

Digital Games and Learning

Ernane Rosa Martins
(Organizador)

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(Organizador)

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APRESENTAÇÃO

Os estudos e pesquisas presentes nesta obra permitem ao leitor obter uma visão teórica crítica clara e concisa do campo de conhecimento dos jogos digitais e aprendizagem em uma perspectiva interdisciplinar, tendo em conta a investigação de áreas como ciência da computação, psicologia, educação, neurociência e design de jogos.

Assim, este livro sintetiza 15 trabalhos relevantes para o estudo de jogos e aprendizagem, servindo como um guia para qualquer um interessado nesta temática, especialmente para pesquisadores, designers, professores, profissionais e políticos que querem entender, projetar ou analisar melhor a relação entre jogos e aprendizagem.

Estes trabalhos trazem a reflexão abordagens importantes, tais como: o uso de tecnologia como uma alternativa na maneira de ensinar, agregando mais interatividade e dinamismo durante as práticas educacionais; um jogo de plataforma instigante e divertido, envolvendo desafios matemáticos do Ensino Médio com o objetivo de aumentar o interesse dos alunos pelas aulas de matemática neste nível específico da educação; um apanhado histórico acerca da origem de jogos analógicos, a relação da sociedade para com os jogos, algumas de suas classificações que estão em maior quantidade no mercado atual como os “Eurogames” e os “Ameritrashes”, a hibridização destes jogos e a participação dos dispositivos móveis; avaliação das experiências de jogo em ambientes digitais e não digitais através de personalidades de jogadores em potencial, como seus jogos são estruturados e quais jogos atendem às necessidades de determinadas personalidades; estudo de tecnologias e os detalhes de implementação envolvidos na sua criação; um jogo em duas etapas para auxiliar na escolha de um curso de graduação onde a primeira etapa apresenta conceitos de forma lúdica e divertida e a segunda etapa explica os conceitos apresentados e sua importância; construção de um jogo focado em personagens míticos do folclore brasileiro de forma a compartilhar essa informação com alunos, motivar a discussão do tema e aumentar o interesse dos alunos pelo mesmo; um serious game do tipo Quiz dentro da temática “Urgências Endodônticas” que enfoque nas competências e habilidades que capacitam o cirurgião-dentista ao atendimento destes casos; uma avaliação heurística de um jogo criado para auxiliar crianças surdas na aprendizagem da língua portuguesa; uma experiência de negociação e desenvolvimento pela empresa Napalm Studios de dois advergames com características distintas; aspectos educacionais e de diversão de jogos voltados à educação; uma análise, a partir da perspectiva de estudantes do Ensino Fundamental, Ensino Médio e Ensino Superior, como o jogo digital pode contribuir no processo de ensino e de aprendizagem.

Aos autores dos diversos capítulos desta obra, meu agradecimento pela submissão de seus estudos na Editora Atena. Aos leitores, desejo que este livro possa colaborar e instigar uma reflexão mais aprofundada sobre a relação envolvente entre jogos e aprendizagem.

Ernane Rosa Martins

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THE PLAY PERSONALITIES PURSUANT TO THE INTERPRETANTS IN PEIRCE'S SIGN THEORY

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RESUMO: Nos jogos digitais, o conceito de experiência é normalmente utilizado de uma maneira muito genérica. Portanto, a fim de aumentar a precisão os estudos de experiência de jogador, este texto procura avaliar as experiências de jogo em ambientes digitais e não digitais através de personalidades de jogadores em potencial, como seus jogos são estruturados e quais jogos atendem às necessidades de determinadas personalidades. Essa pesquisa não será benéfica apenas em termos de criação de novos jogos ou interfaces, mas também beneficiará uma ampla gama de profissionais, como psicólogos e professores, que estão constantemente buscando formas de atender às necessidades de um público muito diversificado. A metodologia é qualitativa e decorre das personalidades propostas por Stuart Brown enquanto é conduzida pela semiótica de Peirce, e observa jogos e jogadores através dos seus Interpretantes Imediatos, Dinâmicos e

Finais. Na provável continuação deste estudo, pretendemos confirmar essas possibilidades através de entrevistas e exemplos conhecidos.

PALAVRAS-CHAVE: Experiência, Semiótica, Interpretante, Fluxo, Personalidades do Jogar

ABSTRACT: The experience in digital gaming is usually expressed in a very generic way. Therefore, in order to accurately collate the studies of gamer experience, this paper seeks to assess gaming experiences in both digital and non-digital environments through potential player personalities, how their gaming is structured, and what games meet the needs of certain personalities. Such research will not only be beneficial in terms of creating new games or interfaces, but it will also benefit a wider host of professionals such as psychologists and teachers who are constantly seeking ways to meet the needs of a very diverse audience. The methodology is qualitative and stems from the personalities proposed by Stuart Brown whilst being driven by Peirce's semiotics, and observing games and players through their Interpretants Immediate, Dynamical and Final. In the likely continuation of this study, we intend to confirm these possibilities through interviews and known examples.

KEYWORDS: Experience, Semiotics, Interpretant, Flow, Play Personalities

1 | INTRODUCTION

To know the experiences that players undergo during gameplay is vitally important in understanding what they feel and how to map their search for a great experience [Csikszentmihaly 1991]. Such knowledge can immediately impact the application of new games and interfaces, but also benefits educational applications where the use of digital and non-digital games is present.

In order to understand a bit more about the experience of playing, we will try to understand the personalities of the players via the classifications of Stuart Brown [Brown and Vaughan 2009] through Peirce's Interpretant. Therefore, this paper is divided into three sections:

1. To present the Play Personalities categories, according to Stuart Brown [Brown and Vaughan 2009]
2. To present the notion of Interpretant, a central concept in the semiotics of C. S. Peirce
3. To show the personalities presented under the light of Peirce's Interpretants

At the beginning of section two, we will also explore the conditions of Optimal Experience [Csikszentmihaly 1991] as a motivator for the various personalities.

It is important to note that the English language often has several meanings for the same word such as the word 'play' which can denote anything from someone playing a musical instrument to a play on a stage. In this instance, we have opted to use the word 'player' to denote the larger, overall meaning of someone who is playing, whether it be through music, flirting and, of course, gaming.

2 | THE PLAY PERSONALITIES

Known to be the founder of the National Institute for Play [<http://www.nifplay.org>], researcher and professor, Stuart Brown MD, has conducted over 6,000 interviews on the subject of 'play histories'. He defined these as "a careful analysis of the role of play in childhood and adulthood" [Brown and Vaughan 2009 p.26]. Interviewees ranged from murderers and Noble Prize winners through to merchants and artists.

From this huge sample size, the researcher identifies eight categories that can define the different modes of play that become dominant when the player becomes an adult. These modes are called Play Personalities, although the author points out himself that they are not to be considered scientific categories, but exist as an accurate reference [Brown and Vaughan 2009 p.65].

According to Brown, the eight Play Personality are:

4. Joker
5. Kinesthete
6. Explorer

7. Competitor
8. Director
9. Collector
10. Artist/Creator
11. Storyteller

2.1 The Joker

The joker is the most basic play personality of them all. It reminds us of childhood and the silly things adults do to make children smile. It's the individual who actively craves the fun state of mind through jokes and pranks, often playing tricks on friends and colleagues. In the context of digital games, this character is likely to appreciate Flash games with simple content as well as comic characters and narratives.

2.2 The Kinesthete

This kind of personality needs to be in motion to achieve the fun state. Many who fall into this category need motion to simply focus on their daily activities. A well-known example is the case of Gillian Lynne, an English dancer, actress and choreographer who struggled with poor academic performances in mainstream school. After being transferred to a dance school, her education took off and she is now revered as one of the world's great choreographers.

These types of people who fall into this group may be dancers, gymnasts, sportsmen and women and musicians. From a digital perspective, these characters would favour motion platforms such as Nintendo Wii and Microsoft Kinect, extending to games such as Guitar Hero and the DDR mats.

2.3 The Explorer

The explorer would also fall into the remit of a fairly basic personality since all people begin their lives exploring the world around them, although "some people never lose their enthusiasm for it" [Brown and Vaughan 2009 p.67]. This group of players, in a broad sense, is motivated by allowing the imagination to explore which can be facilitated by either:

1. **Physically:** such as when they are led to see new places and encompassing the personalities of visitors to our museums and restaurants (amongst others).
2. **Emotionally:** such as seeking new feeling through art, music, gastronomy or flirtation
3. **Mentally:** the joy in discovery through acquisition of new knowledge or the projection of his imagination through literature and audio/visual media.

These exploitative personalities include teachers, researchers and readers of various types of media. In the case of digital gamers, American standard RPGs or the adventure genre are common, but may include an exploratory element to various other

types of games, something which is now common in shooters and racers.

It is also important to note that these personalities are common simultaneously. For example, a wine lover can read about a certain wine in a magazine and create a narrative through imagination (1), after tasting the wine (2) and travel to any city of restaurant within the wine's region (3).

2.4 The Competitor

Those who fall under the title of competitor prefer specific objectives and clearly defined rules which form part of the challenge they are trying to overcome, whether solitarily or as part of a team. Even in games where a clearly defined score isn't available, one will often be agreed to or created. This can be likened to the business world where the 'score' would compare to their total fortune, or in internet terms the number of visitors to a page. Awards, titles and various XP points are employed to aid personal, competitive narratives. This strong personality will often go out of their way to turn an uncompetitive situation into a competition.

2.5 The Director

The director takes his delight from the planning and execution of projects and events. They are very organized and excellent motivators, often doubling as producers as well as directors. They love to feel like the centre of any social situation, however they are also known as stark manipulators. They are one track-minded in pursuit of their own goals and use others as pawns in their socio-political games. In the world of digital gaming, they prefer simulation and strategy games, even operating as heads of guilds or clan, spending a great deal of time organizing teams and strategies as well as capturing and training new members.

2.6 The Collector

The collector's personality draws his delight from the acquisition and organization of objects and their narratives. Bottle caps, postcards, photographs, replicas, dolls, books and a host of other collectibles are the default of this personality type. The constant maintenance and reorganization of these collections can lead to signs of obsessive compulsive disorders or compulsive accumulations.

In digital gaming, these characteristics can be catered for at several points such as during the collection of rewards for quests or missions, the organization and completion of specific inventories, and gamer-targeted achievements and challenges from both inside and outside of the game world. Players who strive to complete all challenges within a game are known as achievement hunters or trophy hunters.

2.7 The Artist/Creator

The Artist/Creator satisfies their pleasure by creating and modifying things such as

drawings, ceramics or craft. The growth of the internet and e-commerce has spawned a new generation of Do It Yourself (DIY) enthusiasts, presenting us with new brewers, musicians, designers, writers, jewellers and perfumers amongst countless others.

Such personalities seek to create unique objects or customize existing ones, sometimes for their own enjoyment and other times for marketing purposes. In digital games we see these characteristics in players who invest a lot of time in customizing their avatars, creating virtual environments such as Second Life and homes for Sims, as well as creating custom content, new levels and game modifications.

2.8 The Storyteller

Finally, the personality of storytelling presents not only writers, but readers of various media as well as the traditional book. These can both tell and read their stories through the medium of movies, music and gaming and so this category captures writers, composers, RPG players, adventurers and any other game genre in which the story has a central role. People who use their imaginations in this way surround themselves with constant narratives. Suddenly simple things like a pasta dish or a single point in a tennis match can be transformed into incredible, life-changing stories.

3 | THE PEIRCE'S INTERPRETANTS

Although Brown did not declare the factors taken into consideration to establish these categories, we can see that in their generality, they show us what keeps people, or players, motivated in pursuit of their goal, what gives them pleasure, and what constitutes as fun in the context of gaming. I prefer to sum these up as the Optimal Experience, in accordance with Flow Theory [Csikszentmihaly 1991]. Although the term fun in game design refers to various kinds of pleasure, it's often only perceived as entertainment, and a few game designers like Marc LeBlanc prefer to create a typology to disentangle the itself from the generality of function [Salen and Zimmerman 2004 p.334].

Optimal Experience tells us that pleasure can also be tiring, persistent and even suffered, just as a ballerina or fighter would go through a certain degree of pain whilst developing their bodies, all in the pursuit of achieving their goals. "The best moments usually occur when the body or mind of a person is pushed to its limits by a voluntary effort to accomplish something difficult and interesting" [Csikszentmihaly 1991 p.3].

Brown connects such Play Personalities with growing: "As we get older, we begin to have strong preferences for certain types of play rather than others" [Brown and Vaughan 2009 p.65]. Some things keep us interested, others not. So even if a person submits more than one of these categories, one is dominant over the other and these are your personal preferences.

According to Peirce's Signs Theory, the same can be applied to signs – they exist in great profusion some occur in a more dominant way than others. The Interpretant

is “that which the sign has had the effect in a mind, potential or current” [Santaella 2002 p.128-129]. In turn, “Every sign has three interpreters, a Final (or logical) is the effect which would be produced in the mind by the sign after sufficient development of thought [...] a Dynamic Interpretant which is effectively the effect produced in the mind [...] and an immediate Interpretant which is represented by the Interpretant or meaning in the sign” (CP 8343) [Houser and Kloesel 1992 p.xxxvi-xxxvii].

3.1 The Immediate Interpretant

The Immediate Interpretant is the interpretive potential of the sign. To recap, the Interpretant is not the interpreter, but the result that the sign produces and the overall effect on the mind. In computer games, and other media, the audience can be considered as this interpretive state [Santaella 2002 p.128-129]. Content type, language, and other signs that belong to an Immediate Interpretant may suit one type of audience but not another. As an example, a person who only plays racing games may have difficulty in understanding the need for exploration and development in a different genre, such as RPG.

3.2 The Dynamic Interpretant

This is exactly the effort produced by an interpreter throughout the sign. When it reaches the interpreter, three different effects can be produced:

1. Emotional
2. Energetic
3. Logic

3.2.1 The Emotional Dynamic Interpretant

Some effects are more emotional than others, even if they are vague or intermittent. The pace, intonation and appearance are just some of the factors that may leave a sign more emotional than others.

3.2.2 The Energetic Dynamic Interpretant

When the sign causes a reaction in your active receiver, be it physical or intellectual, it is the Energetic Dynamic Interpretant. The way that we tap our feet to the beat of a song, or the way that we recoil when a loud explosion happens in a film or game, would be called the Energetic Dynamic Interpretant. This reaction could also fall under the physical or intellectual too – just look at how we can smell a food and it can transport you to a Parisian restaurant, for example.

3.2.3 The Logic Dynamic Interpretant

When this is interpreted through an interpretative rule set in place by the receiver (beliefs, behaviours, intentions etc.) we call it Logic Dynamic Interpretant. These are signs that suggest a change in behaviour and decision making.

3.3 The Final Interpretant

Lastly, when the Interpretant causes an expected result, we call it the Final Interpretant. This is often found in the discourse of political hustings whereby military may be drafted in to prepare the citizens for the Interpretant achieving its goals – therefore a Final Interpretant.

Peirce himself warns us that “In its general nature, the interpreter is much more easily understood than the object, since it includes all of the signs expressed or means of itself” [Houser and Kloesel 1998 p.410]. For this reason, we chose to work on the Interpretant level.

4 | RELATIONSHIPS

In order to make known the relationship between the experiences of players and see them from the point of view of Peirce’s Interpretants, we need to look at some of his research. Initially, we will be focusing the lists of Play Personalities on digital games only. This is necessary to create a more tangible, accessible theory model. We then pick some different game genres and verify the Interpretant we consider most appropriate.

Finally, to better visualize the data, we will display the information in a table along with individual considerations.

Play Personality	Game Relationship	Interpretant
(1) Joker	Short casual games, with emphasis in entertainment	Immediate: Recreation Dynamic: Emotional Final: Rejoicing
(2) Kinesthete	Dance, music and gym games	Immediate: Motion Dynamic: Energetic Final: Believability
(3) Explorer	Adventure, puzzles and RPG games	Immediate: Curiosity Dynamic: Logic Final: Discovery
(4) Competitor	Driving, shooter, RTS, and any game the player can promote a competition	Immediate: Overcoming Dynamic: Emotional Final: Win

Play Personality	Game Relationship	Interpretant
(5) Director	Host events, clans, train players, ask questions, make choices	Immediate: Collective Dynamic: Logic Final: Achieve
(6) Collector	Capture, organize and retrieve content in any game genre that is possible. Accomplish tasks in order of quest rewards.	Immediate: Collect Dynamic: Emotional Final: Accomplish, increase
(7) Artist / Creator	Create and modify games, content and characters	Immediate: Nonconformity Dynamic: Emotional Final: Achieve
(8) Storyteller	Tell or read (listen, watch, interact) stories by different mediums	Immediate: Narrative Dynamic: Emotional or Logic Final: Having / Being Public

Table: Play Personalities vs. Interpretants.

We know that such a typology is an imprecise art requiring a great deal of debate. It is vulnerable to interpretation since many signs may occur simultaneously, which may be dominant for a majority, and may not be a totality. However, the table above seems to corroborate the research, although some topics require more explanation than a table can provide. It's important to remember that the above table is not closed for debate and is still open to interpretation, confirmation and research.

The joker is quite simple to understand – he wants to have fun, plenty of recreation and have an emotional relationship with the game rather than logic or high energy games, reaching its Final Interpretant when rejoicing with experience.

Similarly simple is the kinesthete who wants to constantly move, and needs the Energetic Dynamic Interpretant to make it move. The Final Interpretant is a bit unclear as it would have to be broad enough to encompass those who want practical results such as weight loss, muscle tone or imagining to play a music instrument, such as that which can be found in the Guitar Hero franchise.

Thus, a Final Interpretant that may be most common to all of this diversity is the believability, or at least the feeling of immersion within the gaming environment that feels like you are actually practicing these activities, in spite of it just being a simulation. A perfect example would be a game like Beach Volleyball by Kinect Sports who use the gestures of the actual sport but in a one square meter space. Even with the space restrictions and it being a simulator, it may lead players to consider them very similar games.

Explorers are driven by their curiosity, driven by a Logical Interpretant to travel whilst meeting new and different things.

Competitors, in turn, are driven by an overrun of goals that they either set

themselves or are challenged to complete by others. His Dynamic Interpretant, although at first glance seems logical, is in fact emotional as this character needs to feel that he is overcoming something. A feeling isn't always attached to a set rule or belief, but just that feeling of having to overcome something.

If the first four categories can be deemed as well defined, the other four are more uncertain and require further debate.

Directors do not perform alone. A factor such as this displaces them from the artist/creator category even if they belong to artistic collectives. Your Dynamic Interpretant and the Logic is the dominant one, since together they create a series of ideal conditions in order to ensure that their realization is achieved.

Moving away from the order in the table slightly, we now need to assess the category of artist/creator as it starts off by looking very similar to the director. At this time, Peirce's Interpretants were of great value in explaining the difference since the goals of both were to perform any work or event. However, the journey to the goal is very different since the director works in accordance with logic and is driven by the collective, whilst should things not be going to plan he retains the capacity to transform objects and events to help towards the final realization.

The collector operates in the manner of moving things, acquiring new facts, ideas and information amongst anything else that can be gathered. While it may happen within logical or favourable conditions, such as working at the Post Office and always having the opportunity to add to a stamp collection, many collectors have no idea why they collect certain objects – possibly a childhood fantasy or life goal.

This leads us to believe that their dominant Interpretants should be emotional. Many artists will obsess over designs which can take months, years or longer. This character could fit into this category, if not differentiated by their Interpretants Immediate and Final.

Finally, the storyteller – arguably the most complex and difficult to categorize due to him spanning everything from the writer to the reader, listener to the musician, screenwriter to the cinema-goer. They present features of the explorer, collector and artist. At first, the sheer profusion of Interpretants of all kinds leads us to believe that this category is inflated. While the goal of a writer is, in most cases, to be read, the motivations are very different for the reader. Readers like to convince others to read his books, to generate a diversity of views, to read stories to others that they have read themselves in the manner of a true storyteller.

The immediate Interpretant also seems quite simple, as is the possibility of transforming even simple facts into narratives. However, the Dynamic Interpretant is again problematic – if we think it's emotional, it shares the Final Interpretant in having an audience. However, if it is logical, when taking into account the defined rules and objectives, the same Final Interpretant could be rethought. Even in their extremes, it is just a matter of quantity, whether it's how to be successful or just paying the bills.

5 | FINAL THOUGHTS

As we discussed earlier, the table presented is not, nor could it ever be, the finished article, yet this doesn't mean it isn't useful. Such categories need further discussion, research, interviews and continuous updating to see how people are affected by them.

Although Brown's work (Brown and Vaughan, 2009), is not specific about digital games, referring to them in sparse moments, this article seeks to expand it in this sense, while it seeks to bring considerations of Peirce's semiotics to such categories to make them more defined and precise. Even so, this text is not the be all and end all for digital gaming. Digital games are still evolving at an exponential rate. We go through stages where this slows and old games are simply updates or games are copied from other platforms, but the advancements made in motion capture technology (Kinect, Move, Wii, etc.) open up new possibilities.

Anyway, we believe the details of such categories are important not only for the area of digital games, but also for any professional working in creative fields, involving play (playing in the broad sense), or if they need a defined audience based on their play personalities. Designers, teachers, publishers and other professionals who work with diverse audiences can benefit from this table. In the digital games industry, for example, it is becoming increasingly important to expand the public audience since the game production industry has reached such very high levels (Hong, 2005).

Games have therefore become more diverse, sometimes easier, but still need to expand their languages to reach out to more people. Take for example zombie games like *Dead Island* (Dead Island Website, 2015), involving open world, puzzles, shooting, exploration, creation of weapons, different types of characters and game environments. Earlier games like these had far fewer possibilities, like explore and shoot, whereas by increasing the possibilities of the game, it has led to an increase in the number of players who will identify, motivate, or feel able to play certain titles.

In semiotic terms, a game or other activity involving a few Interpretants is bound to motivate a few Play Personalities, and, in the last instance, have some form of audience or active participation. A table like this allows us to identify missing Interpretants, and expand the possibilities of motivation and success of an activity, whether it be a digital game or a school class.

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