A FORMATIVE APPROACH TOWARDS THE CLASSIFICATION OF COMMERCIAL DIGITAL GAMES

Claudiu SCHWARTZ, Ph.D.Cand. Assistant Professor,
"Aurel Vlaicu" University of Arad, Romania
claudiu.schwartz@gmail.com

Abstract: *Digital Games, as formative resources require classifications; and while there are many classifications which satisfy consumers, none of them come in handy for teachers or educators unfamiliar with the specific language used by the growing semiotic domain called digital games. This article aims at sketching a classification for commercial digital games from a formative standpoint by indicating educational potentials of various constitutive elements of most digital games out there.*

Keywords: *Digital Games, Classification of Digital Games, Big G Games.*

1. General considerations

Especially in the last decade, games and interactivity are increasingly enjoying much attention within the educational literature. While some educators and psychologists argue on whether games are good or bad, others conducted research which indicated they are potentially very powerful learning tools, a trait otherwise implicitly underlined by most authors who studied them.

Whether they are good in the sense that they are useful to acquire or develop formally useful skills (see Gee, 2014; Prensky, 2006) or bad in the sense that they promote and trivialize violence or cause the emergence of violent behavior, (Anderson, Bushman 2001, 2002) is irrelevant to the argument that they are indeed learning tools, since without some form of learning, nothing is changed and no behavior, be it good or bad can be developed. So far in my desk research, I could not identify salient scientific articles to state or demonstrate that playing video games has no effect whatsoever, and the activity can thus be considered a waste of time.

While most learning tools are rigorously classified by educational literature, obviously from a formative standpoint, we can't help to notice that commercial digital games have no such classification, making it hard for educators willing to use or recommend them to identify which game would

suit their particular needs in the absence of extended experience, which probably few educators could afford investing time into.

There are types of digital games classified from a formative standpoint, such as edutainment and serious games. But even though they share a similar construct and use the same technology, they are not the same as commercial digital games, since they don't serve the same purposes. While edutainment games are harmoniously combining education and entertainment components, intending to create an entertaining environment in which learning is meant to take place, serious games are predominantly aimed at facilitating the development of specific skill sets through the simulation of various real-life contexts. Commercial digital games are mainly designed for entertainment. But since entertainment can take many forms, the liberty of the game creators is virtually unlimited.Commercial digital games formed an industry which has a vast network of dedicated websites, billions of consumers around the world, and currently enjoys one of the most flourishing markets, which ensures a constant flow of both products and consumers. Since competition is always dire on high-profit markets, the industry is forced to always innovate and generate not only new, but increasingly better products. Given the intrinsic characteristics of digital games, a better product simply means a better user experience, and while this may appear as simple, it has extensive and vast implications: From technical/performance stability and platform availability to mechanical concepts – interaction, user interface(s), internal and external game rules etc. – artistic concept – basically, everything a motion picture would contain, and more – and a certain organic, realistic, natural feel, everything is accounted for in the assessment of such a digital game product.

Other types of digital games like edutainment and/or serious games are not mainstream and since their popularity is lower, the industry's possibilities are lower, from all points of view. Since most of these games are developed by other companies than the commercial ones, the niche industry becomes apart from the mainstream one, which is only natural given the fact that it addresses a different market. But does it? Predominantly the only market there is from a certain perspective is the time market, which means that the question is no longer about who the industry addresses but rather who's time it wants to have, and this puts the two in competition: both industries want the learner to spend time on their products. Because, cliché or not, in the media business, time is literally money.The aforementioned competition is far from being a fair one though, since the mainstream industry is crushing the smaller one, which renders it unable to keep up with both quantity and quality of commercial digital game industry's output.

2. Why would such a classification be needed?

Since most of the time allocated to digital gaming is within the frame of commercial digital games which are proven to have formative value, some educators should consider exploiting this media intake, which can be done in at least two ways:

• From student to educator – by observing which digital games are trending at a particular time and exploiting the familiarity factor by using elements from those games in class to better explain, exemplify or make parallels between real-life scenarios and game scenarios that share similar mechanics and/or phenomena.

• From educator to student – by recommending or using certain digital games as needed in order to better acquire or develop skills or store information. Digital games have the potential to sugar-coat the learning of concepts, mechanics or procedures, especially since many digital games turn skill and drill learning into fun (Gee, 2013)

Since most educators cannot afford investing countless hours into exploring the vast variety of digital games available until they identify for themselves which game title develops which set of skills or leads to the acquirement of what knowledge, which implicitly requires some progression of the game, which again means learning how the game works etc.; a formative-structured general classification of digital games would help in narrowing the list down to a manageable amount to be explored or investigated.

The classifications made available by the industry are consumer-oriented, providing little to no information on the actual game's composition from a formative perspective. The proposed classification however, given its perspective, bases its criteria on the structural universal components of most commercial digital games, each of which is prone to stress certain types of skills and/or simulate the acquirement of certain types of knowledge.

3. Classifying commercial digital games

There are four fundamental components to a commercial digital game: *content, interaction dynamism, projected identity and functional modal design*.

3.1. Content

This category is divided into two other categories, identically to the classifications of motion pictures by the film industry: the type of content with regards to the *public towards it is addressed*, and the type of information contained within the game mainly by *theme*.

Much like in the film industry, the themes can be: Fiction, Drama, Fantasy, Sci-fi, Thriller, Horror, Adult-themed, Historical, Biographic etc.

The formative value of content requires no argumentation since it can be harnessed to the extent of any other type of content. The most addressed themes in elaborated and complex commercial digital games are fiction, sci-fi and fantasy, since these themes provide a more flexible framework which has the potential to accommodate a large variety of interactive of concepts, mechanics and objects. It is understandable why at first glance these themes show little to no formative value, when instead their potential to deliver knowledge is the same as any book or motion picture of the same theme, and no less.

For instance, if an educator needs to teach pupils about the effects of a nuclear war on the environment, the game called *Fallout* which is post-apocalyptic themed – as the name suggests – might actually do more than just depict the environmental impact of such a war. Instead, if assisted with the transfer of knowledge, they will be able to acquire deep, meaningful understanding of human nature through interactions and conversations with a vast variety of characters embedded in a complex story-line, as well as some physics, chemistry and biology elements. The list could go on, and the variety of games makes it nearly impossible not to be able to find support in teaching by harnessing their content, especially within games based purely on reality.

3.2. Interaction dynamism:

This perspective targets the intrinsic dynamical facet of the interaction, which divides into two major categories: *sequential and real-time*.

   a) Sequential interaction involves action only within the allocated turn. Game industry refers to sequential interaction games as turn-based, and it suits strategy and/or tactics games very well. This type of interaction doesn't stress input skill, thus allowing for virtually unlimited reaction time, the only time measurement being the respective sequence within the particular game instance. Very much like chess or most physical or digital board games, the user can be pressed to take a decision faster, but the dynamism of the interaction will still be sequential even if timed.

This kind of dynamism can be exploited formatively by underlining the importance of preparation and research before taking a decision if the possibility is available. For instance, students could be encouraged to play the game while being restricted to access outside resources containing explanations, tips or walkthroughs, which will force the students into an exploratory approach to the game. While this would be entertaining, it would greatly impact game performance. In a second instance, they would be encouraged to research on the game mechanics in order to ensure a more informed decision, and compare in-game performance indicators to the

previous instance when no external information was available. This exercise would ensure *empirical learning* in a safe environment through a solid simulation of how big an impact information has on decision making, and how important it is to take informed decisions, which can be further analyzed through critical analysis of choice, the importance of planning and/or organizing action etc.

b) Real-time interaction as opposed to sequential firstly requires higher levels of input skill. While acquiring the needed input skill is done through exercise which usually requires a considerable amount of time, these kinds of games can be used to emphasize the importance of automated action, the relationship between planning and dynamic implementation of a plan, and so on. Many fast-paced strategy games deliver a large stress load on analysis, decision making, distributive attention, visual-peripheral coordination, time management, working under pressure etc. Obviously, a player of real-time games has to acquire the interactive content of the game in order to be able to make decisions, which is another element which can be learned: how skill without knowledge is impossible; making decisions, managing, planning and implementing are activities in need of notions and concepts to manipulate.

3.3. Projected identity:

What we mean by projected identity is what James Paul Gee, who coined the syntagm means, which is: the identity one assumes when entering the game world or the simulation, which implicitly determines game modalities and possibilities or interaction.

We can divide projected identity in three subcategories: *interpretative, active entity and passive-determinative entity*.

a) Interpretative identity is probably the easiest to imagine and the most suggestive through its name. It simply means the projection of one's identity into an avatar or persona, which either represents a character with a name, features, skills and talents, personality and background story, a character which will be created freely, whose name, gender, features, and maybe skills and talents will be allocated by the user, or any combination of elements characteristic to the two. This type of identity is frequently opted for in action and RPGs – role playing games.

The formative value of interpretative identity is only limited by the number of available in-game options of action and conversation. The more organic the game is the more formative potential it possesses. Through this type of projection, the user can experience and emotionally react to virtually anything it comes in contact with, and very complex and elaborated games like The Witcher series, Dragon Age series, Elder Scrolls series, and Fallout series address a vast variety of concepts and content of great complexity

which are directly translatable into transferable skills providing some form of facilitation exists from a supervising educator.

b) Active entity identity: although the user interprets a role, this element is the only similarity between interpretative identity and active entity. As the name suggests, the user is more of an entity, and even if specific characteristics might be attributed to him or her, the user's interaction is much like an *invisible hand* manipulating other characters and objects somewhat indirectly. The objects or characters the user can interact with in this form vary from geographic regions, towns, buildings, populations or armies, to multiple individuals. This type of identity usually has access to a large variety of panels belonging to either interactive objects or characters, containing possible actions for the selected element and another layer of panels containing tactical, strategic and/or statistical information relevant to the game.

This type of identity is common in most pure strategy games, where the active entity controls – through a panel of *commands* – the actions and activities of entire armies, vehicles, buildings etc. Since it requires and stresses complex skills, its formative potential for those particular skills is great, particularly when paired with real-time dynamism games.

c) Passive-determinative identity. Even if the vantage point is identical to active entity identity, the user's actions cannot be actively directed on the characters themselves. The intrinsic concept of the game revolves instead around facilitating or inhibiting certain responses from autonomous sim characters – be it individual characters or groups, populations etc – which renders the *powers* of the user to only have a deterministic value. From a formative perspective, this identity provides opportunity for role simulation in various scenarios and environments.

For instance, in management or city-building games with various themes – ancient, medieval, or modern city-building from a construction company standpoint (Constructor; Tycoon series) or administrative one (Caesar; Pharaoh; Zeus; City Skylines; SimCity series) – the user assumes the role of administrator for either a company or as a dignitary, and must complete various specific tasks within campaigns, broken up in scenarios or missions which will increasingly grow in difficulty and get more complex and challenging as the game progresses. This type of game familiarizes the user with a vast variety of aspects related to public life or the inner workings and concepts of a company, since the models used for these games is obviously inspired from the real world, following intrinsic real-life models. This can easily lead to acquirement of skills in business and administration or strategy, which would make the understanding of related disciplines easier and would

be processed at a deeper level since the *physical* representation of the feel of a business, town, or field of battle, are present in the mind.

3.4. Functional modal design

This represents the measure in which the game by design is playable in a reasonably enjoyable manner in an either single-player or multiplayer setting. While most modern elaborated digital games support both single and multiplayer, some games only support single-player, multiplayer, or even massively multiplayer by design, and wouldn't work otherwise. Thus, this criterion is divided in two subcategories: *unimodal* or *multimodal*.

a) The unimodal design allows only either single-player, multiplayer or massively multiplayer play. This reveals fundamentally different mechanics between genres since their design rigidity is derived from the fact that the particular mechanics which make the games work are intrinsic to this characteristic and thus exploit it to its maximum. For instance, a massively multiplayer game or match game, where you have multiple players cooperating and/or competing towards goals would require the replacement of human players with artificial intelligence players in order for the game to work, which would make them redundant, since the very mechanics and game rules on which the game is based address and accommodate human-specific behavior.

While from massively multiplayer games students can learn and understand pure human interaction, stripped of physical attractiveness, race or gender biases, from cooperating within these games in order to undertake a hard task which requires coordination, they will learn how to best perform and cover their role, how to be team players, how a team is assembled and the social rules involved in all of these processes. There is much that can be learned by playing MMO (Massively Multiplayer Online) games (see Nardi, Harris, 2006; Corneliussen, Rettberg, 2008; Williams, Ducheneaut, Xiong, Zhang, Nickell 2006).

b) The multimodal design allows both single-player and multiplayer experiences within the same game. These kinds of games will usually get specialized in multiplayer or fail on the long run, since one of the components will always be shaped to accommodate the other, and usually the single-player modality is reshaped to accommodate a multiplayer one. This kind of flexibility can also have its own formative potential, especially when comparing user performance with other users within a wider community, or when developing multiplayer so that single-player users can compete with each-other in matchmaking, tournament, challenge or ranked – called ladder in the game industry – competition systems.

Conclusions:

This classification is still in its infancy and as the game industry changes so should the classification which tries to clarify its product's formative value.

Since classifications are increasingly used over the internet to sort out or narrow searches, I believe building such a classification is necessary if we – that promote the harnessing of digital games' formative value – want to have a clearer view and understanding on what can be stimulated and which are the specific elements or traits of a game that stimulates it.

While it is obvious to experienced gamers or educators armed with a solid gaming literacy what game may help in which way, I dare to say that most educators are neither experienced gamers nor very well acquainted with digital games' or simulation's formative potential. While some educators realize that certain projected identity modes stress certain cognitive structures, like shooter games – which would fall under the interpretative projected identity category here – using first-person perspective offer a higher immersion by simulating the visual field of the avatar thus stressing visual-spatial orientation or passive-determinant projected identity stresses management, interpretation and integration of information skills; other do not. Before criticizing their lack of effort to promote digital games as learning tools, or in some cases even considering them only bad and/or a waste of time, we should take some time to try and clarify all the aspects that we were privileged to experience and/or learn about and present them in a way that might help everyone get a clearer picture.

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