Scanning With Single Switch Technology

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Introduction

Communication is one of the most important tools we use everyday. Unfortunately, certain disabilities can take away our ability to communicate. Some young children with physical disabilities cannot use speech to communicate. These children can use single switch technology to access augmentative and alternative communication (AAC) devices, and use this technology to interact with their families and caregivers.

Background Information

Single switch technology is a good option for young children or people with severe disabilities, because it allows the user to communicate using the operation of a switch. Our scanning technology specifically focuses on teaching children of preschool age how to use a single switch to control scanning technology. Our software is designed to keep young children engaged by having the child practice scanning using a picture or video uploaded by a parent or teacher.

Methodology

Our scanning technology works by taking a still image or video (uploaded by the user), and breaking the target image into sections. The user is allowed to choose the number of sections into which the target image will be broken (1) . Pieces of the target image are blurred out (2), and the user is presented with pieces of the target image (along with foils, pieces that are not part of the target image). The goal of the user is to use single-switch scanning to select the piece (3) that is a part of the target image and not to select the foils (i.e., two other random pictures). Upon completion of the puzzle the user will see the picture pop up or video play (4). We think this is a great idea to keep the users engaged while teaching them how to scan.

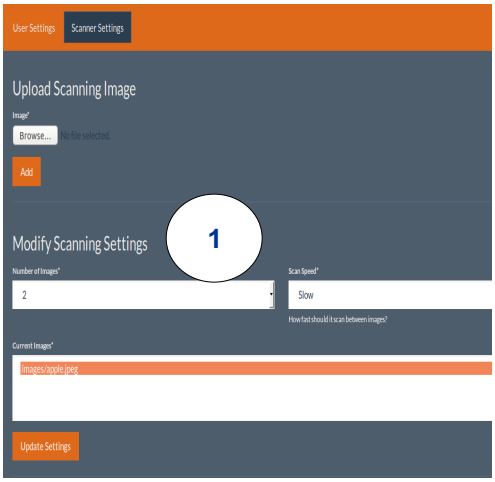
Results

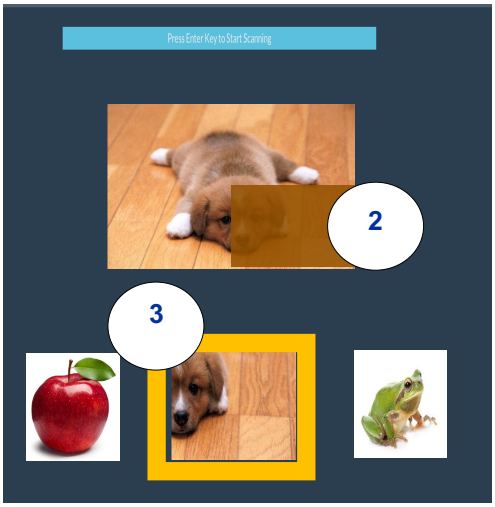
Our scanning software was made to be easy to use, while still being visually pleasing and effective. As you can see in Figure 1 our scanning software has a customizable profile that is unique to each user. We provide high level of individualization for the user, as they are able to upload a wide variety of videos and pictures to be used. We also integrated another unique feature that helps keep the user engaged by having the enlarged photo or video play after the user successfully completes the puzzle.

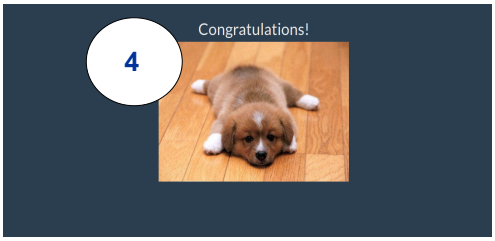
Conclusion

Our single switch scanning technology is a great option for young children. Our software provides a fun and interactive way to help young users learn to scan. Our software incorporates the ability to have complete user customization. We decided to make it more individualized to keep their attention and improve their motivation to learn to scan.

Figure 1 illustrates process flow for our scanning process







Acknowledgments

We also wish to thank our sponsors, The Hintz Endowment for Communicative Competence at Penn State University, and the Rehabilitation Engineering Research Center on Augmentative and Alternative Communication (RERC on AAC). The RERC on AAC is funded under a grant from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR grant #90RE5017). NIDILRR is a Center within the Administration for Community Living (ACL), Department of Health and Human Services (HHS). The contents of this poster do not necessarily represent the policy of NIDILRR, ACL, HHS, and you should not assume endorsement by the Federal Government. We also wish to acknowledge the support provided by Erik and Tom Jakobs (InvoTek), and Dr. David McNaughton (Special Education program, Penn State University)