Shared Inter-generational Collaborative Problem Solving Play Spaces

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Abstract: We designed a five-week family program where seven parent-child dyads ages 9 to 12 played Quest Atlantis, a multi-user 3D educational computer-game used in middle schools internationally as part of the school curriculum, in an informal setting. Our goal was to understand the challenges, opportunities, and collaborative work that result when both parent and child are immersed within a shared collaborative problem solving play space.

Introduction

Researchers have paid special attention to parent-child interaction in order to understand how children's complex cognitive processes develop in the context of social relationships and socio-cultural tools and practices (Vygotsky, 1978; Rogoff, 1990). Although it is found that parents continue to provide effective assistance to their children with problems around ages between 8 and 12 (Gleason & Schauble, 2000), parents start to engage in their children's lives less and less around middle school. This, partially, is because, as a desired learning outcome, children are expected to become independent and self-regulated learners. But another reason is specific to the socio-historical context in which we are in where children master new technologies faster than adults (Tapscott, 1998) and create their own cultural practices around it. Children spend time outside of school playing video games and other internet activities through which they get to know things in new ways, to interact with other people, and to prepare for future learning and problem solving (Gee, 2003; Squire, 2005). It is one thing to talk about educational use of video games and another thing to talk about designing educational video games where game principles are used to support the learning of academic content (Barab et al, 2007). We conducted a study in an informal learning environment to explore the possibilities of making educational videogames a "shared inter-generational collaborative problem solving space" for parents and children where they engage in collaborative learning through playing.

Implementation

Context

We set our study at a local Boys and Girls Club. The club is solely designed for youth programs and activities that allowed us to introduce our program to elementary and middle school children. 51% of the children were between ages 10 and 15. Secondly, the club serves to low and middle SES children, and 66% of children are from minority families. Also, the club was open between 3pm and 8 pm which was convenient to set a program for parents and children where parents can attend after work.

Participants

Seven parent-child dyads participate in the program. There were two father-son dyads, three mother-daughter dyads and one mother-son dyad and one boy who came either with his mother or father. One of the father-son and mother-daughter dyads was a family. Parents held middle-class jobs such as small business manager, accounts receivable coordinator, nursing, payroll system manager, chemist, and administrator accountant. Two of the children were 9, two of them were 10 years old, and one of them was 11, 12, and 13 years old.

Data Collection

In the beginning of their first session, parents filled out a 12-item questionnaire. On a 5 point-Likert scale, parents rated their and their child's familiarity and comfort level with computers and videogames, interest in science and art related activities. Parents answered two open- ended questions about the leisure and education-related activities they do with their children. At the end of five weeks, three parent-child dyads were interviewed about their experiences. During the implementation, two researchers took 'thick notes' during each session. Except the first week of the program, all four sessions were audio and video taped for each parent-child dyad.

Results

Dyad Profiles

Each dyad picked a tree type as their identifier. Pinyon, one of the father-son dyads, was the only dyad where the child seemed to be catching up with technology faster than the parent. The father reported that his son was 'very familiar' and he himself was 'somewhat familiar' with commercial videogames. He also rated his familiarity and comfort with computers lower than his son's. Maple, Pine, and Waterlocust, three mother-daughter dyads, had similar profiles. All parents rated their and their children's familiarity with commercial videogames low, and their and their children's familiarity and comfort with computers high. Roseberry and Hickory, two mother-son dyads, were commercial video-game players. Roseberry mother reported that her son was 'somewhat' familiar and comfortable with computers and herself higher than her son. Hickory mother rated both herself and her son 'very high' on the same items. Oak, the other father-son dyad, was the only dyad where the father seemed to be part of the digital age. He rated himself higher on familiarity with commercial games and computers and comfort with computers than his son.

Case Characterization

Session One. The facilitator introduced the Quest Atlantis overarching story, walked parents and children through a user manual and the program syllabus. They chose a username. Participants first mission was related to exploring the virtual environment, where parents' and children's task was to watch a video about Atlantis history, to visit and gather information about two worlds in Atlantis and report what they have found to OTAK, a virtual computer that greets users when they first log in. Parents and children were observed to focus primarily on understanding how to use the tools to play the game successfully.

Sessions Two and Three. When parent-child dyads came in for the second session the following week, they were greeted and were immediately directed to a computer to continue to work on where they left previously. Parents and children were able to finish the tasks faster than before. Parents observed to be more distanced and letting the child take over while going through I-BURST mission, where players learn about the code of conduct for using the virtual space, and Shardflower mission, where players learn about seven social commitments that foster children's sense of purpose and citizenry.

Sessions Four and Five. By the fourth session, most parents and children were working on the mission they had chosen together. Only one parent-child dyad, in which the child was the oldest, wanted to work on science-related missions in addition to two language arts missions they had done. Only three parent-child dyads came to the fifth and final session. At the end of five-week program, only one parent-child dyad couldn't complete all three required missions (Introduction, I-BURST and Shardflower).

Core Themes

Through examination of the data three core themes emerged. First, in order to share a conceptual space, the groups had to negotiate how to share tasks and mutually decide how to go about progressing on the activities which seems to be a necessity for collaboration. Second, groups had to share an intention to understand the context in order to make sense of the content. Third, the space allowed parents and children to relate to and share their personal experiences. These themes also intertwined with parenting styles. Given the limited space, we cannot discuss our findings here. But findings will be discussed in more details on the actual poster.