Tech app helps teach fractions

Junk food is making its way back into the public school system thanks to an iTunes application created by Virginia Tech faculty members. CandyFactory is helping to improve middle school students' understanding of fractions.

The purpose of the CandyFactory app, and others in production, is to "create a new niche of games that will both get players to think more deeply about content and will provide diagnostic information for teachers," said Michael Evans, an assistant professor in the School of Education.

Anderson Norton, a mathematics assistant professor, worked with two seventh graders from Corey Watkins's math class at Blacksburg Middle School every Wednesday after school for about four months.

"I would absolutely bring this app into my classroom if I had the option of using iPads," Watkins said.

CandyFactory, which Watkins said brings novelty to fractions, took about six months to design and complete. The team of Tech teachers created the app without funding from its recent grant of $2 million from the National Science Foundation. The grant is meant to be used to create three new educational apps.

CandyFactory contains three levels, which are designed to help students understand fractions. In level one, candy bars are already partitioned and students focus on "ubiquitous concepts of fractions," Norton said. In level two, "students must be more creative about the use of partitioning and iterating," he said. Improper fractions are introduced in the third and final level.

The app is available free on iTunes and has been downloaded over 2,500 times.

Norton said the team chose fractions because they are gateways to algebra.

"Students need to develop these mental operations in order to make sense of what comes next," he said.

With the NSF grant, the team is contracted to build three apps over the next two years. Norton said each of the three new apps will be GAMES — gateways to algebraic motivation engagement and success — applications and will focus on fractions for the sixth, seventh and eighth grade.
As a part of its grant project, the team plans on purchasing 150 iPads to give to public middle schools in Danville and Shawsville, Va., as well as Floyd County.

“You can’t get benefits from the app if you don’t have something to play it on,” Evans said.

The app was a collaboration with the School of Education, the Educational Research and Evaluation Program, and the computer science, psychology and mathematics departments.

The team that created CandyFactory consists of Osman Balci, a computer science professor, Mido Chang, an educational research and evaluation assistant professor, Kirby Deater-Deckard, a psychology professor, Serdar Aslan, a computer science Ph.D. student, as well as Evans and Norton.