

Words With Kinect

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Unimplemented Features

Lessons

We had originally planned to have lessons to go along with the games to help kids learn further. We never got around to finalizing how this feature would work and how to implement it in a way that made sense with standard education practice. We focused on the games because we had those approved by Dr. Bear and we knew they would be important.

Matching Game Picture Refresh

The matching game was designed so that after all pictures are matched, 6 new images appear for matching. Due to a shortage of time, this was not implemented.

Picture Database

The picture database would've been used in the matching games and other future games that would utilize pictures from Dr. Bear's book *Words Their Way*. Due to a shortage of time, this was not implemented.

Spelling Assessment

This was designed to test the child's reading level. After this was determined, difficulty levels could be set for the games and lessons in that child's user profile (see *User Profiles* below). Due to a shortage of time and complications with the speech recognition API, this was not implemented.

Spelling Game

Due to complications with voice this feature was not implemented. We began experimenting but the main issue is that the Kinect was not able to pick up single letters.

Demo/Tutorial

We discovered that a demo was needed after giving a demo to kids to children. Due to a shortage of time, this was not implemented, though we do not feel like this would be very hard to implement.

User Profiles

User profiles with their own data was planned in the beginning. Due to a shortage of time, this was not implemented.

Progress Tracking on a Website

We had planned to create a website to accompany the user profiles for our software. Through this website, children, parents, and teachers would have been able to track their progress and growth online. Due to a shortage of time, this was not implemented.

Things We learned

Kinect Dragging

The Kinect has grab gesture recognition built in to the SDK. This is however only implemented fully with an object called a scrollviewer. A scrollviewer is a GUI object that holds more content than what fits on the screen and is able to be grabbed and scrolled to reveal more content. So grabbing was natively intended to be for scrolling these viewers. It took a while to figure out how that scrollviewer utilized grab events and related code and to translate that to dragging a button. There weren't any easy to follow solutions that others had found to this problem and we mostly had to figure it out on our own. This was a big breakthrough for the word sort game since it is essential to how it is played.

Speech Recognition

As mentioned above we had a plan and had begun implementation of a spelling game. While working on this we found that the speech SDK for the Kinect works best when recognizing full words. When given single letters it's word recognition confidence is not nearly as reliable.