

## Let's Have a Conversation! Using AAC to Improve Communication for Individuals with Rett Syndrome – Part 2

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Assistive Tech 4 ALL



### AAC Device - Easy and Independent Access to their “Voice”

PCEye Go  
USB eye gaze  
system - laptop  
computer or  
EyeMobile



Tobii I-15



Tobii  
EyeMobile

## **Eye Gaze/Eye Tracking Technology**

- Direct selection is a more efficient means for communicating – seeing dramatic progress
  - Provides improved access for communication when reliance on hands limits choices and options.
- Assumed individuals with RTT cannot communicate; reality is they have not had access or the opportunity
  - “Presume competence” and figure out how to tap into their potential.

## **“It’s in their eyes”**













- Direct selection
- See dramatic progress provided...access to “just the right setup”
- Giving insights into what individuals with RTT are truly thinking and feeling
- “Unlocks” their hidden potential for communicating and learning

## Common Misconceptions about Eye Gaze Technology

- Individual with RTT needs to master use of light tech system first.
- Eye gaze to light tech system is a prerequisite
- Have to exhaust all other access methods before introducing eye gaze technology
- Has hand use so work on this first before explore eye gaze technology Use of hands or switches limits communication; not reflect true communication ability and potential
- Meets all communication needs across all environments

## Conversation with Brother - Movies

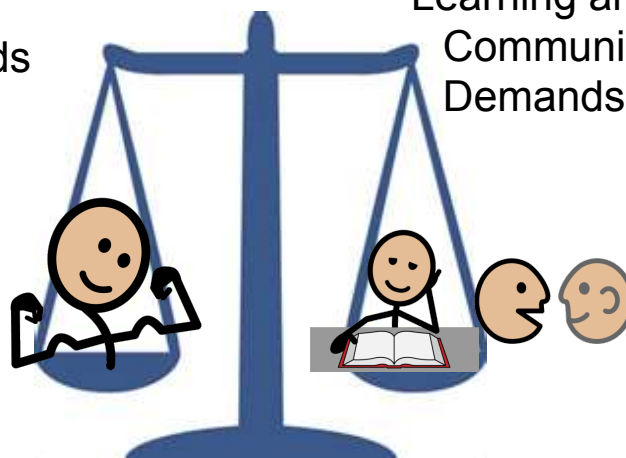
Have you seen any good movies lately?

 I'll tell you what I think.		Clear 	
	I loved that! 	It rocked! 	
		Cool 	Hot 
			BACK TO MAIN 
	bad 	slow moving 	
		not like how ended 	I don't recommend 
			BACK TO MAIN 

## Success - It is always a balance between...

• Motor Demands

Learning and/or Communication Demands



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## Which Eye Gaze/Eye Tracking System to Trial?

- Size of the Trackbox of Eye Gaze/Eye Tracking System is important relative to the girl's positioning and natural movement patterns.
- Conduct eye gaze trial with at **least two different systems**
- Extended trial with one that represents a girl's "best" and "easiest" access
- Bigger size of screen does not always mean better as this does not always mean a bigger Trackbox



## Eye Gaze/Eye Pointing System

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- Essentially performing two actions when using eye gaze
  - Looking at what want
  - Maintaining visual attention on it for selection (Dwell)

## Goal of Trial with Eye Gaze System

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- It is not target practice!
- Aim for Success - increased motor demands, lower the learning and communication demands
- Allow for natural and spontaneous interaction; respond to selections appropriately
- Assist with navigation to page (Model, Model, Model)



## **Judy's Eye Gaze Trial Page Sets**

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- Set up based on girl's natural use of horizontal eye movements in the middle of the page – looking left to right
  - Navigation between pages is integrated into these middle buttons
  - Typically girls have ease in looking up or down not both directions
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## **Judy's Eye Gaze Trial Page Sets**

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- Tested and used across over 250 eye gaze trials with girls ranging in age from 2 to 39 years old
  - Able to identify preferences very clearly as well as communication of immediate wants and needs and independent navigation to different pages within first 30 to 40 minutes of using these pages
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## Calibrate During a Trial Session?

- Don't have the girl calibrate during an eye gaze trial; not necessary and often leads to failure
- Get the girl's parent to calibrate system
- Using my page sets, never have the girls calibrate during a trial session
- Apraxia often interferes with getting a good calibration
- Can tire out a girl's eyes before she gets started

## What is going to be more successful?

### This?



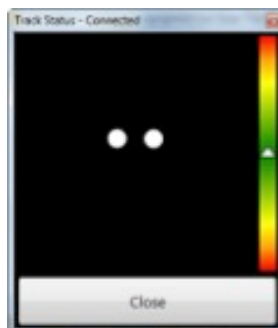
### Or this?



## What do you do?

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- Find girl's eyes in the Trackbox
- Position device correct distance away
- Ready to go!



## Videos showing Eye Gaze Technology

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It's never too early....

It is possible to stand and use eye gaze technology – while Judy and a girl's parent were talking at end of clinic session, girl walked up to Tobii and selected “Something's wrong, then I need a break,” followed by selecting “I'm all done” and looking to Judy.

It's never too late to try out eye gaze technology with a woman with RTT – video shows woman selecting Selena Gomez video and when Judy took her to check out a “One Direction” video, she quickly exited out of that video and selected the Selena Gomez video – very intentional and showing strong preference

## Look at how use eye gaze system with natural gestures

- Video of girl “Requesting a break”  
from Part 1 of presentation relating  
to Sensory Regulation

## Qualitative Data Collection

Date - On page with 8 choices – Example of 3-year old girl

Selection	To Communicate	Other modes of communication
I'm tired	I'm tired.	Looked to Mom
I'm tired	I'm tired.	Looked back to Mom; tired face
I'm tired	I'm really tired	Looked at another communication partner
I'm tired		
I need to rest my eyes	I'm tired and need to rest my eyes	Looked back at same communication partner

## From Eye Gaze Trials to Device

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<http://rett-u.org/>

- Through Rett University, I will be creating an 5 to 6-hour online course with modules about conducting eye gaze trials with individuals with RTT of all ages
- Once get the device, how do I set it up...

## We have/getting an Eye Gaze System – Now what?

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- **More** vs. less
- **Core phrase-based system** to support success with low motor demands, increased communication!
- Need **consistent structure and organization** of system
- **Don't reinvent the wheel!**

## The Dynamic Communication Book

- Developed by Pati King-DeBaun
- [www.creativecommunicating.com](http://www.creativecommunicating.com)



## Judy's Copyrighted Eye Gaze page layout

- Starting page



## Main Conversation page



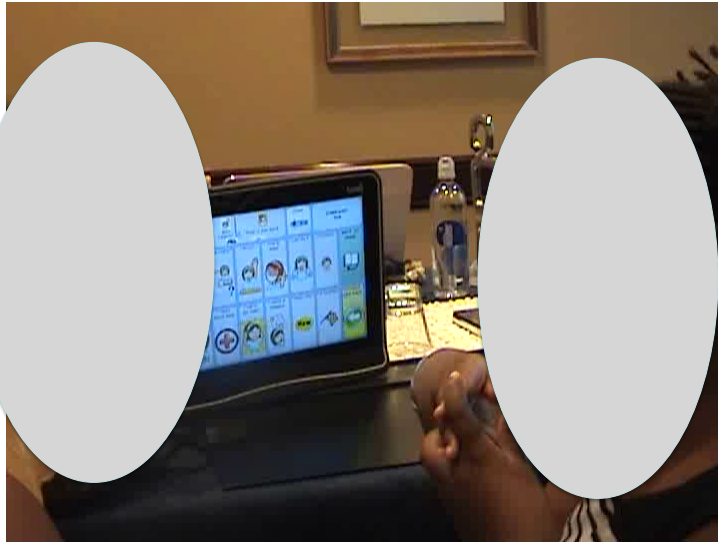
## First Use of Dynamic Communication Book

- Never worked with this girl before
- Just loaded the “Judy-Pati” pages on her Tobii I-12 to try – end of the day
- Saw her at 5 p.m. end of conference and after swimming in the afternoon – sensory regulation?
- Had 5 to 8 buttons on her existing pages – heavily needs-based



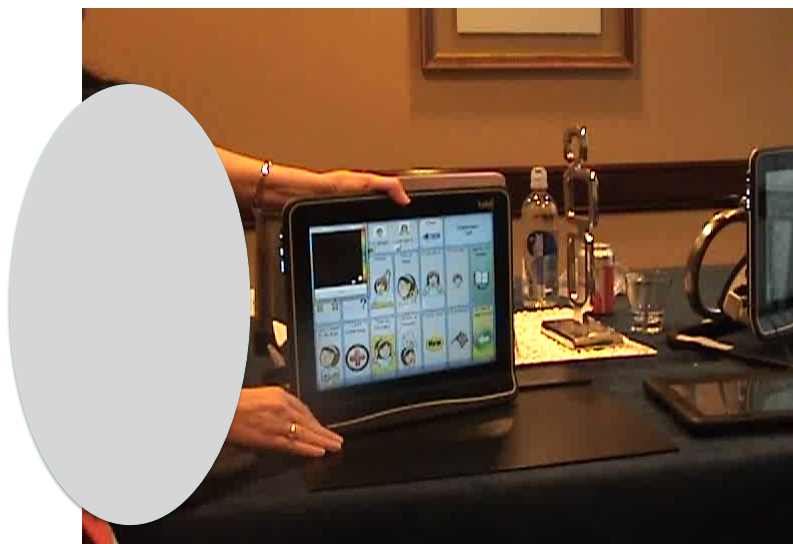
## Eyes “glued” to “Judy-Pati” pages

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## Telling her Mom to “buy it!”

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## The Dynamic Communication Book

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- Results seen across multiple girls and teens using this (**multiple case studies**):
    - The phrases have allowed girls to **initiate conversations, ask questions, and make comments** – beyond needs and choice making
    - The girls are highly motivated, interested, and **engaged** in the interaction using the phrases in this book.
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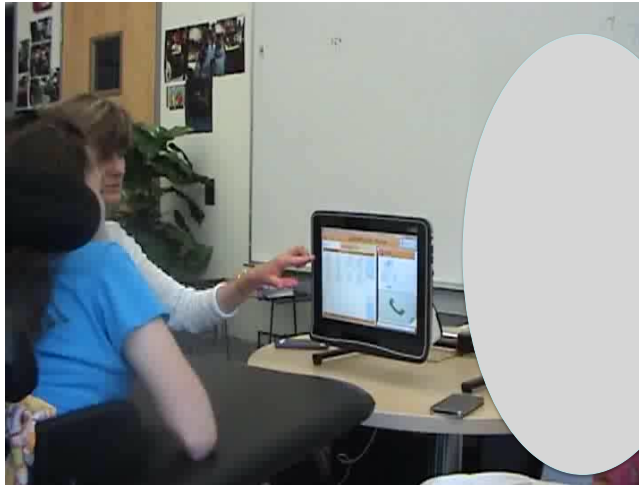
## The Dynamic Communication Book

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- Girls are **independently navigating** to different pages to communicate what they want to say, when they want to say it.
  - The girls are **more of an equal partner in the conversation** when using phrases – reciprocal communication!
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It has to be natural and  
age-respectful – talking on phone

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Part 2 - Spontaneous

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## What they need access to...

- Phrases for social interaction and conversations that are quick
- Activity-specific pages for active participation at school/home/community; directing instead of hand-over-hand; situational
- Scrapbook on device for sharing experiences and photos of these - memories
- Core words and vocabulary for generating language – can use SonoFlex or Picture Word Power for supporting literacy
- Alphabet and Sentence Starter
- Home page for independent navigation between page sets

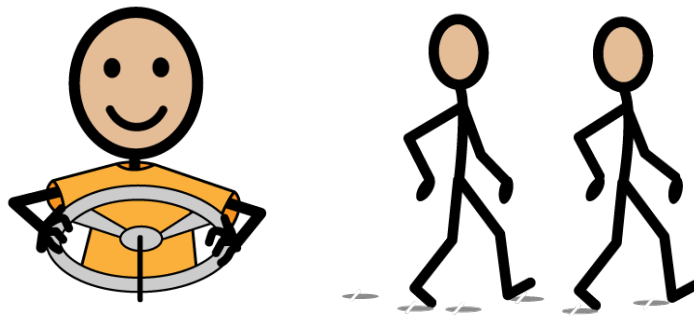
## Supporting Conversations

- Asking questions with only one answer doesn't work; even asking directed questions doesn't always work – why? Apraxia....especially with technology!
- Don't expect independent navigation to a specific page in response to a question – WHY? – Apraxia!
- If ask what he/she thinks about something – take to the comments page
- Keep it **natural!**

## Supporting Conversations

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- Keep interactions natural, spontaneous, and engaging; not one-sided



## Provide opportunities to interact with peers

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- Regular education teacher embraced this girl in her 4<sup>th</sup> grade classroom
- Set up opportunity for interview to have others get to know her more
- Changed format of interview – instead of asking questions, open-ended so girl selected what she wanted to share about herself
- Helped her teacher get to know more about her interests as well (& abilities)
- An girl talking about herself is incredibly powerful!

## Supporting Conversations

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- Presume communication competence – even though selections may seem random or exploratory in nature there is meaning to what a girl selects
- Use what is available to communicate
- If unsure, check in with parents/teacher/therapist about the context
  - Example: Brother's name - Matthew – then Lego

## Supporting Conversations

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- **Observe, observe, respond** not just to what saying using communication device but all other forms of communication (facial expressions, eye contact, eye brow raises, etc.)
- Not “Tobii-time” – integrate into what you do naturally
- Example: snuggling on couch and reading – bring Tobii to this location

## **Scrapbook for sharing Life Experiences**

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- Allows for modeling of text-to-self connections for reading comprehension for literacy
  - Allows a girl to demonstrate comprehension of what she is reading or having read to her (for content purposes) (through initiation)
  - Allows a girl to demonstrate an understanding of what is being taught, in inclusive settings, through making connections between the world and new content and her life experiences
  - Example – 10<sup>th</sup> Grade Biology Class
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## **Need something to talk about...**

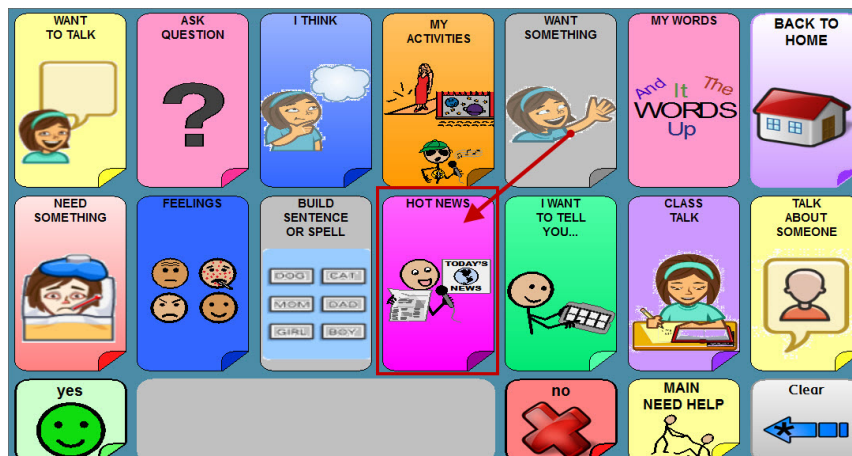
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- Life experiences – we all tell stories about our experiences
  - Share in open-ended fashion
  - Pages programmed so can choose what to say
  - Different than day-to-day communication shared on a step by step
  - Add “Remember” – that reminds me of something
  - Text-to-self connections for supporting lessons in reading comprehension
  - Spontaneously demonstrate an understanding of what is being taught, in inclusive settings, through making connections between the world and new content and her life experiences
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### Grade 10 Biology Class Example of “Hot News” – 1<sup>st</sup> Classroom Work Page



### Example of “Hot News” – 2<sup>nd</sup> Main Conversation Page





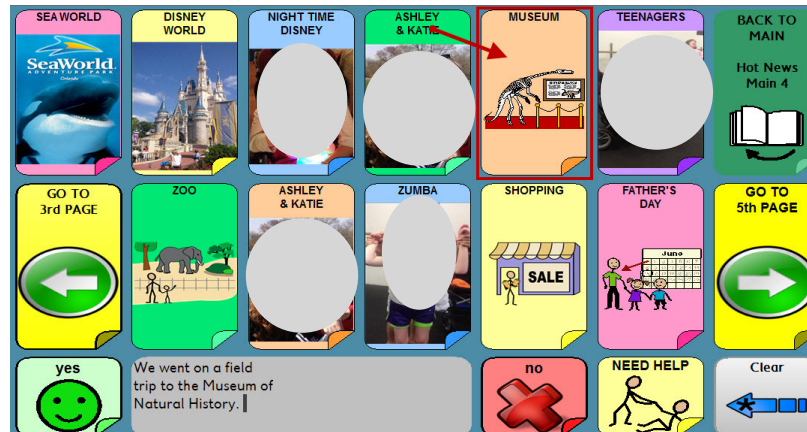
## Example of “Hot News” – 3<sup>rd</sup> Main Hot News Page



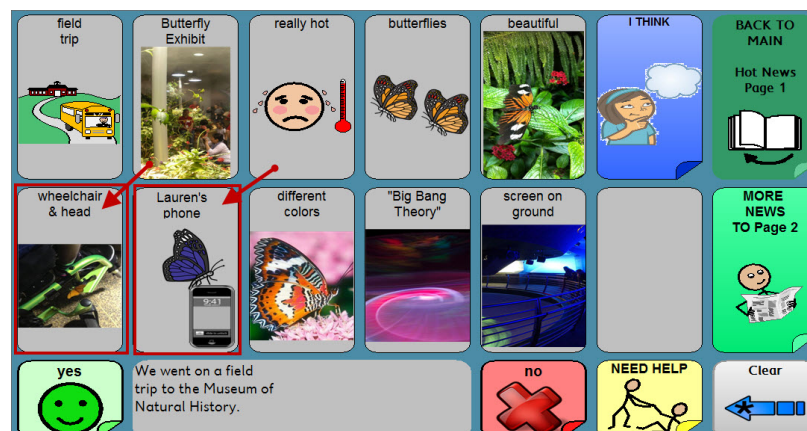
## Example of “Hot News” – 4<sup>th</sup> Page 3 of Hot News



## Example of "Hot News" – 5<sup>th</sup> Page 4 of Hot News



## Example of "Hot News" – 6<sup>th</sup> Museum of Natural History Page

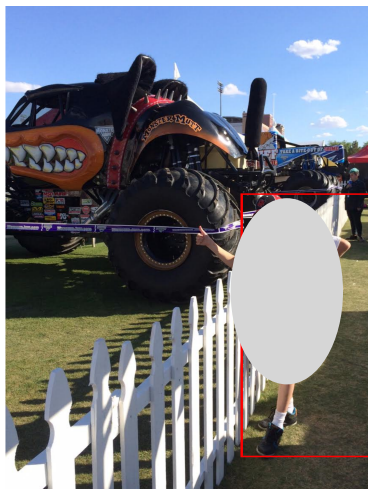


## Tobii – Photo Album



## Tobii – link to page with Photo as background and “hot spots”

We went to Monster Jam World Finals in Las Vegas in April.



This is my son, Doug. He loves Monster Trucks.

## What a girl needs access to...

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- Phrases for social interaction and conversations that are quick – [even on devices with core words](#)
  - Activity-specific pages for play and active participation at school/home/community; situational
  - Scrapbook on device for sharing experiences and photos of these - memories
  - Core words and vocabulary for generating language
  - Alphabet
  - Home page for independent navigation between different pages/page sets
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## Supporting Conversations – Talk with the girls!!!

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- Asking questions with only one answer doesn't work; even asking directed questions doesn't always work – why? Apraxia....especially with technology!
  - Ask open-ended questions but take her to a page so she can respond
  - Follow the girl's lead and respond to her selections
  - Acknowledge motor approximations
  - Amazing and incredible communication moments happen when you least expect them
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## Communication Strategies

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- Facilitate spontaneous “back and forth” exchanges so delayed responses are minimized
  - Acknowledge when you observe a girl experiencing difficulty in accessing a location
  - Take pressure off expecting output; she will join in the conversation!
  - Have fun interacting with the girl; social and love to talk!
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## Communication Strategies

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- Modeling and multiple opportunities to use for success in natural environments – use the device to talk with the student
  - Facilitate spontaneous “back and forth” exchanges so delayed responses are minimized
  - Have fun interacting and talking with them.
  - Amazing and incredible communication moments happen when you least expect them – initiate spontaneous comments to add to conversation or comment on what is happening\_
  - Have a [conversation!](#)
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## Tobii EyeMobile or PCEye Go with Laptop

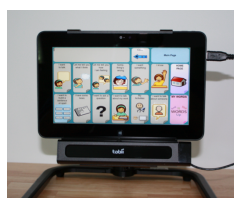
- Gives access to more affordable eye gaze technology for communication – independent access
- Use with Tobii Communicator for communication



**Tobii PC Eye Go (\$2,500 Cdn.) +  
\$700 for Tobii Communicator**



**Tobii EyeMobile**



## Tobii EyeMobile



- Works well for some
- Have to try before buy
- Smaller screen so need to assess for access
- Works with Windows Pro 8 tablets
- [www.tobiiati.com](http://www.tobiiati.com)



**Tobii Bluetooth  
Speaker**

## The possibilities are endless...

Final thought:

- Communication is more than just expressing wants and needs.
- Having a conversation using various means = building connections and relationships.
- By giving individuals with Rett Syndrome independent access to their “voice,” their personality will shine through.

## For iPad - TouchChat HD – if you have purchased Pati's Dynamic Communication Book





## For iPad - TouchChat HD – if you have purchased Pati's Dynamic Communication Book

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Programmed by Susan Norwell, M.A. and posted under iShare of TouchChat HD for download

- In TouchChat HD, go into **iShare** from Menu in top right corner when in list of Vocabulary Sets
- Click **Public files** folder.
- Select **Geriatric** file folder
- Then select **End of life** file folder. You will see files to download.
- The one you want is **Dynamic Communication Book** - so select that one and then click **Download** to download it to your Touch Chat HD on your iPad.

## Coming Soon! Teach Me AAC-CLL – Conversations, Language, and Literacy:

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- Specifically designed for students with Rett Syndrome
- Watch Judy's and Pati's websites for details

<http://jlariviere.com>

[www.creativecommunicating.com](http://www.creativecommunicating.com)



Teach Me AAC-CLL Conversations, Language and Literacy a Curriculum for Rett Syndrome

Developed by Pati King-DeBaun and Judy Lariviere

This course is specially designed for students with Rett Syndrome. Adaptations and suggestions within this course will address the unique learning and access needs of this population. This course moves beyond the Beginning Communicator's Program and goes more in depth into conversation, literacy and language instruction. This course will have approximately 350 lessons for one year's worth approximately 2 sessions per week.



## Resources

### Judy's Eye Gaze Trial Page Sets

- Preschool and school age versions for Tobii Communicator will be available December 2014
- Teen version for Tobii Communicator will also be available.
- Check website [www.assistivetech4all.com](http://www.assistivetech4all.com) for details
- Layout/design is copyrighted
- Cost: \$30.00
- judy.jlariviere@gmail.com

## The Dynamic Communication Book for Girls

- Developed by Pati King-DeBaun
- [www.creativecommunicating.com](http://www.creativecommunicating.com) (click on **Featured Product** file tab, then click **Light Tech and Dynamic Communication Book**. Scroll to the bottom of the page, **Dynamic (Older Version) Communication CD** - \$250 – Click on the drop-down menu for the Girl version
- Also set up for use in Tobii Communicator (Judy's eye gaze layout with 2 rows x 7 columns – easier motor plan); email Judy picture of what Pati sends you or copy of invoice and Judy will send content in her copyrighted eye gaze layout electronically to you
- \$250.00

## Demo Version of Tobii Communicator

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- Sign up for an account with PageSet Central
- <http://www.pagesetcentral.com/>
- Download and install a 30-day trial of Tobii Communicator as well as SymbolStix

59

## Pati's Dynamic Communication Book in Judy's Copyrighted Eye Gaze Layout

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- Go to [www.creativecommunicating.com](http://www.creativecommunicating.com)
- Under Categories on the left side of the screen, click the link to **Dynamic and Light Tech Communication Books**
- Scroll down the page until you see **Purchase Choices**
- The first option under purchase choices is **Dynamic (Older 12 Location Version) Communication CD \$250.00 Includes Light Tech Book to Print and Electronic Files on the CD**
- **Girl** should be displayed in the drop-down menu just above the **Add to Cart** button
- Click **Add to Cart** to purchase
- Once you purchase this, email Judy Lariviere ([judy.jlariviere@gmail.com](mailto:judy.jlariviere@gmail.com)) a copy of the receipt (photo of screen will do) and I will send you an electronic version of Pati's pages in my copyrighted eye gaze layout through transferbigfiles.com (for use on Tobii)

## Judy's Copyrighted Music Player and Music Video Player

- **Music Video Player** – developed by Judy for girls and women to stop and start music videoclips and choose different selections
- **Music/Song Player** developed by Judy for girls and women to play music playlists; change songs, stop, start, and pause music and interact with others about the songs; essentially an eye gaze controlled iPod/MP3 player
- \$20.00 each
- Downloadable from [www.assistivetech4all.com](http://www.assistivetech4all.com)
- Available beginning in December 2014

61

## Supported Phones Tobii I-series

The following phones have been specifically tested by Tobii and known to fully support all mobile communication features of Tobii Communicator and the I-Series:

- 1. Blackberry Z10
- 2. Sony Xperia Z
- 3. LG P880 Optimus 4X
- 4. Samsung Galaxy S2 (GT-I9100)\*\*
- 5. Samsung Galaxy S3 (GT-I9300)\*\*
- 6. Samsung Galaxy S4 (GT-I9500)\*\*
- (As of April 10, 2014  
<http://www.tobii.com/en/assistive-technology/north-america/support-downloads/?product=36374> )