Game-based Events for School Community Mobilization

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Abstract: Community involvement in school activities has long been the topic of studies, and while much has been discussed in terms of its consequences and types of involvement, there is little research regarding events, as a way to mobilize school communities in Brazil, especially game-based events. In light of Brazil's poorly perceived school environments as shown in 2018 PISA and the massive popularity of electronic games as a hobby for Brazilian youth, this research will attempt to demonstrate how game-based school events can be an effective way of involving school communities. This research followed a game-based city-wide project, which occurred simultaneously in all schools of Maricá in Rio de Janeiro state, in Brazil, over the course of 2019. While the project had many goals and activities, this article will aim on demonstrating the effects of its game-based events in relation to school communities, as perceived by teachers and their students who participated in the project.

1 INTRODUCTION

This research was based on Maricá-wide project, named Ti-Games, which focused on using games in all fifty schools of Maricá in the state of Rio de Janeiro – Brazil, during the school year of 2019. The project was composed of many game-based activities, such as workshops, game tournaments and talks, and was part of the city's ongoing effort to build a game development cluster. All fifty schools took part in the activities, with more than 2500 students participating directly, alongside approximately 400 school teachers.

One of the main reasons for the research, is the demand established by Brazil's National Curriculum guiding document – BNCC – for the use oftechnology in schools beyond administrative use andhow it states the use of games to guide the learning process (BNCC, 2018). Therefore, the main goal was to examine Ti-Games impact on school community and school routine, from the teacher and student's perspective, in order to understand if using games, in a legitimate manner – by the institution, can help mobilize the school community in a positive manner, around this hobby and related activities.

This research aims to demonstrate the encouraging involvement of school community on said project and how students who participated, were positively surprised to see the city, their school and teachers supporting their participation on a videogame tournament. The research will also show how teachers directly involved, perceived the participation of their students and community in this project.

1.1 Terms and Definitions

The project here researched, Ti-Games, consistedof numerous game-based activities, which included a game tournament within every school and between schools. However, while electronic game tournaments are popular and already common, this

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specific tournament had a different format, one created for the goals of the project which in essence are contrary to what usual competitions aim for - to measure and rank the skills of participants. Hence, when referring to the tournament, we are precisely talking about Ti-Games tournament, which had no intention of measuring how able students were in any specific skill or game.

This research shall use the term "game" as referring to electronic games of entertainment not related to gambling, as it is commonly understood as in Brazil. The research shall also use the term "gamer" as those who play electronic games, for it is also understood this way in Brazil and it is also how the English dictionary Merriam-Webster defines such term. When mentioning "game-based activities", this research is referring to activities that either use electronic games or are about electronic games, such as workshops centered on creating or explaining aspects of game development and industry.

While the goal of this research is the observe if games used in schools by the institution themselves can result in a positive mobilization of the school community, one of the goals of the project Ti-Games, was to legitimize game use in schools. With "legitimate", the present research means ways in which games, including commercial titles, can beused by the school itself with its students and faculty.With "school community", this research means all those involved, directly or indirectly, with schoolactivities, although, focusing mainly on students,teachers, and student's parents. As it will beexplained, data was collected from students and teachers, as this relationship can be seen as the basefrom which other relations derive in regard to school.

1.2 Necessary Study Delimitation

The project here researched, Ti-Games, had aseries of game-based activities in schools, aiming for the legitimacy of its use by the institution, however, this article focuses on how and if games can used asa tool to mobilize school community, especially students and teachers in relation to a common activity. Therefore, the following segments will briefly describe the Ti-Games project, having a greater focus on the activities held for school community involvement such as the second phase of the tournament, where schools competed against schools. It is important to note, that Ti-Games projectwas a public initiative, and all events were free for those involved and no school, student, family, orfaculty was obliged to participate.

This research will not focus extensively on forms or impacts of parent active participation on school affairs, since this is widely researched and documented. This research, will instead, focus on parent and teacher active participation via school internal and external events, related to the project, Ti-Games, which consisted of several game activities, though with its core, being a School versus School game tournament.

2 BRAZIL'S SCHOOL ENVIRONMENT AND NECESSARY CHANGE

In 2012, Brazil's school dropout rate, according to United Nations Development Program (UNDP), was the third highest between countries researched, and by 2019, Brazil national research, PNAD (2013), indicated that more than half of people older than 25 years old, did not complete their basic education and at least 29% of those who abandoned school, were drive by lack of interest. Dropout rate continued to rise in Brazil, with an increase in 171%, according to 2021 research by *Todos Pela Educação*. While there are many reasons for abandoning school, the 2018 PISA indicated that Brazil school environment, as perceived by students is place of loneliness, bullying and indiscipline, one that did little effort to embrace students (G1, 2018).

On average across OECD countries, 21% of students had skipped a day of school and 48% of students had arrived late for school in the two weeks prior to the PISA test. In Brazil, 50% of students had skipped a day of school and 44% of students had arrived late for school during that period. In most countries and economies, frequently bullied students were more likely to have skipped school, whereas students who valued school, enjoyed a better disciplinary climate, and received greater emotional support from parents were less likely to have skipped school (OCDE, 2018).

The report also stated that 41% of the student's recognized indiscipline, 23% felt lonely in school and 13% self-declared feeling sad. PISA also stated that improving school environment for students, is a possible solution to help revert this scenario (OCDE, 2018), this is further corroborated by Brazilian research on school indiscipline (Garcia, 1999), which suggests that improving school image and atmosphere, for students and parents, may help generate school spirit, and the sense of belonging for students, consequently creating a welcoming environment.

2.1 The Need for School Community Active Involvement

Discussions surrounding the needs, forms and impacts of family involvement in school have largely concluded that active family interest and participation in school activities have positive results regarding student achievement (Herman et. al, 1983). Studies suggest that school endorsed events are effective ways of involving and stimulating connectedness with parents (Dove et. al, 2018).

School events offer ways to work with specific student's areas of interest, such as sports and arts, stimulating further parent and student non-compulsory participation. The planned structure of events, which usually defines and limits, timewise, ways for parent contribution and relevance, may also explain why this type of official school activity is effective in promoting involvement - as lack of planning and mutual understanding, between school and parents, are seen as the greatest barriers. (Cotton et. al, 1989).

2.2 A Generation of Gamers

To understand the role of games as a tool for mobilizing school community, it is imperative to discuss today's generation of students. According to Prensky (2001), one of the main advocates for game use in education and the need to adapt educational systems for today's generations, there is a disparity in language between teachers – whom he sees as "digital immigrants" and students – "digital natives". For Prensky, "digital natives" were born in a world with digital interfaces, while "digital immigrants" saw the development of these inventions, a difference that leads to a gap in communication and perception of new technological tools.

This discrepancy in communication between students and teachers, is one of the main reasons why many traditional schools, such as Brazil's public schools, feel dissonant with today's technological era. When considering there were 75,7 million gamers in Brazil in 2019 (pacete, 2019) and 162 million internet users, with a 75.7% technological penetration rate regarding smartphones and internet (statista, 2021), it is safe to suppose that most students are indeed gamers. In this regard, game-based events may be a viable option for schools, not only due to the ubiquitous and accessible nature of this hobby, but the value it may provide in adjusting school environments to today's youth reality.

2.3 Games and Social Connectivity

Philosopher Johan Huizinga (Homo, 1938) one of the most cited game researchers, believed playing and games can promote social grouping, and while historically, games have been a part of human culture, this notion recently reached headlines during the Covid-19 pandemic, as the World Health Organization recommended playing online games to withstand social isolation. The ubiquitous and cultural nature of games, along with the social stimuli, during times of social isolation, may aid explaining the recent steady increase in gamers aged above fifty.

Other researchers, such as Jane McGonigal, had previously indicated the social strengthening aspect of games and how playing together may generate a cooperative spirit, something that has been thoroughly discussed in relation to group sports, many of which are in fact games (Kamau, 2015). However, one major issue with physical games, considered sports, have always been the physical demands and usual segregation of participants, based on age, gender and weight, for the purpose of game balance (Nixon, 2007) and while this offers a fairer activity, it does limit the socialization potential of games. In comparison, electronic games are more physically accessible and can offer a more democratic and inclusive group activity, reducing possible differences between those playing together, this is seen in electronic sports competitions, "e-sports", where there are usually no gender, age or weight divisions. This was also seen in Ti-Games project, and while it involved many game-based activities, including competitions, it was not an electronic sport competition, as stated here before.

3 PROJECT EXECUTION

Ti-Games project had as one of its goals, to implement the legitimate use of games in schools, by the schools themselves, recognizing gaming culture and stimulating new practices with games as an educational tool. For this reason, the school versus school tournament that took place in the second half of the project, had no intention of being a real skill-based competition, and instead, was focused on promoting school spirit and involvement on a common game-based event happening in all schools of the city.

As mentioned before, the project had other game centered activities such as workshops and talks for students and teachers alike, however, this research

shall describe events that were focused on involving the whole school community.

In short, the project started with game centered activities in all fifty schools of the city, offering talks about the game industry and its professions, workshops of game design and design thinking with games, as well as a smaller tournament within each school, to establish a school team for the second phase of Ti-Games. These activities took place in each school and were limited to fifty students, gamers between the ages of 12 and 18. There was no limit of participation for the faculty focused activities, however, at least one school director was required to be present, this legitimized the participation of the school, as it signaled to its community that school direction was onboard, this had positive effects as the research will demonstrate. All schools received the exact same activities and for the same number of students, however, schools were encouraged to organize their own game centered events, such as team practice for the tournament, while waiting for Ti-Games second phase. While this research did not record such events, these were incentivized by the project organization, as it was aligned with Ti-Games goal of legitimizing games in school and stimulating game culture.

When all fifty schools had received their Ti-Games activities and consequently formed a school team, the project advanced to the second phase, a school versus school game tournament. On this phase, schools had to participate with their teams on a minimum of rounds to accumulate points and advance towards the semifinals. These rounds were events hosted after school hours, by schools that offered to host, as well as some that were hosted in public gymnasiums.

While not disclosed to students, points were mainly awarded for collective effort made by each school community, such as, being present in all rounds, cheering for their team, helping other school teams reach their designated rounds and online support on social media; points for winning the game contest on each round were only relevant as a criterion for tiebreaking.

Over the first phase of Ti-Games, 2500 students participated in the activities held within each of the fifty schools of the city, out of which, ten students per school managed to form the school team for the second phase of the project. Any student of the school could substitute for the school team, so having an official team formed by ten students, was a mere formality to bolster the moral of those students who were more engaged in the first phase.

Since, mastery of specific games was not the intention of the project, the tournament had a unique format, with games not being announced until the day of each round and with the organization behind the tournament, reserving the rights of changing game titles mid rounds, in case students had previously played them. Every round, three games were announced from amongst a pool of preselected games, all of which were age and school appropriate and were curated with the project's goals in mind, teams had to play all three games and for the same number of times.

Teams that managed to win more matches in each round, were awarded slightly more points, this however, was not disclosed for students as not to deter their personal efforts.

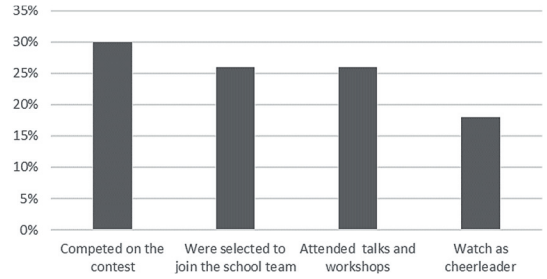
During this phase of the Ti-Games project, many rounds were offered for schools to accommodate their calendar and avoid eliminating teams due to being unable to participate on a specific day. For safety reasons, only schools that confirmed attendance could participate on these events, since most were held within school grounds, however, there were three open to public events, held in public gymnasiums, that had different themes but were all centered on further school community involvement, these shall be described later.

Participation and attendance rewarded more points than winning each round and to further accommodate schools, teams could call in any student at the school as a reserve in case the official team could not attend. This rule also intended on including all students on the responsibility of attending events and eliminating any possible blaming. Parents were asked by schools to take turns in taking teams to these events, but many schoolteachers also took up the task voluntarily and outside work hours, something that was unexpected.

Aside semifinals and finals, there were three other open to public events, all designed to involve those beyond direct participation. Attending these events as a school awarded extra points, but again, there were no punitive measures incase teams could not participate, especially since they were held during weekends. One such event, was completely centered on activities for student's families, with workshops and tournaments focused on parents and students.

The goal of these events was to allow involvement and support of those close to students participating of Ti-Games, such as neighbours, older brothers, parents, and family friends. All three events had a surprisingly high participation of family and friends outside of school direct relations, however, this was only observed and not measured quantitatively, as to avoid any discomfort by those attending. The number

of teachers present on these three events was also unexpectedly high, while many were directly involved in the competition, their school received no extra points for having faculty present and many of those who participated, were in fact, with their family which in many cases were not students at the schools they worked in.



Source: research data

Graph 1: How students were involved with Ti-Games.

The semi-finals and finals were also open to public events that took place in a public gymnasium and during Saturday and Sunday, respectively. Schools who accrued a minimum of points – something undisclosed for schools but was met with the minimum participation - during the second phase, were able to participate in the semi-finals. For this decisive round, a normal tournament format was presented and advancement towards the finals was mainly based on winning matches. The finals happened the following day and counted with other activities prior to the matches, to further stimulate participation of schools who weren't competing anymore. Since this phase of the project was centered on school community effort and involvement, the main prize was a "gaming room" for the school and a plaque containing the team's names - this was awarded to first and second place, as to further diminish the competitive aspect of the project.

Data was collected via questionnaires (Appendix A) from students and teachers (Appendix B) that participated in the project, up to the semi-finals and finals, collection was done during these two days, with the goal to measure the project's impact on those who were engaged to the very end. Answering the questionnaire was voluntary and the intention was to note how these students and teachers perceived the project and its impacts on themselves and on their communities, which could lead to a better understanding of the overall relationship of those involved with their communities.

While semi-finals and finals were open public events, and there were students present who did not partake on the tournament directly, or participated indirectly cheering for their school team, these students did not receive questionnaires to answer. On the same note, only teachers who accompanied teams and were involved in previous activities of the project were handed questionnaires to answer, although regarding teacher's results, there were less answers than what was expected.

3.1 Analysis of Results

Research found that 59% of students had already imagined themselves participating in game tournaments, however, it is important to note that these students wre those who participated the most, and therefore, can be speculated that they had greater propensity in seeing themselves in this reality. In contrast, 81% of the students who answered, claimed they had never imagined their school encouraging their participation on a game tournament, a result that when considering Pisa report (2018), regarding school environment in Brazil, may indicate low expectations, on behalf of students, towards their school. This can be further corroborated with teacher's data collected, 54% stated having noted a greater interest in school by their students, during Ti-Games project. This may be aligned with what was suggested as school image improvement for students, in the research regarding Indiscipline in Brazilian Schools (Garcia, 1999).

Results of both, students, and teachers, appear to indicate effort from both ends towards participating in the project, with 71% of students claiming they were encouraged to participate by teachers. At the same time, teachers were asked how their students were involved in the project, if they were involved at all, and unsurprisingly, all claimed their students were involved in some way and with similar distribution in relation to how they were involved, as show in graph 1.

Table 1: Who else in your school communitywas involved with Ti-Games.

	Little involvement	Partial involvement	A lot of involvemen
Students	0%	14%	86%
Teachers	14%	29%	57%
School Staff	14%	14%	72%
School Directors	0%	28%	72%
Parents and	14%	36%	50%

Teacher results further indicate school community mobilization, for 64% of teachers perceived an impact on school routine during Ti-Games, with only 7% claiming they noticed no change. Out of those who claimed having perceived said impact, 86% stated the impact was of positive nature. While the

whole project did involve all schools in the city, with more than 300 activities in total, most of these activities were done in the first phase, with each school receiving the same events for the same number of students. This is noteworthy, as it might indicate that schools may have kept internal game events, unrelated to those of Ti-Games, such as school team practice or other game centered events, in preparation or in inspiration with the project.

This may be further suggested from students answers regarding what they appreciated the most from the whole project, with 61% expressing they enjoyed knowing their city of Maricá was focusing on game development. Another research, published in 2021, concluded the project had a positive impact in improving students' confidence in their professional perspectives in the game industry (Prado, Victor, et al. 2020) when related to this research's analyses, this could indicate the project's success of starting a game development cluster in Maricá, as it reveals student's perception of their community and city movement, as a whole. Positive social impact may be further deduced from the results of the same question in hand, with 18% of students indicating that what they enjoyed the most of Ti-Games, was making friends. It is interesting to note the disparity between the most picked answer and the second, which while both are positive, could suggest that mobilizing the city in favor of their interest may come prior to new relations, even if this may be one of the goals of such endeavour.

Due to ethical reasons and time constraints, there was no data collected from parents or family, however, as stated before, while school community involves many relations, this research focused mainly on student and teacher relation and their perspectives, as most relations within the school community, derive from this focal point. In this sense, teachers were asked how they perceived their school community involvement with the project over the year.

Unexpectedly, teachers perceived involvement of other teachers was barely above 50%, which could indicate a critical view of their colleagues, after all, they were the ones accompanying their school's team. On the other hand, 86% claimed their students were really involved with the project, which can corroborate student's claims over being encouraged by their teachers and suggest a cooperation towards a common goal. Two results, however, require further consideration when analyzing towards answering this research's question, one being school director involvement and the other regarding neighbours' involvement. In relation to school director, 72% claimed having perceived their participation, though it was required that every school had at least, one school director directly involved in activities, which could indicate a non-voluntary participation. In relation to neighbours, they were the least involved as perceived by teachers, although it is worth considering who they considered neighbours, as 50% of teachers perceived a lot of parent's involvement.

Figure 1: National and local media coverage. Source:For Games (2022).

4 CONCLUSION

Ti-Games project involved all fifty schools of thecity of Maricá, over one school year, with 2500 students and 400 teachers directly involved and manyinvolved indirectly, this social mobilization can be seen in media coverage of the project as shown in figure 1.

School community participation during and after school hours was fundamental for the project to take place, as schools had to work to fit activities in their schedule and many even hosted events for other schools. Teams also had to be taken and supervised by adults during external events, some of which took place during weekends and holidays, factors which did not deter the efforts of many teachers and can indicate a sense of school spirit and representation around some communities. This sense of school representation could also be seen in the efforts of schools, to mobilize students to cheer and support their team during events, this is seen in graph 01, as 18% mentioned perceiving students participating by watching and cheering for their team.

Nevertheless, due to limited resources and ethical reasons, data was not extensively or directly collected from the school community, which limits this research to document the positive mobilization of the school community, from teacher's and student's perspective. As stated, teachers perceived greater interest in school from their students during Ti-Games and at the same time, students were surprised to see their school encouraging their participation,

which could indicate a positive view of their school, especially when considering students extensive efforts for a competition with no individual prize. This betterment of school image for students, as well as the clear effort of the community involved, can further corroborate studies suggesting that school image improvement for students has a positive impact, as well as studies indicating the positive impact of parent's participation. It is worth noting results of study aforementioned, which stated that students who participated, displayed confidence in their chances of winning future competitions, this could reinforce the suggestion of family participationin school activities having a positive impact in studentachievement.

It is important to reenforce the fact that Ti-Games was a public project, free of charge for participation and that approximately half of the schools involved were public, meaning that many schools were private. At first, it was generally expected that private schools would have an advantage, since transportation, equipment for practice and general support for teams could be provided by schools, this however, was not the case, and public schools had better results in the long run, including winning first and second place. While this research did not extensively measure the effects or nature of school community involvement, it is clear, that there was a positive contribution of each community. This indicates a possible direction for future studies, thoroughly investigating the natureand extent of the impact of such event, in different school communities. Another future study could be on the quantitative effects of school community involvement, in relation to their team's success, in similar game tournament events, to better understand the relevance and consequence of this support.

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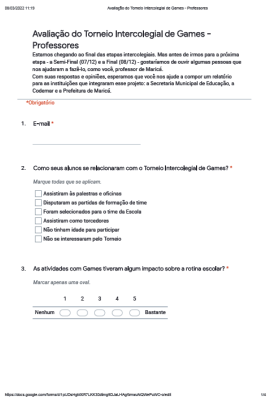
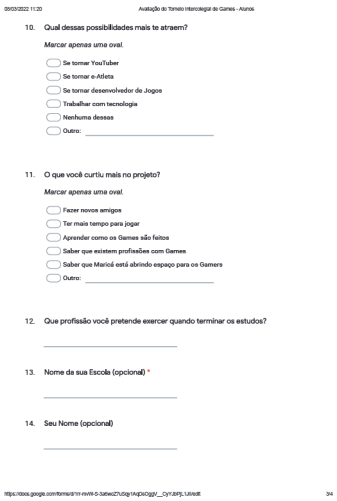
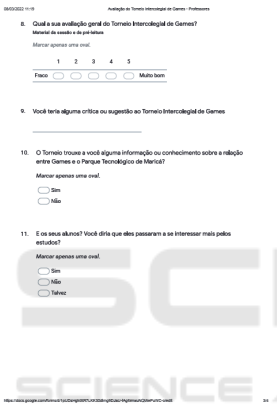
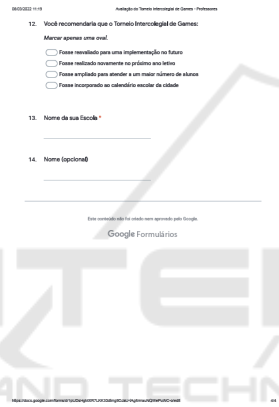
APPENDIX

Appendix A – Teacher's Questionnaire

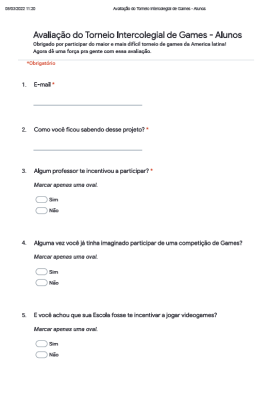


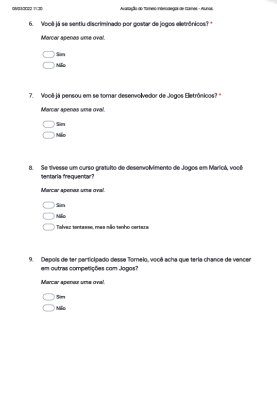






Appendix B – Student's Questionnaire





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