

P0627**THE PERIODIC TABLE FOR VIDEO GAME ANALYSIS**

CHEMISTRY AND EDUCATION

2. Tools in chemistry education

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This communication aims to present a formal deconstruction of video games in the form of various elementary elements called "Gameplay Bricks". To understand these elements and study their characteristics in order to classify video games, an analogy has been established with the periodic table of elements. Each element is considered as an atom and the set of elements as a part of a structure that is inspired by the periodic table of elements.

This approach made it possible to identify inconsistencies in the first iterations of our model from 2011. Indeed, the search for properties and the way to display them according to the method of the periodic table of the elements made it possible to detect inconsistencies in certain Gameplay Bricks. Thus, by iterations, it has been possible to identify at this stage 4 large families with distinct properties: Objectives, Results, Condition and Average.

The way of associating the elements of each family answers to the rules that one finds by analogy on the atomic scale. This analogy has also helped to identify missing elements and opens up perspectives on how to build different types of molecules that correspond to computer programs of video games.

This way of deconstructing video games in the form of atoms and molecules offers innovation approaches in the way of classifying video games but also to imagine new types of experiment in the frame of gameplay research. Our next work aims to find new atoms (Gameplay Bricks) and molecules thanks to the use of crowdsourcing and Artificial Intelligences tools. This work would probably help us to improve our model based on the the periodic table of elements.

Bibliography

Koster, R. (2012). An atomic theory of fun game design, Raph Koster's Website : <https://www.raphkoster.com/2012/01/24/an-atomic-theory-of-fun-game-design/>

Leleu-Merviel, S. (2017), La traque informationnelle, Collection sciences, société et nouvelles technologies, Série Traces, Volume 1, ISTE Editions, Londres, Royaume-Uni

Pennell, B., B. (2008), Effectiveness of Text Representations in the Automatic Classification of Regional Game Design Trends in Video Game Reviews. A Master's Paper for the M.S. in I.S degree. December, 2008. 56 pages. Advisor: Catherine Blake

Propp, V. (1928), Morphologie du conte, Seuil (1970), Paris, France

Keyword 1

Atomic Approach

Keyword 2

Gameplay

Keyword 3

Taxinomy

Keyword 4

Formalism

Keyword 5

Periodic Table