Chapter 5
Gamification:
To Engage Is to Learn

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ABSTRACT

This chapter will discuss Gamification and video games, analyzing their peculiarities. After a brief historical introduction to the disciplines that intertwine the design of Gamification applications, such as User interaction, User Interface, and Game Design, authors analyze the real areas in which Gamification can be applied with verifiable results, citing scientific studies and examples of applications. We will see then how from the video games Toca Boca for children, to the "tourist" version of Assassin's Creed Oringis presented at the British Museum, up to the latest interactive applications for business training, the techniques of the game are exceeding the playful areas to make more deep human interaction with the real surrounding it.

INTRODUCTION

Interactivity, that is, the working relationship of reciprocal reference or exchange, is at the basis of the way in which the human being interfaces (another word not by chance used in reference to computer contexts) with the world that surrounds it.

Every day, we understand what is outside of us with the use of the five senses, developing one or two of preference to others according to the historical period and the geographical location in which we grow up. We smell, taste, listen, but above all, we see and touch objects, changing our reality.

Precisely referring to the predominance of these two senses (sight and touch), when the computers sale became possible even for private buyers, the need was to make user-machine communication easier for people who lacked technical knowledge by creating graphical interfaces (UI).

Although the first interfaces were organized on their own text character sets, using graphic symbols such as straight lines, angles, and arrows, the result of a still primitive technology, graphic icons soon made their entrance with the advent of enhanced machines., virtual objects that reproduced the elements we can find on or around a desktop, such as the trashcan, document sheets, pencils and calculators.

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These precautions were the first step towards a user-friendly computing device, which also allowed the novice an intuitive approach to IT tools.

The user interface is a discipline based on the design of user interfaces for machines and software, which has extended over the years from computers to mobile devices, from websites to applications, reaching cars, embracing all fields of human interaction machine and claiming for itself the role of a bridge between the humanities and computer sciences. It is in fact through a well-designed interface that we acquire and learn the information necessary for using a software or hardware.

The user interface is supported by a complementary discipline called User Interaction, which deals with how the user and the machine interact on each other.

Put simply, if the User Interaction are the actions that the machine and the user perform on each other, the User Interface is the words and symbols with which they communicate.

These two disciplines wisely used define a better educational experience for most users of any age (Antin, 2012; Kim et al., 2015).

USER INTERACTIVITY AS A LANGUAGE TO UNDERSTAND

With the emergence of the gaming industry as an entertainment giant, which has undermined and transformed the concept of play that has always been linked to childhood and sports, expanding the concept of gaming to Experience also and often addressed only to adults, we see planting the first seeds for a new discipline that will be intertwined with the aforementioned: Gamification, which will be able to mix user interaction and user interface with the language and dynamics of the game, exploiting the new language used by video games together with the mechanics of the Game Design, combining the use of technological means and the learning of notions or procedures the entertainment of the game.

Here, we explore how Gamification can be useful in the pedagogical area.

Through Gamification, which can make use of different ways for the medium (based on, for example, the twelve intelligences theorized by Gardner), we can transmit a skill or a notion, so that the subject can experience learning in a more personalized way, allowing him to experiment several times and find different ways to solve an experience that could arise in the real world, with the benefit of the protected environment that the game experience creates, so as to put into practice solutions applicable later in the experience daily.

The educational apps of Toca Boca are an example of "learning by playing", in fact, through the mechanics of the game, the child acquires knowledge through a pedagogical and engaging use of the technological medium, stimulating the imagination and bringing it closer to the world and its dynamics. Scratch is another exquisite example, a site that allows you to learn how to program by combining pieces of code as if they were pieces of a puzzle, where the child (or a novice programming student) understands how to connect programming blocks and how to structure a function thanks to the intuitive connections and colors that help in classifying the code according to its purpose.

If in the child the approach to Gamification is to abstract from the notional learning by immersing it in an involving reality through pedagogical techniques that facilitate learning, in the adult the discourse evolves: thanks to the adult maturity, more advanced means can be exploited in which abstraction is not necessary and learning techniques are enhanced, using achievements, scores, goals and rewards without neglecting emotional involvement and storytelling.