



Switch Use Part II: Growing Switch Use for Communication

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NWACS Evening Seminars

June 8, 2023



Switch Use Considerations – Summary from April’s Evening Seminar with Donna Cole Wilson

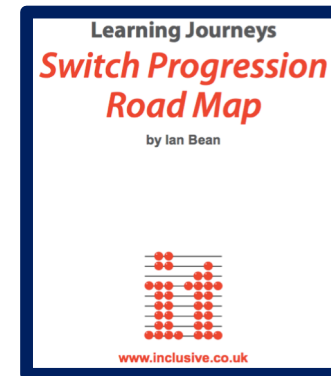
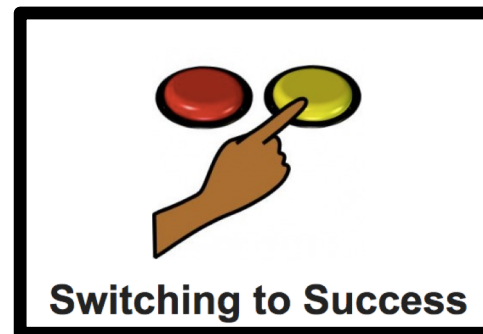
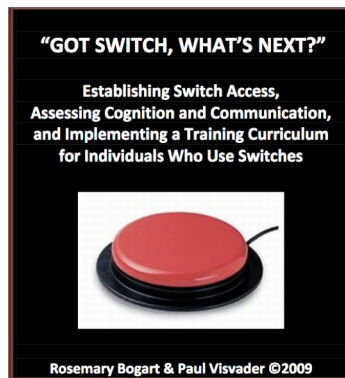
- Identify possible switch sites and considerations
- Identify factors that influence switch access
- Identify ways to motivate and engage
- Understand Partner Assisted Scanning (PAS) as it relates to overall communication
- List at least one errorless communication activity



Objectives

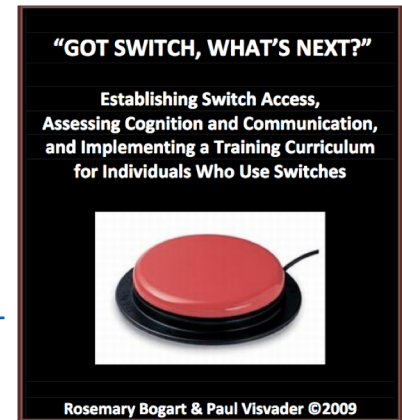
- Identify different “published” switch instructional hierarchies or assessment tools
- Understand pros and cons of using these resources
- Learn from an AAC user the possibilities of switch access
- Learn from an AAC user - considerations when working with students to develop switch skills
- Understand how customizing scanning supports motivation and more efficient communication

Switch Skill Hierarchies and Assessment Tools

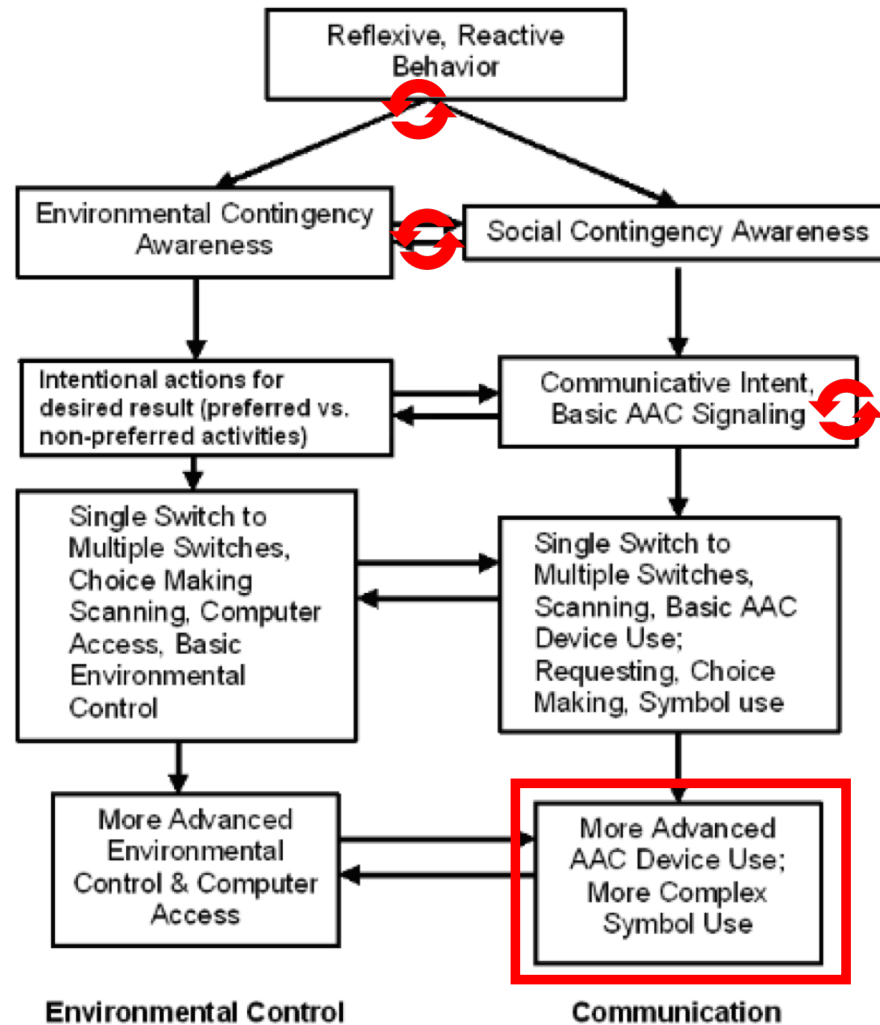


Got Switch, What's Next?

- <https://static1.squarespace.com/static/57c86c3cff7c506bc7a8fdbf/t/59f8b14a0d92973ad1e0c176/1509470539472/Got+Switch+What%27s+Next+Book.pdf>
- Authors Rosemary Bogart & Paul Visvader
- Published in 2009, 81 page manual
- A three stage system that is fluid/inter-related:
 - Establishing basic switch access
 - Determine type and positioning of the switch(es)
 - Generate list of preferred/non-preferred activities
 - Evaluating cognition and language
 - Judge intentionality, consistency and communicative intent
 - Assessing prompting needs such as wait time, physical/verbal prompts and how this supports attention span
 - Implementing a skills training curriculum: how do we support and advance our student's switch skills.



Communicative/Cognitive Progression



Where Switch Skills Can Stall

- Responding to a stimulus vs. recognition that one's actions cause a result
 - Recognizing that environmental contingency awareness is not the same as social contingency awareness – need to work on both
- Communicative Intent – switch to toy vs. switch with recorded messages for attention, refusal, recurrence, reciprocity
- Big Mac vs. Step by Step (Sequencer)
- My favorite communicative intent activities
 - Come here / go away
 - Stop / go
 - Clap your hands, stomp your feet, shout woohoo



Switching to Success

- <https://talksense.weebly.com/switching-skills.html>
- Developed by Talksense, Judy King and Tony Jones
- 2014
- Stage 1: Choosing a Switch (great visuals)
- Stage 2: Developing Switch Awareness
- Stage 3: Switch Accessibility
- Stage 4: Cause and Effect
- Stage 5: Timed Switch Access
- Stage 6: Moving From One to Two Switches
- Stage 7: Choices with Switches
- Stage 8: Scanning



The Switch Rules

<https://talksense.weebly.com/switch-rules.html>

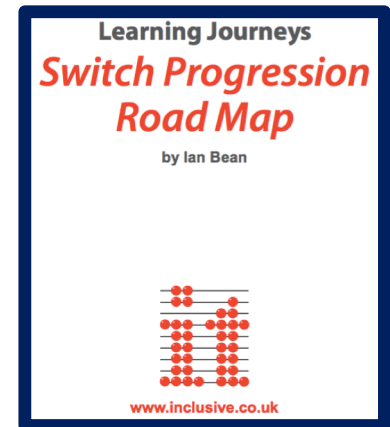
- Rule 1** **Maintain the switch position**
- Rule 2** Maintain the switch style
- Rule 3** Label the switch
- Rule 4** **Avoid fly-swatting**
- Rule 5** Focus on POLE (person, object, location, event) not the switch
- Rule 6** Mount the switch
- Rule 7** POLE should be proximal in space and time
- Rule 8** Remove the switch when it is not in use

- Rule 9** **Provide sufficient response time**
- Rule 10** Maintain your goals
- Rule 11** Safety First



Switch Progression Road Map

- https://atinternetmodules.org/storage/ocali-ims-sites/ocali-ims-atim/documents/Inclusive_TLC_switch-progression-road-map.pdf
- Published in 2011, Inclusive Technology Ltd
- Author Ian Bean
- 60 page manual
- Skill progression with recommendations for their software



» Switch Progression Road Map



Stepping Stones to Switch Access

- Author: Linda Burkhart, <https://lindaburkhart.com/>
- Article in Perspectives of the ASHA Special Interest Groups 2018: https://lindaburkhart.com/wp-content/uploads/2018/06/ASHA_Perspectives_Switches_Burkhart.pdf
- https://lindaburkhart.com/wp-content/uploads/2016/06/stepping_stones_chart_10_12.pdf, 2012, 10 page chart
- Two Switches for Success: https://lindaburkhart.com/wp-content/uploads/2016/07/switch_handout_3_12_Burkhart.pdf (motivation/cognition/motor learning)
- Step 1: Single Switch - Cause and Effect
- Step 2: Single Switch - Multiple Locations and Multiple Functions
- Step 3: Two Switches - Two Functions
- Step 4: Learning to Two Switch Step Scan
- Step 4a: Side Step: Single Switch Timing
- Step 5: Two Switch Step Scan Errorless Learning
- Step 6: Two Switch Step Scan for Clear Choices: Activities for Increasing Accuracy and Cognitive Engagement
- Step 7: Practice for Increasing Accuracy with Two Switch Step Scanning
- Step 8: Two Switch Step Scan Reducing Time for Success




Stepping Stones To Switch Access (Two Switch Step Scanning)

Linda Burkhart <http://www.Lburkhart.com>

Converted to chart format by Katie Stuhlsatz and Kathy Lalk, St. Louis Special School District Assistive Technology Specialists

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STEP 1: SINGLE SWITCH: CAUSE & EFFECT 	
Definition of Step 1 (cognitive skill)	Implementation Ideas and Tips
<p>Student begins to associate an intentional movement with the ability to cause something to happen (working on understanding cause and effect-connection between motor action and response)</p>	<ul style="list-style-type: none"> *Cause and Effect (C/E) cannot be taught through prompting. It is learned through experience. *May need to begin with accidental switch activation. *Use existing motor pattern (a movement where the child will be able to get on and off the switch without help). *Learning C/E and new motor pattern at same time is too much. *Direct activation to start. When you are sure the student understands C/E, you can add a delay timer. Use short timed segments when using delay timer. *When learning C/E, if student does not have any response after 3x, change something about activity (motivation), switch (ease of access), placement (opportunity for accidental activation and release), etc. * Only use software applications that allow for direct activation (plays for less than 6 seconds after activation). *Data: <ul style="list-style-type: none"> *when evaluating understanding of C/E, don't dwell on inconsistency. *Looking for active engagement. * Anecdotal notes/observations are valuable. * Don't stay in Step 1 too long. (Children will habituate to the activity and loose interest. This can be misinterpreted as not understanding cause and effect)
Example Activities	
<p>Vibrating pillow or massager inside a puppet with battery adapter Music (tape recorder with battery adapter), Rad Sounds, Everybody has feet in momentary mode Sequencer device to play a short segment of a song upon each activation (add a few comments or cheers into the sequence) Sequencer device with related silly sounds, vulgar noises, or musical notes/sounds Simple voice output with "clap hands, tickle me, bounce me, swing me, etc".</p>	
<p>Notes:</p>	

*Please note these steps are intended to be followed in a sequential manner, although not necessarily in a rigid way. A student may be in more than one step at the same time or within the same session/day.

Updated 10/23/12

Assessment of Learning Process for AAC



- <https://www.alpforaac.com/>
- Authors: Lisbeth Nilssen, Chip Clarke and Sarah Wilds, 2023
- An assessment and tracking tool to support the progression of any access mode: touch, switch, head tracking, eye tracking in AAC.
- Three broad stages of learning with eight specific phases.
- Five areas of assessment to determine how to support them in progressing to the next phase.

Stage 3
Extrovert/ Exploring
Performance

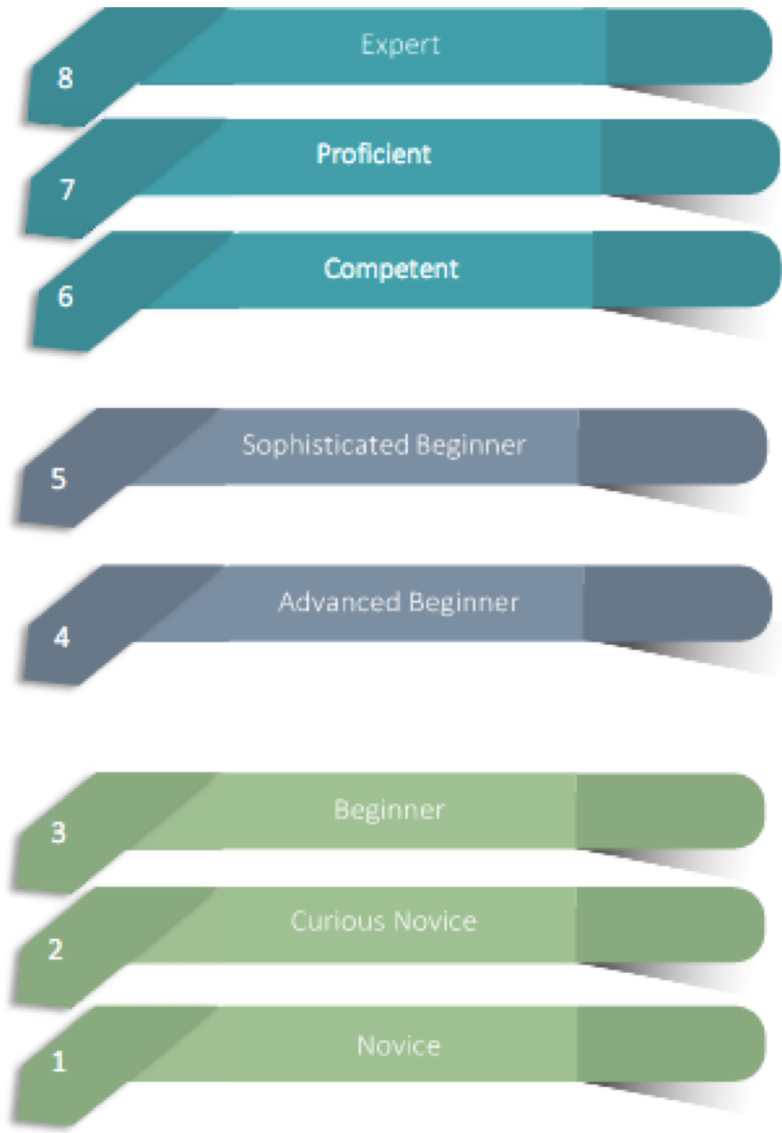
Focus is on body, access method, communication & environment. SGD focus = improved use of language and system

Stage 2
Difficult Transition/ Exploring
Sequencing

Focus is on body, access method & communication. SGD focus = intro to language/ communication

Stage 1
Introvert/ Exploring Functions

Focus is on body & access method. SGD focus = early exposure to access method, games & participation



"I'm not thinking about how to use this – I just do it." Fluid, precise, automatic movement. The task (not access) is focus.

"I'm in control and use it fluently." Uses device/ access method for multiple functions, movement is controlled and refined.

"I can use this to communicate." Purposeful but unrefined movement. Increased sequencing, may ignore mistakes.

"I know its use and try to master it." Overshoots and undershoots movement. Repeats and varies movement to explore different effects. Exhibits frustration at times.

"I find out more ways to use it." Able to locate and select target, and explores different targets. Shifts attention between people and activity.

"I'm making that happen." Able to locate target, shows basic understanding of access method.

"Something is happening but I'm not sure how or why." Attempts approximate activation. Increased interest/ alertness during activity.

"This is all new to me." No or vague idea of how to use, may use unintentionally and be curious or passive.

Five Areas of ALP Assessment

There are five areas of observation and assessment that are considered when trying to determine the learner's current stage and phase. Although the learner's activity and movement with the access method is considered to be indicative of the phase they are in, the other areas provide clues for intervention planning and relative strengths and weaknesses.

5



Activity & Movement

"Ability to control the access method went from seemingly random movement to clear control. From **vague** to **fluid**."



Understanding

"She started with no understanding of the purposes of the access method and ended with a complete understanding and ability to manipulate its purpose. From **no** understanding to **complete** understanding."



Attention

"She began by showing no attention to the access method and progressed to an ability to sustain focus on both the task and the access method. From **distractible** to **sustained**."



Interaction & Communication

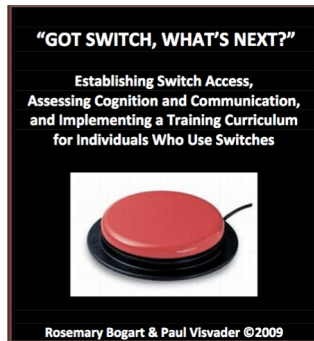
"She started with limited interaction with her communication partners to simultaneously interacting with the device, environment and social partners. She went from **no/little** social interaction to **fully integrated** interaction."



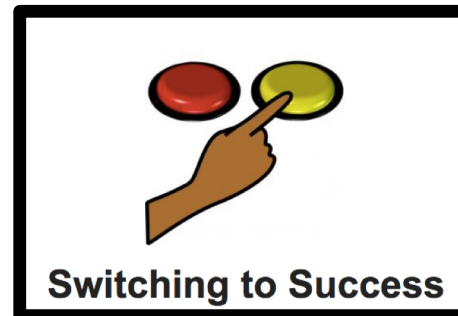
Expressions & Emotion

"She started with some short glances with the instructor to engaging in both signed and verbal communication. She went from **neutral** to **situationally dependent** expressions of emotion."

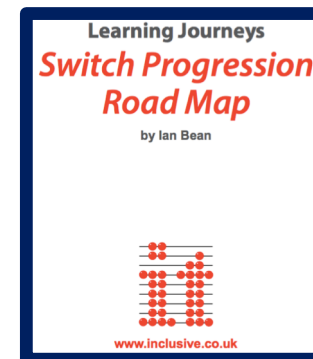
Switch Skill Hierarchies



Useful in separating environmental vs. communication switch use



Useful in learning more about early switch setup and use



Useful in setting up switches using switch interface on the computer with switch software or online switch skills programs



Useful in the transition from one to two switches



Useful to track progress of access or compare access modes



Summary

- **Stage 1: Choosing a Switch Type and Switch Location**
- **Stage 2: Developing Switch Awareness**
- **Stage 3: Developing Switch Accessibility and Accuracy**
- **Stage 4: Cause and Effect**
- **Stage 5: Timing Switch Access**
 - Moving from one switch to two switches
 - Making choices
 - Using two switches for routine utterances (more/done, go/stop)
- **Stage 6: Build Scanning Skills**
 - Visual scanning
 - Auditory scanning
 - Partner assisted scanning (PAS)
- **Stage 7: Increasing Independence with Scanning**

Thank you Amelia Willcox, M.S. CCC-SLP, AAC and CVI, Perkins School for the Blind, 2022

Possibilities of Switch Access

Contact info: Drew Sato

Email: drewcat@outlook.com





PROVAIL

LIFE OPPORTUNITIES FOR PEOPLE WITH DISABILITIES



*Every one of us has the right to
pursue the life we choose to live.*

Complex scanning considerations

- Scanning takes much longer than direct touch so think about using the tech to assist with efficiency
- Consider what needs to be included on all pages
- Create organizational shortcuts

Scanning types

- **Simple scan**
- **Group scan**
- **Directed scan**
- **Auto scan**
- **Step Scan**

Color coding/visual considerations

- Groups color coded
- Background contrast
- Outline of button color highlighting or coded

Auditory preview considerations

- Different voice
- Private preview
- Partner listening to headphone
- Speaker preview
- Shortened to avoiding interfering with scan timing
- Group name previews

Wheelchair /switch access considerations

- Can we use head array
- Can they use power chair and switches for device
- Does device need to be positioned differently for safety while driving
- Can we use auditory previews if in the way of driving

Timing parameters for SGD

- Scan time: This is the time it takes for the highlight to move from one object (group or item) to the next.
- Initial scan time: When the scan starts at the top of the selection set it is often useful to some users to have an extra delay before the scan moves to the first item
- Scan pause: It can be beneficial to allow users to collect their thoughts before the next stage of the scan. A delay between pages/groups may aid some users in this.
- Acceptance time: the time the switch must be held down for before the system recognizes the switch action
- Release time: the time the user must be away from the switch before another selection is registered.

Scripting and Co-Construction for SGD

- Co-construction during aided conversations serves multiple functions : – Scaffolding use of aided AAC – Eliciting information – Maintaining narrative and conversational flow – Assisting message formation – Clarifying information – Confirming information
- Co-construction has been found to contribute to increased communication competence and positive communication partner collaboration.
- Social scripts (e.g., joke-telling, chit chat, ordering fast food) and life stories (e.g., what happened at camp, our funny cooking) offer powerful opportunities to connect with others
- Having pre-programmed sentences can be very important when interacting with unfamiliar communication partners in community locations.

Programming considerations

- Custom scan layout
- Up a level
- Scan next
- Differentiated previews
- Number of words for preview
- Do not interrupt
- Scripted step by step programming

Links and Navigation

- Adding links to all pages
- Navigation ease
- Keyboards and predictions

Telepresence groups need not be virtual

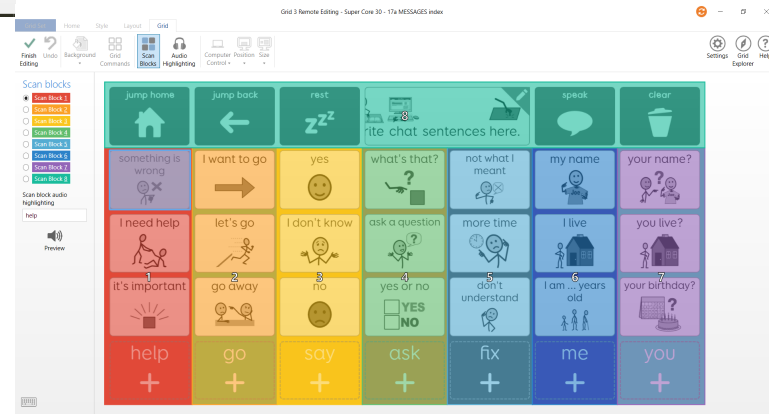
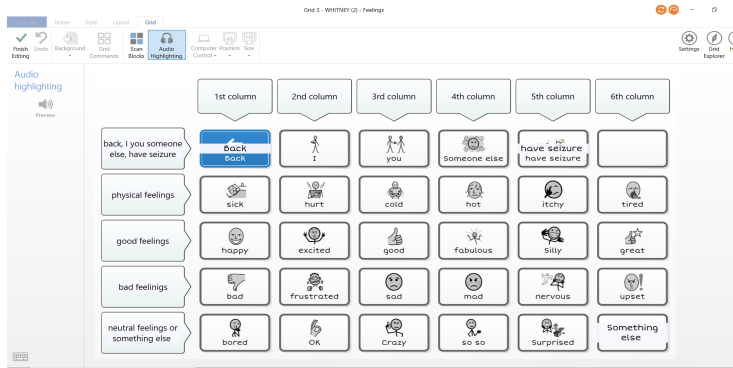
TD Snap

Group 1 Draw the areas you want in this group Done

Speak		Clear	Delete	Chat	Copy to Button	Share			
Back	I	we	want	is	tell	need	not	an	
QuickFires	you	my	like	can	take	know	more	@	
Core Words	it	our	go	stop	think	come	a	because	
Topics	he	they	have	do	see	let	&	and	but
Keyboard	she	them	will	get	say	feel	the	for	
Dashboard	us	People	help	put	find	Actions	that	to	
Current Boardmaker activity	what	who	why	all	some	All Word Lists	Personal	Choose a word list to link 1	
Pause Disabled	where	when	how	none	here	Descriptions	Little Words	Punctuation	
Word Forms	which	could	Questions	there	later	Date & Time	Choose a word list to link 2	Word Forms	

Group: ● ● ● ● ● ● ● + | 🗨️ 🔊 People Stay in group Off <<

Grid 3 Audio highlighting, scan blocks



Lets look at a few layouts



Email topics

Main									
Greetings	Hi	Hello	Hey	What's up	How are you?	I am feeling			
Goodbye	Bye	See ya	Talk to you later	Adios	Sincerely	Your friend	Got to go	Hugs	
School	What's your favorite class	My favorite class is	My grades						
Movies	Do you go to the movies?	I think movies are	I like to watch	Do you have any favorite snacks?	I watch movies	That's fun that you like	I like those movies.	I don't like those movies.	
Pets	My favorite pet is a	Favorite pet because	It's awesome you like	Want to buy					
Weekend	Are you excited for the weekend	I'm going to hang out with	Weekend activities	Your weekend sounds fun.	This weekend I will	Weekends are great for			
Shopping	Do you like shopping?	My favorite store is	I like to shop for	I like shopping with	That's fun you like that store	I like that store.	I don't like that store.	If I had a ton of money, I would buy	Maybe, I will see you at the store.
Seasons	My favorite season is	It's my favorite season because	What is your favorite season?	Why is that your favorite season?	That's cool you like	I don't like	That season is		
Holidays	Are you excited about Christmas?	I love the smell of	Did you going shopping on black Friday?	I need to buy a present for	Do you think it's a good idea?	On Black Friday, I went to	Your ideas are	Are you excited about hanukkah?	
Reply comments	That's great	It's good to hear from you	That's cool						

Using popups

Tobii 5X5 Linear scanner_Kaela 2.5 2018 - [email shopping things] - User: kaela - Communicator

File Help

My favorite class is I'm going to hang out with My favorite store is I like to shop for

Go Back	games.	toys.	clothes.	food.	jewelry.	video games.	movies.	make up.	
Goodbye	Bye	See ya	Talk to you later	Adios	Sincerely	Your friend	Got to go	Hugs	
School	What's your favorite class	My favorite class is	My grades						
Movies	Do you go to the movies?	I think movies are	I like to watch	Do you have any favorite	I watch movies	That's fun that you like	I like those movies.	I don't like those movies.	
Pets	My favorite pet is a	Favorite pet because	It's awesome you like	Want to buy					
Weekend	Are you excited for the	I'm going to hang out with	Weekend activities	Your weekend sounds fun.	This weekend I will	Weekends are great for			
Shopping	Do you like shopping?	My favorite store is	I like to shop for	I like shopping with	That's fun you like that store	I like that store.	I don't like that store.	If I had a ton of money, I	Maybe, I will see you at the
Seasons	My favorite season is	It's my favorite season because	What is your favorite	Why is that your favorite	That's cool you like	I don't like	That season is		
Holidays	Are you excited about	I love the smell of	Did you going shopping on	I need to buy a present for	Do you think it's a good	On black Friday, I went	Your ideas are	Are you excited about	
Reply comments	That's great	It's good to hear from you	That's cool						

80°F Sunny 5:57 PM 6/6/2023

Communicator: scan groups

The image shows a Zoom meeting interface with a digital communication board. At the top, there is a text input field containing the text "Aida is coming back |". To the left of the input field is a yellow "Backspace" button. To the right are orange "PHRASES" and purple "Email" buttons. Below the input field is a grid of buttons:

- Row 1: Moses, Harlow, Donna, Kaye, Gabe, Aida
- Row 2: Emily, Jane, Rebecca Olson, Mom, Scott, Missy
- Row 3: to, ., for, from, on
- Row 4: , , in, and, home, ↑ (red arrow), Delete Word
- Row 5: ABCDE, FGHIJ, KLMNO, PQRST, UVWXYZ
- Row 6: 1 2 3, .?! SHIFT, SPACE, EDIT, CLEAR

The board is set against a pink background. The Zoom window title bar shows "Zoom" and "judy categories - [sp...]" with a time of 11:25. A small video thumbnail for "Donna Cole" is visible in the top right corner.

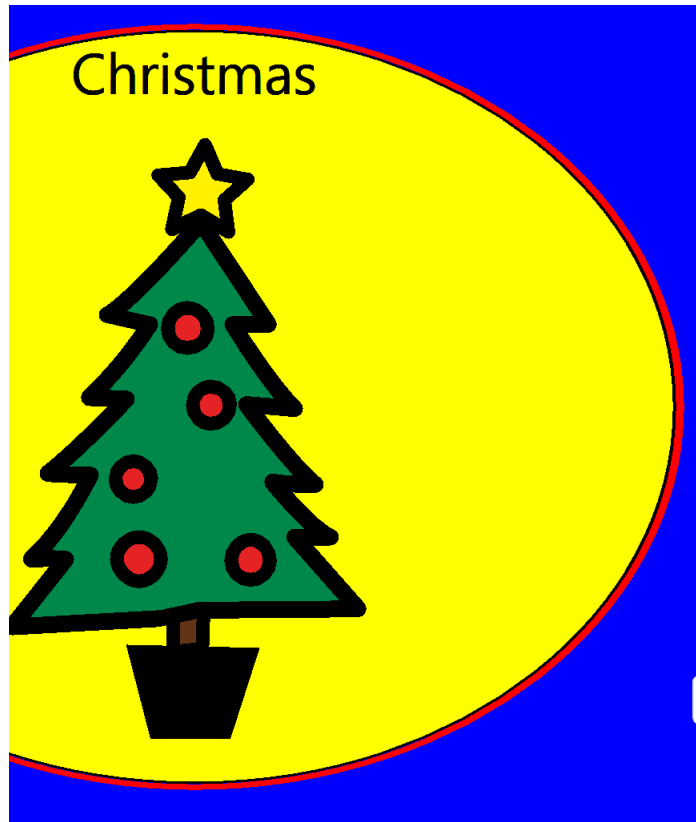
Communicator : Up a level



Communicator: errorless scanning

Back	Main	Talk about Christmas	I love making Christmas cookies
I love driving around and looking at the lights	I love having my lights up	I love putting our Christmas tree up	Make sure you don't lose your keys during the holidays
Drinks are very good	Do you still have your tree up?	Do you like Christmas lights on your house?	Do you like to drive around and see Christmas lights?
What is your favorite Christmas show?	I love the, Elf and the Grinch who stole Christmas	What kind of things do you like to bake at the holidays.	Little Drummer Boy

Communicator: Christmas script



Birthday talk

Lets talk about birthdays |

Back

Main

Birthday talk

Your birthday talk

March 1st

Do what I want

Coffee and breakfast

Driving around

Barbeque hot dogs

Loud music

Play games

Walk outside

Ice tea

Cologne

Set of keys

Your birthday

Your birthday activities

Inside the page for Birthday script

Page Open Actions

Hotlist Games Message Window Miscellaneous Sound

Available actions

Available actions	Description
Frequently used	
Go to	Miscellaneous
Set Input Method	Settings
Delay	Miscellaneous

<< Less Add ↓

Added actions

Action	Details	Group
Toggle Audible Cue	Disable	Sound
Toggle Read As You Type	Disable	Sound
Set Scan Interval	10 seconds	Settings
Assign Variable	x = 0	Variable
Assign Variable	sOutput = I want to tell you about my ...	Variable
Assign Variable	p1 = I had a birthday on March 1st I L...	Variable

Choose Feature Tabs... Show all available actions

OK Cancel

Assign Variable

Variable name:
sOutput

Variable value:
I want to tell you about my birthday

Persistent (saved when the program exits)

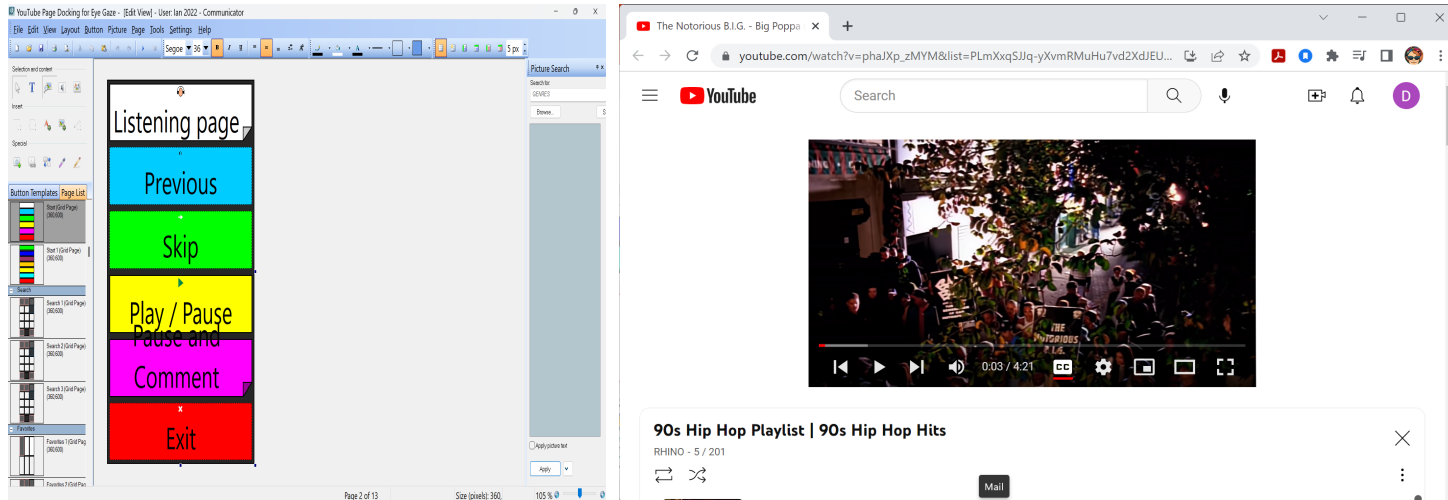
Only assign value if variable does not already exist

OK Cancel

Simple scan : high motivation



Scanning access to Youtube



Communicator: Scan/touch available for PAS or modeling

scan touch

Clear

. I have something to say

. help

. Word Power or SnapCore
And It The
WORDS
Up

. Camera

. hi and bye

Updates on news

. want

. go

. people and pets

. videos

. Google, Siri, Echo, Zoom

. work

. email

. schedule

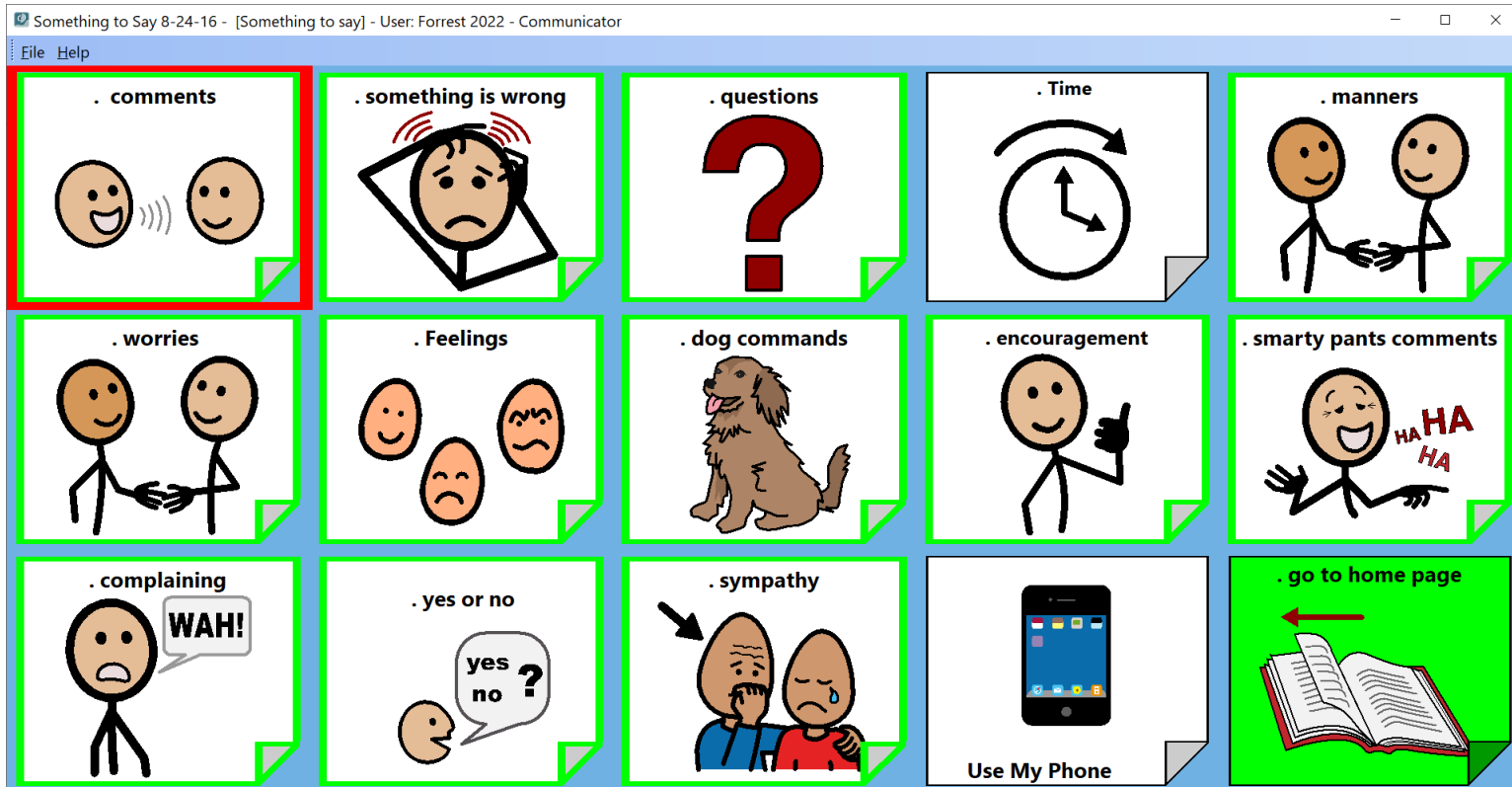
. Reading and stories

. Jokes

I don't want to talk right now

CALENDAR			
JAN	FEB	MAR	
APR	MAY	JUN	
JUL	AUG	SEP	
OCT	NOV	DEC	

Communicator: Pages available across contexts



Think outside the box



