

AgentSheets Case Study, Adolescent Game Designers Using AgentSheets, The Imagination Platform, by Mark Willoughby, 12 June 2005, 1001 words

BOULDER, Centennial Middle School Computer Club - The fertile mind of 7th and 8th graders expands quickly to fill a void when their imaginations are given free reign. The cool tools to create your own computer games made the computer club at Centennial Middle School the preferred hangout for 20-30 kids on Friday afternoons.

The computer club is an optional, two-hour session of open, unstructured time on the 30 machines in the school's computer lab. Scott Dixon, a 29-year veteran of teaching math and computers, supervises the kids and enforces the school district's strict "no games" policy.

"But if you build it, you can play it," Mr. Dixon said, a loophole which fuels the creative atmosphere on Friday afternoons. "Generally I leave the kids alone. They teach each other. There are some very advanced kids that teach the others kids. They really get into it and some try some very significant stuff."

The big attraction in the Centennial computer club is AgentSheets, an innovative and award-winning simulation and imagination platform from the Boulder company of the same name. AgentSheets is the only ingredient needed to produce amazing results in the hands of a motivated group of adolescents.

Consider the work of 8th grader Phil Reed of the Centennial computer club. Phil has been using AgentSheets for almost two years. He estimates the past three months have been especially fertile. He's created, by his estimate, "maybe 40 games. Some are cooler than others. We just create the games out of nowhere."

One of Phil's favorite creations with AgentSheets is an interactive game he's labeled "P12". P12 features a protagonist in a snowsuit running through a snowfield populated with snowmen, whom he blasts with a flamethrower.

"When you melt a snowman they disappear. The objective is to melt as many snowmen as you can," Phil said. "P12 actually was pretty easy to make with AgentSheets. It took maybe a half-hour to an hour to make it. I made the beginning, then played it, then went back and changed stuff and played it some more."

The changed stuff, from the simulation capabilities of AgentSheets, added complexity and richness to P12. Phil added a snowman maker that cranks our snowmen as fast as he can melt them with his flamethrower.

"If you run into a snowman, you turn blue, freeze and disappear. So now it's a race to melt all the snowmen before you freeze. If you get frozen the flames take on a life of

their own, jumping from snowman to snowman. It's random, the flames spread like a virus, they don't actually seek out any specific snowman."

With AgentSheets, Phil has joined one of the few growth areas of computer science education in the U.S. - video game developers. In 2000, 3.7% of college freshmen nationwide majored in computer science, according to the Higher Education Research Institute. By 2004, concerns over information technology outsourcing and a post-Internet bubble shrunken technology job market, had reduced the number of computer science students to only 1.4% of all freshmen.

Innovative colleges and universities are adding video-game development programs to their computer science curricula. The new video game programs are attracting new students with a mix of programming and creative skills to develop new content for a marketplace that sold 239 million computer and video games in the U.S. in 2004 for \$7.3 billion, 23% more than the previous year.

Game design also breaks the gender barrier typically associated with computer games and computer programming. Designing games is a creative effort that has proven attractive to girls, giving them a creative computer tool to develop games and simulations on subjects they like. Results in with AgentSheets in labs in the U.S. and internationally has demonstrated superior results with female students designing games focused on social subjects and phenomena.

Phil Reed and his pals at the Centennial Middle School computer club are not thinking about phenomena or even careers. "It's really fun to create games with AgentSheets. I've done so much cool stuff. I've created many games just out of nowhere. Sometimes I plan ahead and make a game; sometimes it just comes to me when I'm working on AgentSheets.

"The longer you work on a game the better it gets. Like working on a game and then make it rain in the background to make other stuff happen, it just makes it better. You can start with some of the games that come with AgentSheets and go from there, add simulations, some really advanced stuff."

Phil's next favorite game is a new, multi-level creation named simply "Car" which he began this year. Car is a big game, he's invested twice as much time as he's logged on P12.

"I made it multi-level. At one level you drive on the roads and hit people. At another level you want to avoid hitting people. You can choose to hit or avoid people and I've added toads, you can hit or avoid them too. It just depends on what you feel like. And then there's hazards, like bombs and rockets. If you get hit by a hazard, you get a new car."

Mr. Dixon says the kids are their own best recruiters for the Friday afternoon computer club. “They’re original, that’s for sure,” he said. “These kids say they want to do their own thing from scratch, not copying any existing game.”

Centennial Middle School graduates, schooled in imagination by AgentSheets, are fertile ground for industry. A typical computer game today, like Halo 2, has a team of 200 developers and a \$20 million budget. Meanwhile, Phil is planning to test drive a game called “Timmy the Telephone Walker” designed by one of his computer club colleagues.

“This game’s really funny. You walk around on telephone poles and throw things at birds. When you hit them they explode and disappear. There’s multiple levels. One level includes a boss. The boss just floats over everything and drops little eggs at you to dodge. You’ve got to throw things back at him.”