Head of the Class With Game-Based Learning

Like kids who play the classic board game, students at Belle Sherman Elementary in Ithaca, New York, are making their way to the "head of the class" by playing language and literacy computer games. In the spring of 2012, Belle Sherman partnered with Imagine Learning, an award-winning language and literacy software program, to provide game-based activities to assist English-language learners, struggling readers, students with disabilities, and early childhood education students. For three months, select pre-K-5 grade students participated in a pilot, using the program an average of 20 minutes a day. The results were incredible.

"The challenge I face as a teacher is meeting every student's individual needs," said Nancy Thompson, a fourth-grade teacher at Belle Sherman. The program "allows me to meet with small groups of students and do the kind of personalized teaching that works best."

On the New York State ELA test, Belle Sherman's fifth graders scored higher than students in any other school in the district, and teachers and administrators attribute part of that accomplishment to game-based learning. Because of this initial success, Ithaca School District is now starting to implement the program districtwide, potentially changing the lives of more than 52,000 students.

Game-based learning has proved to be a powerful resource that teaches today's tech-savvy children through animation, sounds, videos, and interactive examples in varied contexts. It reaches across ability levels, and allows all students to learn and progress at their own pace.

Game-based learning motivates children to learn by incorporating fundamental elements of play. Research by Kathleen Roskos and James Christie, published in their book *Play and Literacy in Early Childhood: Research from Multiple Perspectives*, demonstrates that play elements such as "fictional characters, temporal motivations and suspensions of reality" are also important components in the development of children's literacy. Imagine Learning uses engaging activities to teach school readiness, listening and speaking skills, and the five essential components of reading: phonemic awareness, phonics, vocabulary, fluency, and comprehension. In addition, the program has an optional first-language support feature that allows English-language learners to receive instructions, vocabulary help, and feedback in their native language. This assistance is gradually scaled back as a student progresses. First-language support is offered in 14 different languages including Spanish, Arabic, Russian, Mandarin, and Haitian Creole.

Self-Paced Interactive Instruction

The key to game-based learning is interactivity. Engagement with the program promotes students who are motivated to achieve higher goals. For example, the program we use allows emergent readers to trace letters on the screen, sing along with alphabet songs, and create make-believe characters when they match letters with sounds. Older students read and record books in their own built-in recording studio, and click on illustrated objects to learn additional vocabulary or broaden their substantive knowledge base. The bottom line is that game-based learning captures and maintains students' attention.

Lessons are paced to each individual student, since more advanced exercises are presented only after a student has mastered a prior task. Students may take more time or practice additional exercises in order to master a given learning objective without delaying more advanced classmates. Moreover, the program provides immediate feedback so students know if they need more practice or are ready to take on more challenging work.

Logistics

Belle Sherman implemented game-based learning by placing computers in each classroom, creating a workstation for small group instruction. Teachers navigate between students using computers and those working on other projects.

Before starting a game-based learning program, elementary principals should consider the following:

- The technology infrastructure should be robust enough to adequately support the program's features.
- The campus should have the capacity to provide optimal computer use in classrooms and the ability to troubleshoot issues that might arise.
- The campus staff should also be familiar with blended instructional models, and using a center/stations approach that allows students to rotate between direct teacher instruction and computer-based lessons.

While game-based learning cannot take the place of traditional teaching, it is a resource to fill in students' individual knowledge gaps and enhance the learning experience for all students.

"Game-based learning leads the way to engaged thinking," said Luvelle Brown, superintendent for Ithaca School District. "Imagine Learning gives our students the opportunity to practice what they learn in the classroom in an engaging way that encourages them to think in different ways. As a district, we have set the goal to have all students be reading at grade level by third grade. Imagine Learning will help us achieve that goal." **P**

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