

# **Media education and video games**

## **An action-research project with adolescents in an out-of-school educational context**

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The penetration of video games in media consumption behaviors in Italy is statistically very significant: in 2006, 27.9% of households owned a console and 50.4% a personal computer. According to the Italian Association of Video Game Producers (AESVI, 2007), the market of this sector has added up to 742 million Euro, +2.3% than the previous year. 7951 were the titles of games released on the market, 1781 of which were new (+37% compared to 2005). The estimated gamers are about 24 million (43% of the population), 61% of which are male and 43% are between 6 and 24 years old. Moreover, video games reach saturation levels among school students: 96% of children between 6 and 17 play, despite different frequency and modality (AESVI, 2006).

Education and media education cannot ignore this phenomenon, as it is so relevant for such a considerable part of the population, especially youth.

### **1. Education, media cultures, and video games**

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Just like all other media, the link between education and gaming is not unique: there are different ways in which games enter the educational field, both from the practitioners and the scholars point of view.

The main, and probably the most widespread, way is the use of educational gaming within school and in adult education: in literature, this is the field called "educational video games" or "serious games". Recently, they have been thoroughly studied for the opportunities that they offer to increase the learner's motivation, and also because they give access – let's think for instance at

management games – to immersive learning in virtual situations, whose complexity of variables is not far from reality (Gee, 2003; Cangià, 2003; Sandford, Ulicsak, Facer, & Rudd, 2006; Dipietro, Ferdig, Boyer, & Black, 2007; Amory, 2007).

A second way is studying the relationship between gaming and youth culture, describing the penetration that these media have, what role they hold in children's and adolescents' lives, which impact they produce in the peer relation practices, and so on. This kind of studies, which is mainly carried out by sociologists, is very important for educators, because it allows a more appropriate and respectful approach to youth world, and at the same time offers intelligent responses to the teenagers' educational needs (Buckingham, 2000; Mediappro, 2006; Rivoltella, 2006; Johnson, 2005; Balnaves & Tomlinson-Baillie, 2006).

A third area of educational study on video games is related to the protection of children's rights, both in terms of real access to media products, and in terms of respect of their growth. The fear of violent or vulgar content in video games, for instance, led to the creation of a European rating system, called PEGI (Pan European Game Information: [www.pegi.info](http://www.pegi.info)), that classifies all the titles available on the market. In the United States there is a similar organism, called ESRB (Entertainment Software Rating Board: [www.esrb.org](http://www.esrb.org)). These systems, even though deeply discussed, should be supportive to parents when purchasing a video game for their children (Walsh & Gentile, 2001; Lima & Cinque, 2004; Gentile, Humphrey, & Walsh, 2005; Abelman, 2007).

A fourth and final way, probably the most recent one, is the media education approach about video game. It considers them as an object of study, in which children and teenagers should improve their communication and critical thinking skills. The present contribution is situated within this area.

Media education, or media literacy, is an internationally accredited field of study and educational practice (Gonnet, 1997; Tyner, 1998; Rivoltella, 2001; Buckingham, 2003; Kleber, 2005; Hobbs, 2007; Felini & Weyland, 2007). First, it refers to communication education in the variety of forms that mankind created (press, radio, cinema, television, Internet...); second, it refers to citizenship education, because information and participation today take place especially through the media. Who does not have access or is not able to use them is inevitably cut out from the life of the community to which he belongs. In both cases, however, media education is an important part of the human person's general education (Felini, 2004).

The application of media education principles and goals to video games is very recent, because these electronic media are relatively young, and because of some deeper pedagogical and organizational reasons. In fact, media literacy has to deal with the cultural prejudice that video games, considered just like toys, don't deserve to become the subject of a discipline and to be present in school curricula. Media education always faced the relationship with popular culture, and it might be argued that toys are culture (Sutton-Smith, 1986). Nevertheless, educators are in trouble when they look for a rationale for this kind of teaching activities. Furthermore, media literacy activities about video games require technological facilities, which are not necessarily expensive, but which are not generally available in schools and educational centers; last, these

activities require staff with specific video game skills, a background that teachers and educators usually lack. Therefore, for these reasons, the arrival of video games in media education is still in its early stages, and there are many more open questions – Ferdig (2007, p. 218-220) lists 16 issues – than settled practices.

By applying to video games a theoretical framework, which I already presented in a previous work (Felini, 2004, p. 33-46), we can identify three possibilities to practice media education about video games:

1. Media education as **comprehension** of games: through iconological, semiotic, and narrative analysis of one or more games, this kind of media literacy leads to the acquisition of the language, technology, genres, values, stereotypes, and production processes of this medium. A teachers' guide by the British Film Institute, for instance, provides suggestions for this kind of educational activities, focusing on female characters in video games and on the representation of conflict and competition (Newman & Oram, 2006).
2. Media education as **critical consumption** of video games: children are lead to reflect on their own behavior as video games consumers, in order to improve their habits in spending leisure time. The typical issues presented in this discussion are the amount of time spent using video games, related tastes and preferences, the habit of playing alone or with someone else, the kind of pleasure they supply, and so on. An example of a documented teaching activity that fully fits in this model is contained in the MED's Italian media literacy curriculum for primary school, where a part of the course for children aged 11-12 years suggests observation and self-observation activities of game sessions, discussion activities on favorite genres and the review of the most beloved games (Andreoletti & Vonghia, 2006);
3. Media education as video games **production**: teenagers become video game authors by creating plots, characters, and rules, drawing its graphic elements and programming the software. It is clear that to achieve the end of such a complex production activity, children have to assimilate in advance some notions of media analysis and consumption. Examples of such activities were recently documented in related literature (Robertson & Good, 2005; Buckingham & Burn, 2007; Salen, 2007).

## 2. Aims and methodology of the project

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Within this outline, a group of media educators characterized by various levels of training and experience (school, out-of-school educational service, university, video game industry, adult training) pondered the conviction that it was now time, in Italy, to study educational courses of

media education about video games targeted to adolescents. In early 2007 this group began to meet regularly under the aegis of MED – The Italian Association for Media Literacy Education. The working group identified the following aims:

- investigating the world of video games, especially from the educational perspective;
- designing and evaluating one or more activities of media education, such as video game comprehension, critical consumption, and production;
- developing a fruitful cooperation among different skills and professional competences, such as media educators, teachers, parents, video games producers, vocational trainers and university researchers;
- participating in the development of an easy-to-use game-authoring software (*Inventagiochi*, produced by Koala Games Ltd., Bologna) and testing its use with a group of teenagers.

In September 2007, the project began its action-research phase, experimenting a course with a software that, in the meantime, had been developed. For the above mentioned reasons, the group came to the conclusion that it could be easier to test the course in an out-of-school context. The working group identified the Youth Education Center (YEC) as a potential ideal location for the experiment, since teenagers like to gather in this place in the afternoon and in the spare time.

The project involved two YECs located in medium-size towns (8-10.000 inhabitants): Langhirano (in the province of Parma) and Reggiolo (in the province of Reggio Emilia). These two centers show different conditions: Reggiolo's YEC, established in March 2005, is more consolidated, while Langhirano's YEC is still in a developing phase after four years of street-education activities carried on by educators. In both cases, however, the participation in the project is supported by the Local Administration Council, with the commitment of one educator for each YEC. Both in Langhirano and Reggiolo, the potential target was identified in a group of adolescents aged 13-17 years.

The field experiment is currently in progress: it started in Fall 2007 with planning activities, and we expect to end in Spring 2008. Presently, we are carrying out two kinds of activities:

- training, designing, planning and evaluation activities involving the research team: these sessions take place once a month in Parma, Milan, or Bologna;
- the field experiment, carried out by two educators with the teenagers. If necessary, the research team provides additional evaluation/training moments or the participation of experts in the YECs. The YEC educators are asked to record everything that happens during the activities on specific report cards.

The project has no funding, and the work of the research group is done on a voluntary basis, with the awareness that this project is an interesting experience for everyone. The YECs provide technological equipment with their own funds. Koala Games provides free license of *Inventagiochi* to the participants.

Right from the start of the project, a firm conviction for everybody was to plan a production activity as a qualifying part of the course. For this reason, the use of *Inventagiochi* with the teenagers became central.

### 3. *Inventagiochi*: a videogame-authoring software

The game-authoring software *Inventagiochi* ([www.inventagiochi.it](http://www.inventagiochi.it)) was developed by Koala Games Ltd. up to Beta version, released in October 2007. That version had been tested by some members of the research group, who provided guidance and suggestions to developers especially in order to make the software fully congruent with the activities of media education. Thanks to this work, in February 2008 *Inventagiochi* reached its 1.0 version.

The *Inventagiochi* is specifically designed to allow the creation of "action games", i.e. those games where the main character, controlled by the player, moves in a set performing actions of various kinds (killing enemies, collecting objects, gaining stamina or ammunition supplements etc) as far as a target is gained, that is the conclusion of a specific level. These games are essentially based on rapid actions and possess simple narrative structures; their environments, however, are very rich in objects and characters, whose features the player discovers as he/she meets them.



Figure 1 – Outlook of the *Inventagiochi* interface

*Inventagiochi* is designed to create third-person action games: in other words, the point of view on the stage is always that of an omniscient viewer who looks at the scene from above.

The main characteristic of *Inventagiochi* is its user-friendly quality: the game does not require programming skills and all the procedures are the most intuitive as possible, so that a teenager can use it without any specific training.

The creation of a video game with *Inventagiochi* starts with the choice of the game name and the protagonist. Thereafter, all the necessary operations are guided by an interface organized in five menus (see figure 1): main character, map, logical objects and game rules, enemies/helpers, and music.

In the *Main character* menu, the user can choose or change the game protagonist, insert a brief description that may appear in a caption, and set the stamina, speed and damage levels.

In the *Map* menu (see figure 2), there are building and furnishing tools for the game area. The software provides six environments that can be selected by the user: city, jungle, fantasy, space, cartoon, and desert. The ground can be painted with multiple textures (sand, stones, grass, asphalt, wood, metal...) and completed with roads and rivers. Moreover, 2D and 3D objects can be inserted together with vegetation, walls, fences, houses... For both texture and objects, *Inventagiochi* has internal libraries where the user can choose his/her favorite elements; but it is also possible to import digital objects (for example, textures in bitmap format) created by the user through other software.



Figure 2 – Map menu

In the *Logical objects and game rules* menu, the user can insert objects with logical properties (which must be specified) into the game plan. The behavior of these objects determines the set of rules that the player should discover and respect in order to win; at the same time, they also determine the plot of the game itself, with its obstacles, forced routes, opportunities, meetings, and fights. In *Inventagiochi*, the logical objects are grouped into six categories (see figure 3):

- **keys:** objects that allow the operation of something else (e.g.: to open the door A, the player needs the key N);
- **doors:** gates that can be open or close according to a certain condition (e.g.: to open the door B, the player must first kill the enemy Q);
- **switches:** objects equipped with on/off positions; each of them allows or does not allow the occurrence of a given situation (e.g.: only if the M switch is on, the player can pick up the key N [which he need to open the door A]);
- **destroyable:** items that must be destroyed in order to access a second hidden object (e.g.: the chest T must be wrecked to take the ammunition reserve P);
- **injurious:** items that, when destroyed, cause damage to the player (e.g.: the chest F lower the stamina level);
- **bonus:** objects that, when touched by the protagonist, bring him/her a supplement of stamina, ammunition, speed, resistance to enemies' strokes, or invisibility.

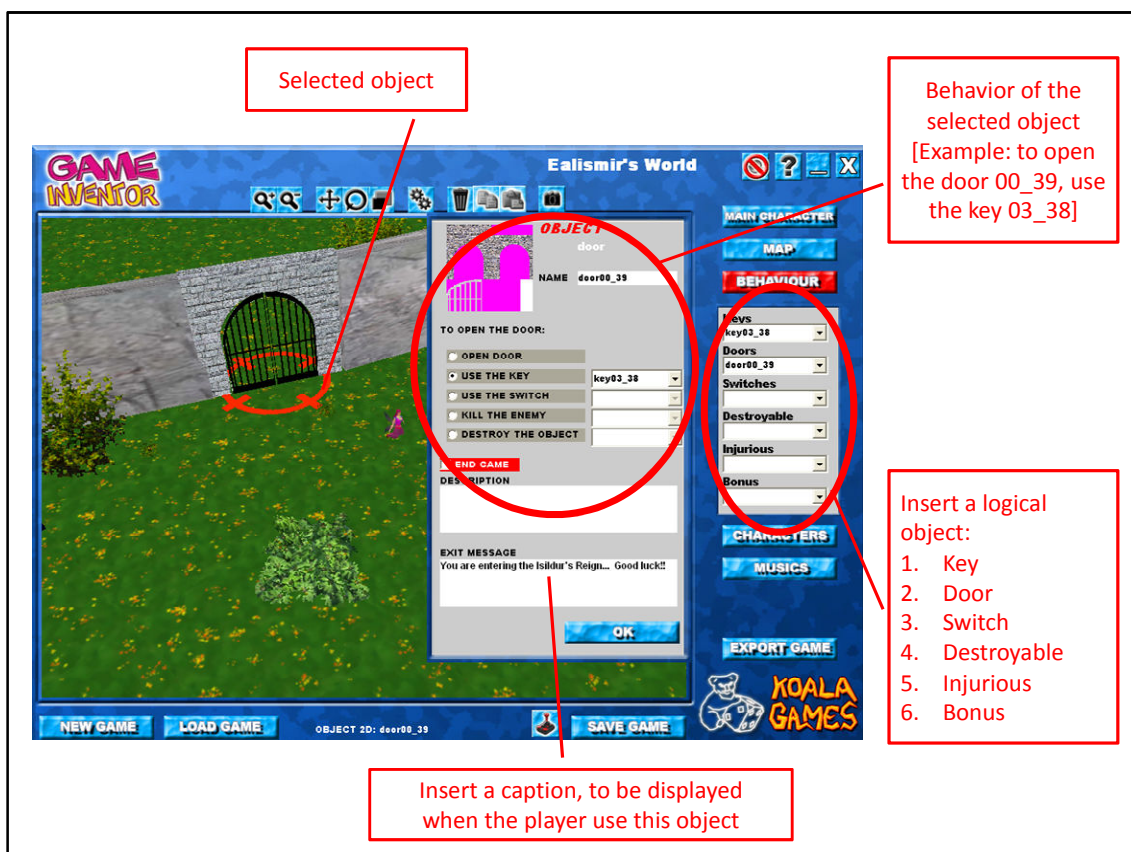


Figure 3 – Logical objects and game rules menu

Each logical object can have a caption, by which the game designer can provide the player with tips, directions or even false clues.

In the *Characters* menu, the author can insert antagonists or helpers, selecting them out of a library, and setting a certain number of traits: resistance to strokes, speed, weapon fire power (damage), action range and motion paths (waypoint).

In the *Music* menu, finally, a soundtrack can be selected to play in the background during the game. Alternatively, one can load an Mp3 audio track.

When the game author has completed the insertion of all the elements, *Inventagiochi* has a fully automated function that creates and saves the entire project on the hard disk in a single .exe file, that does not require *Inventagiochi* to run. In this way, the game can easily be distributed on CD or via internet, for example to friends, without requiring the purchase of any software.

#### **4. Educational activities with the teenagers: work steps**

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The educational activities with the teenagers was designed jointly by all the members of the research group. We planned four phases:

##### **STEP 1 – INTRODUCTION AND VIDEO GAME ANALYSIS (2-3 LESSONS)**

The first phase is to share, among youths and educators, a series of experiences related to their life as gamers. The starting point is a discussion on what kind of players they are, which titles they like most, how and with whom they usually play.

Then, it is necessary to start a game analysis activity that lets the teenagers understand what are the typical linguistic, technical, and ergonomic characteristics of this media. Therefore, we decided to show and play an action-game, chosen among the most popular titles: *Rayman 3*, available for the PlayStation 2. This analysis, carried on in a discussion group led by the educator, should focus on eight points:




1. Skills required by the game (strategy, memory, observation, speedy reflexes...);
2. The kind of entertainment the game offers (filling time, relieving, developing mental skills, challenging oneself or an opponent...);
3. The characteristics of the protagonist and of the other characters;
4. The characteristics of the environment;
5. The time factor (total time of the game, time of each session...);
6. Interface that allows the gamer to play with the machine;
7. Audio (music, noise, sound effects...);
8. "Mechanics of the game" (goals to be achieved and how to reach them).





After this stage, they are going to produce:

1. A list of elements (or storyboard), which contains all the necessary constituents and logical objects for the game, as shown in the diagram below;

ITEM LIST						
N°	Symbol	Name	Description	Properties	Captions	Notes
START					<i>Do you want your scooter? Your mum has the key! Let's go to the park...</i>	
1		Bonus_01_05	It gives the necessary stamina to pass the injurious alive.	+20 pt. of stamina	<i>Wow! You've got the power!</i>	
2.1		Injurious_03_08_a	If the protagonist has not enough stamina, the injurious kills him.	-20 pt. of stamina		
...						

2. A real map of the game plan, with a correct placement of all the previously identified items. Groups use large sheets, with a 32x32 grid that corresponds to the *Inventagiochi* work plan. On this poster, the different areas of the environment can be colored (e.g.: woods in the north, a pond at the center, roads, buildings...); objects, helpers and enemies can be added using leaflets or post-it, so that they can lift or move at one's will.

At this point the teenagers can "play" the game on the paper: as the character goes on completing the simulated plot, they take notes of the collected items, of which doors have been opened, and so forth. The aim of this activity is primarily to verify that the plot works, and to check if there are points where the game can stop against the protagonist's will, or that all you need to conclude the game (switches, keys, bonuses...) is available at a certain point.

**STEP 3 – VIDEO GAME PRODUCTION THROUGH INVENTAGIOCHI (3-4 LESSONS)**

Following the storyboard, the two groups initially create all the necessary multimedia objects (sounds, texture, pictures...); if they use the *Inventagiochi* libraries, the complexity of this phase is

considerably reduced. In addition, they must write captions containing useful or subtle suggestions to let the player understand the plot.

When the items are all ready, the teenagers may really begin to use *Inventagiochi* to create their game.

#### STEP 4 – TESTING

During the various stages of the video game designing and authoring, the groups let other people try their game, in order to have an immediate feedback on what they are doing (comprehensibility, pleasantness...).

At the end of the process, when the video game is ready, the groups will look at what happens when a real public plays the game (does the game take more or less time to be completed? is the game too easy or too difficult? etc).

### 5. Towards a "*video game literacy*" (...instead of a Conclusion)

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Since the action-research is currently still being carried out in the two YECs, it is not possible to provide reliable conclusions about the results of this field experiment. What seems clear at the moment, however, is that media education can be applied even in the field of video games; in some way, we are going towards a *video game literacy*, inspired by the same well-known and accomplished philosophy. As an example, we can indicate some of the principles that, in our experience, were so far confirmed:

- the possibility and usefulness of bringing popular culture into education, developing in the adults attitudes of understanding and mediation, not of censorship (Alvermann, Moon, & Hagood, 1999);
- the opportunity to develop critical thinking skills in youth, by increasing knowledge and competence about video games;
- the benefits of a teaching approach that integrates video game analysis and production;
- the usefulness of the collaboration among media producers, educators, and researchers (French National Commission for Unesco, 2007).

The future progress of this action-research project will allow to achieve more precise results about its feasibility and effectiveness.

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## Acknowledgements

*The project was developed with the collaboration of Romina Mambrini (YEC Reggiolo), Marco Serrao (YEC Langhirano), Ivan Venturi (Koala Games Ltd., Bologna), Michele Aglieri, Massimiliano Andreatti, Sonia Cagnolati, Angela Castelli, Marta Mingrino, Alessia Rosa, Giulio Tosone (MED – The Italian Association for Media Literacy Education). In order to carry on the project, the research group had the support of public authorities in Langhirano and Reggiolo, and the collaboration of the technical team of Koala Games Ltd.*

*The Author finally wishes to thank Miss Stefania Bonà and Dr. Davide Papotti for the revision of the English version of this paper.*

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