Designing Gestural Input Devices for the Classroom

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Project Description

- Use gestures and motion tracking to control applications
- To aid special needs students by providing an exciting alternative mode of input

Major Components

Hardware:

- Microsoft Kinect
- Laptop
- Display device

Software: - NI Mate - Max MSP

How it Works



Classroom Testing: Setup



Classroom Testing: Application

Used online puzzle software called JigZone



Classroom Testing



Classroom Testing: Trial 1

Lasted approximately 25 minutes

Two main difficulties:

The switch area was rather elusive
Student had difficulty selecting items

Classroom Testing: Adjustments

1. Enlarged the trigger and appropriated the environment

Classroom Testing: Adjustments



Classroom Testing: Adjustments

2. Introduced and increased rate of mousedown

Classroom Testing: Trial 2

- Lasted approximately 5 minutes (5x faster)
- Student had an easier time selecting items
- Less of a struggle remembering how to select

Community Partner

Immediately noticed several benefits:

 Adaptability of the interface
Potential for student-specific profiles
Advantageous to appropriate the classroom environment

Strengths

- Can be configured for click-and-drag or double-click modes
- More interesting for certain students, maintains students attention
- Direct correlation between right arm and cursor

Weaknesses

- Only click and drag or double click mode at a time
- Limits of physical abilities of users
- Students had trouble with the virtual switch
- Mouse style was a weakness
- Having 2 arms with 2 functions was too much

Tech Demo

Thank you!