UNIVERSITY OF MARYLAND

The Uses of Adaptive Switches

EDUC 477/689O

Devices Part III-B

Adaptive Switches

- Many of the switches you will find on the general market are designed to be used in one manner.
- For example, some switches are meant to be pushed by the user.
- This is not always the only way this switch can be used.
- Indeed, the actual name of the switch (press switch) most often constrains the way we think about using this device.

Adaptive Switches

We have to actively fight the inclination to narrow the use of the switch to one or two obvious uses.

- Begin by thinking of the **action needed to activate the switch**.
  - This is the physical action on the switch itself.
  - The action may be pressure exerted on the top of the switch.
- Next, think of all the possible ways that a person may create this action for the switch.
- Lastly, think about a variety of ways the switch can be used.

Adaptive Switches

- This switch is a **Big Red Switch** (a pretty intuitive name) manufactured by AbleNet, Inc.

Adaptive Switches

Information for you so that you can see what is meant by switch action, alternative movements, and potential uses.

Action	Movements	Potential Uses
•downward pressure on the red panel of the switch (i.e., compression of the switch)	•pressing down with the hand (as shown in the picture in slide before) •placing the switch to the side of the head, tilting the head to compress the red panel •placing the switch in the crook of the arm, bending the arm to compress the switch	•operating a communication device •turning on/off lights •turning on/off the television set

Exercise

- Think of several ways of using the following switches and ideas for using the switches in an educational, vocational, or community/home setting

Magnetic Finger Switch

Wait for the finger to move (in slideshow mode)

- This handy switch is operated by **bringing the two magnets together** (one magnet is pictured below the finger and one is sewn inside the leather sleeve on the person's finger) . This completes the electrical circuit and activates the device to which the switch is attached. Here the switch would activate a radio (not shown in the photo)

Questions: Think About

- What might be an additional function for this switch?
- What might be a potential application for this device

(i.e., What could this switch help a person with a disability to do?).

Grip Switch

- This switch is pictured sitting on the table (the small black cylinder with the wire attached to the toy).
- The switch is operated by exerting pressure inward across the entire external foam surface.
- This is most often accomplished by squeezing the switch.
- When the switch is squeezed, the elephant is turned on.

Questions: Think About

- What might be an additional function for this switch?
- What might be a potential application for this device

(i.e., What could this switch help a person with a disability to do?).

Infrared Switch

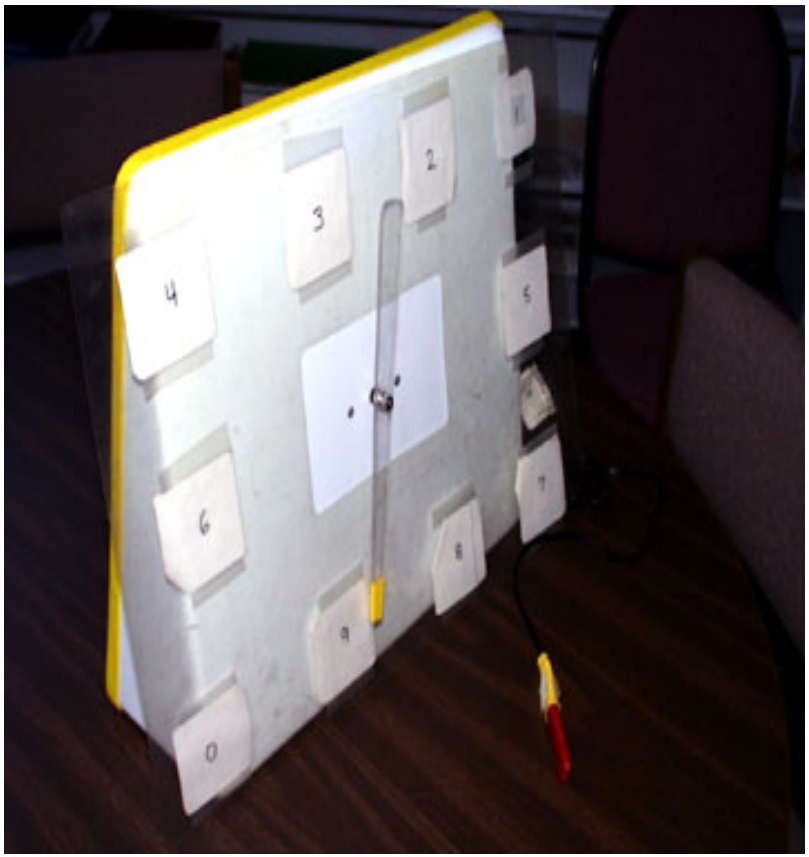
- The switch in in the hand.
- The switch is activated by **breaking the infrared beam** emitted from the small lens on the front surface of the switch (the shiny area on the small black box in my hand).
- Anything that passes in front of the small lens will break the infrared beam and activate the switch.
- When the switch is activated, in this demonstration, the communication device will speak a message.

Questions: Think About

- What might be an additional function for this switch?
- What might be a potential application for this device

(i.e., What could this switch help a person with a disability to do?).

Leaf Switch



- This switch is the small yellow and red device sitting in front of this communication device.
- The switch is activated by **bending the red portion either to the right or left** of its resting position (shown in this photograph).
- When the switch is bent the communication device pointer will move in a clockwise circle.

Questions: Think About

- What might be an additional function for this switch?
- What might be a potential application for this device

(i.e., What could this switch help a person with a disability to do?).

Roller Switch

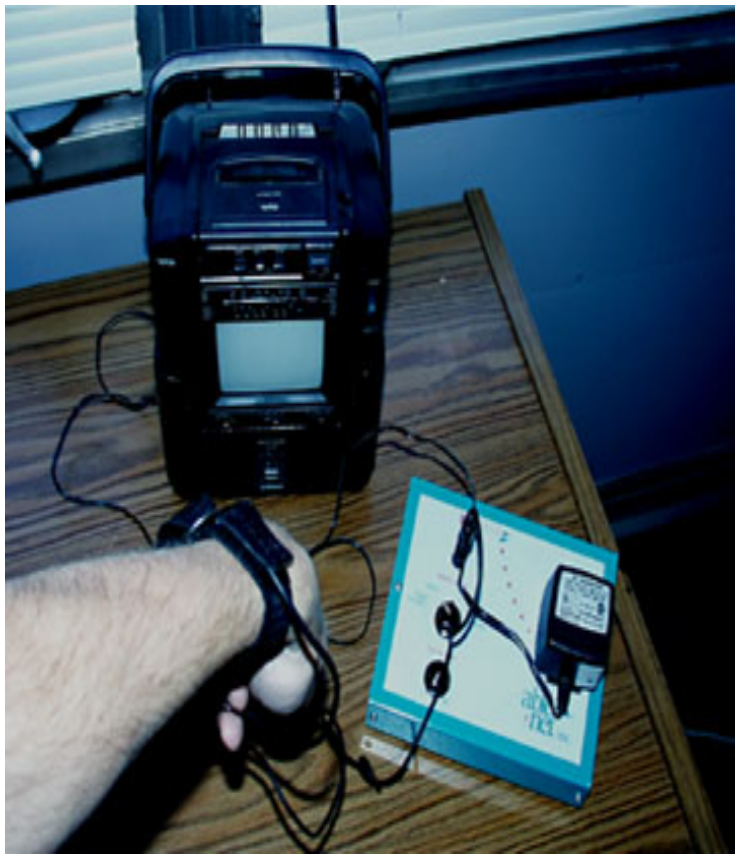
- The red switch pictured in this photo is the roller switch.
- The small wooden cylinder of wood in the center of this switch is **moved forward or backward** (rolled) to activate the switch.
- The switch, when activated, operates this environmental control unit that turns off/on a light in the room.

Questions: Think About

- What might be an additional function for this switch?
- What might be a potential application for this device

(i.e., What could this switch help a person with a disability to do?).

Tilt Switch



- The tilt switch in this photo is attached to the persons arm.
- The switch has a small mercury filled tube sewn into the Velcro on their wrist.
- When the switch is **tilted upward** the mercury falls to the bottom of the tube and completes the circuit - in this instance turning on the radio

Questions: Think About

- What might be an additional function for this switch?
- What might be a potential application for this device

(i.e., What could this switch help a person with a disability to do?).

Think About

- The Uses of Adaptive Switches

- Discuss some of the ideas you thought about related to:
- an additional function and potential application for each of the six (6) devices (i.e., What could the switch help a person with a disability to do?)
  - Magnetic Finger Switch
  - Grip Switch
  - Infrared Switch
  - Leaf Switch
  - Roller Switch
  - Tilt Switch