



## **THE GAMIFICATION USED AS AN ACTIVE LEARNING STRATEGY IN STUDENTS OF ELEMENTARY AND SECONDARY SCHOOL IN A NEGLECTED AREA OF PIAUÍ – BRAZIL**

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Health promotion and the prevention of disease are pointed as the World Health Organization (WHO) principles. This concept acts as a public policy strategy that enables the improvement in quality of life, ensuring the health provision.

The pedagogical practices used to be centered on individual actions, where the students' life conditions were not considered. Therefore, the Brazilian public elementary schools present a deficit on their teaching-learning process. Thus, it became essential the inclusion of methodologies that improve the health education.

There is a need for interactive methodologies that embrace health promotion, such as the gamification. The active learning through games act as an important tool on the health education for children.

The present study aims the health promotion by the means of a playful approach – the gamification practices and its effectiveness on the teaching-learning process. The group dynamics also aim the children empowerment.

Exploratory and descriptive research was conducted with a quantitative and qualitative approach. Children from seven to twelve years old currently enrolled in an elementary school in Parnaíba – Piauí were chosen to participate.

The game contains an iconographic board that includes several daily situations. The game also consists of: twenty-one yellow houses of specific questions; thirteen orange houses related to the cards “Did you know?”; eight green houses related to the cards “Aggression and Defense”; ten blue houses regarding the board ambience; thirteen white houses, where the player remains without further alterations.

Figure 1 – Game board.



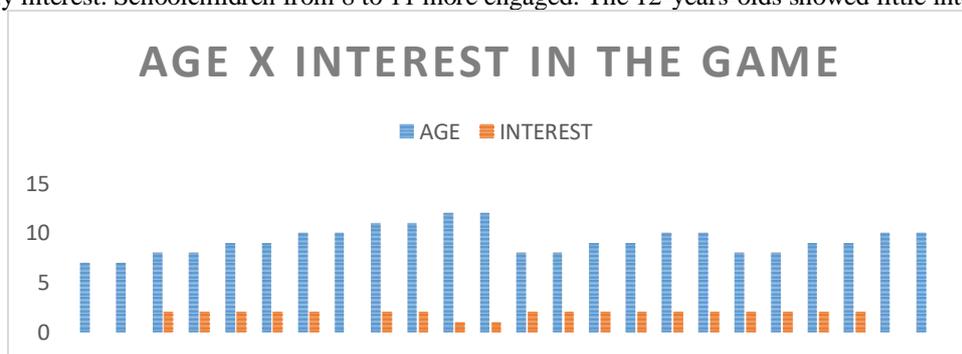
On December 2017, the game was applied as a pilot study. Twenty-four schoolchildren – fourteen boys and ten girls – were randomly chosen and divided into four tests. The players were subdivided into three pairs for each round. The tests average duration was 35.2 minutes.

There are two dices in the game: one is numbered and the other one is divided into three colors – Immunology (blue), Parasitology (red) and Microbiology (yellow). Furthermore, the board has forty-five specific cards with questions regarding the aforesaid areas; twenty-eight teaching and curiosities cards named “Did you know?”; sixteen “Aggression and Defense” cards.

The medical students who applied the game explained the essential points about the asked questions, in order to expand the schoolchildren’s concept health education. At the end of each match, a qualitative analysis of the students was carried out, in order to verify the need for changes in strategies and rules.

There was a large discrepancy between the extremes of the selected age group. While the seven-year-olds were inhibited, the twelve-year-olds showed no interest in the game, only a desire to win the match. However, children aged 8 to 11 years were more engaged in the game since they answered more questions. In addition, they had more consolidated prior knowledges referred to the health education.

Table 1 – The graphic represents the group ages according with the game interest. The 7-years-olds did not show any interest. Schoolchildren from 8 to 11 more engaged. The 12-years-olds showed little interest.



There was 100% understanding of the rules and strategies of the game. 37.5% did not have prior knowledge on the health subject. It is also worth noting that 66% of the children had affinity with the game.

The teaching methodology has a direct influence on the teaching-learning process. Therefore, the medical students observed the need for an interaction-based learning in order to develop attitudes of autonomy and self-perception. The use of gamification proved to be effective at the health education. In addition, it was visualized how important it is to show the children the pathologies' etiology. Because it stimulates the self-care and prevent some diseases caused by microorganisms.

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