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## Literacy and Learning through Game Design

An Afterschool Twine Workshop

Kelly Tran (Arizona State University) & Mikaela Wallin (Arizona State University)

### Abstract

This poster describes a research project based on an afterschool game design workshop. This workshop was intended to teach the tool Twine to 5<sup>th</sup> and 6<sup>th</sup> grade girls. Twine has been lauded as an accessible design tool, but thus far little research has been conducted on it. This mixed-methods study explores the ways in which girls engaged with the literacy and programming aspects of the tool, as well as the ways in which they brought their own Internet literacies and knowledge of pop culture to bear on the games which they made. Implications for teaching game design in and out of school will be discussed.

### Twine

The game design tool Twine has been lauded as an accessible tool for game design (Anthropy, 2012; England, 2015; Ellison, 2013). The tool allows users to create text-based games and interactive stories by writing in plain English text. Stories written in Twine are similar to choose-your-own adventure books, in which the player is presented with choices about what to do in the story (for example, to cross the bridge, turn to page 34, to walk along the river, turn to page 85). Twine also allows users to use a basic, built-in programming language in order to use variables, if-then statements, and so on. With these, the game can keep track things that have happened in the game- whether a user has found a key to open a particular door, for example. Users can also add images, sounds, and videos to their games.

The tool has been taken up by a number of people who are not traditionally part of the game design community, including women (Kopas, 2015). However, little research has been done on women and girls making games with the tool. This poster is an overview of an after-school workshop held in a public school with 5<sup>th</sup> and 6<sup>th</sup> grade girls. In this six-week workshop, participants learned how to use the tool and make their own games and stories. Throughout the course of the workshop, the girls have used their existing knowledge of the Internet and technology in order to make their games.

### Game Making for Literacy

While a number of scholars have framed game making as an important literacy practice (Gee, 2003; Salen, 2007; Squire, 2008;), much less attention has been focused on the potential of video game making for learning. A number of authors (Gee & Tran, 2015; Burke & Kafai, 2014; Kafai & Peppler, 2012) have argued for the importance of making games for learning and literacy. This workshop was an attempt

to give girls a space in which to construct their own knowledge and meaning in the context of making games. While each session of the workshop involved teaching the students how to use a particular feature of Twine, the girls were largely free to explore ideas and to access the Internet to look for information or inspiration.

## Pop Culture and Literacy Practices

Many of the girls were interested in popular culture, such as music, movies, games, and books. A number of scholars (Black, 2007; Jenkins et al., 2006) have framed writing and production around pop culture as a rich literacy practice, and the ways in which girls practiced their literacy skills through making Twine games was a focus of the project. The girls drew inspiration from games that they played at home and with friends (*Minecraft*, *Undertale*) and from popular songs, which they watched videos of on YouTube during the sessions. They were also fans of popular internet memes, sometimes inserting references or humorous pictures into their stories.

This integration of their interests led many of the girls to express that the games workshop was a different space than school, even though it took place in their classroom. They expressed that it allowed them to experiment with ideas and explore topics they cared about. The fact that their games did not need to conform to school conventions (grammar, format, etc.) and did not have to be “school appropriate” (with rules such as “no one can be killed in your story”) meant that participants had a creative freedom which they reported enjoying.

## Methods

This study employed a case study approach (Flyvbjerg, 2011). The individuals in the workshops (their individual interests and learning trajectories) as well as the overall workshop as a whole were both areas of interest. Data sources included field notes, video data, observations, and the games which students created.

Additionally, students all took an initial survey that assessed their interest in video games, stories, and computer programming. They also took a post survey which covered these same topics, as well as inquired about which topics and activities were favored by participants. All participants also took a follow-up survey that explored the questions of whether or not they continued to use Twine or any other game making tools after the workshop was over. This was followed by one final session- a focus group intended to further explore participants’ experience in the workshop and their interests and aspirations for game making in the future.

## Findings and Discussion

Data analysis is still ongoing. The students’ games, and how these game were developed over time (games were collected from students after each session), were a central focus of the analysis. The questions of how girls developed literacy skills and game design skills, as well as their knowledge of how to use the tool, were key. Also of interest was the topic of girls’ games and how these relate to the girls’ everyday interests. The survey data, which were intended to be exploratory and descriptive, are currently being used to examine whether girls’ interest in stories, games, and programming evolved while participating in the workshop.

Finally, there are a number of implications that arise from this study. One, the girls' enjoyment of and interest in exploring their own interests and topics in the workshop could have interesting implications for school, writing and even traditional literacy. Secondly, the enthusiasm that girls professed for programming and the creative potential of making games is noteworthy. Third, the notion of whether a workshop such as this could inspire girls' continued engagement with and interest in game design beyond the end of the workshop will be discussed.

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