

Instructor

Module Three

* You have learned from the previous modules about many different types of switches. Think about your students and their abilities, what do you think you need to consider when choosing a switch for them? (**learners will brainstorm orally**) Before we start this module, lets try an activity. Larger control surface areas require larger switches. Try to access multiple switches that are keyboard keys with your heels. (**Divide the learners into groups of 3 allowing each group to work with a different size switch/keyboard; get the group back together after 3-5 min**)

** The purpose of this module is to demonstrate how student’s abilities may influence your choice of the most appropriate switch for your students. At the end of this portion of our training you will be able to:

- select a switch for a student based on the description of that student’s abilities
- correctly write down the definition of the control sites
- identify reliable body parts of specified students in the correct order
- identify switch types for various body parts
- correctly write down the definition of the range of motion.
- identify a switch that corresponds with a specific range of motion

Just like at the end of the previous modules, you will be receiving a job aid for this portion of the training. A job aid is something that can help you when using this material in the real world. The job aid you will be receiving will be a quick guide of all the information you are going to learn from this module. The material from this training will not be used everyday, so the job aid will assist you when you are ready to choose a switch for a student.

As teachers you know how to figure out the best way to teach the material to your students based on their personal abilities. Selecting a switch is done the same way. You have to know your student in order to pick the best switch for your student. This module will help you determine the steps to go through in order to find the correct control site for your students.

* Recall of Prior Knowledge & Gaining Attention Activity

**Instructional Purpose & Objectives

Directions are in bold

Learner

Module 3:_____

Instructional Purpose:

Name:_____

Notes:

Method of control sites

*The first thing you have to consider is what reliable body parts) does the student have.

Definition:

Control sites are body sites that the student with disabilities will be able to use to activate and control a device (switch). The presence of a disability alters the use of control sites. It is very important to choose a control site carefully. While choosing control sites you need to think about physical movement capabilities of each site. There is a certain order in which you choose one site over the others.

But before I will tell you the correct order to assess control sites, lets watch a video where the teacher goes through all the steps of choosing the appropriate control site with a student. While watching the video, I would like you to write down the order of control sites in which the teacher assesses her student's control sites. **(Turn on the video– watch the five minute segment)**

So here is the order of determining where to place the switch. Check your answers to make sure they are correct.

1. Hand/Finger
2. Head
3. Eye
4. Foot
5. Leg
6. Arm
7. Mouth/Tongue
8. Other Input Switches

Make sure to tell learners that more than one control site can be chosen.

Important aspects to tell learners

- You need to observe a child in his/her *natural* environment to determine the best "*switch site*"
- Switch site is the body part and *movement* that he/she is most *consistently* able to control.
- The movement should be *reliable*, meaning it can be *repeated*.
- Look for the movement that requires the *least* expenditure of energy and the one the *student* prefers.
- All members of the team should *observe* the student when he/she is using the *equipment* to determine if it is the most reliable movement.

The control site used in the picture is the hand.

In small groups create a diagram of assessing reliable body parts in order to select an appropriate switch. BE CREATIVE!!!! **(Break up the class into groups of three come back together after 10min)

* Presenting Stimuli
 ** Eliciting the Performance
 Providing Feedback will be done continuously based on the situation

Directions are in bold

Method of control sites

While watching the video, write down the order of the control sites the teacher uses.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

- You need to observe a child in his/her _____ environment to determine the best _____.
- Switch Site is the body part and _____ that he/she is most _____ able to control.
- The movement should be _____, meaning it can be _____.
- Look for the movement that requires the _____ expenditure of energy and the one the _____ prefers.
- All the members of the team should _____ the student when he/she is using the _____ to determine if it is the most reliable movement.



What control site is being utilized in the picture above?

Notes:

**Reliable Body Parts
Hands/Fingers**

*The first choice control site is “hands or fingers”. It’s enough to observe the student’s usual hand movements to figure out if that will be the appropriate control site. Can the person grasp, pick up, release, etc. objects?

Important aspects to tell the learners.

- Movements of the wrist are small and normally do not cause fatigue or stress.
- The wrist is a small joint with a limited range of motion, it lends itself to activating both manual and proximity switches.
- Tell the learners the difference between a manual switch and a proximity switch.
- For students who have strong muscle tone and “fisting” of the hand with strongly flexed fingers, sometimes providing switch activation with radial movement is effective.
- Switches can be placed around the hand with the use of splints or strapping which holds the switch close to the hand.

Fingers

Important aspects to tell the learners.

- Small finger movement for switch control is one of the most efficient methods of switch access for many people.
- One of the most overlooked switch control sites.
- Finger movements are less fatiguing.
- With finger bones being smaller, lever arms and forces of movement are small, often resulting in greater control.

**Does anyone have any questions?
Is everything clear so far?**

Instructor Notes:

*Presenting Stimuli
Providing Feedback will be done continuously based on the situation
Directions are in bold

Reliable Body Parts

Hands



Movements of the wrist are _____ and normally do not cause fatigue or _____.

- The wrist is a _____ joint with a limited range of motion, it lends itself to activating both _____ and _____ switches.



BIGmack

Manual Switch



Plate Switch

Proximity Switch

- For students who have _____ muscle tone and “fisting” of the hand with strongly _____ fingers, sometimes providing switch activation with _____ movement is effective.

Fingers

- Small finger movement for switch control is one of the _____ efficient methods of switch _____ for many people.
- One of the most _____ switch control sites.
- Finger movements are less _____.
- With finger bones being _____, lever arms and forces of movement are small, often resulting in _____ control.

Notes:

Hand/Finger Switches

*Lets look at some switch choices available for those students who have reliable hand and finger movements.

Plate Switch

Show learners an example of a plate switch and how it works.

Tell learners how the switch works and who would benefit from the switch.

Tell where they can order this switch from.

BIGmack or Jelly Bean

Show learners an example of a BIGmack and Jell Bean switch and how they works.

Tell learners how the switches work and who would benefit from the switch.

Tell where they can order this switch from.

Pinch Switch

Show learners an example of a pinch switch and how it works.

Tell learners how the switch works and who would benefit from the switch.

Tell where they can order this switch from.

Ask for any questions.

Now that you have learned about these switches, come up to the front and play with the switches.

Let learners come up and use the different switches. They can use the additional note section for comments they have when they use the different switches. Come back together after 5 minutes.

Instructor Notes:

*Presenting Stimuli
Providing Feedback will be done continuously based on the situation

Directions are in bold

Hand/Finger Switches



Plate Switch: Thin membrane switch; activated by light touch; limited strength and range of motion.

Available from www.enablemart.com

Additional notes:



BIGmack or Jelly Bean: Button or touch switches; requires full range of motion and relative strength .

Available from www.ablenetinc.com

Additional notes:



Pinch Switch: Very light pressure (less than 30 grams); one or two figures; limited range of motion.

Available from www.enablingdevices.com

Additional notes:

Reliable Body Parts: Head

*If the hand/finger movements are limited you need to look into other sites. The next site to assess is the head (including neck and cheek).

To start this section I will show you the video of Berry. Berry uses his head to activate a switch. (**Show the five minute video**)

Important aspects to tell the learners.

- Neck movement allows for flexion of the head and rotation.

Give the definition for flexion and rotation.

- Flexion– movement of the head to the sides, or backwards/forwards
- Rotation-Turning the head.
- Switches can be placed on the sides of the head or at the cheek.
- People with tone problems and associated reflexes sometimes have a difficult time controlling movements of the head without tonic neck kicking in.

Stress the cautions of using a head switch.

Important aspects to tell the learners.

- The jaw joints are the most complex joints in the entire body.
- If a switch is placed at the chin, the specific movement being used to operate the switch should be carefully determined.
- A mechanical, push-button switch could be activated with a forward movement of the head or opening of the jaw.
- It is very important to isolate the specific movement being used.
- For some students, requiring a jaw joint movement and opening of the mouth for accessing a switch interferes with saliva control and oral motor functions

Is everything clear so far?

Instructor Notes:

*Presenting Stimuli
 Providing Feedback will be done continuously based on the situation
Directions are in bold

Reliable Body Parts: Head

- Neck movement allows for _____ of the head and _____.

• **Flexion:**

• **Rotation:**

- Switches can be _____ on the sides of the head or at the _____.
- People with _____ problems and associated _____ sometimes have a difficult time controlling movements of the head without _____ neck kicking in.



Head movement for switch control should be very carefully considered given the possible problems with visual focus, eye control, attention to activity and tonic neck reflexes.

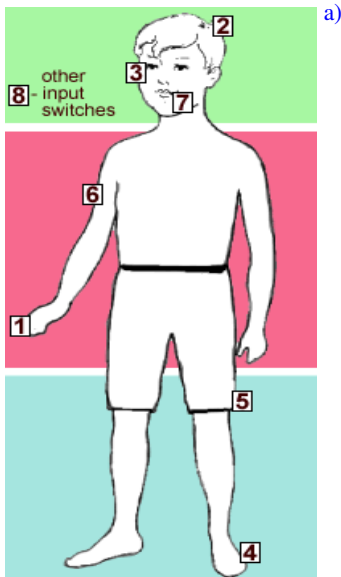
- The jaw joints are the most _____ joints in the entire body.
- If a switch is placed at the _____, the specific movement being used to operate the switch should be carefully determined.
- A mechanical, _____ switch could be clicked with a _____ movement of the head or _____ of the jaw.
- It is very _____ to isolate the specific movement being used.
- For some students, requiring a jaw joint movement and opening of the mouth for accessing a switch interferes with _____ control and _____ motor functions

Quiz

*Now that we have learned about control sites and reliable body parts, lets take a short quiz to see what you have learned. The quiz continues on the second page, make sure you continue after this page. **(Instruct the learners that the quiz is the page in front of them. When they are finished have them tear it out and swap papers with their neighbor)**

Answer Key

1. Control site are body sites that the student with disabilities will be able to use to activate and control a device (switch). The presence of a disability alters the use of control sites. It is very important to choose a control site carefully. While choosing control sites you need to think about physical movement capabilities of each site. There is a certain order in which you choose one site over the others.



b) False, His eye is the most reliable because it would be the next control site in the sequence.

*Assessing Performance
Providing Feedback will be done continuously based on the situation
Directions are in bold

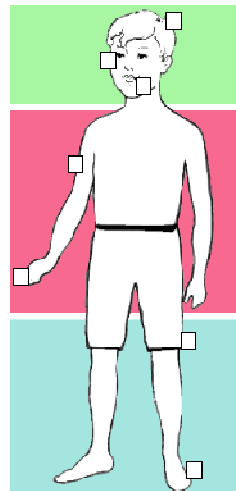
Quiz

Follow the directions to answer the following questions.

1. Please write down the definition for control sites.

2. Please a) number the reliable body parts in the correct order. Then, b) read the description of the student and identify the most reliable body part.

a)



b)

Chad is 11 years old. He has cerebral palsy, manifested in a severe quadriplegia that markedly limited his use of his hands, arms, and legs. He has little control of his head. Chad is highly motivated in using simple communication board that can be activated with a switch. What would be the best control site for Chad to activate the switch?

Chad's the most reliable body part is foot.
 True
 False

Explain:

Continue to next page

Quiz (cont.)*Answer Key:*

1. All-Flex arm-activated Switch; 5 Thread Switch Slot Control
2. d
3. Piezo Switch by Advanced Multimedia Devices Inc.
4. Middle picture – The two button foot switch

After everyone is finished (in approximately 15 min) have learners switch papers and give answers. Have them hand in the papers when you are finished

Quiz (cont.)

Using the materials, answer the following questions about switch types for various body parts.

1. Please write down one type of switch that can and should be used for the student who has reliable arm movements. _____
2. If a student has reliable hand/finger movements, they can use _____.
 - Push/touch switches
 - Lever switches
 - Proximity switches
 - All of the above
 - None of the above
3. Write down one specific switch that can be used by the student with the reliable eye movements.

4. Please select and circle one particular switch that could be used for a student who only has foot mobility from the list of different pictures of switches. (The names are not used on purpose. By the time of this test, students will know what these switches are, what they are used for, and what their names are.)



Test

*Now that you've learned about all body parts, different ranges of motion, control sites and how they come together in choosing a switch, you are going to take a final test for this module. Read the instructions and turn in the papers when you are finished.

Tell the learners where to turn in the papers. Grade the papers.

Answer:

- 1. full range of motion; strength; reliable head movements – use push-button switch activated by the head.
- 2. large range of motion but difficulty with grasping and/or pushing an object; enough strength (if she is able to use the manual wheelchair); reliable body parts: hands and fingers – use a lever switch, hand or finger activated (a chain switch where a child can make any movement with his hands that causes the chain to move against the metal bar).

**At the end of this module, we would like you to take 5 minutes to think about the following: First, close your eyes, think of a person/ student with a physical disability you know, become that person in your mind. Now, think about that person's abilities and come to a switch that you think would work best for that person. Try to access that switch with "your" reliable body part.

Switches distributed on tables around the room. Make sure there is a wide variety.

Instructor Notes:

* Assessing Performance

**Retention

Providing Feedback will be done continuously based on the situation

Directions are in bold

Test

Instructions: Please read the following descriptions of different students and their physical abilities and choose a specific type of switch for each student.

- 1. Eva is 17 years old and is nonverbal and no fine motor control. She uses a lightweight manual wheelchair to get around and needs a full-time aide in the classroom. She is quadriplegic so she has a paralysis of all four limbs but she seems to be pretty strong. Eva uses a simple laminated alphabet board with a red penlight attached to a baseball cap so she spells out words, sentences and phrases by nodding. The aide then reads her messages and records test answers in longhand. Eva wants to be more independent in the classroom as well as at home. She would like to be able to surf the web and send and receive emails, as well as white letters and reports.

- 2. Julie is a 7-year-old spirited girl who just entered the first grade. She has a diagnosis of cerebral palsy that affects mostly her speech. She uses a manual wheelchair to get around and has good motor control of her hands and fingers but has a hard time picking up objects, grasping and holding into items. Now that Julie is entering the first grade she needs an access device to participate in regular classroom activities.

Please Note:

The content represented in this manual does not cover all the material planned for Module 3. This is just a prototype of possible instructional approaches to this module, including samples of instructional strategies, sequencing, and messaging.

The instructor may choose to develop a PowerPoint presentation in order to teach this module based on the content represented in this manual.