) were considered to form the most suitable age-group for three main reasons: (i) they are one of the age-groups which is most familiar with the world of Harry Potter; (ii) they are in the process of consolidating their literacy skills, namely, the competences involved in reading and writing texts; and (iii) they are not used to using video games or writing on a computer.

The participants were pupils at a state school chosen at random from among all state primary schools in the city of Alcalá de Henares (Madrid, Spain); they were members of one of that school's two second-year classes. There were 13 children in the class, eight girls and five boys. For the purposes of the workshop, the children were divided at random into two working groups of six and seven members apiece. All participants knew the Harry Potter stories as told in the saga's novels and films; none had prior experience of the *Harry Potter and the Goblet of Fire* video game.

Materials

The materials used in this study were the *Harry Potter and the Goblet of Fire* video game and film, both based on J.K. Rowling's novel (published 8 July 2000) of the same name, and the students' own productions by means of blogs. The novel was not included in the workshop, because as pupils had not yet completely developed writing and reading skills, their understanding of the story would be hampered. Therefore, we thought the audiovisual content existing in the other media (film and video game) would be more easily understood by the students.

In the video game, the protagonist is transformed into a digital hero. Up to three players at a time take on the roles of Harry Potter and his two friends (Hermione Granger and Ron Weasley), who move through an elaborate imaginary world, solving various problems as they do so. There is no pre-established route through the game, which means that the players are free to create their own story. Three players from each of the teams took on the roles of the three heroes and were in full control of all the game's variables and resources; but they had to take into account the opinions of the other members of the team under the mediation of their teacher. That being said, the participants were given no direct instructions regarding the progress of the game, which meant that each group had to solve problems *ad hoc* and in accordance with their own interests (Figure 1).

One distinctive feature of the game is that the three heroes can cast spells jointly, as a result of which collaboration between the players and the other members of the team is crucial to surpassing the different challenges. That was an important reason behind the selection of this game since collaboration entails that the pupils discuss the best options to take and explain why with the help of the teacher. Such discussion represented an important source of data for subsequent analysis.

The film was also a key element of the study since it allowed scenes or episodes from the story to be viewed in class before the pupils themselves had to confront them in the video game. As a result, the two groups of pupils were able to analyze, compare, and discuss the strategies adopted by characters in the film in order to overcome the challenges at different points in their adventures, strategies which might either be imitated or rejected in favor of alternatives when playing the video game. Thanks to the interactive nature of the game itself and to each group's analysis and discussion, the pupils were given the opportunity to create stories which differed



Figure 1. A group moving their character in the classroom. Three sources of data were obtained from each group: A screen capture recording, a video recording, and an audio recording.

from those in the film. That in turn enabled a genuine interactive learning experience to be generated.

The other key element of this study was the pupil's own creations by means of blogs. Blogs were chosen as an appropriate tool since they enable pupils to become creators of information at the same time as they consolidate conventional literacy and are inducted into digital literacy through the formulation and justification of their arguments in written texts and drawings produced with the aid of a computer. In each session, the teacher issued instructions to the children about how to gather information from the film and the video game in order for them to tell what had happened later in blogs.

Workshop Structure and Data Collection

The study was conducted between December 2009 and February 2010, as an eight-session workshop, structured in two phases (Figure 2).

First Phase (Sessions 1–4)

This phase commenced with a session devoted to finding out what the pupils already knew about the world of Harry Potter and exploring the degree of involvement,

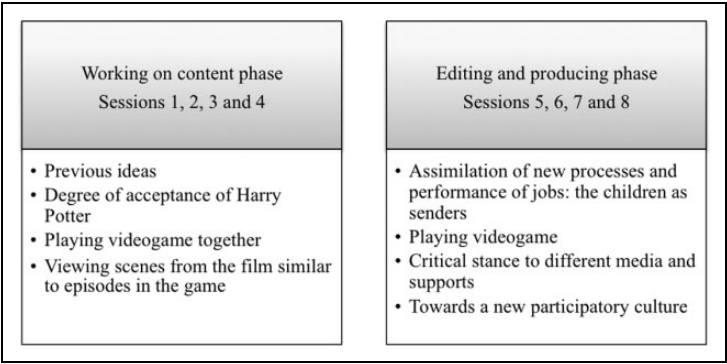


Figure 2. Phases of the workshop.

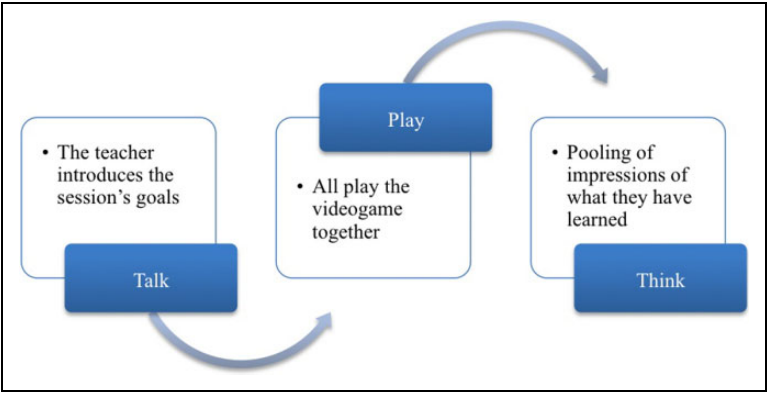


Figure 3. Session sequence.

acceptance, and identification with the values Harry Potter stands for (Session 1). The following three sessions were organized into three moments (Figure 3), always allowing for modification in view of the particular circumstances of each session: (i) the teacher and pupils discussed the goal of the session and the problems and challenges to be overcome in the course of the game; (ii) the pupils played in their groups and viewed scenes from the film which were similar to episodes in the video game; and (iii) the session ended with the pupils pooling what they had done and learned.

Second Phase (Sessions 5–8)

While the same session structure (see Figure 2) as in the first phase was preserved, in this phase the pupils, with help from the teacher, began to take on the role of creators

Table 1. Data Collection.

Workshop. <i>Harry Potter and the Goblet of Fire</i>				
Sessions	Dates	Photos	Video	Audio
Session 1	December 12, 2006	71	V1. 1:02:22 V2. 0:35:19	Minidisc C1
Session 2	December 19, 2006		V3. 1:02:23 V4. 0:39:42	
Session 3	January 09, 2007	47	V5. 1:02:37 V6. 0:19:30	
Session 4	January 16, 2007	72	V7. 1:01:54 V8. 0:19:18	
Session 5	January 23, 2007	46	V9. 1:02:37 V10. 0:34:33	Minidisc C2
Session 6	January 30, 2007		V11. 1:02:17	
Session 7	February 06, 2007		V12. 1:01:18 V13. 0:45:37	
Session 8	February 13, 2007	111	V14. 1:02:21	
Total		347	11:33:14	2 Tapes

and critics as they edited Internet blogs in pairs. The pupils created the blogs in order to share their experiences in the workshop with others, using their own written texts and drawings in support of their arguments. In this process, they had to follow this order of events: (i) planning the action, where each pair had to decide what their message was to be, the audience it was aimed at and its intention and (ii) selecting and combining resources to transmit the message.

Throughout the two phases of the workshop, audio and video recordings were made of the participants and photographs were taken. In all, more than 11 hours of audiovisual content and 347 photographs were collected. In addition, the contents of the pupils' blogs were also recorded, thus ensuring that there was a record of all the workshop's relevant activities (Table 1).

Data Analysis

The audiovisual content collected in the workshop was processed with the aid of ATLAS Ti 5.2 software (e.g., Strauss & Corbin, 1997; Tesch, 1990). This enabled the pupils' discourse to be interpreted in two successive phases: the narrative phase, in which the most significant events in the workshop were selected and transcribed before being put into chronological order; and the analytical phase, in which the transcriptions could be classified into a system of categories as interpreted by the researcher. It should be noted that this interpretation was a circular analytical process which commenced during the field work (Figure 4). Furthermore, the participants own productions as published in their blogs were analyzed.

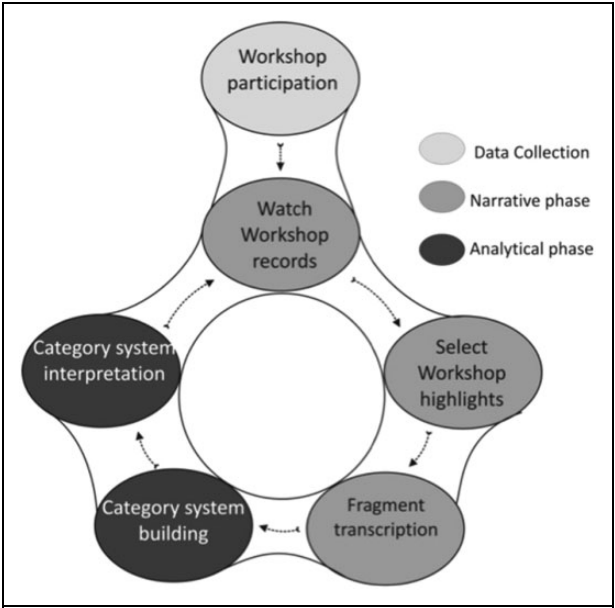


Figure 4. Interpretation of the pupils’ discourse.

Results

Interpretation of the Pupils’ Discourse

Analytical interpretation of the pupils’ discussions permitted their discourse to be classified into a system of four main categories and seven subcategories (Table 2).

Digital Literacy and Collaborative Learning

This category included those fragments of discourse with evidence of the processes of the development of skills related to digital literacy in a context of collaborative learning. These processes were geared toward understanding the video game as medium transmitting information for interpretation and reconfiguration by the players. The pupils’ discourse shows how, working in groups, they came to understand the narratives proper to the video game, including its rules, images, sounds, and written texts.

To begin with, the children were aware that the use of digital media in the classroom was unusual. Indeed, as these new elements motivated them and kindled their enthusiasm, *innovative learning spaces* were created (Table 2, subcategory 1a) where pupils learn by means of multiple communication codes. The

Table 2. Resulting Coding Scheme.

Category	Subcategory	Description
1. Digital literacy and collaborative learning	1a. Innovative teaching spaces	The children were aware that new teaching practices with digital media in the leading role had been generated
	1b. Previous ideas	Children's initial information about Harry Potter
	1c. Image as language	The children were aware of the messages transmitted by the images
	1d. Collaborative learning	The pupils agreed actions to be taken in order to proceed in the game and to create blogs
2. Critical thinking	2a. Comparison and analysis	The children compared analogous scenes in film and video game, consciously and explicitly identifying the particularities of each medium
	2b. Transmedia storytelling	The children developed specific skills for disseminating stories transmitted in the sage and for creating their own
3. The children as creators	3a. Internet and blogs	The children became producers of contents through blogs
	3b. Acquisition of new capacities	The children created more complex and more artistic contents, with more involved narratives, than they were capable of using their conventional literacy skills
4. Participatory culture		Thanks to the children's blogs, knowledge was diffused among the whole online community

following conversation shows an example of these issues between pupils and teacher:

- Teacher: Does anybody know the Harry Potter stories?
 Girl 1: Yes, he's a wizard.
 Teacher: Very good. He's a wizard. Has anyone read the Harry Potter books?
 Boy 2: My mother has read parts of a book, but I've seen the film.
 Teacher: The film? And would you like us to see the film in class?
 Boy 2: Yes, it'd be good fun.
 Teacher: You think it'd be fun? And would you like to play the *Harry Potter* video game too?
 All the children: Yes!

These early conversations meant that children quickly established a rapport with the character. One of them says that he knows the stories narrated in the books because they have been read by his mother, but he also knows the films in the series.

Accordingly, the teacher asks the children if they would like to introduce into the classroom both the Harry Potter film and the video game. The children's enthusiastic response and evident motivation generates a suitable atmosphere to create the intended *innovative learning space*.

However, to achieve this it was necessary to deepen our understanding of the pupils' *previous ideas* (Table 2, subcategory 1b), taking as our starting point what they knew about the Harry Potter character, as we see in the following transcription:

- Teacher: Who knows what happens in the first book? Who can tell me what happens in Harry and the Philosopher's Stone? Who has seen it? Who remembers it? It's the first film.
- Boy 1: Harry Potter arrives at Hogwarts and he's very happy.
- Girl 2: And he gets on the broom and has to catch the Philosopher's Stone.
- Teacher: Very good
- Boy 3: But Voldemort took the stone away from him and Harry Potter had to go to the infirmary.
- Teacher: You know a lot about Harry Potter already!

The teacher starts by asking about the "Harry Potter and the Philosopher's Stone" narratives, since this is the first book and film of the saga, with the purpose of assessing the students' *previous ideas*. Boy 1 points out that Harry Potter arrives at Hogwarts and feels very happy. Girl 2 explains the main plot of the story, namely, that the main character must take a broom and achieve the Philosopher's Stone. Boy 3 mentions Harry's enemy, Voldemort. The teacher encourages the students, telling them how much they already know about this character.

At this stage, the information offered by the pupils consisted of descriptions, and at times of very specific issues related to events at certain points of the stories; but there were none of the value judgments or reflection over more complex issues which would emerge later in the course of the workshop.

Another important aspect which emerged from analyzing the pupils' discourse was the importance of *image as language* (Table 2, subcategory 1c), since images provide information which needs to be interpreted. It is vital for pupils' acquisition of digital literacy that they become aware of this, and the use of digital media like those used in this study could be encouraged in schools. The significantly high presence of images in the video game and the film was analyzed, used, and discussed by the pupils when building their arguments, as can be seen in the following discussion:

- Teacher: Does anyone know what we doing today?
- Girl 1: We are going to have the scene that we liked the most in the movie and the game.
- Teacher: What scene did you like most?
- Girl 2: I liked the image of the movie where Harry Potter gets the broom because he was almost going to fall. I liked the image of the game where I had to take the egg because they fought with the dragon.

- Girl 3: When you have to contend with tail horn. For wings with a broom and it is very exciting. I also like when we go to the Forbidden Forest because it leaves the tail horn.

By analyzing the words and the pictures of these three girls from the workshop, we realize that emerges one of the types of narrative specialization in video games, the per formative or speculate, done stories are articulated from the character's movement through space whose components can accelerate or retard the development of the argument (for example, that Harry's horn or tail fight with him to take the egg of the dragon).

Finally, throughout the course of the workshop the pupils' discourse gave evidence of the resort to the working groups in order to overcome the different challenges posed by the video game. Thus, pupils with different learning styles and even with different capacities were able to overcome those challenges jointly in what amounted to spaces of *collaborative learning* (Table 2, subcategory 1d).

- Boy 1: We've got to be careful now because we going to come up against that creature.
Boy 2: OK, I'll be Harry.
Boy 3: Who's going to be?
Boy 4: Me
Girl 4: And Hermione?
Girl 5: Yes, but remember we've all got to do it at the same time.

Boy 1 is aware that the video game poses a challenge. To try to solve the challenge, the children decide to share out each of the characters and realize they need to act collaboratively in order to overcome it. Hence, if each one uses the magical powers at the same time, they will be stronger.

Critical Thinking

Throughout the workshop, the pupils' discourse threw into relief learning processes geared toward developing critical thinking, such as the capacities to deduce, analyze, compare, and reason critically. In discussions with their teacher, the pupils were able to *analyze and compare* (Table 2, subcategory 2a) the similarities and differences between both media and to identify which messages transmitted by the film would help them overcome the game's challenges more successfully. With a view to this end, and conscious as we were of the relationship between the two media, those scenes of the film were selected for viewing which were reproduced in the video game so that the pupils would cross-check the contents of each and identify similarities and differences.

The following transcription shows an example of critical thinking development through the comparison of these media:

- Teacher: What are the similarities between the story you've seen from the film and the story you've seen in the videogame? Somebody who hasn't said anything. Anybody?
- Girl 1: The characters are the same.
- Teacher: Very good, More things (. . .) So what about this? If they're so similar, why do you think they've made a videogame and a film? You've got to think about this carefully.
- Girl 1: Well, so that we can have a good time watching the film and playing Harry Potter.
- Teacher: So what's the difference between watching the film and playing the videogame?
- Girl 1: That in the videogame it's you who moves the characters, and in the film you see them.

When the teacher asks about the similarities between the film and the video game, Girl 1 explains the characters are the same. Nevertheless, the same girl is also aware of the main difference between them: in the film the story is closed, the viewer only sees the film as a final product. However, in the video game it is the player who shapes the evolution of the story, controlling the characters through the interactivity inherent to this medium.

Furthermore, by analyzing and comparing the two media, the pupils also acquired the competence of *transmedia storytelling* (Table 2, subcategory 2b), developing specific skills which disseminated the messages transmitted by each medium and helped them to overcome the games different levels of difficulty. The development of this competence allowed the children to understand the stories related in each medium and to make them their own, as attested by their conversations with the teacher.

- Teacher: Very good. More ideas.
- Girl 2: It's the same adventure.
- Teacher: The same adventure? So what's the adventure about? What adventure's going on here?
- Girl 3: You've got to kill the same dragon.
- Teacher: Very good, killing the same dragon. More things.
- Girl 4: To pick up the things I did the same spell in the videogame as in the film.
- Teacher: More similarities.
- Girl 5: It's the same cave.
- Girl 6: He goes along the same paths as in the film.

In this conversation, the teacher asks about the narrative in both supports. The children can put into words what happens in the video game and find similar

narrative details in the film and the video game and are aware of the stories' spatial features. By comparing, analyzing, and reflecting on the two supports, the children come to understand the peculiarities of each medium and to develop their critical thinking skills.

Pupils as Creators

In the second phase of the workshop, the pupils' conversations revealed the processes whereby they became creators with the encouragement of their teacher to tell their own stories in blogs. Analysis of these conversations showed how the children were aware of the opportunity and responsibility represented by expressing themselves online before the whole community using *Internet and Blogs* (Table 2, subcategory 3a). The pupils realized that the audience was larger and that they should address it differently from the audience they were used to addressing in the classroom; also, that they should be careful with such issues as intellectual property, a concept with which they were none too familiar (transcription A).

- Teacher: Let's see, who can, who can tell us what they had to write in the blog?
- Girl 1: Describe Ron and Hermione write about who we like more, Ron or Hermione.
- Teacher: And did you know?
- Girl 1: Yes
- Teacher: Do you want to read us what you've written? It's important to bear in mind that this is going to be in Internet and lots of people are going to see it. Come on then, tell us.
- Girl 1: Ron is ginger and a big chicken. Hermione is very clever and very inquisitive. I liked Hermione because she's very clever.
- Teacher: The thing is there are people, and this is a very serious problem, I don't know if you're aware. The thing is there are people who download pirate copies and never pay anything. It's a complicated issue. It's as if we had pirate copies of the videogames and didn't pay for them. What do you think about that? How do you see it?
- Girl 1: It's bad
- Teacher: Bad? Why? Why do you think it's bad? Why do you think it's bad, love?
- All the children: Don't know.
- Teacher: Well, sometimes it's bad because if everybody downloaded everything for free, they couldn't make new videogames or films, because to make new films what people do is sell the ones they have but if everyone pirates them, the people who make films aren't going to earn any money.

The process to convert students into creators begins with this dialogue when the teacher asks about the task to be performed in the blog. The teacher stresses the

importance of taking great care when writing messages for publication on Internet, she explains the gravity of not respecting intellectual property.

To do so, it was necessary for them to *acquire new capacities* (Table 2, subcategory 3b) which would enable them to publish their texts and drawing for a distant audience with the aid of a computer keyboard. The help of the teacher was necessary here in order to set in motion a learning process which commenced with simple tasks but gradually grew in complexity as the pupils themselves grew in autonomy.

- Teacher: Does anyone know how to use a computer keyboard?
Girl 2: Me, a bit. Sometimes I see my mum writing on hers.
Teacher: Do you know why she writes on the computer?
Girl 2: I think its things to do with work. To talk with people.
Teacher: Very good. The computer can help us write to people who are a long way away. Do you want people a long way away to be able to read what we do in the workshop?
All the children: Yes!
Teacher: So we'll have to write everything you've got in your notebooks on the computer.
Girl 3: So then everybody can see it?
Teacher: Once we've got it on the computer, we're going to publish it in a blog so that anybody who wants to can see it.
Boy 3: Will my parents be able to see it?
Teacher: Yes, of course.

In this fragment, the teacher finds out about computer use. The Girl 2 is aware that computers allow contact with remote audiences. The teacher asks about the possibility of people a long way to be able to read what students do in the workshop. The children are enthusiastic about the idea of their productions being disseminated beyond the classroom. Finally, the teacher explains the process of writing blogs.

Participatory Culture

As they became creators, it was possible to see how the pupils realized that their blog publications would make them part of a *participatory culture*, thereby transmitting their knowledge and the results of their learning to the whole online community. The pupils expressed in words how their blogs would enable other people they knew such as family or friends who had nothing to do with the workshop would be able to comment on their productions. This fact enriched the pupils' blogs and entailed a greater diffusion of the information worked in the workshop:

- Teacher: Hey, this is really interesting. Listen, Ana's going to read you what her mother's said on the blog. Let's see

- what you think. Your mums and dads can write things too. Now Ana's going to read it to us. Off you go!
- Girl 3 (reads what her mother wrote on the blog): Hello children! I wanted to tell you that we've had a great time this week with the *Harry Potter* videogame because we hardly played with the NBA one, because it looked a bit too technical for us. But this one . . . it's been cool. Even Luis, Ana's little brother, who's 4 years old, has had a great time because he saw he could help. I loved the pictures for the story. And what I like best is being in contact with you to see what you get up to in class.
- Teacher: Is very interesting what your mother says! What do you think?
- Girl 3: I like very much my mother and my friends can see what we do in class and learn with us!

In this conversation, the teacher points out the important fact that other people outside the workshop can make comments about it. Girl 3 reads out her mother's blog comment, in which she expresses her enthusiasm about finding out through the computer what her daughter does in the school. It shows how the students' blog productions can be enriched with their family's and friends' comments. Therefore, their creations transcend the school environment and become part of the participatory culture through the media they employ.

Childrens' Blogs

Most of the information the pupils published in their blogs was graphic. Writing had not yet been fully acquired by all of them and it was easier for them to express their thoughts through drawings, though these were always supported with textual messages. The different arguments became progressively richer as the children grew more capable of expressing value judgments, deductions about what might happen next, comparisons between the film and the video game, and so forth (Table 3).

The texts were mostly taken up with interpreting the contents found in the video game and the film, with particular emphasis on those features which were treated equally or differently in the two media. Our analysis of the texts disclosed three main categories of messages: about a player's performance, about how to perform an action, and identifying a player's active participation. It was noticeable how the children interpreted each of those messages in accordance with the medium which transmitted it. For example, when talking about who performed an action, reference is made to the video game's defining characteristic of interactivity (Table 4).

Table 3. Main Tasks Reflected in the Blogs.

What happens in the video game	Comparison between video game and film	Creations in the blogs
How to play in the first magic lesson, "Defence Against the Dark Arts."	The same scene was seen in the film and similarities and differences were analyzed.	The pupils used drawings and texts to tell the story of the first magic lesson.
Identify with one of the game's protagonists	The characteristics of the three main characters in the film and why the children decided to choose their character.	The pupils were asked to talk about their favorite character and to tell a story about him or her which had taken place in the video game or the film.
Analyze the characteristics of the heroes	Comparison of the defining features of the heroes in the two media	Writing and thinking about the good features of the heroes. Choosing a favorite character and explaining why.
Digital art	Comparison of digital art in both media	Analyzing and criticizing the digital art in both media worked with in workshop.

Discussion

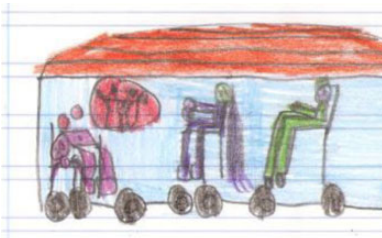
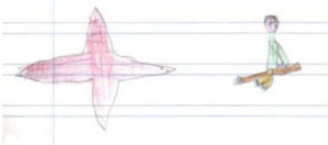
The Results Obtained

Our analysis of the results showed how using the *Harry Potter and the Goblet of Fire* video game and film prompted the pupils to set in motion skills related to critical thinking, digital literacy, the appropriation of digital discourses to be found in the two media (*transmedia storytelling*), and participation in participatory culture.

We should first like to point out how the combined use of both tools together with the methodology adopted in the workshop fostered collaborative interaction and debate among the students about the best action to be taken to overcome each of the challenges posed by the game; in other words, the pupils constructed their own signifieds and built their own knowledge in partnership (Scardamalia & Bereiter, 2003; Stahl, 2001) and autonomously (Shaffer, 2006).

To be more precise, we observed how most conversations and blog creations focused on the visual elements of the video game or the elements common to both media. In this connection, Lowe (2003) and Jonassen (2011) found that subjects tend to be attracted to the animated information characteristic of video games. This is borne out by the comparisons the pupils in our study made with the film, at times spontaneously, other times under the guidance of their teacher. The spontaneous action of comparing and contrasting, as attested in the pupils' blogs, amounted to the acquisition of competences related to critical thought, as demonstrated in other studies (e.g., Gilster, 1997; Resnick, 2007).

Table 4. Examples of Pupils' Blog Comments About What They Most Liked in the Film and the Video Game.

Blog	Creations in blogs	Children's drawings to illustrate their texts
http://anayeloy.blogspot.com.es/	Hello children! Here I am again to tell you which scene in the film and in the videogame I liked best. I've also done a drawing of the film. What I liked best in the film was when Harry fell asleep on the train and dreamt about monsters, and in the videogame—I don't know how to explain it.	
http://sergioymiguel.blogspot.com.es/	Hello children! We're going to tell you which bit of the film and the videogame we liked best. We've done a picture for you, too. The bit we liked best in the film is when Harry takes on the dragon because he flies on a flying broomstick. What we liked best in the videogame is when Harry takes on the dragon because you can control Harry in the air.	
http://guillermoybea.blogspot.com.es/	Hello children! We're Guillermo and Bea. In today's class we've seen a bit of the film and a bit of the videogame and then we said what differences and similarities they had. Today we've learned to find differences between the two things and what they have in common. We've also learned how to play <i>Harry Potter and the Goblet of Fire</i>.	

Another key aspect was the support provided by the film, which acted as a guide to assist the pupils to make the most appropriate decisions (e.g., Manovich, 2001; Wolf, 2003) when playing video game. This demonstrated their ability to integrate the narrative from both media, thereby developing the skill of transmedia storytelling.

At the same time, the use of new technologies in tandem with others already tried and tested in the classroom permitted the pupils to acquire new skills related to digital literacy, learning in the process how to use multiple communication codes (Lacasa, Reina, & Albuquerque, 2002). Finally, after 7–8 weeks, the pupils were able to create their own stories in blogs, thus becoming active members of participatory culture (Jenkins, 2009).

The Methodology Employed

The methodology of ethnographic study employed in this study meant becoming thoroughly familiar with children's' conversations and productions; those conversations and productions yielded the results obtained. The objective value of such contributions, as in other studies of this type (e.g., Farley, 2000; Hine, 2005), is not so much in the frequency with which a particular phenomenon recurs but in the detailed description of the cases where explanation can be given of how people ascribe meaning to their activities in particular sociocultural contexts; this means exploring what happens in natural situations without introducing any modifications which may alter the progress of the activities. It would perhaps be desirable to carry out a study with more sessions in order to obtain more data over a longer period and, therefore, to be able to explore in greater depth the skills analyzed.

This methodology could also be complemented with a pretest/posttest study (Rebetez & Betrancourt, 2007), which would measure and analyze more specifically the starting point and the end of the process of acquiring those skills. That said, it is worth mentioning in this respect that the transcriptions and the way they were codified were compared with the codification carried out by another researcher in order to strengthen the objectivity and validity of the interpretation of the data; both codifications were in agreement (Banerjee, Capozzoli, McSweeney, & Sinha, 1999).

Education

Video games and other digital media form a part of popular children's' culture but are not habitually used in schools. We need to understand how children can learn by using such resources and that means making educators aware of the great potential they have for teaching and learning (Panoutsopoulos & Sampson, 2012). Consequently, learning experiences in which children overcome the challenges posed by video games both autonomously and cooperatively and activities involving participatory creation of meaning need to be fomented. Experiences of this kind (e.g., Gee,

2004; Jenkins, 2009) would give a boost to the development of a group of skills which will be required if children are to become adequately equipped citizens of the 21st century.

Furthermore, other studies have found that, in most cases, participants will only learn and engage with what they want to learn or find interesting (de Freitas & Griffiths, 2008). This is the great strength of video games which are attractive tools for pupils since they are part of popular children's' and youth culture.

In this connection, it is worth pointing out that this study's results were enhanced by the fact that the pupils had previous ideas of the world of the video game saga and understood the context and the different problems and challenges posed in the world of the game (e.g., Kennedy-Clark & Thompson, 2011; Richards, 2006). These children were all involved, in different ways, with the cultural phenomenon of Harry Potter (Burn & Durran, 2007).

However, all this potential cannot be harnessed unless there is a change of attitude and competences among schoolteachers (Hasselbring, 2001) and all institutions involved in education. This is the challenge for tomorrow's education professionals.

Conclusions

This study has demonstrated the value of commercial films and video game tie-ins in assisting pupils to acquire competences related to critical thought, digital literacy, participatory culture, and the production of contents with the aid of online tools. The use of both supports in a participatory workshop led by the schoolteacher generated an innovative and collaborative learning context.

As pupil motivators, video games are a powerful stimulus, apart from a welcome change from the typical decontextualized classroom activities. If learning environments which incorporated video games and films were designed where priority was not only given to contents but also to how pupils think about and construct that knowledge, those pupils would have the chance to acquire new skills, to interrelate, and to make the different contents their own, and to improve their problem-solving and critical thinking skills.

For its part, the use of blogs gave the pupils a creative role as active participants in digital culture, and this is a sort of role they are not used to having in the classroom. As a result, they were able to develop capacities which will help them deal with today's world.

Nevertheless, much deeper and more thorough analysis is required of how pupils learn in these new environments if they are to be introduced successfully into the classroom and if teachers are to be equipped with new methods and activities which will foment the development of this kind of skills.

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