An Alternative Communication Device for Children

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Children require an alternative means of communication

Limited Physical ability
- Cannot Speak or Gesture
- Confined to wheelchair
- Can do one effective movement
Introduction

An alternative communication device

- A Child-friendly computer program that communicates the needs of the child
Basic Device Design

Need inputted → Message indicating the need
Basic Program Design

- On the Computer Screen:
- A virtual environment displayed that is filled with objects
  - Objects = The needs of the child
Picking Actions

- Basic Interface
  - Use of Scanning Agent
  - Single Button Control such as a mouse
Why use a scanning agent?

- Allows for easy object selection while accommodating for the user’s limitations
Software powered by FLASH

- Using FLASH
  - Familiar environment can be developed
  - Cartoon style graphics
Laptop Computer

- Advantage
  - Child can communicate on the move
Device Expectations

- Accommodates user’s limitations
- Promotes continual usage
- Easy to use and informative
Client Information

- Dr. Hallowell – Main Client
- Dr. McCarthy – Contact

- Ohio University Alternative and Augmentative Communication (AAC) Lab
Objective

- Help a person with communication disabilities
- Focus on a child’s needs
Virtual environment for children
Familiar Environments

- House
  - Kitchen, Bedroom, Bathroom

- Keep minimal
  - Clutter free choices
Methods

- Macromedia FLASH
  - 95% of computers in the world
- Attention grabbing character
- Ability to return to previous menu
- Single switch input
Hierarchical Structure

Example flow chart of product environment architecture for AAC device, 02-18-2007
Budget

- Laptop Computer
- Adobe Macromedia Flash Software
- Mouse Input Device
Laptop Computer

White 13” 2.0GHz MacBook with Mac OS X

Price:
$1,299.00 at Apple Store
$899.00 at UConn Co-op
Adobe Macromedia Flash Software

The software is required to create the interface the individual will use to communicate.

Price: $199.95
Mouse Input Device

A bluetooth mouse with a single button to act as the selection switch for the client.
Price:$49.95
Budget Total

899.00
199.95
199.95
☐ 49.95
+(tax): 68.93
$1217.83
Materials

- Sudden Motion Sensor
- Solid Polycarbonate Case
- High Definition Liquid Crystal Display
Conclusion (Design for Children)

- Needs to be simple
- Needs to be interesting
- Needs to be entertaining
Conclusion (Purpose)

Needs to clearly and effectively convey what a person is trying to communicate.
Conclusion (Better than Current Devices)

- Easier to learn to use
- Device is operated by a single switch
- Quicker communication by focusing on key elements
Quicker Communication

- Hierarchical menu system
- Friendly Character
- Focusing on essential elements
- Quick scanning
- Ability to make selections using a single switch