

Section 1

Chapter 1 - Videogames: A Way to Change Communication Languages

Theoretical Framework

1.1. Video Game Industry and Cultural Consumption

Video games were born in defense research centers in the context of World War II and the Cold War. Although there is some disagreement as to which was the first video game in history, there is some consensus about the origin of this industry and the reasons for its appearance.

The conflicts experienced during the Cold War threatened the world almost daily with the shadow of war. The media in general and television in particular had become purveyors of bad news. Ralph Baer, creator of the first home console, the Magnavox Odyssey, thought of his project as a way to transform television consumption and reach 40 million TV sets, converting an appliance to a playing field that provided fun through basic symbology (stripes and dots). Video games were thus born from that idea of fun and in that context of need.

In the early 1970s, Nolan Bushnell, after seeing Ralph Baer's invention, thought his ping-pong game could be improved. He created the Atari company, hiring Allan Alcorn to develop the game Pong. This germ of video games would be sold both in its arcade version and its domestic version. Thus, in 1972, the video game industry was born with the premise of providing fun and freedom while facilitating socialization. This was the concept of the two-player game, and its consumption became an engine that would stimulate the industry.



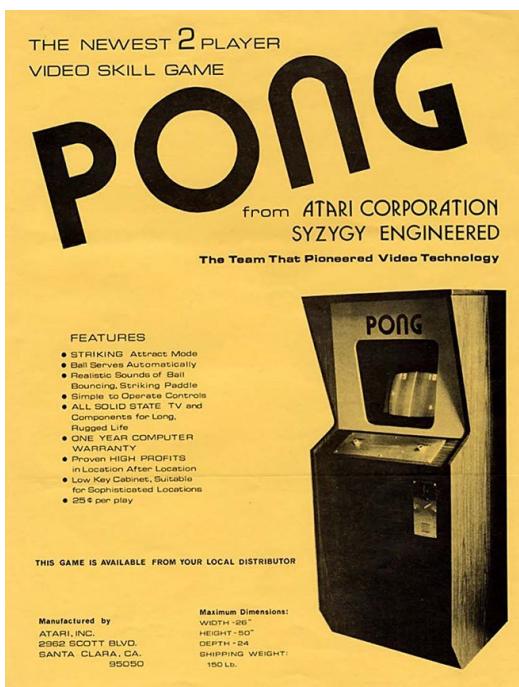
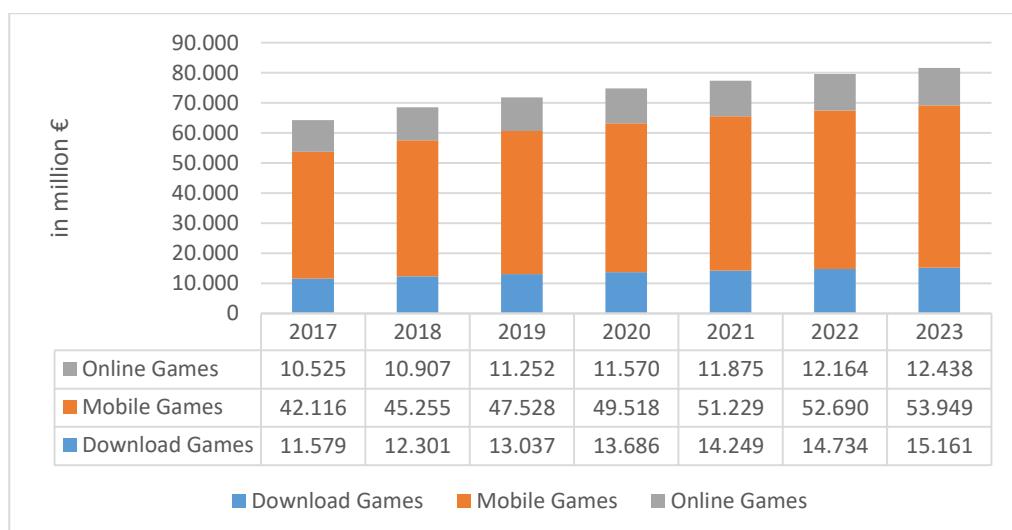


Figure 2: Pong. Source: *The Six Fifty*, 2019

Although the success of Atari and other companies was remarkable, perhaps its creators never imagined the expansion that this industry would present fifty years later.

Today, in 2019, the gaming industry worldwide amounts to almost 72,000 million euros and an annual growth rate of 3.2% is expected by 2023. According to analysts, the largest growth segment is in the mobile gaming market with a volume of over 47,000 million euros per year.



Co-funded by the
Erasmus+ Programme
of the European Union

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Figure 3: Consumption of games worldwide. Source: Statista Database, 2019.

According to the report Digital Market Outlook (Statista, 2019) more than three billion people use this means of entertainment; 85% of them are between the ages of 18 and 44.

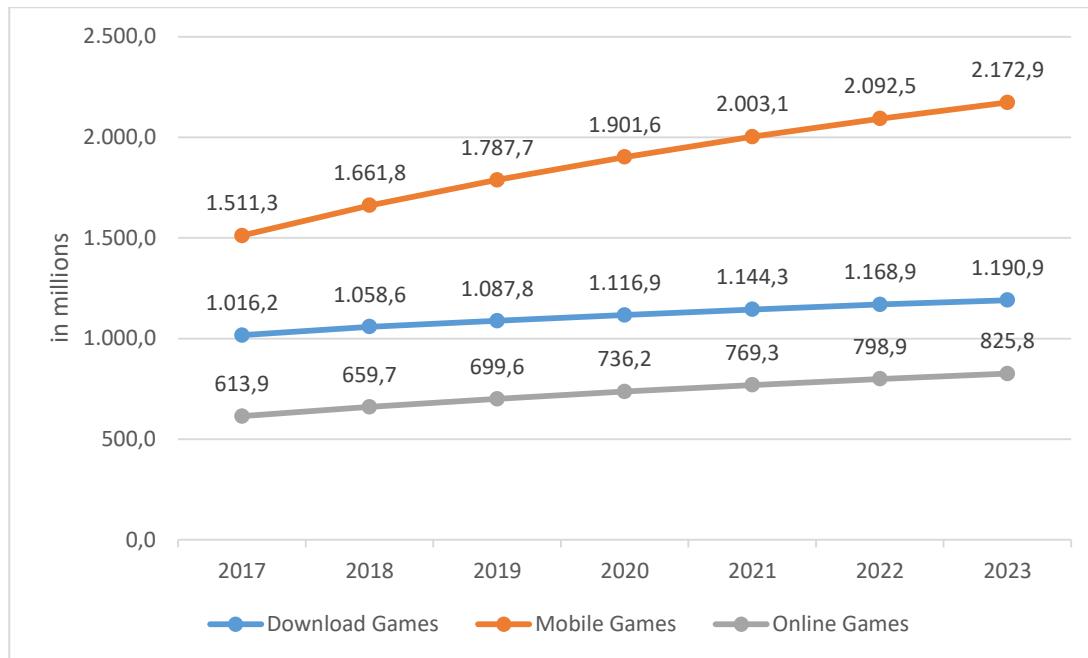


Figure 4: Game consumption data worldwide. Source: Statista Database, 2019.

Geographically, East Asia, mainly China, North America and, within this especially the United States, are the regions and/or countries that cover the highest market share.

However, when talking about the entertainment industry, we are also speaking of a global market that is not exclusive to children and/or adolescents. according to the Entertainment Software Association (ESA) male game players in the United States have an average age of 32 and the female players average age 36. At the same time, the video game industry monopolizes the attention of sponsors and companies that have invested in a professional market that has become the (virtual) game in sports with cultural and business implications. This business, which is not only a “hardware” market, in the US alone bills almost five billion dollars and more than two billion in accessories. According to the report “Video Games in the 21st Century”: *The 2017 Report* (ESA, 2017), the industry today maintains more than 220,000 jobs in the US alone.



We can say, therefore, that this sector currently carries an associated culture of consumption trailing behind a whole cultural industry: musical, audiovisual and technological. Its products not only serve as entertainment, but are part of a considerable number of citizens' lives.

1.2. Beyond the Video Game Industry

The video game industry was able to overcome its initial explosion and bankruptcy in 1984 to return a year later, in 1985, to a globalized context that encouraged growth at both the technological and consumption level.

In the late 1980s and early 1990s, this interest turned to the study of video games in their social context. Thus, various forums (academic and cultural) were conducted regarding the study of both the industry and the phenomenon itself. The brothers Le Diberder address this in their controversial book *Qui a peur des jeux vidéo?* (1993) declared video games as the tenth art, a provocative proclamation for the time, as Wolf and Perron noted (2003). The text was subsequently revised for publication in 1998 under another title better suited to the objects of concern of the time, titled *L'univers des jeux vidéo*.

For Le Diberder, video games were the new Hollywood. They introduced elements that cinema was unable to offer because not only did they present a story, but also the ability to change, interact and influence it. Video games were not just a social phenomenon. Unlike the cinema, they also allowed the player to establish a relationship with the narrative world (Wolf and Perron, 2003).

1.2.1 Keys To Successful Video Games

As Sedeño says, the video game is a “cultural device with its own socialization functions, like most communications media” (2010, p.183). Today both digital and video games have become a ubiquitous part of the current media ecosystem (Dovey & Kennedy, 2006). Gamification processes have even been used beyond the purely recreational (as in education, in business, human resources and marketing, psychology, etc.). Early video games were classified as entertainment,



Co-funded by the
Erasmus+ Programme
of the European Union

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

and in essence continue to be. However, a more expanded view leads us to classify them as a means of communication, as long as it is a cultural product that was developed in a context and responds to specific purposes in a specific society. It is developed with a specific technology by a multidisciplinary team of professionals. A game expresses desires, feelings, desires, fantasies, tastes, intellect, art ... all part of the historical, social and technological context in which it is born. The background of video games, their impact and penetration is due to many factors, but we agree with Gomez (2007). Their success can be summed up from three methodological approaches: a) understanding video games as narratives; b) video games as games and c) videogames as a cultural product.

a) Narrative: From the narrative point of view, video games allow creating stories that connect with the player. In these nonlinear, real or imaginary narratives, the player can move to an imaginary or real world in which events respond to the player's decisions. This element marked the rebirth of videogames after the sector crisis of the 1980s, with the understanding that players needed a game object, a purpose, a story ... Atari, without being conscious of this, decided, in view of the lack of programmers, to hire an artist who knew little of programming to create a new video game. Therefore, Shigeru Miyamoto decided to design a different game from those existing, such as Space Invaders, based on shooting spaceships. He created a product that would allow players to find a link to a key element: the character. Thus was formed what would later become Mario, the main character of the original game Donkey Kong, in which the character had a purpose, to rescue a lady kidnapped by a huge monkey. At the same time, Miyamoto gave the game different characters and narrative elements, such as the color red or the background of the game, for example, to place the player in a context with different challenges to solve and, above all, a character connected with the players.

b) Games: The optical video game as an element of play is perhaps the earliest and first. The success of the famous Pong or Space Invaders is essentially due to the possibility of using televisions differently and the innate human need to socialize, to spend some time in leisure and entertainment, and have fun. That is why players, saw arcade machines as a way to socialize with other (players) outside the family or household and, with the domestic game consoles, a way to



share family time. Recreational features (fun, freedom, imagination, pleasure, etc.) develop in the video game, as in any other game, with the particular characteristics, constraints and potential of a game within a virtual electronic world. Although the game is on a media screen, its playful essence remains the same that characterizes the oldest games of humanity.

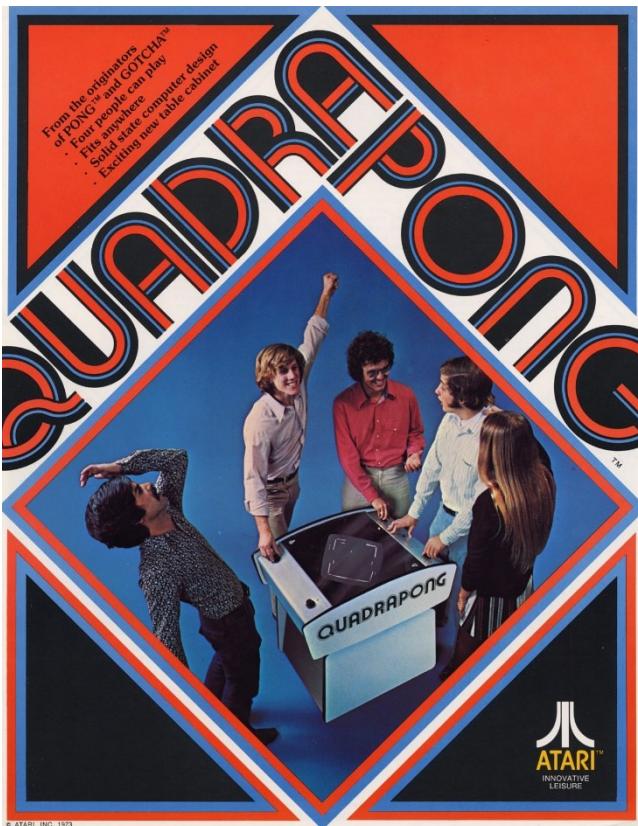


Figure 5: Advertising Quadra Pong. Source: Flyerfever, 2019

c) Cultural Product: Finally, the success of video games must also be addressed for them to be understood as a cultural commodity. Most of a video game's market penetration is associated with its relationship to the social context. In this regard, and to relate an example, the success of Space Invaders in 1978 was made possible by the imprint the space race left on the information realm. Thus, the need to reproduce the feeling of protectiveness, for some, or the imagination regarding a hypothetical situation of extra-terrestrial invasion, for others, connected very well with the widespread social sentiment in the Cold War context. The same thing happened with Pacman in 1980. Its success, among other factors, was associated with video game consumers'



need to try different experiences from the existing shoot'em-up games. So, a more humorous orientation was chosen, with a comic character, a plot, characters and a marketing strategy aimed at placing arcade machines in dining establishments.

1.3: Video Games as an Educational Element

The game industry in general and video games in particular have had an undeniable scope and impact on society in general and youth and adults in particular.

Today, as we mentioned earlier, video games are not just a cultural product with particular communicative elements. At the same time, they are a tool that is exploited in different contexts (work, education system, society) and has been widely covered by scientific and specialist literature.

It is not surprising that today some countries pose the recognition of a player (gamer) as a profession or that tertiary education institutions have started offering tertiary studies specialized in the video games field and even have created specialized training centers for these games.

This book addresses in detail in its various chapters the way that video games can be incorporated into the educational act as a teaching tool and a complement for teaching and learning. This, from the history of education and science teaching, has traditionally been called learning while playing (Payà, 2008; 2013; 2014)

At the same time, new technologies associated with video games (such as virtual reality or augmented reality) expand the possibilities and scope of these resources in the classroom. They enable, from virtual itineraries to simulations, developing meta-cognitive skills related to orientation, memory, visual spatial perception, mental arithmetic, problem solving, etc.

The videogame's essence as an educational tool is based on the main feature of play as an innate leisure element belonging to the human species, as Huizing affirmed in his well-known work "Homo ludens". However, various theoretical perspectives have analyzed the potential of games in human learning. Games and video games can enhance socialization, learning of values and counter-values, reflection, expression, development of creative and critical thinking, problem



solving and resource management, among others. This is a comprehensive education project that can address all instructional areas and skills of a pedagogical and training project.

To cite just one example, a summary of the procedures and values that allow working with video games was provided by Pinado (2005).

Table 1: Procedural attributes and values of video games (Pinado, 2005)

Procedures	<ol style="list-style-type: none"> 1. Psychomotor skills (laterality, spatiality ...) 2. Assimilation and retention of information (attention, memory ...) 3. Resource organization 4. Creativity (generation of ideas and explanatory hypotheses) 5. Analytical ability 6. Decision-making 7. Problem-solving
Values	<ol style="list-style-type: none"> 1. Values: tolerance, cooperation, self-esteem, responsibility ... 2. Counter-values: violence, sexism, racism, intolerance ...

Likewise, video games and their application in education have led to other trends such as “gamification,” serious games and game-based learning. The former term refers to the incorporation of classic video game elements such as the system of roles, rewards, badges, avatars, environments (worlds), points, progress, leaderboards, gifts, breakouts, etc., to daily classroom activities. These elements make the students feel closer to the educational process by combining elements of their everyday culture (entertainment through video games) and the application of these game mechanics in learning. Meanwhile, the second term, or “applied game” refers to a specific type of games and video games, designed with a different purpose than play and more focused on the specifically educational component. Finally, game-based learning uses games or already existing videogames for development of one or more educational objectives.



Without a doubt, the current boom in gamification, serious games or game-based learning is the result, among other factors, of the cultural scope and social impact of the gaming industry. Teenagers have assimilated the games' mechanics of operation, which are complex and connect with their surroundings and social and human desires. That is why we mention some examples and case studies below that will help us illustrate video games' communicative power and appeal to young people and their educational potential.



Co-funded by the
Erasmus+ Programme
of the European Union

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.