

GenAAC: Augmentative & Alternative Communication Application with Generalization

CS530

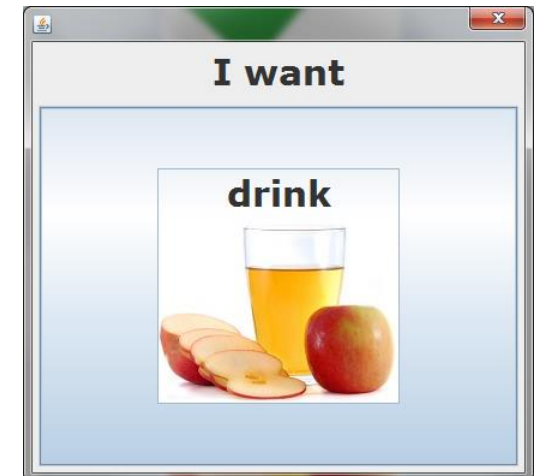
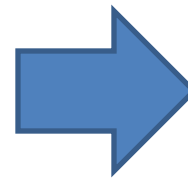
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System & Users

- Augmentative and Alternative Communication (AAC) is any and all communication, besides oral speech, that is used to express needs/wants/ideas.
- Picture exchange systems are used widely among speech-language pathologists as they are a preferred way of introducing alternative communication to a child with Autism.
- Most picture exchange systems use cartoonish pictures and don't help with generalization which teaches the child, for example, a car is a car, no matter if it's blue, red, an SUV or a sports car.
- My system is intended for children with Autism and features rotating, real world pictures to help children with Autism develop that essential skill which can increase their development into a functioning member of society.

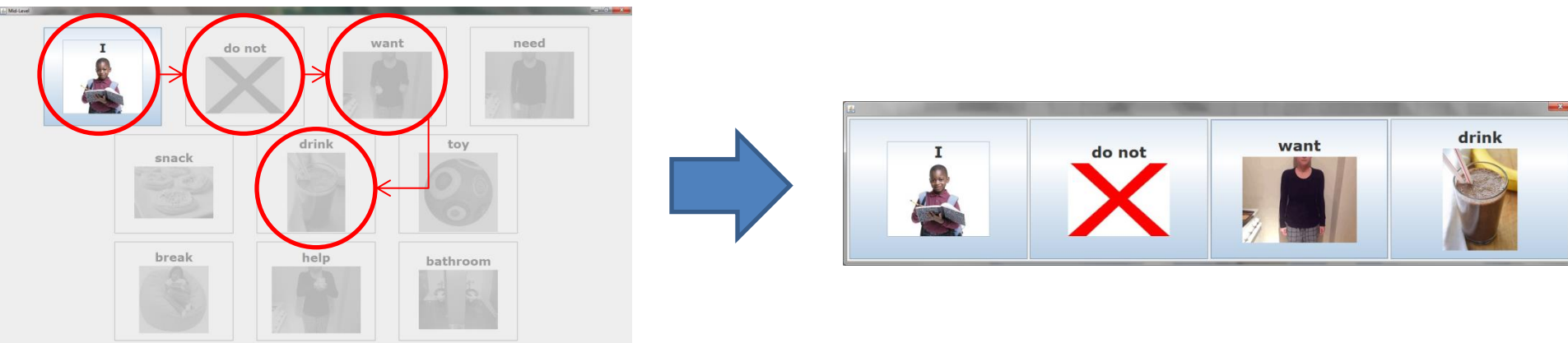
Implementation

- 3 Levels (Low, Mid, High) based on cognitive level of child.
- Pictures open dialog which uses text-to-speech API to speak want/need
- Low level (below) features only 6 buttons each needing only one button press to be used



Implementation

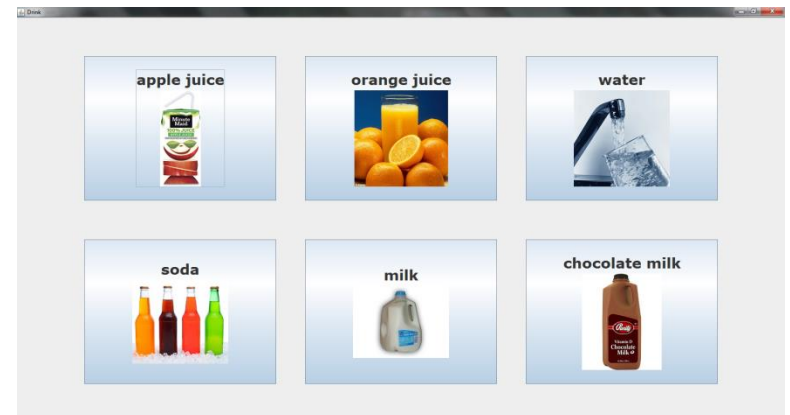
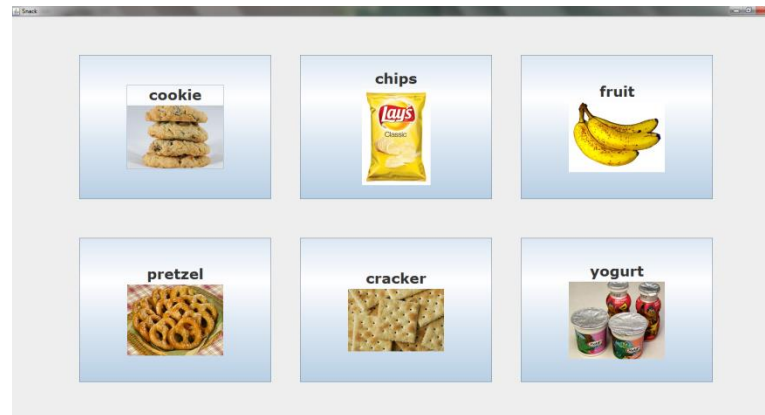
- Mid and High level share same base interface that allows a child to create a complete phrase.



- Buttons for “want”, “need”, and “help” display a gif showing the American Sign Language symbol for those words.
- Buttons for “snack”, “drink”, “toy”, and “bathroom” rotate after dialog is done speaking sentence.
- Buttons for “I” and “break” should be preset and will have an option to be uploaded by teacher in future development.

Implementation

- High level takes buttons for “snack”, “drink”, and “toy” and adds another screen to categorize each word.
- These categories also rotate through pictures.



Conclusion

- There are many AAC systems available like the picture on the right. All of them use cartoonish images that have the potential to only teach a child which button to press, not how to recognize these objects in the real world.
- With a system like GenAAC, students will not only associate the communication buttons with real world items, they will learn to generalize these words which will help them assimilate better in everyday society.
- Additionally, the sign language gifs will help them easily learn to use this as a communication device or help them learn another form of communication.
- For a demonstration of the application please click the following link:
http://www.youtube.com/watch?v=8pZTD_QLYks

