Finalist Best Teaching with ICT – Primary

Name: Tracy Tindle
School: Wellsford School, Northland
Name of ICT activity: Does Gaming Help You Learn?

1. What is the Teaching with ICT activity that you want to be considered for the award?
I would like my 'Does Gaming Help You Learn?' topic to be considered for the Best Teaching in ICT award 2014. It is an integrated topic covering science, technology, ICT, English and statistics that we presented for our school Science Fair.
Students worked in small groups and used Gamefroot.com and Sploder.com to design and create a playable game where players would overcome a series of challenges while gathering information about a certain subject. The player would be tested before and after playing to determine if their knowledge had increased from playing the game.
Students designed and build the game themselves, decided on the game story line, character narrative, researched information about the 'topic' they wanted to teach people, scripted in-game objects and tested their game before publishing. They then designed forms based around the information in their game to test their players on. This test was used as a pre and post test that was given to players before and after the game to test their level of improvement. Approximately 10-20 people were tested for each game and their data on their pre and post tests was analysed by the group to decide on their hypothesis that if 'teachable information' is included in a game, players will retain information about the topic. Once the data was analyzed students decided on whether their hypothesis was successful or not and presented their work for play at our school Science Fair, for students throughout the school to have a go on.

2. Why did you choose to use this activity?
I regularly talk to my students about their learning and what things they would like to see included in their learning throughout the year. One of the things they always asked was to learn how to create games like they played online or on xbox. This had come up time and again and I had always hesitated as I just didn't know how it could be done without extensive knowledge of fancy game designing and animation software. That was until I discovered Gamefroot.com and Sploder.com. These are both online game design programmes that are easy to use but produce great results. In particular, gamefroot.com, a NZ company, had NCEA units that they had created and had made available online. I had a look at these and decided that I could adapt them to link in with our upcoming science fair and use the games the students created to prove our big idea of 'Does Gaming Help You Learn?
I was able to share a number of game design docs with my students using doctopus and google docs, so they had access to the unit plan, the tasks and the presentations that they would have to complete during the project. I also added a folder of images of tutorials but did not teach them much in the way of how to use the websites, other than to explain the layering on Gamefroot.com. They students taught themselves everything else.
This is the folder I shared with students:
https://drive.google.com/folderview?id=0B3eULDESpZX5eW1zMjIyNUpDTEU&usp=sharing

3. How did you implement and use this activity?

I started by getting students to talk about their favourite games and what they enjoyed about them. We skyped with a game designer called Jacques from PikPok to ask some questions about game design and he told us how important the narrative of a game is.

I introduced them to gamefroot.com and briefly showed them a very sort example that I had made, and talked about the layering aspect- foreground, terrain, backgroung etc. Other than that I let them play and learn about how to work in the design environment.

The students then planned their character narrative, the situation and decided on what they wanted the player to learn in their game and went ahead and built a game with around 2-4 minutes of gameplay where the player would learn information as they played. They had to learn how to manipulate different objects that were available to them and taught each other how to use the more advanced features such as scripting, creating teleporters, moveable blocks and how to use levers. They also had to find out how to link levels together as they went.

Because this work was going to be our science fair topic they also had to keep their target audience (Year 5-8 students) in mind when creating the game to make sure that the game was not too easy or too hard for them to play, and that the information that they were trying to teach their players was not too complex or too easy. There was a lot of beta testing over the weeks to make sure that these elements were taken into account.

Students wrote about their progress via shared google docs and shared some of their work along the way to their blogs so our quad blog schools could see what they had been doing. They had to write design briefs on their character development, their game concept, the world building the had done as well as the research they had found out about their topic.

Once the games were complete they created pre and post tests for their players to assess their prior knowledge and to see what improvement they made after playing and then drew conclusions from their data.

4. What outcomes has it achieved for you and your class?

Their completed games were really impressive and the students from other classes had a great time testing the games out and completing the testing. Students were able to prove overwhelmingly that Gaming does help you learn, as most testers improved in their prestest score by at least a few marks.

Having to teach themselves the more complex aspects of game creation was really great and was a great example of active learning as some students were more proficient at this and were able to help teach others the basics of the scripting/coding back end of some of the objects and how to manipulate the game aspects to achieve the outcome they wanted- such as creating moving walls or bricks. It has really helped the kids see that gaming is so much more than playing the game, there is actually a lot of thought that goes into the storyline and the characters and that the game narrative is a huge part of what makes a game successful. It has also had a great effect on their writing ability as part of the process all the way through was for the to write briefs on their game development, their character and scenario and the general storyline of the game. They also had to analyse data and create graphs as well as making conclusions about their findings.

During the school science fair, students from all over the school had a go at playing the games, including 5 year olds and the principal! We had a lot of really positive feedback from students and teachers throughout the school about how much they enjoyed having a go with the games and the interesting information that they learned as they played.

Some students have also started to create other games in their own time.

Here is a link to our blog with completed games and quizzes:

http://misstindlesclass.wordpress.com/2014/08/21/does-gaming-help-you-learn/