

Scarsdale Schools Education Foundation Report

October 2014

Project: Middle School - Using Game-Based Learning to Increase Student Engagement

Funding: \$25,000 for the Middle School

The 2014 Horizon Report from the New Media Consortium (<http://www.nmc.org/horizon-project/horizon-reports>) predicts that game-based learning will transform classrooms in the next two to three years. Scarsdale teachers are ahead of the curve, thanks to the support of the Scarsdale Schools Education Foundation. The teachers who launched the Gaming and Simulation Program have now completed the Institute of Play's workshop series and attended a Games for Change conference in New York City. In addition, the school has purchased materials to support gaming initiatives and worked to create educational game and simulations for Middle School students.

The partnership with The Institute of Play is continuing as the contract included access to their entire educational gaming/simulation library, so that Scarsdale teachers can use these games with their students, as well as creating and adapting their own games for classroom use. In addition, the teachers who participated in the workshop series shared their new skills at game creation in a Scarsdale Teachers Institute course for their colleagues in the District. This year, two additional courses have been approved and are on the STI calendar. The Gaming group also presented to District teachers at the spring Superintendent's Conference Day, which generated requests for help in how to create games.



Examples of original games and simulations currently in use at Scarsdale Middle School include:

Connect the Thoughts - Students practice analyzing political cartoons and learn how to notice the details in the images. They connect larger concepts/ideas to the symbols within the political cartoon. The student must explain how the cartoon connects to the image in the cartoon. They may use the power of “veto” if they disagree with a card placement. This leads to rich discussions and debate about the intentions of the cartoonist.

Library Smackdown – A daily digitally projected puzzle requires students to use subscription databases and books to solve it. Badges and small prizes are offered to students who successfully solve the puzzle.

Symbolize It! - Students learn to recognize how authors use objects to symbolize and/or show deeper meaning in literature. Students use textual evidence from a core novel and/or short story (or from their recent reading history) to connect objects to abstract ideas. Students must develop an argument in order to persuade the judge, and ultimately “win” a round of the game.

Stump the Librarian – students use a giant, little used print dictionary to find words for the librarian to define. Free lunch library passes are the reward for stumping the librarian.

Guidebook Quest – a librarian and Spanish teacher collaboration to change instruction on how to use a travel guide to Madrid from teacher-centered instruction to a student-run team activity. The guidebook quest was expanded to include all eighth grade Spanish students, as well as the eighth grade French students.

Madrid Go Fish – In Spanish class, students created aerial and street view pictures of the top 20 places in Madrid. The pictures were transformed into playing cards that students used to play a game similar to *Go Fish*. They tried to find as many matches as they could. A match is one aerial view paired with a street view of a location. Students need to identify the name by looking at the picture. The skill being practiced is speaking in Spanish (throughout the entire game) and noticing details in the picture.

Minecraft Club We ran a Minecraft after-school club this year and last year. There were 140 students in the club.

Mummy's Revenge - The game centers around the ancient Egyptian practice of mummification. Students learn about the journey of the soul to the afterlife. In addition, students learn the steps for mummification and the importance of religion to the daily lives of ancient Egyptians. To win the game students must get the Pharaoh's soul to the afterlife.

Hit the Road - In a Go Fish-based game, students are introduced to iconic photographs of the Great Depression. The game learning goal is for students to notice deeply details in the photos. This prepares them to read oral histories of the Depression and launches them into research on the historical context of the photographs.

Flip or Fill - Student pairs race against each other and the timer in order to solve different types of math problems (e.g., integers, order of operations, mixed number operations, percentage, square root).

Gamification in the Classroom

Several gaming principles have been incorporated into classroom instruction:

A Nonfiction Study in English: Students began a nonfiction study with 0 points and earned points throughout the quarter to master each level (i.e. work that showed Insight, Creativity, and Courage). Students chose how to demonstrate their knowledge and understanding from a portfolio of projects and built resilience as they revised, modified, or sought assistance in order to move out of a level.

Revolt: In a seventh grade social studies class, students participated in a six-week gamified unit called Revolt, which focused on the events leading up to the American Revolution. Students began the unit with 0 points and earned up to 2100 points throughout the unit, leveling up as they played. They received digital badges for each level (newbie, private, lieutenant, colonel, and general). Points were awarded for challenges (quizzes), tasks (homework/classwork), and quests (projects/unit test). Student engagement was high as they competed to be on the weekly leaderboard and to be one of the top three scorers (President, Vice President, and Speaker of the House). As in a video game, students were able to “fail” and try again. Many repeated quizzes until they had mastered the material. Students reacted positively to the concept of earning points, rather than losing them.

Quizlet Challenge/Etapa 1 Challenge /Etapa 2 Challenge: In Spanish class, students are guided through a review of material in a gamified way. The gamification/game-like structure creates an individualized method of instruction that gives the students immediate feedback along the way. By the end of the challenge, both the student and the teacher can be assured that they have learned the vocabulary and grammar to a level of mastery and are ready to move on to the test.

Impact on Students

Our impetus for getting involved in gaming was to explore its impact on student engagement. Feedback from students, coupled with our own observations and assessments, show that the infusion of games into the classroom heightens student participation and involvement.

Examples include:

- Students who were previously lackadaisical about homework became enthusiastic about completing assignments and with high quality.
- A game played at the beginning of a unit provided a reference point for subsequent discussions throughout the unit.
- Students were able to transfer learning and see connections between disparate units of study even weeks after playing a game.
- Higher levels of engagement meant that the game motivated *all* students to elevate their discussion skills.
- Students were given more opportunity to take risks in the game space environment and were more willing to do so as a result.

Plans for the Future

The CFI gaming group is eager to build on its expertise in creating games for learning and in spreading the practice throughout the Middle School, and eventually the district. The group has seen the potential of Livecode, a software development tool. The group would like to participate in additional workshops offered by the Institute of Play, focusing on the use and construction of digital games and simulations.

Allocation:	\$25,000
Expenditures:	\$23,970
Current Balance	\$1,031