Switch Access Beyond Cause and Effect: Stepping Stones for Effective Learning

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Switch Access Beyond Cause and Effect: Stepping Stones for Effective Learning Part 2 of 3

Timing!

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Which Kids?

- Physical Challenges that limit direct select access to a computer display
- Frequently other multiple challenges such as: CVI, Complex Communication Needs, Auditory Processing challenges, cognition, learning differences, previous experiences, etc.
- Individuals who need multiple access methods due to physical position, fatigue, environmental factors, strategic competencies, and preference

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"Hit the Switch"

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There is more to using switches than getting a child to "hit the switch"

Individuals need to LEARN to use switches

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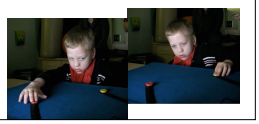
Teaching Switch Access

- Before being able to use switches for learning, individuals need to develop automaticity for switch use
- Learning to use a switch to the point of automaticity for access is a process

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Developing Automaticity takes practice:

Thousands of Repetitions with Intent, Purpose, and Variation

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No One Starts with Automaticity of Movement

Motor Skills are Learned

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When you do something fast, you can only use motor skills that you have already developed to automaticity….

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When you do something fast, you can only use motor skills that you have already developed to automaticity….

You can not improve or refine your motor patterns without slowing down and attending to what you are doing

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When a child's only option is to use a current automatic motor pattern

- Automatic movement patterns will not get better in quality, simply through repeated use
- Attention to movement is required for learning
- Supports and Learning are needed to
  - Begin in a healthy position
  - Learn to move in a healthy pattern


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Using two switches without timing is frequently easier and leads to development of more controlled refined movements than using one switch with timing demands

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Automaticity is a Level of Skill Where You No Longer Have to Consciously Think About Performing that Skill


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The Juggling Act and Working Memory

Sensory, Motor, Language and Cognitive skills

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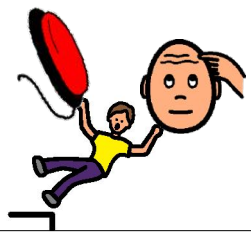
Always Balance Cognitive and Motor Difficulty



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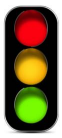
Keep some aspects of an activity easily within the child's capabilities when adding new,
more complex demands



RED, YELLOW, GREEN planning

- Balance things that are
  - Difficult – New learning
  - Easier-newer vs harder-familiar
  - Easy - Automatic
- Can only have one red!

(Erickson)

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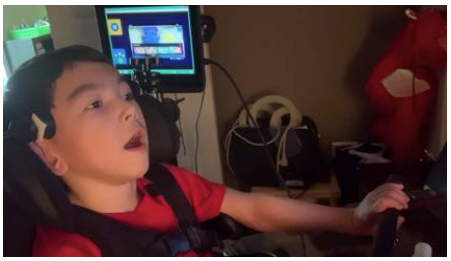

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Juggling Explains Inconsistency of Performance

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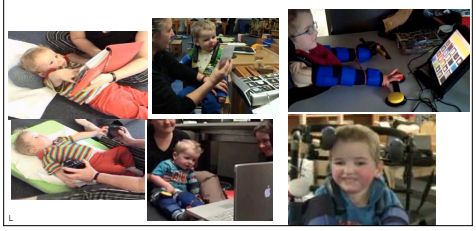
Parallel learning for development of autonomous, independent communication



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Parallel Learning!

Team plans long term direction and works on skills in parallel

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Focus on one component or skill within each activity, or part of activity

- Reduce motor load for difficult cognitive, language and academic tasks
- Reduce cognitive load for motor learning tasks
- Teach switch access as a separate but parallel skill to language and academic learning

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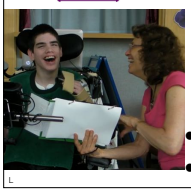
"Non-Electronic" partner-assisted scanning Communication Book for Communication



(Auditory plus visual partner-assisted scanning PODD)

- Reduce motor load
- Reduce vision load if needed

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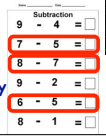
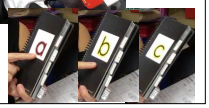
Non-Electronic Academic Modifications

Testing adaptations

Writing with the Alphabet "adapted pencil"

Reduced quantity of work





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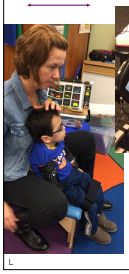
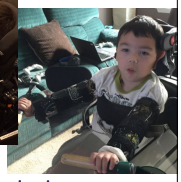
Develop Motor Control and Active Positioning





- Reduce cognitive load
- Reduce language load
- Reduce vision load if needed

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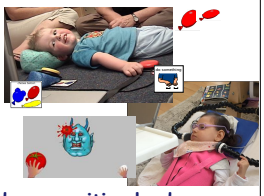
Switch Play to Develop Motor Skills for Switch Access



- Reduce cognitive load
- Reduce language load
- Reduce vision load if needed

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Mind Express
Steps Before Step Scanning: Two Switches (Burkhart)

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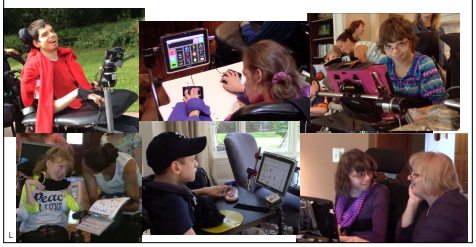
Eventually: Combine Motor, Language, Academic and Vision Skills to Operate a Communication Device and Technology for Learning



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Types of Scanning

- Automatic Scanning (1 switch)
- Inverse Scanning (1 switch)
- Automatic Scanning with backtrack (1 switch)
- Step Scanning with a Delay (1 switch)
- Step Scanning with hold longer for selection (1 switch)
- 2 Switch Step Scanning (2 switches)

F demo

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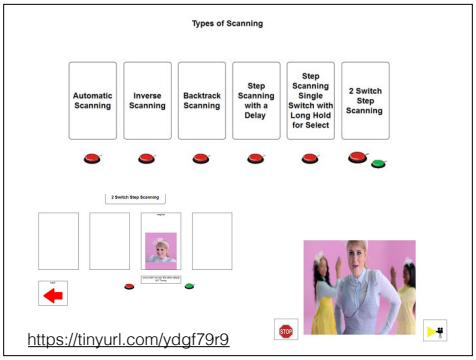

https://tinyurl.com/ydgf79r9

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Launchers

- At the early stages the partner models how step scanning works by selecting the activities for the individual using their switches
- This provides a scaffold for how step scanning works
- Once the individual begins using two switches, they have opportunities to explore a launcher and experiment selecting activities randomly themselves

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Mind Express
Steps Before Step Scanning:
Two Switches (Burkhart)

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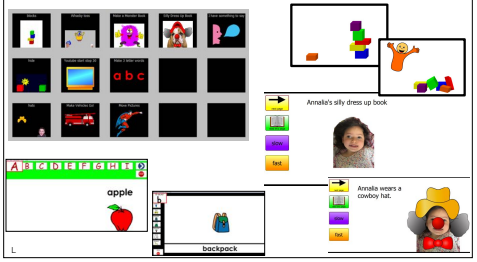
Personal Student Launchers May Include Activities at Several Stepping Stones Mind Express (Burkhart)



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Why Two Switch Step Scanning? vs. Automatic/Timed Scanning?

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Eliminate Timing
(Timing requires automaticity)

You need to slow down to learn the graded movement

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Active vs. Passive

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Two Switch Step Scanning: Scan does not move if attention shifts or wanders

- Requires less demand on concentration
- Allows for for possible distractions
- Encourages appropriate social pragmatics to relate to others who might talk to them during the scanning

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Two Switch Step Scanning: Allows Child to Pace his Own Processing Time

Child is in control of the timing

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Two Switch Step Scanning: Allows Child to Pace his Own Processing Time

Child is in control of the timing

Once automaticity is achieved, then some individuals move to timed scanning and some continue to use step scanning

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Fatigue

Step Scanning

- May be more physically fatiguing
- Provides multiple opportunities to practice switch use and develop motor control
- May help to develop endurance when learning to use switches

Timed Scanning

- May be more cognitively fatiguing
- Need to maintain focus
- Less physical fatigue - especially for degenerative disabilities

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Next Webinar:

- How to begin teaching 2 switch step scanning
- Stepping Stones 4 - 8

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