Video Game Workshop as a Sharing Device in Mental Health Care

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Abstract: The gaming culture produces questions to the standards through which health and education organize experiences for children and youth. In this paper we discuss the use of video games in workshops held with children and adolescents in a mental health service in Brazil. In this work we emphasize the sharing effects promoted by video game workshops in three levels: between game and players, between the participants, and between the video game culture.

The research group "Oficinando em rede" has, since 2004, produced a link between cognition, technology, and mental health. During this period we have developed a series of studies to explore and experiment with the effects of digital technologies workshops in a psychiatric hospital in southern Brazil. In these workshops, we deal with photography, robotics, and different authorship softwares with young people and workers in a mental health service.

During this experience, the main request made by the adolescentes was to play video games. It represented, in fact, one of the main reasons for their participation, rather than the more commonly considered therapeutic activities such as working with authorial softwares, for example. Sometimes, this gaming desire caused discomfort to the workshop instructors who generally were not familiar with this media. The tension caused some inconvenience, eventually modifying the proposals of the workshops.

Faced with this question, we developed a project with three workshops involving electronic games, inpatients, and workers in this mental care service. We use the game workshops as a research method. Within a workshop it is possible to create and strengthen regimes of visibility and enunciation to express how children and adolescents develop their experience with the technology, and what goes on while they do it. The workshops will enable us to emphasize the subjects' actions and the processes of creation and composition, not only the final product. Finally, it allowed the research participants to experiment with a creative use of video games.

The workshops were held weekly, as part of the planned activities in the service. They lasted an average of 20 minutes each. Each group (children and adolescents) consisted of twenty participants. The workshops were followed by two or three workshop instructors, and at least one of them was a service technician and others were participating in the research project. The workshops aimed not only at the interaction with games, but also at providing conversation and interaction between the participants, as well as new ways of expression and communication. The workshops were structured in three parts. In the first part there was a discussion about the proposal of the workshop itself. The second part consisted of carrying out the actual workshop and finally there was a moment in which the participants reported what they did to the group. In the first workshop we used the music game *Guitar Hero*. In this game the player uses the control of the video game to simulate a guitar and he or she must proceed simulation playing in the instrument in the correct harmony in order to score points. Although the model of gameplay serves the purposes of research, the game did not seem to meet the expectations of the participants. One of the hypotheses that could explain this behavior was that the game's songs did not connect with the musical experience of the participants. In the two following meetings we brought two games: *Pro Evolution Soccer 6*, and the racing game *Need for Speed: Carbon*. Both games were more accepted by the participants.

The following analysis was made from workshop's field extracts taken by the instructors' notes. One of the key elements was the emergence of a sort of community born out of the play of video games.

The common is a place of sharing: when you share something, and take part in this sharing, we are forming a common surface, which makes us belong to a community. The common is set as a place that constitutes our political experience because this common is a construction, not a natural place. It is not established a priori as well as the universal ideas (derived from reason). Neither given as standards with purpose of uniformity. The common is not related to what's similar, but looks for the singular, something that came from each one and can be shared by negotiation and exchange.

Video Games, Community, and Sharing

The relationships established in the video games workshops showed moments of a collective unit, a care community. Attitudes such as helping the colleagues in the understanding of the rules or the controls of the game emerged, as well as inviting and encouraging others to participate in the game. These attitudes have provided moments of exchange, learning, and knowledge construction—a space for interaction, sharing and coexistence.

In video games workshops, we observed three distinct but complementary types of sharing. The first one is referred to coordinating actions with the game world itself. Each game is constructed by different rules and possibilities. Due to these characteristics, a game requires coupling, i.e., coordinating actions whit this micro-world. This is a condition that enables the participants to invent their own paths. The characteristics of games may allow more or less immersion according to the attitudes of the participants and the affordances of the virtual environment. The relationship established with the game makes you feel like you belong and are a part of that universe, and with it comes the feeling that one has the potential to play, compete, or win.

The games are challenging because they put the player in front of unusual situations of risk where he can experience them without being physically there. Somehow, the player is there, because the game has the potential to make the events seem real. Gee (2009) says that " players are encouraged to take risks, explore, try new things. In fact, failing in a game is a good thing" (p.171) Resulting from this, we could see in the workshops a second type of sharing experience. The participants helped each other in understanding the rules of the game, and in sharing their abilities. The beginners pay attention to the more experienced.

A third type of sharing comes out of the culture of games, which brings attention to the standards by which health professionals and education exeperts organize designed experiences to children and youth. One of the attractions of the games seems to be exactly their endogenousness, in which the motivation and context are inextricably linked to the gameplay.

It was evident in the workshop that the games are not closed worlds: they are connected to other contexts, producing sharing beyond the current game. Even when it comes to young players, such as the participants discussed here, there is the articulation of the games with other softwares, such as internet search engines—like Google—and the possibility of having their own group experience in the workshop or publishing it on the blog.

Games promote such cooperation, producing an in-common experience between players. Gee (2009) speaks of players who are not only consumers but also producers, who do not get their information ready, but help to "write" their world. This is a positive way of thinking about games, as opposed to simply thinking that they "are no good." Good games work as simulations that teach ways of living that can be transported to people's daily lives, producing features like cooperation.

The author also says that games provide players "a real sense of agency and control," giving a "sense of ownership about what they are doing". These possibilities are very important when we think of children and young mental care work. In our experience, the workshops have opened a space and put in the hands of children and adolescents ownership of what they were doing. This works by giving them the freedom to choose something about their actions. We then see the video games as a powerful generator of speeches in such an environment.

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Moving From Content to Discovery: STEM for Younger Learners

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Abstract: This poster addresses the question "What are the implications for STEM-focused games and interactive media spaces when pedagogical foci shift from content-based to discovery-based approaches?" The intended audience is broad, from educator to researcher to developer. Information presented includes not only content from literature and industry reviews, but also from field professionals following their own professional applications of STEM in the development and implementation of learning environments. The target outcome is to address current challenges and opportunities prompted by shifting STEM pedagogies from content-driven to discovery-driven learning environments. In embracing these pedagogical shifts, the development and application of game and interactive media spaces serve to provide young learners with deeper foundations on which to build long-term STEM literacy and achievement.

Games as a Vehicle for Shifting Approaches to STEM Learning

At its core, Science, Technology, Engineering, and Math (STEM) pedagogy is about fostering curiosity and discovery. It is about instilling in children the desire to find out on their own, not always to be taught (Fisher, Bryant, Akerman, & Fischer, 2010). While discovery is a natural inclination of children, it is has not been a fundamental goal of today's traditional science and math pedagogy. While standards-based educational frameworks are changing to include practices of science and engineering and crosscutting concepts (NRC, 2011), traditional pedagogical structures focus much more on disciplinary content. Ideally, STEM is about encouraging exploration of the environment, asking questions, and being curious beyond initial comprehension. Doing so fosters the ***mindset*** of STEM rather than the facts of STEM. This poster argues that games are a key medium in which to support children's development of a STEM mindset.

Sometimes fostering a STEM mindset is as simple as giving a child the space to wonder, and the tools and encouragement to try out ideas. Games and interactive media spaces can be powerful environments for such wondering and experimentation to playfully take place. They are ripe with opportunities for meaning-making. Play that takes place within game spaces requires high level of textual understandings. Game worlds require players to make sense of signs, moving back and forth between interactions with known and unknown information. Players gain understanding by interacting within the world, and by making interpretations that shift and change based on the way the players use signs and symbols in different ways (Salen and Zimmerman, 2004). What play through various media allows is the possibility for children to create patterns of knowing and understanding based on experimentation, discovery, and role negotiations. Mediated play, therefore, becomes a tool with great promise for STEM supportive environments for younger learners.

A Poster to Identify Implications for Development, Implementation, and Research

With so many products proliferating the market, particularly those claiming to have educational merit, how can developers, educators, and researchers evaluate existing products to identify critical elements of STEM play? Beyond this, how can researchers and developers understand media needs, trends, and opportunities in order to further develop STEM supportive products and platforms? This poster will identify issues regarding the development, implementation, and research of games and other interactive media platforms for supporting STEM learning for young audiences, particularly preschool and early elementary ages.

Statement Samples for Inclusion From Industry Professionals

Carla Engelbrecht Fisher

Founder, No Crusts Interactive

Games are a perfect opportunity to grow this mindset as well as help reeducate adults about STEM learning experiences. Intergenerational play, including cooperative simultaneous play as well as pass-back-and-forth interactions, are increasingly supported by the various gaming technologies. Game designers and researchers should leverage these trends to explore the STEM educational

opportunities for both children and adults, particularly through games that foster cooperation, trial and error, and holistic systems thinking.

David E. Kanter
Director, SciPlay
In my early work, I explored the impact of project-based science curricula in formal classroom settings. Such curricula were designed to support students working on real-world projects. My findings were interesting in that I could show that these kinds of curricula brought about improvements in students' meaningful understanding, but students' affect did not improve in parallel as initially anticipated. While I believe such curricula are a good approach for developing meaningful understanding across disciplines, I have become concerned about their negative impact on affect due to the significant mental effort they require, resulting in a situation that is at odds with ideal classroom practices and thus negatively experienced by students. Taking a different tack, I have recently begun to explore the potential of guided play games to improve both affect and learning. I believe that play in an informal setting can be carefully guided as a game-with-rules that integrates science content in a compelling and intrinsic manner. Also, such play may serve as an important bridge from the informal to the formal setting to promote deeper understanding while also building students' positive affect toward science.

Scot Osterweil
Creative Director, MIT Education Arcade
While harnessing the natural curiosity of children in the service of exploration is a necessary first condition of STEM education, it is not in itself sufficient. As children explore the world, their curiosity leads them into observation and sometimes hypothesis formation, but it can also lead them to misconceptions and even magic thinking. Properly taught, STEM education helps students understand that the formation of knowledge comes through systematic modeling, testing and iterating as well as exploring. Traditional education kills the exploration by emphasizing the memorization of facts, but it also fails at promoting systems thinking by reducing it to a "scientific method" that flattens the experience for students, and drains the sense of wonder from what should be inspiring engagement with real phenomena. Happily, though this form of systems thinking does not come easily, it does emerge in the ways children engage with the models and simulations that animate most electronic games. Through game-play children do learn to reason about cause and effect, test hypotheses, and control for variables. The challenge of designing opportunities for reflection into the game ecology is second in difficulty only to the challenge of designing a genuinely engaging game, but it is a challenge well worth the effort.

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Exploring Coherence in Student Game-Based Learning Narratives

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As game-based learning (GBL) activities grow in popularity, research must address not only the content and mechanics of game play, but also the classroom experiences that contextualize GBL activities. A better understanding of how students relate to GBL is paramount; toward that end, this paper proposes an analytical framework for interpreting student narratives about classroom gameplay. Narrative inquiry using Linde's (1993) coherence model of storytelling offers a way to introduce student voices to the GBL literature and improve implementation for educators interested in GBL.

Game-Based Learning: Missing Stories

Can we use games in education? With the advent of digital games and the avid gaming cultures they engendered, this question has captivated educators' and researchers' attention. In the resultant scholarly literature, games now figure both as models of the learning process and tools for enhancing learning in the classroom and beyond (Gee, 2003; Shaffer, 2005; Squire, 2005; Prensky, 2001). For many, game-based learning (GBL) promises to bridge achievement gaps while nurturing students' motivation and sense of self-efficacy (Barab, 2009; Ip, 2011). Realizing this promise is not a simple matter, however. As Pivec et. al. (2003) point out, GBL activities constitute "radically new ways of learning" (p. 216). This poses a challenge to educators: is it possible to weave academically atypical experiences into a classroom setting?

Game design research offers many approaches to this question (Charsky, 2010). Studies emphasize the importance of situated meaning, consequential context, intrinsic integration of content and mechanics, and rich narrative structure for successful game construction (Barab, 2010; Gee, 2003; Habgood, 2005; Ip, 2011). Valuable as such insights are, the stories design studies tell position the game itself as the hero, charged with saving students from a dreaded "bad outcome" (e.g. a poor grade, a drop in self-reported interest). Coupled with a tendency towards quantitative aggregate assessments of game effect, this emphasis on game-as-unit of study permits dialog between GBL research and dominant modes of educational evaluation. However, it also leaves many voices—particularly student voices—unheard.

Much remains to be said about what happens "when games enter the classroom" (Squire, 2005, p. 1), and how students make sense of game play in this setting. The current study proposes an analytical framework—narrative coherence (Linde, 1993)—for investigating how students situate GBL activities within stories they tell about their own learning. Foregrounding student voices, narrative inquiry allows students to express their experience and understanding of GBL as it relates to an educational context. Linde's (1993) framework enables researchers to ask: how do students create coherence in their learning stories when these stories include the experience of classroom game play?

Creating Coherence: Toward an Analytical Framework for GBL Studies

Linde (1993) describes coherence as a property of a text: it "derives from the relations that the parts of a text bear to one another and to the whole text, as well as from the relation that the text bears to other texts of its type" (p. 12). Coherent relations establish reasonable causal connections between activities and personal development, in a socially sharable form. Describing the sorts of logical work speakers undertake to create coherence in their oral narratives, Linde develops an initial typology of coherence management strategies. These include tying action to character traits, providing multiple angles of explanation to bolster an otherwise weak narrative link, and relying on temporal sequence to illustrate causality. When these strategies fail, Linde notes that speakers experience "personal and social discomfort" (p. 4): coherence is not simply a property of texts, but one for which speakers actively strive.

In Linde's study, the "texts" are choice-of-profession stories spoken by her informants; in GBL research, the texts of interest would be students' learning stories. These stories would reflect on all the experiences that lead to learning a particular topic (e.g. basic French grammar, the scientific method, the history of WW2). The "parts" of the text here are narratives about individual learning experiences (attending a lecture, reading a textbook, playing a game). If games indeed "constitute

radically new ways of learning," game play may not easily cohere with other academic activities. It can therefore be hypothesized that in attempting to reflectively integrate game play into an educational context, students will need to employ many of Linde's coherence management strategies (Table 1).

Within this frame, several central questions emerge: How do students relate game play to other forms of study? Do they experience games as coherent with more common academic activities? If so, why? If not, how do they manage this coherence threat? Is a learning story that includes a GBL narrative commensurable with more traditional learning stories? If so, how? If not, how is this managed narratively by the speaker? Collecting and examining student narratives for answers to these questions offer at least two key insights. First and most practically, learning how students experience classroom game play enables educators to better scaffold GBL activities. Second, and perhaps more fundamentally, including student voices in the growing GBL literature more fully enacts the educational shift GBL represents. Many proponents of GBL argue that learning takes place when information is situated in a meaningful narrative context (Barab, 2010; Ip, 2011). What is true in the classroom is true in research as well: if you want to teach a student, tell her a story; if you want to learn how to teach a student, listen to hers.

Strategy	Characteristic Logic
Meta-Continuity	"Logically the most complex" (p. 157) of coherence strategies, this is the driving force behind the GBL paradigm. Meta-continuity affirms "multiplicity [and] change" (p. 157), holding that something "radically new" can be more coherent with educational aims than something traditional. Here, a game's academically atypical nature becomes an asset, aligning game play with learning styles that education-as-usual tends to suppress.
Character	This strategy relies on personal character traits to explain decision-making. "Life stories express our sense of self: who we are and how we got that way" (Linde 1993 p. 3); likewise, student learning stories express their sense of themselves as students and how this identity impacts cognitive and affective aspects of learning.
Temporal Linkage	Illustrating extended temporal duration or highlighting the temporal sequence of events establishes causality in narratives. Aligning scholastic experience with objectives set out in course syllabi or elsewhere is predicted to be a key coherence strategy for students.
Multiple Non-contradictory Accounts	An accumulation of diverse, mutually supporting explanations for a given event serves as strong justification for an agent's narrative progression. For students making sense of diverse learning experiences (e.g. lectures, lab, reading, online research), this is likely an important strategy.
Discontinuity Without Account (Complaint)	Linde (1993) construed this strategy as a "less than ideal way of presenting a life story" (p. 159); she treated it largely as a case of last resort. However, the strategy of complaint seems key in the academic environment; it is a way for students to "restory" (Linde, 2008) their experiences and exert evaluative agency in a context that determines much of their narrative progression for them.

Table 1: **Coherence Strategies as they Apply to GBL Studies**

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