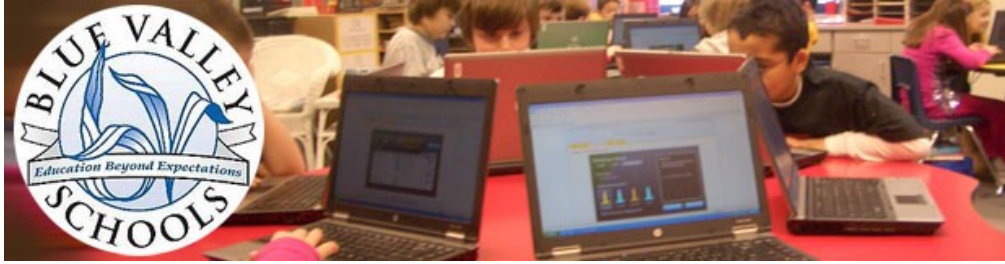


# Arcademics Pilot Study

## Blue Valley School District



Blue River Elementary School, Blue Valley USD 229

### Blue Valley USD 229

Overland Park KS

[www.bluevalleyk12.org](http://www.bluevalleyk12.org)

### Student Population

85% Caucasian

8% Asian

5% African-American

2% Hispanic

### The Impact of Multiplayer Video Games

As you walk through Mary Foote's third-grade class in Blue River Elementary, don't be surprised if you hear strange noises. Laser beams firing, engines revving, and cheers of the victorious may not be common around the school, but in her class they are a common occurrence.

"Video games challenge students in a way they connect with. Students are not usually thrilled about doing drill and practice things," said Mary, "so its good to see the kids excited to do drill work, instead of forcing or bribing them."

In January 2011, the Blue Valley district decided to participate in a study conducted by Arcademic Skill Builders - a provider of educational video games - and funded by the National Science Foundation. The teachers hoped to uncover a means that would result in the district's third grade students improving math fact achievement while also having fun.

### Technology-Driven Students

Of the 53 million K-12 students in the U.S., 51 million of them (or 93%) play video games. If video games engage students outside of class, can they be used to create engagement inside class?

"Video games make the material more fun for students. With the competition, students become more excited," said Mary. "Right away, we saw an increase with time on task. The students said they played the games together at home, so the extra practice was a plus."

Among the first in the education technology industry to incorporate multiplayer capabilities in educational gaming, Arcademic Skill Builders is an online resource offering educational video games that present a powerful, twenty-first century approach to education. The web-based learning games are tailored to assist K-8 students with basic math, language arts, vocabulary and thinking skills while in the classroom or at home. Arcademics won an NSF innovation research grant to fund the in-class study of their multiplayer customizable multiplication games and their potential impact on student achievement.

### Description

The Blue Valley study covered two weeks with third graders in four elementary schools. Students began by taking a pre-test on a teacher-chosen multiplication set, then played the Arcademic multiplayer multiplication games totaling 3 hours over the two weeks. A post-test followed. Below are the differences between the pre and post tests.

### Findings

**13%** Increase in percent correct

**45%** Improvement in rate

**22%** Improvement in students who scored below 75% in the pre-test

**20%** Increase in time spent practicing math facts outside of class.

**5%** Increase students' confidence of their math abilities.

# Arcademics Pilot Study

To begin, Arcademic Skill Builders reached out to the Blue Valley district schools to conduct a study consisting of four elementary schools including 7 teachers and 205 students for a two-week duration. The study focused on a set of multiplication facts chosen by each teacher. Students began by taking a pre-test on the given multiplication table, and then played the Arcademic multiplayer multiplication games for three hours over nine class periods. Finally, they were given a post-test on the table they had been practicing.

To Mary's excitement, Arcademic Skill Builders motivated her students and appeared an impactful teaching strategy that presented a new avenue to connect with and challenge students.

"I liked that it was engaging, quick, and went along with the table lesson plans," said Mary. "I could also challenge higher students by making a game for them and creating competition there. Video games definitely grab their attention."

Just as television and movies in the 20th century created children who were glued to a screen, video games are creating a generation of kids who want to actively participate and interact with each other. Arcademics team-based games enable students to form teams and play together.

## Benefits

Besides performance achievement, the payoff for Mary in implementing the Arcademics multiplication games was two fold. First, she saw students become more engaged in multiplication tables, which they had written off as "boring" or "hard." The second payoff was in student interaction. Students who usually did not socialize with each other began communicating through the games and teaming up. New friendships were formed in the class that might not have been formed otherwise. Technology gives students another means of communication that can help students feel more comfortable in socializing with each other.

Mary also saw improvement in class achievement through the pilot study. Her class increased in percent correct from the pre-test to the post-test by 20 percent. There was also a 50 percent improvement rate (how quickly student answers problem), 28 percent increase in how much students practiced math tables outside of class, and a 6 percent increase in student confidence in their math abilities.

The district average was a 13 increase in percent correct, 45 percent improvement rate (how quickly student answers problem), 20 percent increase in how much students practiced math tables outside of class, 5 percent increase in student confidence in their math abilities, and 22 percent improvement of percent correct in students who scored below a 75 percent on the pre-test.

Educational games were undoubtedly an appropriate way to stimulate the students of Blue River Elementary and the entire Blue Valley district with their math studies, due to the engaging nature of the video games. Because a fun learning environment was created, students felt comfortable and willing to learn in this atmosphere.

"The games energized our class," said Mary. "Even after the study, the students continually asked to play the games."

"Right away, we saw an increase with time on task. The students said they played the games together at home, so the extra practice was a plus."

- Ms. Foote



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## Keeping a Twenty-First Century Classroom

Educational technology initiatives can play a major role in transforming classrooms into twenty-first century learning environments. Educators adopting new technologies in the classroom are able to address learning needs and facilitate unique connections between students and teachers. Drawing on a twenty-first century approach to learning offers students a chance to challenge themselves and become more well-rounded individuals who will have so much to offer in the future. Students appreciate new approaches to learning, which can increase time on task and motivation.

Ms. Foote plans to use Arcademic Skill Builders' online games on into the future with her students, because as she says "Games are fun, as learning should be."

Contact Arcademics for more info:

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Ms. Foote, Blue River Elementary

