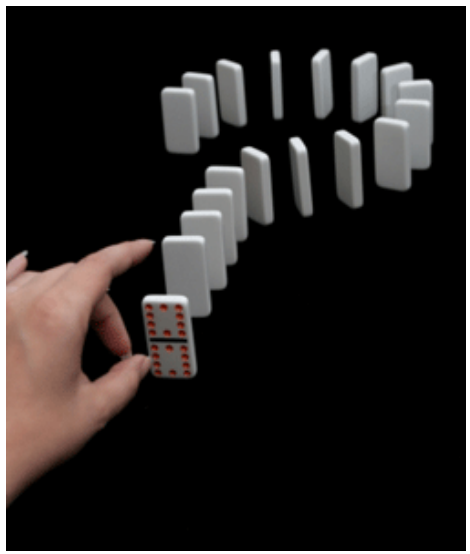
Making Something Happen!

# Emerging Communicators
# Is cause and effect all we can do?



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# Presentation goals

Participants will:

- **Differentiate learning** needs for students with access challenges (due to sensory motor deficits) from students with cognitive challenges (emerging communicators)
- **Understand and assess the stages of sensory motor learning** and how they relate to communication and literacy development
- Be able to **determine strategies and tools** that facilitate the student to move towards the next stage


# EMERGING COMMUNICATOR

**Emerging communicator**[1]: is “an individual who does not yet have any reliable means of symbolic communication, although he/she typically has non-symbolic communication. This communication, for example using gestures and facial expressions, can be very useful with highly familiar partners, but it tends to be limited to the "here and now" or rely heavily on the partner's shared knowledge.”

[1] Dowden, 1999;
Augmentative and Alternative Communication at the University of Washington, Seattle
http://depts.washington.edu/augcomm/03_cimodel/commind2a_emerging.htm


# **Emerging Communicator:** Behaviour/Response Characteristics

They often **do not**:

- Appear interested in physical objects/toys
- Reach consistently for the object they are looking at or look at objects that are placed in their line of site
- Have a favourite toy that the caregiver can identify
- Seem to anticipate pleasurable activities or events


# Emerging communicators vs students with severe motor/access challenges

Children and youth with severe motor access challenges:

- may have achieved the symbolic level of cognitive ability (we must always assume they are competent)
- find it difficult/impossible to demonstrate their learning & knowledge through movement or speech,
- can learn to use picture communication or speech generating devices to communicate & perform

Children & youth with significant access difficulties may need to use switch access; but they should not be stuck with cause and effect activities because of their physical disabilities.


# Student assessment
# SETT framework components

Student assessment: skill capacity versus performance
- Bio-behavioral state (health, comfort, arousal, seizures, medications, hunger,…)
- Sensory (vision, hearing, tactile/proprioception),
- Physical (tone, reflexes, position, movement control)
- Access (control act, orientation, location/placement)

Environment: Physical facilities, equipment available
- Supports/people (skills, availability, attitude, culture,
- Barriers/obstacles versus facilitators/enhancers

Tasks: Activities (productivity, performance, participation)
- Family and curriculum expectations, SMART goals

Biobehavioral states
http://www.usdb.org/DB/FSS/DeafBlind/DISH/BiobehavioralStates.html


# Motor Control of Access

L Burkhart, Two Switches for Success, Nov 2004

Using voluntary, controllable movement or sound, the student activates switch and anticipates or responds to object's feedback (makes the cause & effect "connection")

- Is able to locate, recognize and use one switch
- Activates & releases, holds down switch and/or waits on demand
- Uses 2 switches (knows different functions of 2 switches each differs in response/end object)

(switch access goal – attend to task, not switch)


# Motor Control of Access

- Uses 2 switches for step scanning (takes 50-60+ repetitions for person with neurological impairment to learn to scan)
- Uses multiple 3+ switches (once trained) – activates 2 or 4 switches to to direct the scan & 3rd/5th to select choice)
- Scans with timed activation (optional)
- Uses an adapted mouse (3-5 switches) access (IK, switch array, joystick, SGD, …)
- Uses onscreen choice grid or keyboard (symbolic representation)


# How learning occurs

- The body receives information from a variety of stimuli and makes connections or assimilates the information as a consequence of the experience and normal maturation.

- Over time, the child experiences repeated exposure to the stimuli and begins to discriminate (determine the differences between desired and non-desired stimuli) and to react differently to the different stimuli (accommodate) thus developing a new view (concept) of the world [1].

[1] Piaget: Concepts Before Words: and Egocentric Speech Before Social Speech, 5/4/00 (ehall@csun.edu) http://www.csun.edu/~vcoao0el/de361/de361s121_folder/


# PARTNER STRATEGIES

DEEP Meaningful Connected Messages

- **D**ynamic  voice
- **E**ngage – smile
- **E**xpect
- **P**acing
- **Meaningful**
- **Connected**
- **Messages**


# Why Master the Sensory Motor[2] Level? Implications for intervention

Mastering sensory motor learning is necessary in order for children to enter the symbolic stage of learning when they "climb onto the linguistic bandwagon."

The education of children who perform within the symbolic stage can usually be accommodated at school through curriculum modifications and accommodations.

[2] Piaget: Concepts Before Words: and Egocentric Speech Before Social Speech, 5/4/00 (ehall@csun.edu)
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# Overview of Sensory Motor Stages

## Sensory Motor Stages

### Stages of Emerging Communicators*

- Stages 1&2: Incidental (reflexive)
  preintentional communication
- Stage 3: Exploring
  presymbolic unconventional intentional communication
- Stage 4: Choice Making (errorless)
- Stage 5: Purposeful Choice Making
  presymbolic conventional intentional communication

## Symbolic stage

***Emergent Communicators – Communication Profiles, Alicia Garcia, Bloorview Kids Rehab**


# Sensory Motor Stages 1 & 2: INCIDENTAL (Motor characteristics)

Reflexive or random movement of the limbs or the hands cause accidental contact with the stimuli

"*I can make something happen but I don't know how I did it*"

Child notices the stimuli's response by –

orienting head towards stimulus, listening, looking, startling, withdrawing a limb, repeating the movement, vocalizing, smiling, and/or making another response to the contact/touch


# INCIDENTAL
## Motor Intervention

There must be a direct, immediate, proximate and visually obvious connection between child's movement and response from object/toy

Suspended or stationary toys that when contacted attract the child's attention through multiple sensory responses

**Goal – to increase the child's awareness of and response to consequence of his actions**


# INCIDENTAL
## Tool Examples

Watch for and immediately and enthusiastically reinforce the student's anticipation and/or looking behaviours

- Attach toys, bells, eye catching jewellery to limbs
- Place interesting object that respond when contacted (large soft balls, coloured block tower, balled socks) that can be knocked off the desk
- Use busy boards, suction mounted toys,
- Suspend chimes, lights or toys within reach
- Play interactive & imitation games (peek-a-boo, musical finger plays)

Low tech: switch toy, tape recorder with switch access


# INCIDENTAL Communicators
## Pre-intentional communication

At this level their “reactions” are not connected to their environment

- May not seem to notice or care if other people are around, however, they may make some social responses (e.g., smile when tickled)
- Do not yet understand that they can affect other people by sending a message
- “Do not communicate on purpose.” Their partner may assume or perceive “communication”
- Exhibit signals whether or not a communication partner is available

(Emergent Communicators, A Garcia, T Hunt; BKR/CTN 2007 )


# INCIDENTAL COMMUNICATORS
## Communicative Signals

The student may indicate or signal a desired object or choice - through reactive behaviours, like:

- changes in muscle tone
- changes in posture
- body movement (motor control-limb/finger)
- head movements
- facial expressions
- crying / screaming / fussing
- laughing / smiling
- looking
- vocalizations/changes in voice (loudness, duration, tone)

Shows: perception of a change in the environment (hear, see or feel a change and respond in someway)


# INCIDENTAL
## Communication intervention

**Communication Goals:**

**Establish a consistent means to initiate interaction and to bring attention to self**

**To increase the frequency & consistency of communication attempts with different partners**

INTERVENTION

Pair the student's non-intentional signal with your interpretation of a consistent response frequently to help the child to develop intentional communication


# Sensory Motor Stage 3: EXPLORING

Student is engaged in the activity and intentionally reaches out to directly contact or watch the activity or adult.

"*This and other things I do can make a variety of different things happen*"

Child reaches out or attends to the environmental stimulus and makes the cognitive connection between their actions and the object's response.


# EXPLORING: Intervention

Provide activities that demonstrate an obvious (visual, tactile, auditory) connection of stimulus (e.g., switch) and effect (e.g., battery toy)

–Both the activities and the partners provide immediate, positive, enthusiastic (multi-sensory) reinforcement.

GOAL: **to increase intentional responses by providing immediate consistent multisensory reinforcement**


# Exploring Tools

- Interesting toys with attractive features (textures, noise, movement) that promote reach, grasp and manipulation
- Secure the items so they remain available

Low tech: battery toys with short visible connection to switch, step by step

High tech: books on computer, single switch cause effect programs


# EXPLORING Communication Characteristics

Student:

- Begins to imitate partners (sounds, movements)
- Begins to attend/listen to cues from partners
- Notices changes in responses from partners and objects
- Persistently tries to achieve his goal (shows satisfaction or dissatisfaction after achieving the goal)
- Beginning to use communicative signals with communication partner (pushes away/tugs at apron)
- Often responses are inconsistent and client has a low rate of communication that is limited to the “here and now” – concrete concepts


# EXPLORING Communication Intervention

Support student to

- Develop use of gestures, signs or pictures to request, reject & communicate socially
- Increase ability to produce intelligible or unambiguous communicative acts
- Increase frequency of initiations and expand the range of purposes for student to respond and interact
- Make connections with words


# Sensory Motor Stage 4: Choice Making

The child uses tools to make other things happen (indirect cause and effect)

*"The responses I get from my behaviours or actions are tools for making other things happen"*

The child:

- intentionally uses an object or person to go between himself and the stimulus,
- demonstrates control of stopping & starting, early turn taking, early trial and error
- no longer needs an obvious connection of the stimulus/ tool to the response/effect
- begins to realize that different objects can be manipulated differently


# Choice Making Intervention

Provide errorless activities with intrinsic rewards that encourages the student to make a meaningful choice in an interactive context.

Provide opportunities to control the environment

Pair objects, actions and events with basic symbolic representations to associate meanings of symbol with outcome

Goal: **child uses tools in a systematic way to control or interact with a target, demonstrating control of starting and stopping the activity independently and following direction by an adult.**


# Choice Making Tools

Only 2 or 3 choices are presented and there is no one right answer.

- Play materials/games that offer 2 simple choices (dressing doll)
- Turn taking games (vocalizations/singing)
- Joint looking at picture book
- Use photos, graphics or colour coding to differentiate objects
- Encourage child to indicate a desire for something to occur (drink, next bite)
- Basic matching and sorting of small number of concrete materials (learning or daily life objects)

Low tech: Use 2 battery toys with separate switches (child chooses)

- 2 Big Macs or SGD to respond to choices
- ECU, like a Powerlink, set up to two kitchen devices

High tech: choose activities that require identifying or matching an attribute, making a choice, sequencing, (ITCS Activity Exchange activities, single switch choice software) - but - no right answer


# Choice Making Communication Characteristics

- Deliberate attempt to gain partner's attention
- Makes choices between two objects
- Attempts to convey a specific message with communication partner
- Persists in achieving goals & shows satisfaction or dissatisfaction
- Might be inconsistent in communication attempts
- Continues to use unconventional signals
- Beginning to use gestures/signals for variety of social purposes


# Choice Making Communication Intervention

- Expand use of gestures, signs or pictures to request, reject and communicate for social purposes
- Replace unconventional communication signals with more conventional messages
- Increase frequency of initiations and expanded range of purposes for communication
- Develop turn-taking
- Help student refine, expand & make consistent their response mode
- Increase independence/decrease prompts


# Sensory Motor Stage 5
# Purposeful Choice Making

Child engages in sensory motor problem solving, inventing new means of interacting with the environment through mentally combining experience and learning

"*Different responses I make (towards the stimulus) lead to different kinds of action and information (responses)*."

The child:

- Copes with and problem solves around basic changes in the set up of the environment (stimulus), the action that is required, and the response (feedback) provided.
- Has developed some symbol/object associations,
- Adjusts gaze from near to far point and tracks moving objects (if not visually impaired), and,
- Indicates when actions should start or stop.


# Purposeful Choice Making Intervention

- Student can now understand different purposes and functions for different objects, actions and events (meaningfully use multiple button devices, computer, etc.)
- Language development is progressing (basic directions, language concepts, early symbolic representation)

Skill mastery includes

- purposeful choice making (choose only the desired or “right” answer to demonstrate knowledge)


# Purposeful Choice Making Tools

Provide a few options for making one correct choice. Encourage trial & error then follow though with the natural consequences

- Use early learning material for sorting, patterning, practicing spatial relationships (e.g., graspable toys in a constrained space)
- Daily choice making with nominal natural consequences (clothing)
- Child directs where staff move w/c or how to go somewhere
- Use stamps with built up handles for patterning or picture making

Low: call bell to initiate communication, request help

- 2+ Big Macs: respond to questions (not “yes”/”no”
- ECU to engage in recreation, leisure activities or interact with peers

High tech: Software to increase visual/auditory attention, discrimination, concept development and memory. Start with concrete representation, gradually add categories (animal) and build spatial concepts (L-R. top/bottom), and sequencing (first-next-last)


# Purposeful Choice Making Communication Characteristics

- Language comprehension developing
  - Increasing vocabulary (abstract concepts such as categories, attributes, spatial relations)
  - Following more complex directions
  - Attention span increasing
- Expressing wants and needs through symbolic representation (using gestures, pictures, PCS)
- Making choices from an array of more than two items
- Beginning to convey abstract ideas (i.e., events outside here & now, feelings)


# Purposeful Choice Making Communication & Literacy

- Aware of environmental prints & logos
- Recognizes pictures in books
- Engages in some symbolic play (uses one thing to stand in for something else/pretend)
- Matches identical objects or 2D photos/ PIC to 3-D objects
- Correlates 1-1 symbols with meaning
- Not restricted to here and now (abstract)
- Doesn’t display signals unless partner present


# SYMBOLIC STAGE: Inventing new means by mental combinations

By this time the child is:

- Beginning to think symbolically (which supports the development of his memory).
- Using mental images and concepts to represent or symbolize people, objects, events in the world.
  - Drawing – use series of lines to represent objects
  - Fantasy play – pretending things are other than they are
  - Deferred imitation – mimics an action some time after observing it
- Developing language structure

Symbolic thought facilitates problem solving so child does not need to be engaging in a concrete “hands on” activity (instead he can mentally combine schemas without needing to physically explore, manipulate, and do things). He starts to think before acting.


# Education for All
# Universal Design for Learning


Expert Panel Beliefs

- All students can succeed
- Universal design and differentiated instruction are effective and interconnected in meeting learning needs
- Classroom teachers are key educators
- Each child has their own unique pattern of learning
- Classroom teachers need the support of the larger community to create a learning environment that supports students with special education needs
- Sameness is not fairness


# Education for All
## Differentiated Instruction

- Provide ALL students access to the curriculum
- Learning is a continuum
- Every student is unique and will benefit from a flexible, supportive and adjustable curriculum (student-based pedagogy)
- Focus is on how to teach to a range of learners


# Education for All

## Differentiated Instruction Strategies

- Motivate learning
- Immediate, specific feedback
- Moderate risk-taking
- Tolerant environment
- Reinforce belief that all students can learn with frequent praise
- Organize physical setting to meet needs
- Clarify routines and expectations
- More positives than negatives
- Actively involve all students

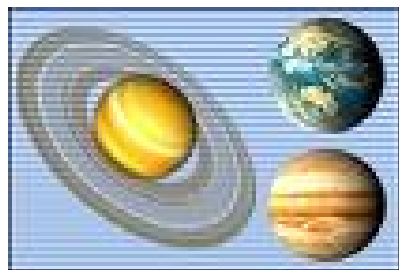

# Universal Design for Learning
## Science – Space Unit

Incidental – planet mobile with various textures & sounds (hard, soft, tactile, rattles),

Exploring – hit switch for categories activity on All-Turn-it spinner

Choice making – turn on a light that represents the sun to demo phases of the noon/day & night, sandbox tools to find moon rocks

Purposeful – sorting suns & moon shapes, matching PCS labels with objects from the target vocab, dress the astronaut: sort clothing




# Universal Design for Learning Participation in Music

Incidental: attach musical instruments, chimes to body, wheelchair, etc.

Exploring: present instruments to explore with touch & movement, switch access computer music, use SGD to “sing along”

Choice-making: turn on music, choose music song, instrument, present different styles

Purposeful: choose preferred music, song, instrument, loudness, style, etc. increased number of choices and complexity – choose next sentence in song, etc.


# Participation

How the student is engaged in the activity

Independent:

- Active control over the input method, engaged with activity for specific period with intermittent monitoring by staff
- Engaged in trial and error and/or problem solving behaviour

Interdependent:

- Turn taking (reciprocal interactive behaviour)
- Directs staff or peer to activate/control

Dependent:

- prompted or directed by peer or staff,
- physically assisted by peer or staff
- being taught


# Making Something Happen! (2007) posted on Bridges Conference wiki

- MSH Rationale
- Assessment forms
- Examples of tools
- Samples: Activity Exchange activities
- How to use the materials (AE, overlays)
- SETT overview,
- Access method overview
- Early literacy and numeracy activities (AE)
- Resources