

Fighting dragons or saving a princess: what is a game?

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Abstract

Games differ in such many ways, with different types of interaction, providing a wide set of experiences. The purpose of this paper is to define what is a game, according to the shared elements that are common among the many games. A literature review presents previous established concepts for games and identifies the shared elements. It was developed a visual schema of a game, showing the relations between each of these elements. The shared elements were analyzed in the main genres of games and the analysis of three games are presented.

Keywords: game concept, game elements, genre of games

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1. Introduction

How trying to save a princess, fight dragons, throw bananas in a kart race, gain points while dancing and create lines of blocks could be the same thing? They are and they are not the same. Huizinga [2003] says that the society has always had games, but it is not hard to assume that our current games and technologies continuously innovate our findings of what a game is. Games might differ significantly in the experience provided for the player, but there are some elements shared by the many game genres.

A shared game element is a central characteristic needed to assume that we are facing a game. Even being common for all the games, these shared elements differ from a game genre to another game genre. This paper aims in understanding what is a game, based in the shared elements from a game. To achieve this purpose, a literature review explores game definitions proposed by previous authors. These definitions were combined and the shared elements found were associated. The result is a visual schema that explains the interaction between the elements. The shared elements from the main genres of games are analyzed, indicating how the same element is explored in a diverse way, according to the game genre. To a better understanding of these elements, three games are analyzed.

2. Related Work

To define the concept of a game has been a topic of interest for many authors. Starting with a broad view, Huizinga [2003] describes the game as a 'magic circle' separated in time and space from the world we are used to. This new world - the magic circle - has its own rules and represents the freedom, as it is detached from the real world and aims the satisfaction.

Game is art, according to Bobany [2008]. The author believes it is the main dominant artistic expression from our society, as it integrates image and screenplay to the interaction and experience from the player. Considering the interaction and experience from the user, a game is an unique activity.

The definition from Adams & Rollings [2007, p. 5] is consistent to the concept of magic circle presented above: "a game is a type of play activity, conducted in the context of a pretended reality, in which the participant(s) try to achieve at least one arbitrary, nontrivial goal by acting in accordance with rules". A pretended reality and the play activity while following specific rules represent a world separated from the real one - a magic circle.

Salen & Zimmerman [2004] explored the definitions of game from many authors, finding the games as a system formed by many parts, having a player to have the experience of the play, the artificiality of an unreal world (magic circle), the conflict of forces, rules to define the quantifiable result and, finally, quantifiable results.

A game has three components, as explained by Hunicke et al. [2004]: rules, system and fun. A framework proposed by the authors "translates" these components into the following: mechanics, dynamics and aesthetics. The mechanics components allow the player to control the game. The dynamics are responsible for the behavior of the game after the input of a player and the outputs, creating an aesthetic experience. Finally, the aesthetics are the components responsible for the emotional responses the player has while interacting with a game.

The taxonomy of creative expressions from Crawford [2003] details the difference between creative expressions that could be falsely assumed as play activities or games. According to the proposed taxonomy, a game is a kind of creative expression made to be sold (gain money). It is an interactive entertainment activity, a "play thing" that has objectives, challenges against others players (real or virtual) and the possibility of attacking the other

players. After meeting all of the requirements from this taxonomy, the creative expression might be called as a game.

3. Understanding game elements

This session explains what are the shared game elements and how they relate to each other, presenting a visual schema that shows the relationship among them. It ends with a comparative of the specific characteristics these elements have in some of the main genre of games: action, adventure, construction and administration simulation, puzzle, role playing games, simulation, sports, strategy and vehicle simulation.

3.1 Shared elements

Six game definitions were presented above. There are elements found in most of them, as the concept of magic circle, but the definitions do not share all the same elements. The following table highlights the elements presented in each of the analyzed definitions:

Table 1: Elements from the game definitions

Huizinga [2003]	game circle, rules
Bobany [2008]	image, screenplay, interaction, experience
Adams & Rollings [2007]	magic circle, play, goal, rules
Salen & Zimmerman [2004]	system, player, play, artificiality, conflict, rules, quantifiable results
Hunicke et al. [2004]	rules, system, fun
Crawford [2003]	creative expression, entertainment, play, challenge, conflict

It is possible to identify some terms that may be merged. A game circle identifies a set of conditions that differ from the real world: a specific image and screenplay, a creative expression, the artificiality and experience. All these terms will now be known as artificiality. Fun is merged to entertainment, conflict is merged to challenge. Interaction is related to play, but it is specially related to a simulation behavior, thus it will be called as simulation. The remaining elements are not merged to any other word. Thus, the list of shared elements is the following: rules, player, play, conflict, fun, artificiality, quantifiable results, goal, system and simulation.

The central elements - the shared elements from games - are analyzed below [Adams & Rollings 2007; Crawford 2003; Hunicke et al. 2004; Salen & Zimmerman 2004]:

Figure 1 below.

Artificiality is the divergence from the real world, where time and space are away from the reality.

Conflict is a central element, it is facing an opponent to test the forces from one and another. It may be seen in many different combinations, from single to multiplayer games.

Fun is an emotional response from the player, coming from the sensations, fantasy, narrative, challenges, social relationships, expression, submission and others.

Goal is the objective a player tries to achieve, even that this is a non achievable one (i.e.: Tetris, a game playable for as long as the player is able to create full lines of blocks). The goal is defined by the game rules, involves a challenge and usually determines a victory condition when achieved.

Play is a pleasurable, participative and interactive entertainment that allows the player the freedom of choices and actions in respect of the game rules.

Player is the person who plays a game and lives the experience it provides.

Rules are clear and non arbitrary instructions agreed by the players while the game is played. They define the meaning of the game symbols, the gameplay, the sequences, the goals, conditions for finishing the game and the possible changes is the rules.

Quantifiable results are the scores that make possible determining a victory or losing condition. They provide a feedback that helps the user be aware of their performance in the game.

Simulation is transferring the new reality to the mind of the player, while in the magic circle. It includes accepting the new rules and understanding the limits between the activities and ideas from the reality and from the game.

System is a main characteristic of a game, as the many elements are linked together to create a complex whole that returns fun to the user.

3.2 The visual schema of a game

A game is a system, and as a system there are relationships between the elements from the same system. A visual schema was developed to help understanding how these elements interact. The schema is seen in the

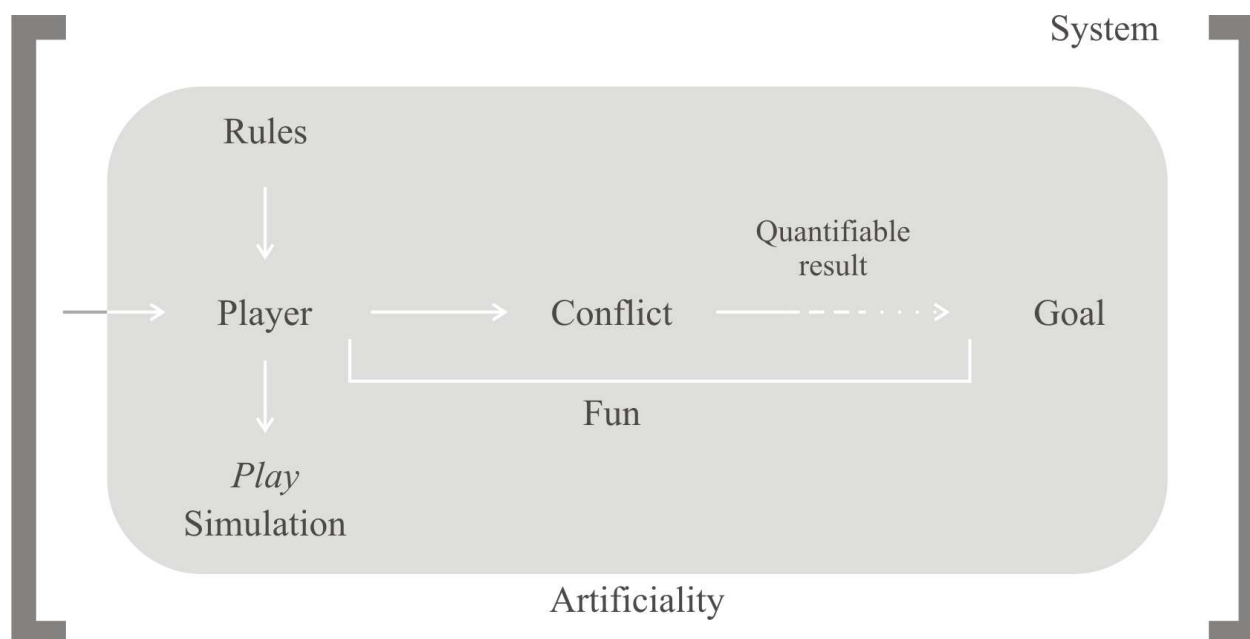


Figure 1: The game as a system, and the interaction between its elements

The system called game involves at least nine elements. It starts in the artificiality, when it is created a word apart from the real one. Having the option to enter this alternate reality, a player decides that he wants to play. This player comes from the real world and enter in the artificial world from the game. In this moment, he starts accepting the specific rules from the game and starts interacting in the play activity, while accepting in his mind the new reality and simulating - accepting a new character in this reality.

The player has a goal that is not always achievable. While he tries to achieve the goal, he faces conflicts, and while facing conflicts he is given the feedback of his performance. This feedback comes as quantifiable results, as a score that helps the user visualize how well he is facing the conflicts of the game. In the process of facing conflicts to try to achieve the goal, the player has fun.

In fewer words, the proposed definition for game is seen either in the visual schema or translated into words: a game is a system where a player enters an artificial world, following specific rules and simulating while experiencing a play activity, trying to achieve a goal, facing conflicts and receiving quantifiable results as a feedback, while having fun in the process.

3.3 Shared elements and the game genres

Nine are the found shared elements from the games, but even being common, they are not equal in the many genres of games. The analysis of eight main genres of games shows these differences. It were excluded four elements that share common characteristics among any genre: artificiality, as the creation of an "unreal" world; fun, as an emotional response in any game; play, as an interactive activity with the freedom of choice; and

system, as a complex set of elements. The following analysis are based in Adams & Rollings [2007]:

Table 2: Elements of an action game

Conflict	Physic (speed of the game)
Goal	Win challenges as pattern recognizing and exploring
Player	Usually controls one player
Quantifiable result	A score indicates the advance
Rules	Few resources that directly interact to each other, time limitation
Simulation	Shooting (2D 3D), platform, fighting, fast puzzles, action-adventure, dance and rhythmus

Table 3: Elements of an adventure game

Conflict	Usually logic, but it is a secondary characteristic
Goal	Explore and or conquer the map
Player	Controls a character that is the narrative protagonist
Quantifiable result	Map visualization according to the advance of the player in the map
Rules	After solving a problem, the player enter a new area and is usually not allowed to return to the previous one
Simulation	Puzzles, mazes

Table 4: Elements of a construction and administration simulation game

Conflict	Economic
Goal	Construct with resources obtained while growing the economy
Player	Controls processes
Quantifiable result	Quantity of available and earned resources

Rules	Behavior of the in game economy
Simulation	Development of cities and commercial business, building of the infrastructure and others

Table 5: Elements of a puzzle game

Conflict	Logic
Goal	Solve puzzles
Player	Controls abstract characters, such as pieces and cards
Quantifiable result	Advance in the game (relation between the solved levels and the overall number of levels)
Rules	Use specific movements to move pieces in a board to achieve a goal
Simulation	Logic, pattern recognizing and comprehension of process

Table 6: Elements of a role playing game (RPG)

Conflict	Battles against other players or creatures. There are also exploration, strategic and economic conflicts
Goal	Solve main and secondary missions. Each player might have their own mission
Player	Controls one or more initial weak characters that evolve and become powerful
Quantifiable result	Character level of experience and level of specific characteristics (skills)
Rules	Physical, mental, moral and social characteristics from the characters and creatures
Simulation	War, action and adventure sceneries explored both in video and table games

Table 7: Elements of a sport game

Conflict	Physic, strategic or economic
Goal	Decide among the best strategies as a coach and have a great performance as a player
Player	Controls a character, a team or both
Quantifiable result	Same as from the real sports
Rules	Same as from the real sports
Simulation	Sport events similar to the real events

Table 8: Elements of a strategy game

Conflict	Strategic against other player. May also be tactic, logistic, economics and of exploration
Goal	Defeat other civilization and remain alive after the enemies attacks
Player	Controls many characters in the same time
Quantifiable result	Based on army results, explorations, resources, technological advances and others
Rules	Obtain resources and constantly upgrade buildings and units

Simulation	Historical, futuristic or fantasy scenarios
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Table 9: Elements of a vehicle simulation game

Conflict	Physic (controlling the vehicle)
Goal	Win a race or be able to drive or pilot in specific situations
Player	Controls a vehicle
Quantifiable result	Place in a race, time needed for finishing a track, finishing a track
Rules	Actions that might be realized against an opponent, conditions in which the vehicle is lost
Simulation	Land, aerial, spatial or water vehicles controlled in a similar way as the real vehicles

3.4 Analyzing games

In the previous section it was presented the characteristic of some of the main genres of games. This section discusses the elements in three specific games: chess, Skyrim and Super Mario World.

Chess may be classified as a strategic game, having a strategic conflict against other players. It may be played either as a physical board game or as an electronic game. The goal is to defeat the other player by killing his king. In the beginning of the game, each player controls sixteen pieces with different roles. The quantifiable results are based on the number and type of pieces still in game and in the domain of the board. The rules determine the movement of the pieces and the conditions for ending the game. The simulation turns the player into the general of a battle.

Skyrim, from Bethesda Game Studios, is a role playing game with exploration, strategic and economic conflicts. The goals are settled according to the quests accepted by the player. The player controls a character that is weak in the beginning of the game and become stronger as he faces the conflicts. The quantifiable result are the level of the character and the level of each of the skills he has (i.e.: magic, alchemy or specific weapons). The rules are those from the medieval cities or specific places the character goes, as do not steal and do not kill. The player is involved in a simulation that includes action, adventure, war, magic and religion.

Super Mario World, from Nintendo, is an action game with physical conflicts that requires abilities to move in the right moment (i.e.: jump to kill an enemy or to flee from it) and to the right place. The goal is to save the princess by winning the many levels from different worlds and facing different types of enemies. The player controls one character, the plumber Mario, who usually has no special abilities but may have after eating/using a special item. The quantifiable results are obtained either by a score that includes points from killing the monster and by the in-world progress as the

player completes the levels. The rules determine the relation between the life and super powers from Mario and his interaction with the enemies: Mario cannot touch an enemy or he will lose his special abilities or even die, but after eating a fire flower, he will throw fireballs that may kill the enemy. The player simulates an action-adventure, exploring the worlds and facing different enemies.

4. Conclusion

This paper is an attempt to define a game and understand its elements. A literature review searched for previous definitions of a game. The main elements from each definition were identified, and further all the highlighted elements were merged to a final list of shared elements. A visual schema that shows how each of these elements interact to each other was presented. The elements were analyzed in eight genres of games, showing how a genre differ from another, even sharing the same type of elements. These differences were explained in the analysis of three games.

The presented characteristics of the elements for each genre of game are a common approach, but following these elements is not a rule. Games vary and have to, but understanding what is a game and how the game elements are related might help in the development process. The analysis of the game elements is a possibility to help in and better understand the development process.

Suggested future works includes a deep analysis of the elements in each kind of game, understanding the differences in a same genre. What makes a game better than other? What is most enjoyable? Detaching and classifying the elements for each game are not enough to answer this questions, but they might be the beginning of this process or, at least, a small part that contributes to a better understanding of the whole. Better understanding may lead to a better development, and, further, to even better games.

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