Implementing Tangible Symbols for Every day Communication

Anne M. Kuhlmeier, M.A., CCC/SLP, ATP
annekuhlmeier@cableone.net
Tangible Symbols

- What
- Who
- Why
- How
WHAT: Tangible Symbols

- Rowland & Schwigert coined the term “tangible symbols” in 1989
- Finding gestures alone not always sufficient for acquisition of abstract symbolic communication
- Cognitive demands might be too high for some individuals with impairments with memory and representational abilities
- Offer a lower demand on memory requiring recognition versus recall
- Require simple motor responses which allows for adaption
Characteristics of Tangible Symbols

- permanent
- manipulable
- obvious
Tangible Symbol Examples

2D

3D
Symbolic Representation

Partial or Associated  Created Association
# Developing Symbols*

<table>
<thead>
<tr>
<th>Level of Representation</th>
<th>Referent</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identical object</td>
<td>Raisins</td>
<td>A few raisins glued to a piece of cardboard</td>
</tr>
<tr>
<td>Partial or associated object</td>
<td>Bolt</td>
<td>A bolt is shrink-wrapped onto cardboard backing</td>
</tr>
<tr>
<td></td>
<td>Shoe</td>
<td>Shoelace</td>
</tr>
<tr>
<td></td>
<td>Bicycle</td>
<td>Handle grip</td>
</tr>
<tr>
<td></td>
<td>Car/out</td>
<td>Car key</td>
</tr>
<tr>
<td>1 or 2 shared features</td>
<td>Pretzel</td>
<td>Thermoform (thin plastic impression) of pretzel (shares shape and size with referent)</td>
</tr>
<tr>
<td>Created association</td>
<td>Work table</td>
<td>Ribbed rubber mat attached to actual work table; a small piece of mat serves as symbol</td>
</tr>
<tr>
<td></td>
<td>Cafeteria</td>
<td>Wooden apple attached to cafeteria door; a similar apple shape serves as the symbol</td>
</tr>
</tbody>
</table>

*adapted from Rowland & Schweigert, 2000
Tips on Symbol Selection

• Use symbols based on motivating activities
• Symbols must be salient to the child
• Symbols can be identical, real-objects (slinky, cup, spoon) or partial object (piece of a therapy ball, top to a sippy cup)
• Label symbols for consistent use by partners across settings
• Logical associations with its referents
• Consider what is salient and meaningful to the child
<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>Referent</th>
</tr>
</thead>
<tbody>
<tr>
<td>zipper</td>
<td>coat</td>
</tr>
<tr>
<td>X (raised)</td>
<td>no</td>
</tr>
<tr>
<td>O (raised)</td>
<td>yes</td>
</tr>
<tr>
<td>Keys /seat belt buckle</td>
<td>Car ride</td>
</tr>
<tr>
<td>Spinner</td>
<td>go</td>
</tr>
<tr>
<td>Sand paper</td>
<td>stop</td>
</tr>
<tr>
<td>Piece of rope or chain</td>
<td>Swing</td>
</tr>
<tr>
<td>Towel material</td>
<td>Bath time</td>
</tr>
<tr>
<td>Shoe lace</td>
<td>shoes</td>
</tr>
<tr>
<td>book</td>
<td>Story/read</td>
</tr>
<tr>
<td>Puzzle piece</td>
<td>game</td>
</tr>
<tr>
<td>Rattle (or bells)</td>
<td>Music/sing</td>
</tr>
<tr>
<td>Bubble wand</td>
<td>Bubbles</td>
</tr>
<tr>
<td>Star</td>
<td>Twinkle, twinkle</td>
</tr>
<tr>
<td>Straw hat/overalls</td>
<td>Farm/old macdonald</td>
</tr>
<tr>
<td>Cotton ball</td>
<td>sheep</td>
</tr>
<tr>
<td>Velvety fabric</td>
<td>horse</td>
</tr>
<tr>
<td>Leather/horn/tail</td>
<td>cow</td>
</tr>
<tr>
<td>feather</td>
<td>Bird/duck</td>
</tr>
</tbody>
</table>
WHO benefits?

- Blind/low vision/CVI
- Multiple developmental disabilities
- Cognitive impairments
- Those having difficulty understanding 2D symbols
Why?: Requesting

- Gaining and maintaining access to preferred items and activities
- Rejecting, escaping or avoid non-preferred tasks

- Requires motivation to gain access to object/activity
- A communication partner who will assist in gaining access
Steps Needed for Purpose of Requesting

- Identify Routine
- Identify object/activity
- Identify acceptable behavior
- Identify symbol
Routines (SHAPE)

Identify
- Existing situations
- Routines
- Environment

Reasons
- Familiar
- Occur frequently
- Provide motivation
- Occur in typical environments

Examples
- Meal times
- Toileting
- Grooming
- Bedtime
- Play
- Positioning
Acceptable Communication Behaviors

- Adults respond to only 7-15% of behaviors intentionally used to gain attention by children with severe disabilities.
- Behavior used must be ones that can be
  - Easily learned
  - Produced reliably
- Behavior must be functional which can become the communicative request.
- Behavior must be clear to the partner.
Daily School Routines

- Hanging up your backpack/coat
  - Start with getting child off the bus (or our of car) with a symbol denoting the bus (or car) while modeling “You just rode on the bus/car (touch symbol, help child to touch symbol). Now we are walking into school and headed to our classroom (show symbol of classroom – could be concrete like a piece of the wall in the that room or something you always do in your classroom or abstract symbol that denotes this classroom from other classrooms). Depending on the child’s sensory strengths its important to provide appropriate feedback.
  - Daily repetition of symbol modeling is necessary to build language understanding and eventual expressive communication
Communication Book Samples
Visual Schedule for Classrooms

• Develop tangible symbols (have both 2D and 3D available) for each activity
• Voice output buttons and written labels can provide feedback for child and staff
• Use sturdy backboards or frames to hold symbols – Plexiglas or boards for your 3D symbols last longer
• Create a holder for your symbols, mounting them to the wall or placing them in an open container, for easy access by staff and student
• Multiple message static displays
Activity Based Communication

• Add symbols to activities that refer to the labels of the objects, actions involved, pronouns, adjectives, negatives
• Keep those symbols placed with the activity/toy for easy access in covered bins, bags, etc
• If they aren’t accessible within 5 seconds it won’t happen
• MODEL, MODEL, MODEL
• Use pictures for every word you speak
• Comment…. Don’t question
• Model some more!
Mr Potato Head

- Tub with Mr Potato Head and all the part
- Photo or symbols (like Boardmaker) laminated and separated with velcro in approx 2” size (*better to go too large than too small!)
- Include tangible symbols using broken/old parts mounted on plexiglas/board
- Use a talking photo album with pre-recorded pages to request the different parts of the body
- One page with symbols for those children who can point but don’t do well with laminated removable pictures
- Overhead transparency with different symbols for those who can’t touch pictures
Giving Baby a Bath
Choosing to begin an activity
Continuing the activity.....

• Go
• Out/in
• Up/down
• Open
• Blow
• I
• You
• Big/little
• WOW!!
Making Cookies/Smoothies

• Picture recipe that diagrams the steps involved in making cookies – stick drawings, photographs, symbol software
• Include symbols for every object needed to complete the recipe (fruit, chocolate chips, milk, eggs, flour, sugar, etc.
• Separate symbols for actions involved in making recipe
• Switches/powerlink for electric mixer or blender so children with motor limitations can participate.
• Place symbols in kitchen area where easily accessible
Picture Recipe Sample using Boardmaker

1. Get milk, yoghurt & ice from refrigerator.
2. Get fruit
3. Wash your hands.
4. Pour 1/2 cup milk & yogurt in the blender
5. Pour chopped fruit in the blender
6. Pour in ice and turn on blender to mix
7. Clean up and eat.
Book Reading/Literacy

• Identify book(s) that can be adapted by adding symbols to the pages
• Using Google Images (works best for popular characters), photograph or copy characters in the book
• Create symbols by cutting out the character and placing on a background that highlights the character
• Try to keep all your symbols relatively the same size
• Either attach characters with velcro to the inside of the book (on the pages works well or beginning page) or place on a separate sheet and keep with the book. I often take books apart, laminate the pages and place in 3 ring binders for ease of keeping symbols together
• Resources for storage: 
  http://www.1plus1plus1equals1.net/2012/03/behind-the-scenes-storing-printables/ or http://www.augresources.com/vindex.html
Beginning Book reading

- pictures
- story
- read it again
- read this

Early Emergent Level

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Reading A Story
Implementation

- Consistent routines and language
- As part of the whole communication system
- Pair symbols with referent as you verbally label
- Comment – Don’t Question!
- Encourage participation
Tips for Using Symbols in the Real World

• Communication supports using t-shirt transfers on placemats, pillowcases, shirt to wear to the pool, kickboards or balls at the pools
• Adhere by using waterproof glue, plumber’s glue, aquarium glue
• Garden kneel pads make great symbol boards for pool, outside use
• Magnets on the fridge with printed symbols to request items from the fridge
• Strips for symbols outside the pantry, storage cupboards, toy cabinet, book/video shelves for visual schedule or requesting
Continued Tips....

- Symbols and mounting surface need to be individualized for child – most need to be sturdy
  - plexiglass or plywood, velcro, plastic ties
- Pair with verbal output if possible, portable voice output buttons (go talk button, Clip on talker, Brix Communicator buttons)
- Build in/Teach a Confirmation Response
- Rowland and Schweigert recommend a comprehension check to determine true understanding of symbol selection. Acquisition is met when child selects appropriate symbol from array of at least 3 with 80% accuracy across 2 consecutive sessions.
Resources

• Tangible Symbol Systems by C. Rowland and P. Schweigert, 2000; [http://www.ohsu.edu/xd/research/centers-institutes/institute-on-development-and-disability/design-to-learn](http://www.ohsu.edu/xd/research/centers-institutes/institute-on-development-and-disability/design-to-learn)


