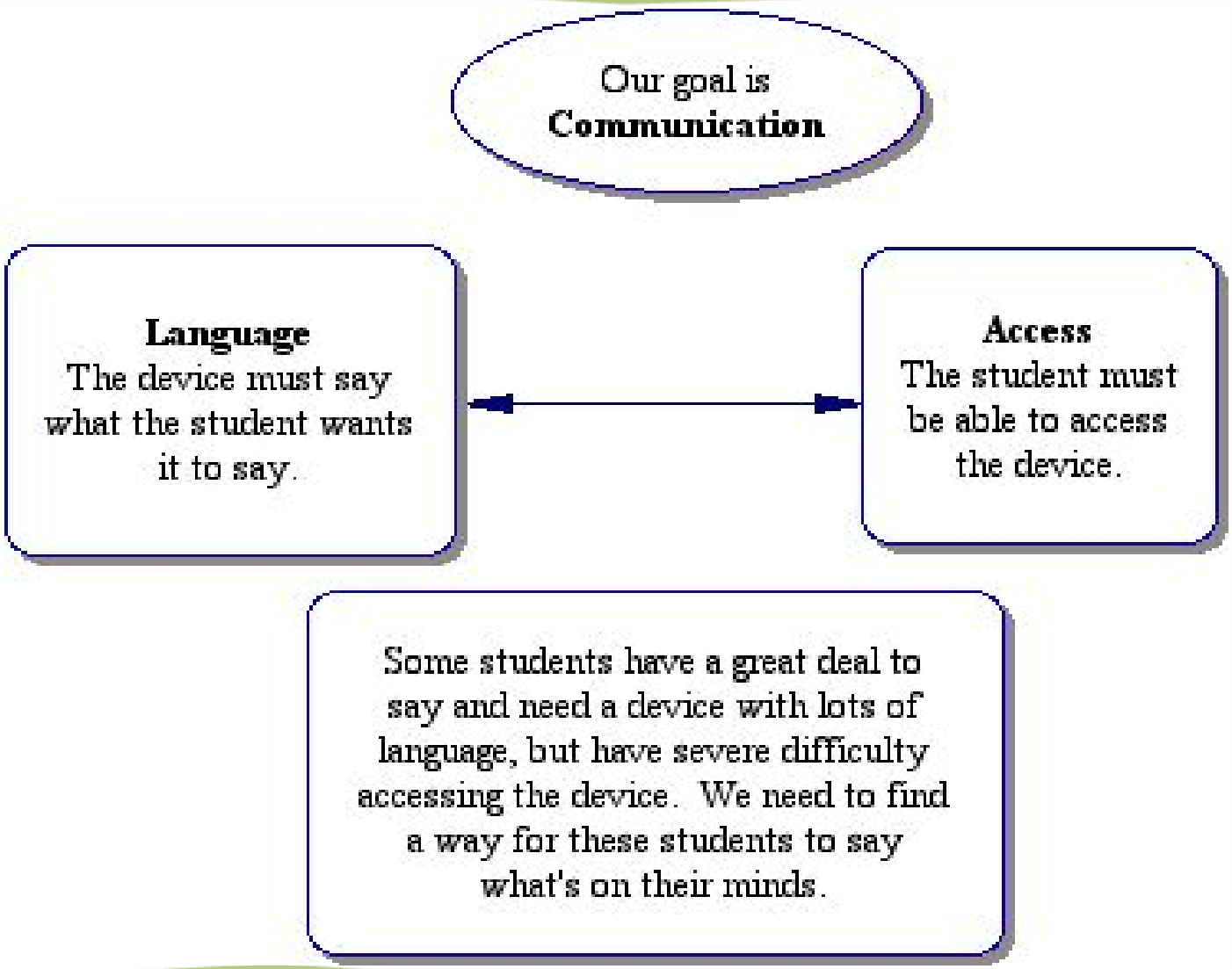
Promoting Access for 12:1:4 Classrooms

- Technology Solutions, D75


Our goal is
Communication
Language
The device must say what the student wants it to say.
Access
The student must be able to access the device.
Some students have a great deal to say and need a device with lots of language, but have severe difficulty accessing the device. We need to find a way for these students to say what's on their minds.

Learning Objectives

- Understand access considerations related to a student's profile
- Become familiar with methods of access available for communication
- Introduction of specific access options

Understanding Access Considerations

- How would you define access?

What Affects Access?

- Student's Profile:
  - Motor/Physical Considerations
  - Cognitive Perceptual Considerations
  - Praxis

Motor/Physical Considerations for Access

- Strength and Endurance
- Contractures
- Joint Instability
- Muscle tone
- Reflexive Movements

Cognitive-Perceptual Considerations for Access

- Perception
- Cognition
- Vision - acuity, attention, memory, tracking/scanning
- Auditory - processing, hearing

Visual and Auditory deficits

- These are not barriers to AAC
- These are opportunities for us to try and find Alternative means to allow children to communicate.
- Devices can be adapted or are specifically designed for students with these deficits:
  - auditory and/or visual and/or tactile cuing are often used.
- Visual or Auditory deficits do not automatically delineate the need for scanning with switch access. Students with especially strong praxis skills often learn to use devices with proficiency.

Praxis

- Defined as the ability to conceive, organize and execute a sequence of actions
- Higher level skill that enables a student to interact purposefully with a classmate or teacher and/or his/her environment
- Access must match the student's praxis skills

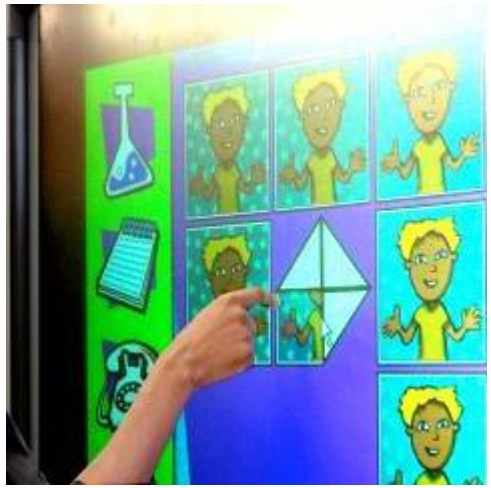
Matching Profile with Communication Method

- Low end $\Rightarrow\Rightarrow$ High End
- Objective is to match the device to the expressive language needs and abilities of the student
- Once the device is selected, how is the student going to use it

Often, device and access have to be two different but coinciding objectives

Methods of Access

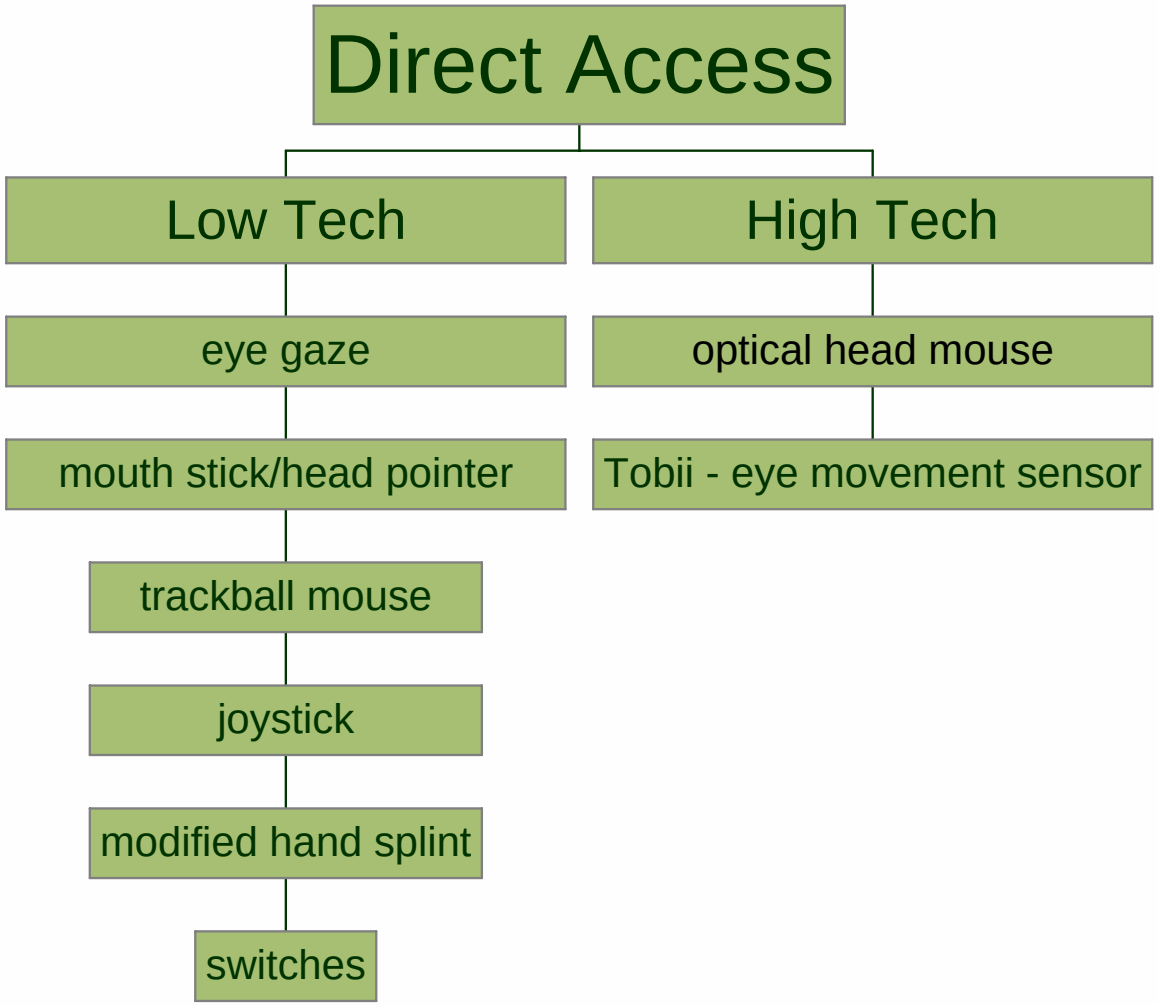
- Direct Access ⇒



- Indirect Access ⇒

Direct Access

- Preferred method - quick and efficient
- Part of body directly targets desired symbol to produce single message or multiple messages
  - Physically- requires fine controlled movements and is the most difficult selection method
  - Cognitively- immediate direct result from selection made, therefore easier to use cognitively


Direct Access
Low Tech
High Tech
eye gaze
optical head mouse
mouth stick/head pointer
Tobii - eye movement sensor
trackball mouse
joystick
modified hand splint
switches

Twitch Switch

- The Twitch Switch is activated by small muscle movement, such as wrinkling the forehead.

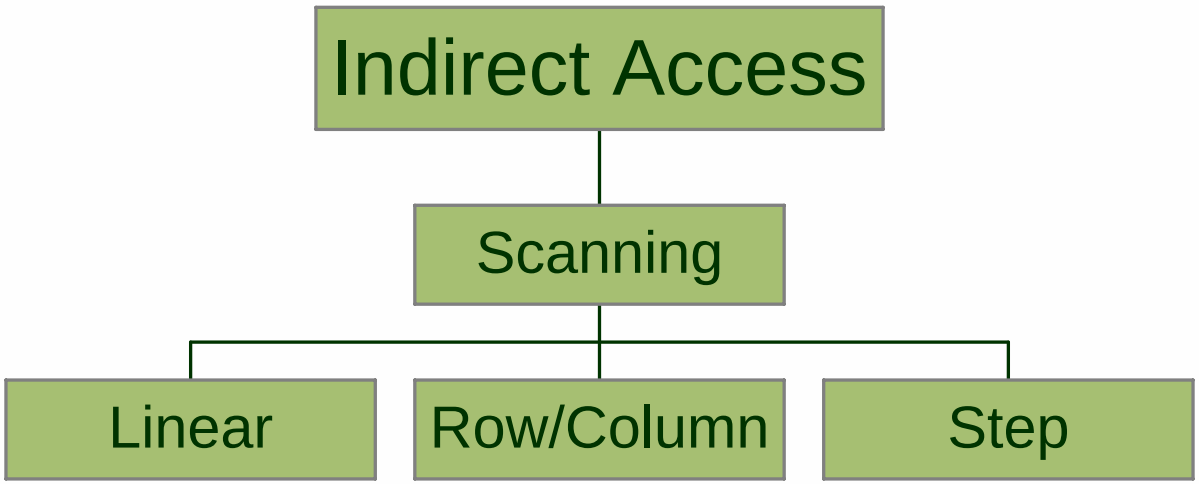
Image Courtesy of http://enablingdevices.com

TOBII

- Example of a high tech direct selection access option that is being developed.
- Uses eye movements to select on screen.

Indirect Access

- Requires use of intermediary steps in making a selection (i.e. Scanning)
- Use of indirect access requires:
  - Good visual/auditory tracking
  - High degree of attention
  - Ability to sequence
- Using indirect access requires the use of a switch to interface with the device.


Indirect Access
Scanning
Linear
Row/Column
Step

Checklist for Static/Dynamic Display Devices

Operational features to consider when selecting a switch

- What part of the body will be used?
- How much pressure is required to activate the switch?
- Can action be sustained despite fatigue?
- Can the force required to activate the switch be graded from light to hard pressure?
- How much time and how much motion is needed to move off the switch to deactivate it?
- What is the feedback mode: tactile, auditory, visual, or propioceptive.
- What is the size of the contact surface?
- What selection method is required? (step scanning, linear automatic scanning)

Positioning of AAC Device

- Position of switch or placement of AAC device should not interfere with other ADLs
- When possible, the mounting system should be transferable to accommodate the consumer in a wheelchair, at school and home.


LET ME SEE
What did you say?
turn the page
I can't see
The End

Environmental Control via Access

Types of Switches

- Hand:Big Red, One-Step, Ultimate Switch with wobble end, Jellybean, Plate, Grasp
- Head: Jellybean, Pillow Switch, Ultimate Switch, Button Switch
- Finger/small muscles-Twitch Switch, Lever
- Leg/Foot-Big Red, One-Step, Ultimate Switch, Plate Switch
- Mouth: Sip and Puff, Mouth stick, Tongue
- Cheek: Twitch switch
- Eye: Blink switch

Examples of Switches

AAC Evaluation – Team Roles

- OT – determine fast, reliable access methods that allow the student to say “what’s on his/her mind”
- Speech therapist – to determine the student’s linguistic level and what device software would best help the student communicate
- Teacher and paraprofessionals – cognitive and academic assessments; facilitate communicative opportunities throughout the school day
- Parent – provide information about topics of interest to the student and places that the students goes to and communication partners.

Thank You

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