Gaming Culture: Teachers Perception in High Schools of Brazil

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Abstract: In order for games to be perceived as more than sheer entertainment, opening up its educational potential as well as new professional possibilities for students, schools must first recognize and embrace this universe. With this in mind, this work will attempt to demonstrate teacher's perception of games in high schools of Brazil, using the city of Maricá, in Rio de Janeiro state as an example. For this, the following research was done over the period of a year and followed a City wide School versus School tournament, called Ti-Games Maricá, which included a series of game based activities done in every single school of said city. This article will focus solely on the impacts regarding activities for teachers and how it affected their perception of games.

1 INTRODUCTION

According to a research by the specialized company Newzoo (2018), one with more than ten years of experience and one of the most cited, there were more than 75.7 million gamers in Brazil. Most of the Brazilian youth play at least one digital game and the country was in 2018 the thirteenth biggest game market in the world.

Added to this, Brazil was in December 2019 the fifth biggest internet user, surpassing the likes of Russia and Japan, both notorious consumers of games and digital technology. The same research by Statista, another leading research firm, demonstrates that every nine out of ten Brazilians access the internet at least once a day.

The National Common Curriculum Foundation has, as one of its principles, the use of technology in class, in ways beyond that of administrative use. In an act of legal dissonance, most public schools implement measures to ban games and mobile phones from school's boundary.

For these reasons, the following research was done following a city wide project called Ti-Games Maricá, executed over the school year of 2019. While the main activity was a school versus school game tournament, there were a series of workshops, talks and other activities involving games. This project was the city's first initiative toward building a game development cluster.

With high dropout rates – Brazil had the third highest rate amongst countries researched by United Nations Development Program (UNDP) in 2012 (UOL, 2013) – many studies relate these rates with learning deficits, which start in the third year of elementary school, when 11,6% of students fail according to the School Census of 2017, creating a year-grade disparity as the student progresses. This in turn, converges to at least 35% of the students that complete elementary school, dropping out before high school, according to ex Minister of Education, Professor Maria Helena de Castro.

There is close to no research regarding the correlation between the high dropout rates and the lack of effective technology use in class by teachers, or the relation with the mere lack of encouragement in regard to games and technology use by these institutions. However, as demonstrated by the World Economic Forum Risk Report of 2021, two critical risk factors for country development are related to the

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disparity in access to technology and technology use in education.

One evidence of the ill adapted environment, which is Brazil's usual public school to the current student's habits and world (digital natives), is in the last Programme for International Student Assessment (PISA). While this evaluation has been done every two years for the last twenty, there has been little sign of evolution in regard to public school's environments as perceived by students. "Bullying, indiscipline and loneliness: the climate of Brazilian's schools as revealed by PISA in 2018" was the headline that gave way to international notoriety of a system that has little to no focus on embracing students.

The same report states that nothing short of half of the students skip classes in Brazil (50%) and 41% recognize the high levels of indiscipline, as well as 23% feel alone in school, while 13% self declare feeling sad in school. The very report indicates the obvious; a better school environment helps reduce the dropout rate.

1.1 Terms and Definitions

In 2015, a research done by Pew Research Center about the perception of digital game universe by the very consumers, demonstrated amongst a series of facts, that the very users were prejudicial with certain affirmations of the area. For example, men have twice the chance of considering themselves "gamers" in comparison to women, even though the number of game consumers was practically the same.

"Game designers themselves offer a bewildering and often contradictory set of definitions" – RaphKoster, (A Theory of Fun for Game Design, 2004).

The English dictionary Merriam-Webster, defines the term "gamer" as being someone who plays games, but more commonly used as someone who plays digital games. For all means, we shall use this definition in this research and consider "games" as all digital games except those of gambling.

As for the concept of games in a broader sense, we shall adopt Johan Huizinga concept of "magic circle", Homo Ludens, 1938, interpreted and more thoroughly defined by Katie Salen and Erick Zimmerman in Rules of Play, 2003.

While the Ti-Games project consisted in a series of activities focused in demystifying the games universe to students and teachers, the main element consisted of a unique format of game tournament. One never done before in Maricá and with only one comparable example. For this reason, all tournament referrals are about Ti-Games.

1.2 Necessary Study Delimitation

While the project focused on a series of activities that aimed for the insertion of games in schools and the recognition of gaming culture by these institutions, this article focuses mainly on the impacts of said project, on the perception of teachers. The whole project, named Ti-Games, was requested by the city of Maricá, in order to help develop a game cluster. It was part of a greater development program for the city, focused on transforming Maricá, in a technological hub.

Therefore, focusing on this matter, the following sections will describe only a fraction of the complete project and try to briefly overview it.

1.3 "Digital Native" Students

In his 2003 book, "Don't Bother Me, Mom – I'm Learning", technology expert Marc Prensky suggests the use of games for the development of children and adolescents. Maybe possible benefits are attributed to the habits of playing games. Prensky algo argues thatthe current educational system is not adequate for "digital natives". In his opinion, teachers tend to be technologically outdated when compared to their students, not only in use and access to newer programs, but also in language and expressions used.

Prensky coined the terms "digital native" and "digital immigrant", while talking about the differences between generations and their relationship with digital technology. He believes digital natives were born in a world with digital interfaces, contrary to those that saw its rise and had to learn these new tools, "digital immigrants".

2 METHODOLOGY

While all schools in the city did participate, it is worth noting that this was never obligatory as well as the involvement of teachers and faculty of each school.

Teachers received a questionnaire post first contact with the project. This contact was officially the first activity every school received and focused mainly on demystifying games to the faculty.

The intention of this survey was to measure the initial overall perception of games and its industry, by each institution's faculty.

2.1 Ti-Games Project as Activity of Introduction to Application of Games in the School Environment

"Purposeful play builds self-confidence and real-world problem-solving skills." - Jane McGonigal (SuperBetter: A Revolutionary Approach to Getting Stronger, Happier, Braver and More Resilient--Powered by the Science of Games)

The goals of the inter school tournament comprehend the stimuli to sociability between students through a democratic and inclusive experience. This starts with the legitimacy of games by schools and within schools, earning its space for an official activity within school boundaries and with the support of school faculty. The tournament was designed for a friendly competition that values process and collaboration and with no monetary gains or ranking of skills.

In its first phase, the tournament works within each school, with internal activities to select students with greater affinity to games.

In the first day of actions, the principal and faculty interested (a decision made by each institution) listen to a brief talk about games and some scientifically proven benefits of playing, as well as a brief summary of the industry and its economic relevance. The goal is to open a discussion focused on stamping out common misconception about games and through this, bring this generation of "digital immigrants" closer to their students, who are "digital natives" (Mark Prensky, 2001).

Soon after the faculty centered talk and discussion, the students partaking in the tournament are assembled for a talk about the game industry and its career possibilities; however the main focus is game development. There are other activities ranging from workshops to game tournaments and while these involve the faculty, they are all focused on attending students.

Since most public schools have only basic infrastructure, all necessary materials were brought for the days which these actions were held.

Each of the fifty schools received the project twice, meaning two days of several activities, one of which established a school team. These teams were made by the students with the highest score on the internal activities. The first phase is expected to end at the same time for all fifty institutions participating in the project, this way there is no extensive time lapse between activities for one or more institutions.

Schools can train or not while they wait for the second phase. It is ideal that they create their own internal activities centered on the tournament, in order to fulfill one of the project's goals, which is institutionalizing games in schools, going beyond access and actually supporting this hobby.

This school versus school phase requires institutions to compete against each other in similar fashion as students did within each school, in order to create a team. Not only is the format similar so students and teachers are already familiarized with it, but there are other mechanics outside matches to give each school extra chances. All schools can participate in up to five bouts. No institution is penalized for not showing up, nor do we remove merit for those that manage to show up on all events. The way the team divides themselves for each round is up to them and if a team member cannot get in, any student from that school can replace him. The team is a formality only for the most part, an indication of achievement by those 5 students. While they do have priority for the second phase, there is no elimination for not showing up.

The point system used was solely meant to register the effort of each school community. There is no way to gain massive advantage. Most points are rewarding for showing up to each event and there is a progressive decrease and in the amount earned. Points earned for winning events serve only as a tie breaker for classifying for the semi-finals.

Semi-finals and finals happen in one single event and in classic key format (Swiss). Since the whole project is about effort and school mobilization through games, this more competitive part is only done as a symbolic event and extending it would go against core values of the tournament. Unlike most game tournaments, the project is not interested in ranking or reinforcing loss of defeat. For this reason the prize awarded is the same for the first and second placed teams. Furthermore, the prize is a gaming room for each school. Students that represented the winning team get their name on metal plaques to go with the equipment and structure for each school. All semi final participants get unique shirts and certificates, the same goes for all faculties accompanying them, as to value the moment and their feat.

2.2 Analyses of Initial Survey after First Contact with the Project

One of the main goals of the project was to provoke a paradigm shift in the way schools and faculty face the relationship between newer generations, technology and digital entertainment; for this is fundamental do any pedagogical implementation of games.

Familiarity with the topic

Answer	Participant
Unknown	6
Little familiarity	28
Some familiarity	15
A lot of familiarity	6

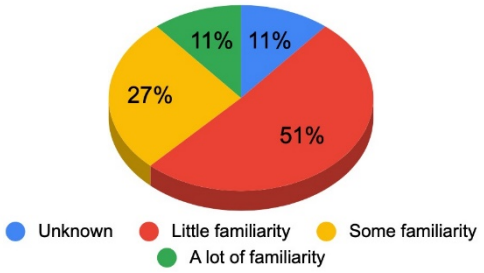

Figure 1: Most teachers said they were not familiar with games in any sense.

With these premises in mind, we endowed the Tournament with activities aimed at informing the faculty of all schools of the city of Maricá, of the potential of games beyond entertainment, including professional possibilities within this industry. One of these activities was a 25 minute presentation, done in each of the fifty schools, at the start of visit, for some of the available faculty, but always including the school's principal. After the presentation, time was reserved for questions and discussions regarding anything related to the topic. Only after concluding this session, did we hand out the survey for those who were present. We collected 136 responses, from which the majority were given by principals and head coordinators of each school.

This report is based on these answers received.

The first question was aimed at exposing the respondent relation with games. We asked them to classify their opinion and offered four possible answers. In order to avoid biased responses, masked by self-esteem, this question was preceded by a simple straightforward question about the content seen.

This initial data was confronted with the information received by the survey done at the end of the project.

According to results, many teachers did not believe games could be anything more than entertainment. Only 30% of teachers already encouraged the use of games before the Tournament. Since participation was optional, it is safe to assume that most of the teachers that took part in the project were already open to new possibilities.

The absolute majority of respondents (teachers that heard the presentation and participated in the activities) changed their perception in relation to games and further possibilities of its use in class. Many did not know much about the industry and economic dimension of this universe.

2.3 Teachers Evaluation at the End of the Project

Intention of studying the subject further

Answer	Participant
Yes	35
Maybe	18
No	2

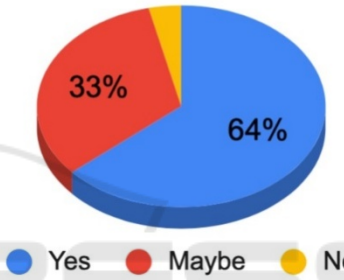

Figure 2: Most teachers expressed some interest deepening their understanding of games.

These evaluations were conducted on the last day of the project, at the end of all activities, December 8th of 2019. One of the reasons for the low count of answers was the fact that many schools were not present on the Tournament's last day, as well as the school's year end. All answers were voluntary and could also be made online, during the weekend, with a link sent to teachers that participated. This also ended up contributing to a lower count, since we did not foresee a closure of public school's social networks during that month, due to a court order. This impediment resulted in poor communication with teachers and amongst themselves, affecting the involvement of more than half of the schools (since the majority was public).

All teachers that responded observed that all their students were involved in the tournament in some manner. Half of these students were involved by school spirit and cheering, evidencing the participation for beyond sheer engagement in direct activities. This fact is made clear by answers related to involvement of the school community. Most affirmed that school direction had a direct

contribution. This is further reinforced by the necessity of a formal request to join the tournament, signed by each school's direction at the start of the project.

Intention of using games in class

Answer	Participant
Yes	48
Maybe	7
No	0

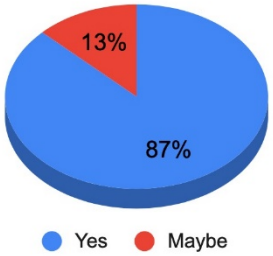

Figure 3: Immediately after the talk, most teachers were intrigued by the possibilities involving games and its culture.

This total commitment from the school, illustrates the importance of answers in regard to the possibility of positive results towards education, by the use of games in class. Most of the respondents confirmed their belief in this possibility. These same teachers affirmed in their majority, that they noticed a greater interest in school by their students, after the start of the project.

3 FINAL ANALYSES OF THE IMPACT OF TI-GAMES ON TEACHER'S PERCEPTION OF GAMES

While only a fraction of the total research done over the complete Ti-Games project. It is imperative to highlight the importance of the teacher's involvement in the overall project and the clear correlation between their effort and the final result. Not only were they the ones responsible for the school's mobilization, but without their direct support and belief, games cannot be legitimized within school.

Although not the focus of this article, it is important to note that all teams that advanced to the finals had major participation from teachers. In other words, it was common for some of the teams (schools) in the finals to be led by the same teacher. This meant that those teams represented two different schools and this equaled two different communities and jobs for the professor, yet the common denominator was the teacher's mobilization effort. This clearly states the weight of a teacher's belief and the importance of focusing on their perception, before the introduction of any new educational tool.

It is recommended that further research is done on the embracing of games within schools, without specific use. How the recognition of this tool and associated culture by the school and faculty, can impact the lives of students in this day and age.

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