Massiveness in Educational Games

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Many genres of commercial games have social elements where many players play at once and have various types of interactions. A few projects have integrated this type of massiveness into educational games as well. There are many benefits to this design element such as the ability to collect large amounts of data, access to large pools of collaborators, potential to find mentors, and a "live" feel to the game world. However, there are also drawbacks in the amount of infrastructure and resources needed to get massive games up and running. This panel will discuss the value of massiveness in educational games and whether it's worth the resources to build them, drawing on current examples of educational projects.

Benefits of Massive Games

There are a number of ways in which large numbers of players playing a game simultaneously and interacting in various ways can support both the engagement and curriculum goals of a learning game. Massive games leverage persistence and community in ways that other forms of gaming don't. Participating in a world you can come back to and meeting friends that greet you when you come back are powerful elements of engagement. In addition, a game that creates a community of hundreds or thousands of players can feel more important and more authentic, and in the process motivate them to work harder at rising to the game's challenges. Some players may respond to the sociability of playing with others, which can result in collaboration and mentorship – both of which help build skills and solidify content knowledge. Other players may be more motivated by the possibility of demonstrating their talents on a larger stage. Massive games can enable this by providing a place to display achievements and creations, which can then lead to further peer feedback and connection building. In addition to the engagement and learning benefits, massive games can be a valuable research tool. Data tracking metrics that are built in to collect data from many players working on a range of personalizable activities result in a large data set and the opportunity to learn about a wide variety of play and learning styles.

Drawbacks of Massive Games

Despite the value added by the design of massive, social mechanics, there are drawbacks as well, mainly stemming from the game development piece. The intrinsic massiveness means it is necessary to integrate many play systems together into one space, for example tools, NPCs, health, social elements, the environment, etc. Creating a constellation of activities that are relevant to each other but can also be utilized independently is no simple task. While it is not impossible to overcome, it does mean that massively multiplayer games are inherently more costly to design and develop. In addition, for learning games targeting children there is an added complexity of creating social spaces for players who may be protected by laws (COPPA), or who at the very least have less fully developed self-regulation when it comes to online interaction. For an educational game whose goal is to get into the hands of students as quickly and smoothly as possible, increasing the complexity and scale of any project presents a certain amount of risk.

Are Massive Games Worth Building?

Given the resources necessary for building massive educational games, we can see that the social component must be well thought out, and of significant value to justify the added expense. It certainly can be a worthwhile undertaking, however. The explosive growth of ubiquitous internet connectivity is creating an expectation that one can be linked to a very large network of friends and acquaintances at all times. In this environment there will be growing demand for more and more synchronous play, and synchronous social learning experiences. To ignore this genre of games and their potential for education would be a mistake. Moreover, some of the challenges of commercial MMOs, particularly community management and time coordination, are actually supported rather than hindered by integration of the games into classrooms. For example, a class turned into a guild comes with a lot of interesting perks and ramifications and is an interesting pedagogical concept to explore. There is another option though, which is to identify the most relevant existing commercial or mainstream games and put resources into making them work for educational purposes. This is already being done by many teachers who modify games or implement companion curriculum around a relevant topic. Capitalizing on existing games that can fit into an educational setting requires fewer resources than developing them from scratch, but may not deliver the content in quite the same way. Given these options the question remains: is it worth building massive educational games

from the ground up?

Panel of Experts

The panel will consist of four experts in the field of educational games who have designed, developed, and implemented a variety of massive learning games. **Eric Klopfer** is currently carrying out research on The Radix Endeavor, an MMOG for STEM learning co-designed by the Scheller Teacher Education Program lab, and he is also designing MOOCs that incorporate game creation. **Scot Osterweil** from the MIT Education Arcade designed Lure of the Labyrinth, a middle school math game that incorporates social elements to help students complete math puzzles. As one of the lead designers on The Radix Endeavor, **Dan Norton** from Filament Games has explored many of the social systems that can work in a multiplayer game. Finally, **Joel Levin** is the co-creator of MinecraftEdu and teaches using Minecraft in his classroom. The games created and used by the panelists are shown in Figure 1.

The panelists have identified the issue of massive educational games as an engaging question, and one that the GLS community would have an interest in exploring. The panel will consist of 5-minute “speed introductions” from each panelist in which they will describe their background with massive learning games, and present their position on the question at hand. Next the panelists will have an opportunity to respond to each other’s positions and engage in some friendly debate. Finally, the floor will be open for questions so that attendees can probe the panel further, as well as offer their own opinions on the topic. The session will be largely discussion-driven to give everyone a chance to participate and gain a deeper understanding of the emerging issues around massive social interaction in educational games.

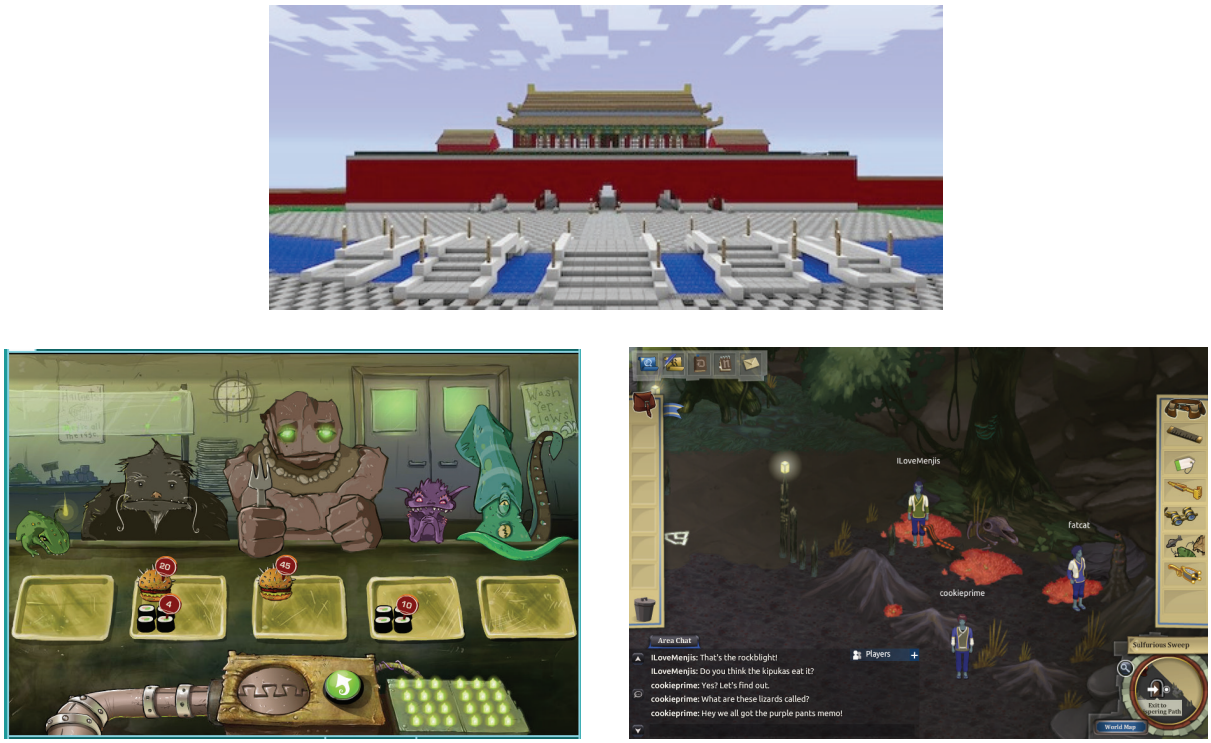

Figure 1: Screen shots from Minecraft, Lure of the Labyrinth, and The Radix Endeavor.

Resulting Discussion

After introductions by the panelists the session focused on questions and a discussion with the attendees. Much of the discussion centered around the importance of the social aspects of multiplayer games, both massive games and games that work on a smaller scale. One goal of the panel was to explore the idea of massiveness and what that means, including MMOs but not limited to games in that genre. However, the conversation grew out of that and turned more toward the social aspects of all types of games. This included not only typical multiplayer video games, but also social or team-based non-digital games. Additionally, it included communities that grow out of either multiplayer or single player games. Those communities may be purposefully designed or emerge organically

from the player base, but are also an important massively multiplayer factor to consider. The session went well due largely to the participation and contributions of the attendees, who helped identify many different types of games that were relevant to the discussion.