

# Communication Matrix: Goal Writing & Implementation Strategies



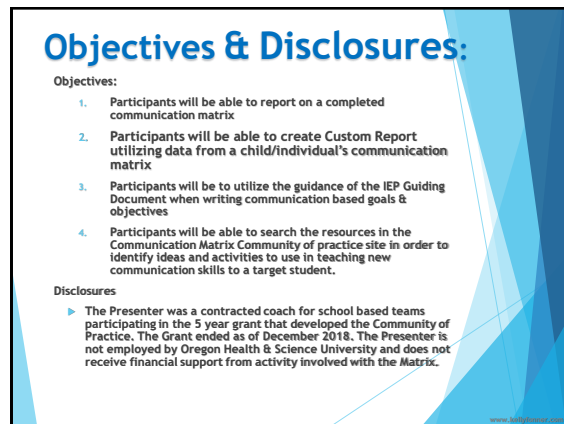
**Communication Matrix 2 Part Workshop:**

Session 1 - Expressive Assessment Tool & Supports  
 Session 2 - Goal Writing & Implementation Strategies

Presenter: Kelly Fonner, MS  
 Assistive Technology Consultant  
 www.kellyfonner.com

Afternoon

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**Objectives & Disclosures:**

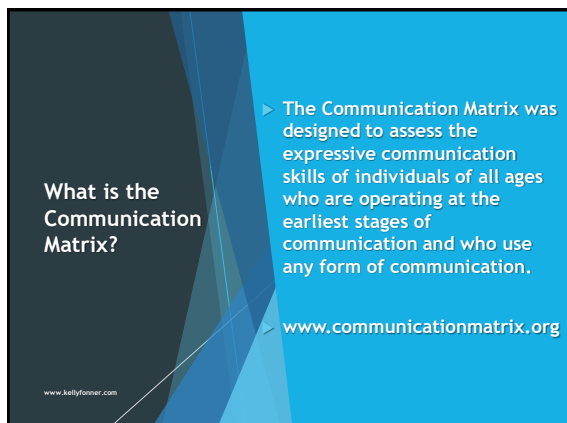
**Objectives:**

1. Participants will be able to report on a completed communication matrix
2. Participants will be able to create Custom Report utilizing data from a child/individual's communication matrix.
3. Participants will be able to utilize the guidance of the IEP Guiding Document when writing communication based goals & objectives
4. Participants will be able to search the resources in the Communication Matrix Community of practice site in order to identify ideas and activities to use in teaching new communication skills to a target student.

**Disclosures**

- ▶ The Presenter was a contracted coach for school based teams participating in the 5 year grant that developed the Community of Practice. The Grant ended as of December 2018. The Presenter is not employed by Oregon Health & Science University and does not receive financial support from activity involved with the Matrix.

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**What is the Communication Matrix?**

- ▶ The Communication Matrix was designed to assess the expressive communication skills of individuals of all ages who are operating at the earliest stages of communication and who use any form of communication.

[www.communicationmatrix.org](http://www.communicationmatrix.org)

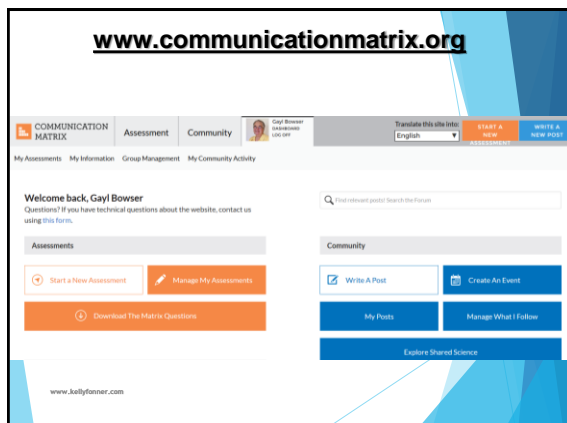
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**Privacy**

- ▶ No identifying information collected
- ▶ Information entered is stored in database
- ▶ IRB-approved privacy mechanisms

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**www.communicationmatrix.org**

COMMUNICATION MATRIX | Assessment | Community

Welcome back, Gayl Bowser

Start a New Assessment | Manage My Assessments | Download The Matrix Questions

Write A Post | Create An Event | My Posts | Manage What I Follow

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**Free Assessment Tool: Communication Matrix**

The Communication Matrix

GEORGIA P. Bowser

Communication Matrix Profile for Parents and Professionals

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# Communication Matrix: Goal Writing & Implementation Strategies

## Communication Matrix Skills List

Prints specific to each child's assessment

Image from Prentice Romich

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## Communication Matrix

### Custom Report

A \$6 per report service that pulls together each Matrix, connects present levels of performance & goals

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## Tool for success

The Communication Matrix Custom Report offers the opportunity to summarize current performance in great detail and also provides choices of specific intervention strategies to target each state/function/intent covered by the Matrix.

### The Communication Matrix Custom Report

Over 100 PDFs - Logged In - Logout  
Home - Change Email - Change Password

New Instructions  
This report is divided into 7 steps. At each step, click the check boxes to select the elements you want to include in your report.

[communicationmatrix.org/CustomReportInfo.aspx](http://communicationmatrix.org/CustomReportInfo.aspx)  
www.kellyfonner.com

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## How to Use Videos

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## Communication Matrix Community of Practice

The community of practice is a place for teachers (SLPs & parents) to be directly involved in both giving and receiving high quality, just in time information to support students with complex communication needs.

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## <http://designtolearn.com/>

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

[illegible]

## PRIMARY LEVEL AT WHICH CLIENT IS OPERATING

Unconventional pre-symbolic behaviors are used intentionally to communicate. Communicative behaviors are "pre-symbolic" because they do not involve any sort of symbol; they are "unconventional" because they are not socially acceptable for us to use as we grow older. Communicative behaviors include body movements, vocalizations, facial expressions and simple gestures (such as tugging on people).

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#### PERCENTAGE OF MESSAGES EXPRESSED AT EACH LEVEL

- Level 1: 100%
- Level 2: 100%
- Level 3: 87.5%
- Level 4: 35.7%
- Level 5: 29.4%
- Level 6: 0%
- Level 7: 0%

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## CATEGORIES OF BEHAVIOR USED TO COMMUNICATE

- Early Sounds
- Facial Expressions
- Simple Gestures
- Conventional Gestures & Vocals
- Concrete Symbols
- Body Movements

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## SUMMARY OF PROGRESS SINCE LAST ASSESSMENT

is operating on the same level as s/he was previously, but has gained some new skills at a higher level

- C3. Requests a New Action
- C6. Request a New Object
- C11. Offers Things or Shares

- Concrete Symbols

Georgie is making progress in the use of tangible symbols for favorite activities and toys. She is less frustrated.

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# Communication Matrix: Goal Writing & Implementation Strategies

## Targeted Level=5

RECOMMENDATIONS	
LEVEL 1	
LEVEL 2	
LEVEL 3	
LEVEL 4	
LEVEL 5	<ul style="list-style-type: none"> <li>Description of Level V                             <ul style="list-style-type: none"> <li>Symbols represent, or stand for, something else. At Level V, individuals use "concrete" symbols that physically resemble what they represent. They look like, feel like, move like or sound like whatever they represent. Concrete symbols include pictures, objects (such as a shoelace to represent "shoe"), "iconic" gestures (such as patting a chair to say "sit down") and sounds (such as making a buzzing sound to mean "bee"). Most individuals skip this stage and go directly to Level VI. But for some individuals, concrete symbols may be the only type of symbol that makes sense to them, for others they may serve as a bridge to using abstract symbols. Typically developing children use concrete symbols in conjunction with gestures and words, but not as a separate stage.</li> </ul> </li> </ul>



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## General Goals selected for Georgie from Level 5

### General Goals For Level V

- Increase the number of different symbols (vocabulary) in the symbol mode that the client currently uses.
- Expand the use of concrete symbols to new contexts, partners, materials and settings.



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## Intents to Target at Level 5 + Suggestions

### Intents to Target and Specific Suggestions

#### C2. Requests More of an Action

- Choose a motivating activity, for example: bubbles, balloons, swinging, tickle, taking a bath, taking a walk, reading books, singing a song at circle time, or action toys or electronic musical devices that Georgie needs your assistance to activate. Every once in a while, stop the action or turn off the device. Don't start it again until Georgie uses the targeted concrete symbol to ask for more of the action. Continue to provide opportunities for (him/her) to make requests throughout the activity.

#### C2. Specific Level 5 behaviors to target

#### C2. Other Suggestions

#### 3-D symbols for major activities of day, especially preferred activities.

Use 3-D activity symbols to "announce" new activities before you begin them (to give Georgie a chance to learn what the symbols mean).



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## Strategies for Monitoring Progress

### Monitoring Progress

Type of data: (e.g. pointing to desired object, using manual sign to request help)

Touching/giving appropriate symbol after activity is stopped, when she wants more of an item, or to make a choice. Demonstrate comprehension of a 3-D symbol by going to correct activity area or by selecting appropriate item when given a symbol for it.

How to measure behavior (e.g., frequency of behavior, accuracy, independence, level of assistance)

Level of assistance

How often to take data (e.g., once a week at snack, every day at circle time)

1 X per week in each major activity

Who will take the data

Rose and Sean

Criterion for success (e.g. points to desired object to verbal cue of "What do you want?" at least 75% of the time)

Independently touches/gives correct symbol to ask for more or independently demonstrates comprehension of symbols in 3/4 opportunities when give choice of at least 2 symbols at a time.

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## Possible Goal

- By [date] in daily school activities (work, leisure, PE, music), when a) ongoing activity is stopped, b) she is asked what she wants next, and c) she is presented with her activity symbols, Georgie will independently select a 3-D activity symbol (for preferred activity) by handing it to her partner or pointing to it in order to request more or to request a new activity, as measured as an increase above baseline once/week by educational assistant.

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## Deciding on intervention goals based on the Communication Matrix assessment



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# Communication Matrix: Goal Writing & Implementation Strategies

## The Basics

- Use the learner's current skills as a foundation
- The learner should be allowed to perform at his/her current level
- The learner should be steadily pushed toward a higher level

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## Decisions to make

1. What level should you target?
2. Which messages should you target?
3. What are the specific behaviors the learner will use?

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## Generic Intervention Goals: Level 1

If the learner is operating competently at

### Level 1: Pre-intentional Behavior

*Behavior is not under the individual's own control, but it reflects his/her general state (comfortable, uncomfortable, hungry or sleepy). Caregivers interpret the learner's state from behaviors such as movements, facial expressions and sounds.*

Consider the following generic interventions to push the learner toward a higher level of competence

- Encourage *intentional behavior* by creating highly responsive environments to promote "contingency awareness." Note that data collection may be important at this level to demonstrate convincingly that a behavior is intentional.



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## Generic Intervention Goals: Level 2

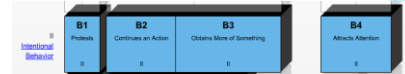
If the learner is operating competently at

### Level 2: Intentional Behavior

*Behavior is under the learner's control, but it is not yet used to communicate intentionally. Caregivers interpret the individual's needs and desires from behaviors such as body movements, facial expressions, vocalizations and eye gaze.*

Consider the following generic interventions to push the learner toward a higher level of competence

- The focus is on *establishing "social contingency awareness"* (the understanding of one's own ability to cause other people to respond).
- Respond to potentially communicative behaviors so that the learner becomes aware of their communicative purpose.
- Some individuals may require extraordinary efforts to entice them into social interactions.



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## Generic Intervention Goals: Level 3

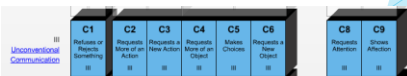
If the learner is operating competently at

### Level 3: Unconventional Communication

*Unconventional pre-symbolic behaviors are used intentionally to communicate. Communicative behaviors are pre-symbolic because they do not involve any sort of symbol; they are unconventional because they are generally not socially acceptable for us to use as we grow older, since they often involve physical contact.*

Consider the following generic interventions to push the learner toward a higher level of competence

- Shape *nonconventional gestures into conventional gestures* and/or target symbol use.
- Some conventional gestures (Level 4) require good visual or motor skills and may not be reasonable targets.
- Symbols may be concrete (Level 5) or abstract (Level 6), depending upon the needs of the learner.



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## Generic Intervention Goals: Level 4

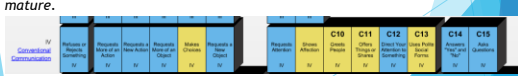
If the learner is operating competently at

### Level 4: Conventional Communication

*Conventional pre-symbolic behaviors are used intentionally to communicate. Communicative behaviors are pre-symbolic because they do not involve any sort of symbol; they are conventional because they are socially acceptable and we continue to use them to accompany our language as we mature.*

Consider the following generic interventions to push the learner toward a higher level of competence

- Teach 1:1 *correspondence between symbols and referents*.
- Symbols may be concrete (Level 5) or abstract (Level 6), depending upon the needs of the learner.



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# Communication Matrix: Goal Writing & Implementation Strategies

## Generic Intervention Goals: Level 5

If the learner is operating competently at

### Level 5: Concrete Symbols

Concrete symbols that physically resemble what they represent, are used to communicate. Concrete symbols look like, feel like, move like or sound like what they represent. Concrete symbols include pictures, objects (such as a shoelace to represent shoe), iconic gestures used to represent specific sounds used to represent things.

Consider the following generic intervention goals to push the learner toward a higher level of competence

- Teach the combination of concrete symbols into two- and three-symbol utterances.
- Consider teaching 1:1 correspondence between abstract symbols and referents, if there is an abstract symbolic mode that the learner can understand and perceive adequately.

Level	Pre-Intentional Behavior	Intentional Behavior	Unconventional Communication	Conventional Communication	Concrete Symbols	Abstract Symbols	Language
V	✓	✓	✓	✓	✓	✓	✓

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## Generic Intervention Goals: Level 6

If the learner is operating competently at

### Level 6: Abstract Symbols

Abstract symbols such as speech, manual signs, brailled or printed words are used to communicate. These symbols are abstract because they are NOT physically similar to what they represent.

Consider the following generic interventions to push the learner toward a higher level of competence

- Teach the combination of abstract symbols into two- and three-symbol utterances.

Level	Pre-Intentional Behavior	Intentional Behavior	Unconventional Communication	Conventional Communication	Concrete Symbols	Abstract Symbols	Language
VI	✓	✓	✓	✓	✓	✓	✓

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## Generic Intervention Goals: Level 7

If the learner is operating competently at

### Level 7: Language

Symbols (concrete or abstract) are combined into two- or three-symbol combinations ('want juice', 'me go out'), according to grammatical rules. The individual understands that the meaning of symbol combinations may differ depending upon how the symbols are ordered.

Consider the following generic interventions to push the learner toward a higher level of competence

- Expand semantic and syntactic abilities by introducing symbols for new vocabulary and increasing the length of symbol combinations (symbols may be concrete or abstract).

Level	Pre-Intentional Behavior	Intentional Behavior	Unconventional Communication	Conventional Communication	Concrete Symbols	Abstract Symbols	Language
VII	✓	✓	✓	✓	✓	✓	✓

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## What's happening now?

### What is the learner's Primary Level of communication?

- The Level that the client uses most often to communicate.
- The Level at which the client is able to express the greatest variety of different messages.
- The Level at which the client's communication shows the greatest mastery.

### What higher levels of communication does the learner use?

- Often these are levels that instruction will target.



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## What's happening now?

- ▶ What new states (Level 1), functions (Level 2) or intents (Levels 3-7) does the learner want to express or need to express?
- ▶ Consider targeting new messages that the child really wants or needs to express.

Level	Behavior	Category	Symbol	Information
1	Pre-Intentional Behavior	Expresses interest	Pre-Intentional Behavior	Expresses interest in other people
2	Intentional Behavior	Communicates or acts	Intentional Behavior	Communicates or acts
3	Unconventional Communication	Expresses need of something	Unconventional Communication	Expresses need of something
4	Conventional Communication	Expresses need of an object	Conventional Communication	Expresses need of an object
5	Concrete Symbols	Expresses need of an object	Concrete Symbols	Expresses need of an object
6	Abstract Symbols	Expresses need of an object	Abstract Symbols	Expresses need of an object
7	Language	Expresses need of an object	Language	Expresses need of an object

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## What's happening now?

- ▶ What categories of behavior does the learner use to communicate now?
- ▶ Look at the Communication Skills List to see which categories the learner uses to communicate.

Level	Behavior	Category	Symbol	Information
1	Pre-Intentional Behavior	Expresses interest	Pre-Intentional Behavior	Expresses interest in other people
2	Intentional Behavior	Communicates or acts	Intentional Behavior	Communicates or acts
3	Unconventional Communication	Expresses need of something	Unconventional Communication	Expresses need of something
4	Conventional Communication	Expresses need of an object	Conventional Communication	Expresses need of an object
5	Concrete Symbols	Expresses need of an object	Concrete Symbols	Expresses need of an object
6	Abstract Symbols	Expresses need of an object	Abstract Symbols	Expresses need of an object
7	Language	Expresses need of an object	Language	Expresses need of an object

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## What Level/s do you want to focus on for intervention?

- You may decide to work on increasing competence at the Primary level of communication.
- And/or at a higher level that the learner uses now.
- We recommend that you do not target more than two Levels at the same time.

1  
Pre-Intentional Behavior

2  
Intentional Behavior

3  
Unconventional Communication

4  
Conventional Communication

5  
Concrete Symbols

6  
Abstract Symbols

7  
Language

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## What specific behaviors do you want to focus on?

- This will depend largely on what the learner wants to communicate about and what behaviors (whether pre-symbolic or symbolic) are needed to communicate about those things.

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Category: Communication

Goal:

Expressive Communication  
Caden will demonstrate use of Boardmaker abstract symbols to do the following communication functions with a 50% increase from baseline.

Present Level:

Mastery Criteria or Short-Term Objective: Caden will increase his discrimination of PCS Boardmaker symbols by 50% by

Measurement Method: teacher observation

Anticipated Date:

a. requesting  
b. making a choice  
c. commenting  
d. greeting or saying goodbye  
e. answering yes or no

Is the goal area related to alternate assessments aligned to alternative achievement standards?  
☐ General curriculum  
☐ Modified general curriculum  
☒ Alternate curriculum

## Ready to Develop and Assess IEP goals!

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## The Problem

- Educational (IEP) goals may be legally compliant, but not of high quality: objectives may not be educationally beneficial to an individual child (Etschiedt 2012, 2008)
- Educational (IEP) goals developed for children with autism were found to be inconsistent with evidenced-based practice (Ruble et al 2010)
- Little similarity was found between observed symptoms of language disorders and IEP goals for children with language disorders (Schmidt, 2011)

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## How Do you Judge the Quality of Educational Goals Related to AAC?

- No clear guidelines
- No existing resources capture all the characteristics needed to judge communication-related goals from an ICF-based perspective

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## Design to Learn IEP Goal Development Guide

design to LEARN

- A tool to evaluate IEPs that goes beyond legal requirements
- Provides a comprehensive list of qualities that contribute to excellent IEP goals for children with CCN
- Uses principles of ICF (activities, participation, function, focus on the individual, influence of the environment)

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# Communication Matrix: Goal Writing & Implementation Strategies

## A Guide, not a Rating Scale

Charity Rowland, Emily Dayle Quinn, Sandra A. M. Steiner & Gayl Bowser

- ▶ Main purpose is to help professionals evaluate the goals that they write
- ▶ Does each goal make sense for the specific student?
- ▶ Is the entire IEP of high quality?

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### A. Are the goals Focused and Precise?

1	Does each goal have one clear focus, as opposed to several different ones?
2	Can you picture exactly what the student will do (what behaviors the student will use) to achieve each goal?
3	Can you picture in what places and activities the learning will occur?
4	Can you picture the cues that the teacher will provide to support learning each goal?

This? *Student will show expressive and receptive use of speech generating device.*

Or this? *In classroom activities and in cafeteria, student will look at communication partner and tap arm to gain attention when partner sits close by, but withholds attention.*

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### B. Will the goals be Measured appropriately?

5	Does each goal include a way of measuring performance that is appropriate and that reflects the most important aspect of the behavior targeted?
6	Does the criterion for achieving each goal make sense and represent meaningful progress?
7	Will progress be monitored frequently enough so that the learning environment can be adjusted promptly in response to the student's successes or difficulties?
8	Is it clear whose responsibility it is to collect progress data?

- Most common criterion: 80% accuracy on 4 out of 5 trials.
  - Consider this Example: Will maintain ability to "come here" when prompted by a teacher from 91% accuracy to 90% accuracy.
- Consider carefully what criteria are appropriate when use of symbols is being measured.
  - Consider this Example: Student will choose correct symbol from a choice of 2 with 50% accuracy.

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### C. Do the goals target Active Participation?

9	Do the goals encourage the student's full and active participation in activities with peers?
10	Do the goals foster interactions and relationships that will support participation in the community and family?
11	Will the new skills increase the student's capacity to function more independently in the "real world"?

To what degree will achieving these goals/objectives have an impact on the student's active participation beyond the classroom?

This? *When presented with picture schedule or hand-in-hand signing, student will tolerate it.*

Or this? *Student will use picture symbols to request needed materials from peers to help set up small group activities including science, art and snack.*

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### D. Are the goals Student-centered?

12	Will the learning occur during preferred activities that motivate the student?
13	Does the student have the physical, sensory and intellectual abilities required to learn the targeted skills?
14	Do these goals offer a reasonable challenge for this particular student?
15	Do these goals describe cues that match the student's needs?

- Learning is improved when goals focus on individual strengths, interests, and emerging skills (Pretti-Fontczak & Bricker, 2000).
- Students who require extensive intervention, and who have to work harder than most students to learn, will benefit from highly individualized instruction that takes advantage of intrinsically motivating activities and materials.
- Goals should represent a significant (but not overwhelming) degree of challenge for the student.
- It is important to provide cues that accommodate the student's intellectual, physical and sensory capacities.

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### E. Are the goals Functional?

16	Do the behaviors to be learned serve a useful purpose for this student (for instance, saying a word to ask for something, rather than merely repeating the sound)?
17	Are the targeted behaviors likely to carry over to other settings and materials outside of the learning context?
18	Can the goals be implemented by nonprofessionals under natural conditions outside of school?

This? *Student will repeat names of five body parts.*

Or this? *Student will use speech-generating device to choose books and to direct peers to turn book pages."*

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# Communication Matrix: Goal Writing & Implementation Strategies

**F. Are the goals Educationally Appropriate?**

19	Do the targeted skills represent logical next steps based on the student's current skills?
20	Is it possible to address the goals at least daily?
21	Will the targeted skills help the student make progress toward the attainment of relevant educational standards?

This? Student will identify own towel when taken to weekly swimming lesson.

Or this? Student will initiate comments and questions directed to adults or peers, a minimum of 4 words per comment, 5 or more comments per day, as measured 2 days per week, for 3 consecutive weeks.

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**G. Is the Entire IEP of high quality?**

22	Does the IEP as a whole reflect the desires of the student and family, as well as their cultural norms?
23	Is the IEP free of educational jargon so that it is easy for nonprofessionals to understand?
24	Taken together, do the goals have an appropriate breadth; will they make a real difference in the student's life?
25	Are goals that were not met last year changed or discarded (rather than automatically carried forward from year to year)?
26	Are the proposed accommodations and modifications (e.g., specialized staff, materials, environmental conditions, interaction guidelines) appropriate to achieve the goals?
27	Does the present levels of function statement provide specific information/details about the student's skills to create a useful picture of the student?
28	Does the present levels of function statement emphasize the student's strengths?

This? Will decode VE and VC words in modified core curriculum materials aligned to grade level state standards.

(In the U.S. IEPs must contain a statement of "Present Level of Functioning" and a list of accommodations and modifications to be provided)

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**Benefits**

- ▶ May be administered repeatedly as an outcome measure to evaluate differences in quality of IEPs
- ▶ Discriminates well between IEPs judged to be of varying quality on subjective terms
- ▶ Promotes ICF approach: active participation in society is the ultimate goal of education
- ▶ May be used to encourage "Reflective Practice" by providing a means for practitioners to evaluate their work objectively

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**Where can I find the Design to Learn IEP Development Guide?**

<http://www.designtolearn.com/content/educational-resources>

Revised Design to Learn IEP Development Guide (2016)  
The 28-item IEP quality guide was created to serve as a clinical resource for educators and therapists who develop educational goals. The guide was created specifically to address the difficulties of developing high quality communication-related educational goals for children with complex communication needs. The first six sections include questions about the quality of the goal/objectives; while the seventh section addresses questions related to the IEP document as a whole. The items are presented as questions that a practitioner (or parent) could ask about a proposed IEP. The questions served the IEP developer to consider whether the proposed goal was functional and educationally appropriate, and whether the entire IEP is of high quality. This clinical tool may serve as a bridge between meeting legal requirements and generating high quality goals that students, professionals and families can understand.

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Download here

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**CEP: Communication Enhancement Process**

- ▶ Year Long Classroom Intervention Process
- ▶ Focus is on students who communicate with non-symbolic (behavioral) modalities
- ▶ To develop more intentional & symbolic communication
- ▶ In order to communicate with a wider range of communication partners
- ▶ Communicate more independently, increase # of communication functions & unprompted interactions

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**One Training Model: CEP (Communication Enhancement Project)**

- ▶ Training Basics
- ▶ Scripting Activities
- ▶ Environmental Arrangements
- ▶ Prompt Hierarchy
- ▶ Tools for Communication

The diagram consists of four overlapping circles. The top circle is blue and labeled 'Activity'. The bottom circle is orange and labeled 'Partner'. The left circle is pink and labeled 'Environment'. The right circle is yellow and labeled 'PURPOSE'. The central area where all four circles overlap is the focus of the training model.

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## Instructional Strategies for Communication Enhancement

**PURPOSE**

Supports for Communication within the Activity:

- ▶ Environmental Arrangements
  - ▶ Materials for interaction
  - ▶ Setting, Location of communication partners
  - ▶ Visual strategies for receptive understanding
- ▶ Partner Supports
  - ▶ Prompting, Instructional Cues
  - ▶ Chaining, Level of assistance
  - ▶ Consequences
- ▶ Expressive Communication/AAC
  - ▶ Targeted behaviors
  - ▶ Appropriate means to refuse

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## First Things First: Communication Activity Purposes

**design to LEARN**

**ACTIVITY**

- ▶ Preference Assessment (p13-15)
- ▶ Establishing Intention Communication (p16-20)
- ▶ Reinstatement
  - ▶ I want more! (p21-22)
  - ▶ Time to change (p22-23)
- ▶ Gaining Attention (p25-32)
- ▶ Communicating Choices (p33-35)
  - ▶ Choice Making
  - ▶ Preferred items
  - ▶ Non-preferential items/ Distractors
  - ▶ Rejection

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## Instructional Strategies for Communication Enhancement

**ACTIVITY**

Preference Assessment

1. Present an array of objects as trial
  - For the student with intentional "easy to read" behavior
2. Engage in different activity choices
  - For the student who is "difficult to read"
3. Highly structured sensory preference probe
  - For the student with questionable intentionality

www.kellyfonner.com p13-15

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## Instructional Strategies for Teaching Communication

**Activity**

Establish intentional communication behaviors (2 types)

1. Social contingency awareness
2. Cause-effect, Means-ends

p16-20 \* www.designtolearn.com

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## Communication Activity Purposes: Expand the repertoire of communication behaviors & intentions

**Activity**

- ▶ Reinstatement (p21-23)
  - ▶ I want more!
  - ▶ Time to change
- ▶ Gaining Attention (p25-32)
- ▶ Communicating Choices (p33-35)
  - ▶ Choice Making
  - ▶ Preferred items
  - ▶ Non-preferential items/Distractors
  - ▶ Rejection

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## Symbol System Examples

- ▶ Sign Language

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## Symbol Systems



Objects in Base Trainer




Miniatures in Talking My Way Communication System




Photographs on ChatPC-M3

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## Symbol System Examples




**Photographs**  
-TOBI  
-Visual Scenes




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## Symbol System Examples



Color Pictures Visual Scene Display




B&W Symbols





Color Symbols

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## Tactual Considerations:



- ▶ Miniatures or textures or parts to whole?
- ▶ Pairing a tactual with the meaning
- ▶ How to represent:
  - ▶ Noun
  - ▶ Action
  - ▶ Place
  - ▶ Description





*Images from Texas School for the Blind & Visually Impaired*

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## Symbol System Examples

▶ Color Coding



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## Symbol Features

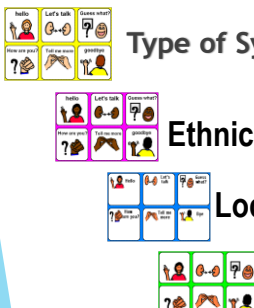


**Type of Symbol**

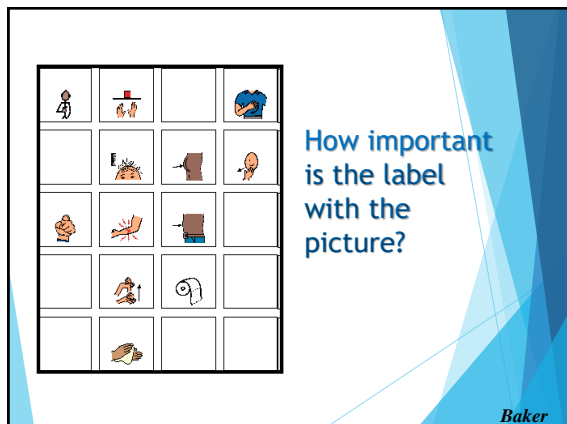
**Ethnic Representation**

**Location of Symbol**

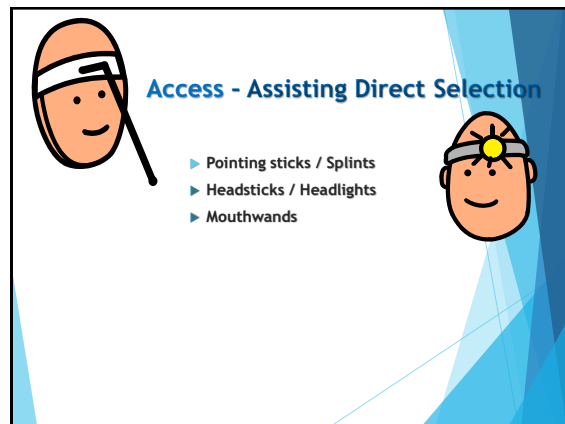
**Message Label**



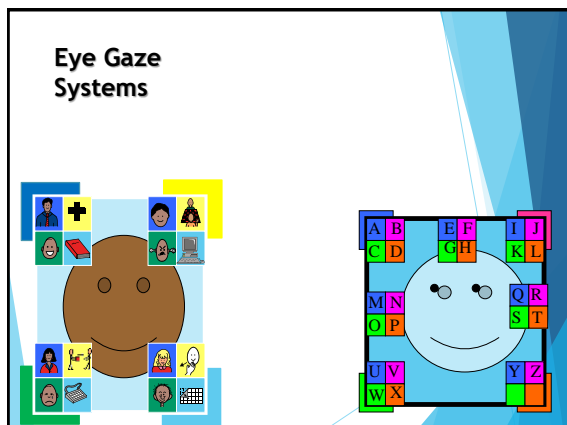
74



75



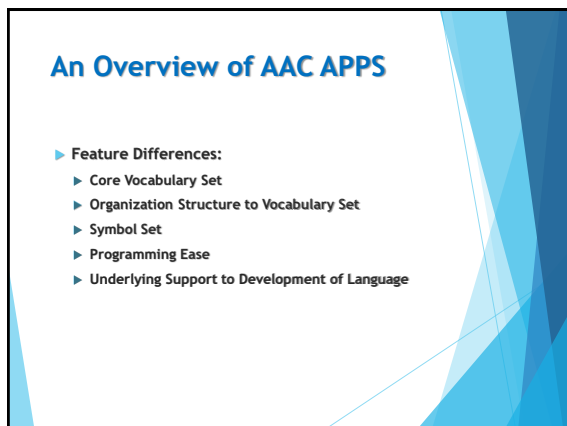
77



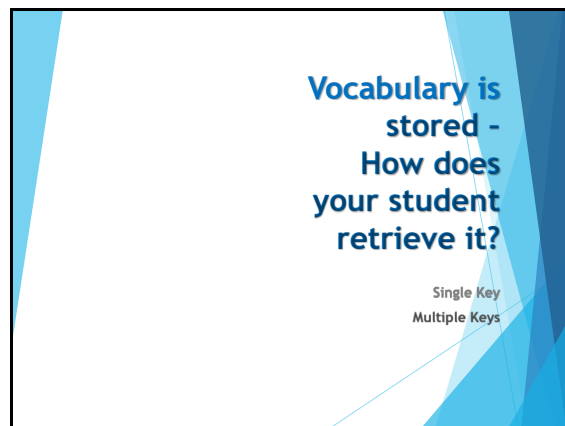
78



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## Preliminary Considerations to Language Processing

- ▶ Language processing demands will vary with the type of student.
- ▶ Students usually progress through a series of levels as they learn to communicate.
- ▶ Language range from generalizable to generative.

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## Communicative Functions

- ▶ Language intent falls into a variety of categories, based on the function of the message.
- ▶ Functions are somewhat hierarchical.
- ▶ Demonstration of functions can present an indication of communication competency.

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## How do these communication functions look for your student?

- ▶ Ways to REFUSE things that you don't want
- ▶ Ways to OBTAIN things that you want
- ▶ Ways to engage in SOCIAL interactions
- ▶ Ways to provide or seek INFORMATION

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## Communicative Functions

- ▶ Direct attention to self
- ▶ Direct attention to object
- ▶ Direct attention to action
- ▶ Request action
- ▶ Request object
- ▶ Request information
- ▶ Answer
- ▶ Comply
- ▶ Reject
- ▶ Greeting
- ▶ Comment
- ▶ Reinforcement

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## Processing Message Set

- ▶ General Core Vocabulary
  - ▶ Frequently used by many people
  - ▶ Include morphological forms
- ▶ Fringe / Activity Vocabulary
  - ▶ Words specific to activity or location
- ▶ Personal Vocabulary
  - ▶ Frequently used by an individual
  - ▶ Not common to others

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## Organization of Vocabulary

- ▶ How Many Boards?
  - ▶ Single Board
  - ▶ Multiple Boards
- ▶ How Many Keys per Message?
  - ▶ Single Hit
  - ▶ Sequence of Hits



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## Major Types of Organizational Arrangements

Activity-Based (Schematic)	Category-Based (Taxonomic)
Semantic-Syntactic (Linguistic)	Alphabetic

From: Blackstone, S., (1993). Thinking a little harder about communication displays. *Augmentative Communication News*, 6, 1-3.

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## Activity-Based Displays (Schematic)

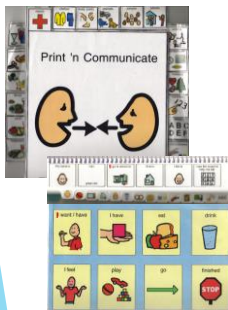
- The purpose of which is to depict people doing things or to capture an experience
- May include photo albums and conversation books
- May be particularly helpful for those with memory or cognitive deficits
- May necessitate repeating of symbols across multiple displays



From: Blackstone, S., (1993). Thinking a little harder about communication displays. *Augmentative Communication News*, 6, 1-3.

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## Category-Based Displays (Taxonomic)



- ▶ Groupings based on categories with vocabulary items arranged according to familiar taxonomies
- ▶ May include dictionaries and topic boards (e.g., I want to talk about home/family/feelings)
- ▶ Require knowledge of super-ordinate concepts
- ▶ Difficult to express relational concepts, or complex thoughts, and difficult to use appropriate syntax

From: Blackstone, S., (1993). Thinking a little harder about communication displays. *Augmentative Communication News*, 6, 1-3.

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## Semantic-Syntactic Displays (Linguistic)

- ▶ Groupings based upon some knowledge of grammar
- ▶ Provide a way to generate more complex thoughts, to develop linguistic skill, and to facilitate literacy skills
- ▶ May include semantic arrangements, grammatical arrangements, or a modified Fitzgerald Key
- ▶ Make it possible for communication partners to model language (augmented input/aided language stimulation techniques)



From: Blackstone, S., (1993). Thinking a little harder about communication displays. *Augmentative Communication News*, 6, 1-3.

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## Alphabetic Displays

- ▶ Groupings based on the alphabet
- ▶ Purpose is to provide:
  - ▶ unrestricted access to language
  - ▶ word boards
  - ▶ alphabetized elements within categories
  - ▶ opportunity for the development of spelling
- ▶ May include combination word-symbol boards
- ▶ Effective use depends on the student's prior knowledge, future goals, and the message selection techniques being used



From: Blackstone, S., (1993). Thinking a little harder about communication displays. *Augmentative Communication News*, 6, 1-3.

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## Add to this

- ▶ Visual Scene Displays (VSDs)
- ▶ Anecdote
  - ▶ chunking of information to relate scripted stories/anecdotes.
- ▶ Combinations Displays such as PODD - Pragmatically Organized Dynamic Displays

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## Does the use of Aided Strategies impeded natural speech?



**Does AAC impede natural speech?—and other fears**

Even when a child communicates primarily with AAC, there is no reason to believe that the child's natural speech will be impeded. In fact, the opposite is true. AAC use is often associated with an increase in natural speech. This is because AAC use provides a child with a means of expressing their needs and desires, which can lead to a more confident and expressive child. AAC use also provides a child with a means of learning about the world around them, which can lead to a more engaged and motivated child. AAC use is a powerful tool for supporting communication, and it is important to remember that AAC use does not impede natural speech.

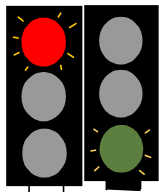
**How does AAC impact the use of any type of speech development?** Children who frequently provided with communication programs or other types of AAC are not at a disadvantage. In fact, AAC use can lead to a more confident and expressive child. AAC use also provides a child with a means of learning about the world around them, which can lead to a more engaged and motivated child. AAC use is a powerful tool for supporting communication, and it is important to remember that AAC use does not impede natural speech.

**Can the other hand, which is easy to appreciate in children with speech difficulties, is to offer to have a communication program or other type of AAC. This is a common misconception. AAC use does not impede natural speech. In fact, AAC use can lead to a more confident and expressive child. AAC use also provides a child with a means of learning about the world around them, which can lead to a more engaged and motivated child. AAC use is a powerful tool for supporting communication, and it is important to remember that AAC use does not impede natural speech.**

Common fears and myths	What the facts are	Practical solutions
AAC use will impede natural speech.	AAC use does not impede natural speech. In fact, AAC use can lead to a more confident and expressive child.	Encourage AAC use and provide support for natural speech.
AAC use will lead to a child who is dependent on AAC.	AAC use is a powerful tool for supporting communication, and it is important to remember that AAC use does not impede natural speech.	Encourage AAC use and provide support for natural speech.
AAC use will lead to a child who is not motivated to learn.	AAC use provides a child with a means of learning about the world around them, which can lead to a more engaged and motivated child.	Encourage AAC use and provide support for natural speech.

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## Considering cognitive load



- Red Light - difficult or new communication task pair with
- Green Light - easy access to communication
- Green Light - easy communication task pair with
- Red Light - new or difficult access to communication

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## Environmental Arrangements

- ▶ Interesting materials & activities
- ▶ Materials in view, out of reach
- ▶ Materials with which need assistance
- ▶ Small amounts
- ▶ Inadequate portions
- ▶ Involvement of Peer Partners



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## Environmental Arrangements Teaching Displays

### Schedule Systems

- ▶ Activities of the Day Schedules
- ▶ Within-activity Task Schedules
- ▶ Picture sequence chart for task performance
- ▶ Visual "bridges" for transitions

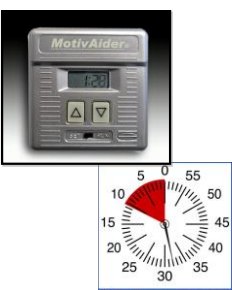
### Cues for Talking

- ▶ Picture or Text based prompts
- ▶ Mnemonic device for what to communicate

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## Time Tracking

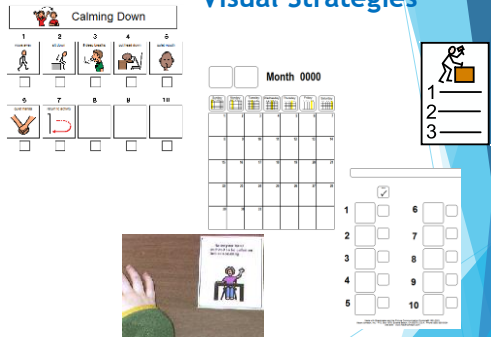


- ▶ Digital Clock
- ▶ Count down
- ▶ Count up
- ▶ Clock face
- ▶ Count down
- ▶ Intervals
- ▶ Stopwatch
- ▶ Multiple Alarms

*Time Timer*

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## Visual Strategies



**Calming Down**

1. Sit on the floor
2. Close your eyes
3. Breathe in and out
4. Relax your body
5. Stay calm

**Month 0000**

**Checklist**

1	6
2	7
3	8
4	9
5	10

*Examples from Mayer Johnson*

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## Being an Effective Communication Partner




- ▶ Give time to respond
- ▶ Avoid excessive use of questions
- ▶ Avoid repeating or questioning a child's message
- ▶ Make available communication tools where & when needed

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## Considerations in Partner Assisted Scanning

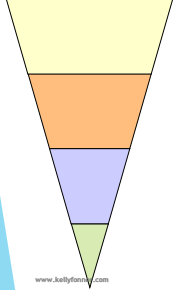
- ▶ Motivation
- ▶ Multiple cycles of presentation
- ▶ Consistency of order
- ▶ Include a "way out"
- ▶ Decrease verbal questions/language
- ▶ Use easiest student mode
- ▶ Accept multiple communication modes
- ▶ Attribute communicative meaning to all attempts
- ▶ Support physical movement
- ▶ Augment with a generative modality



Hanser

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## Most to Least Prompting for teaching a NEW skill

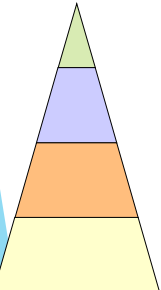


- ▶ Full Physical
  - ▶ Support action to choose from display
- ▶ Partial Physical
  - ▶ Touch to start action towards display
- ▶ Modeling
  - ▶ Model on separate display
- ▶ Gesture
  - ▶ Motion towards display
- ▶ Verbal
  - ▶ Tell Me
- ▶ Independent
  - ▶ Response to natural cue

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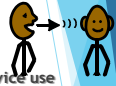
## Least to most Prompting for skill mastery & independence



- ▶ Independent
  - ▶ Response to natural cue
- ▶ Verbal
  - ▶ What do you Need? Or Tell Me...
- ▶ Gesture
  - ▶ Motion towards display
- ▶ Modeling
  - ▶ Model on their device or separate display
- ▶ Partial Physical
  - ▶ Touch to start action towards display
- ▶ Full Physical
  - ▶ Support action to choose from display

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## Be *descriptive* in your Feedback NOT rewarding



- ▶ Confirms message sent by the person
- ▶ Don't re-ask questions
- ▶ Opportunity to expand upon language &/or device use
- ▶ Respond to intelligible utterances or indistinct gestures by requesting that the person "say it another way"

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## Scripting

- ▶ Should state what the student will do or say to complete the activity at the final criterion
- ▶ Use only verbs such as Ask Tell Say and Answer to describe the communication from the student
- ▶ Remember that all communication has equal value regardless of the modality being used

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# Communication Matrix: Goal Writing & Implementation Strategies

## Social Regulation Functions

- ▶ How does the activity Initiate?
- ▶ What Maintains the activity?
- ▶ What Redirects the activity?
- ▶ How does the activity Terminate?

*How, What & Why do We Communicate within Activities?*

Otherwise you fly by the seat of your pants...

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## Components of a Communication Script

- 1) Objective(s)
- 2) Criteria
- 3) Materials
- 4) Environment (Setting, Partner, Positioning)
- 5) Teaching Routine
  - Staff cue & assistance (verbal, visual, physical)
  - Student target behavior (what do they communicate & how/mode)
  - Consequence (what happens if they do & what happens if they don't)

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## Think through the Whole Activity

▶ Beginning - Middle - End

▶ Not just one step - make a whole activity

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## Building Symbolism with the Same Activity - Types of Chaining

- ▶ **Forward Chaining**
  - ▶ Start at first part of task & proceed sequentially to the last part. One step at a time until skills are built to the last part of the task.
- ▶ **Backward Chaining**
  - ▶ Start at the last part of the task & proceed sequentially to the first part. Student completes the last step first & experiences the whole task.

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## Collecting Data on Student Progress

- ▶ Videotaped segments
  - ▶ Baseline of activity
  - ▶ Intervention segments (approximately once a month)
  - ▶ Adjust to numerical data
  - ▶ Create chart in Excel
  - ▶ Make graph by Insert Diagram/Chart
- ▶ Track
  - ▶ Novel comments
  - ▶ Level of prompting
  - ▶ Use of vocabulary

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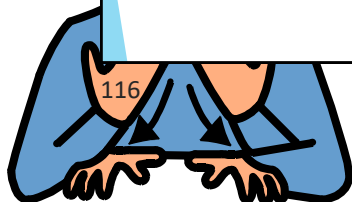
## Data Collection connected to the type of Activity

Preference Assessment & Simple Communicative Intent

With a Prompt Hierarchy

Data collection from Design To Learn

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## 119

## Communication Matrix: Goal Writing & Implementation Strategies

## Reinstatement Data & Analysis

date	Scarf Reinstatement										Totals	
"More"	1	2	3	4	5	6	7	8	9	10	time	
baseline	+	+	+	+	+	+					3m	6
22-Feb	+	+	+	+	+	+					2.46m	6
1-Mar	+	+	+	+	+	+	+	+			3m	8
8-Mar	+	+	+	+	+	+	+	+	+	+	3m	10

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# Data Example

## Reinforcing Learned Communication Intent/Behaviors

### CEP Prompt/Merchery

<b>Student:</b> Jerome <b>Objectives:</b> Communicate "More" for lunch/snack foods by using switch or to vocalize <b>Criteria:</b> 100% of verbal cue 3 out of days per week	<b>Instructor:</b> Educational Assistant <b>Materials:</b> switch with more symbol is placed in-between student and food item <b>Scoring:</b> Mark with (+) prompt level with Positive response; Mark with (-) for each Prompt given but no response; Mark with (x) Prompt not given
--	--

**Facilitator Prompting Sequence:** present food item with view, out of reach - pause for 30 seconds; say "what do you want?" - pause 30 sec; gesture towards the switch - pause 30 sec; model switch use - pause 30; gentle lift of switch arm at elbow - pause 30 sec; assist to activate switch

Date	Student Response	Independent Natural Cue	Verbal	Gesture	Model	Partial Physical	Full Physical
Sep 25	Needed full assistance with switch	X	-	X	X	-	+
Sep 27		-	-	-	-	-	+
Sep 29	Only partial assistance	-	-	-	-	-	+
Oct 1	Responded at gesture	X	-	X	-	+	-
Oct 3		-	-	-	-	+	-
Oct 5	Responded as gesture with vocalization	-	-	+	-	+	-
Oct 8		-	-	-	-	+	-
Oct 10		-	-	-	-	+	-
Oct 12	Responded at verbal with vocalization	-	+	-	-	-	-
Oct 15	Responded at model with switch use	-	-	-	+	-	-
Oct 17	Responded at model with switch use	-	-	-	+	-	-

Date	Percentage of Correct Responses
Sep 25	40%
Sep 27	60%
Sep 29	60%
Oct 1	60%
Oct 3	60%
Oct 5	80%
Oct 8	40%
Oct 10	60%
Oct 12	60%
Oct 15	60%
Oct 17	60%

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# Data Collection in “More” Reading Activity

**CEP DATA COLLECTION CHARTING**

For reinforcing learned communication interactions/behaviors

**PROBET HIERARCHY**

Student:                      Instructor:                                                                                                         

Objectives:                      Student will communicate “read more” at book by touching visual on book that activates a switch.

Setting:                      100% at school on 1 out of 5 days.

Materials:                      Soundlight Mouse Book, gel pad, switch, “more visual” taped on bottom corner of every page of book

Date	Student Response	Facilitator Prompting Sequence					
		Independent	Verbal	Visual	Model	Partial	Full
		Behavioral Cue				Physical	Physical
10/15/14	Prompts: student verbal and gesture cue. Student accurately activates switch during the 1st trial.	1	2	3	4	5	6
		1	2	3	4	5	6
		1	2	3	4	5	6
		1	2	3	4	5	6
10/16/14		1	2	3	4	5	6
		1	2	3	4	5	6
		1	2	3	4	5	6
		1	2	3	4	5	6
	Student gel pad at end of rows. Did not complete trial.	1	2	3	4	5	6
10/17/14	Student not on right rows. Assistance required to activate switch. Student pressed switch. However it didn't activate. 1st attempt to activate switch.	1	2	3	4	5	6
		1	2	3	4	5	6
		1	2	3	4	5	6
		1	2	3	4	5	6

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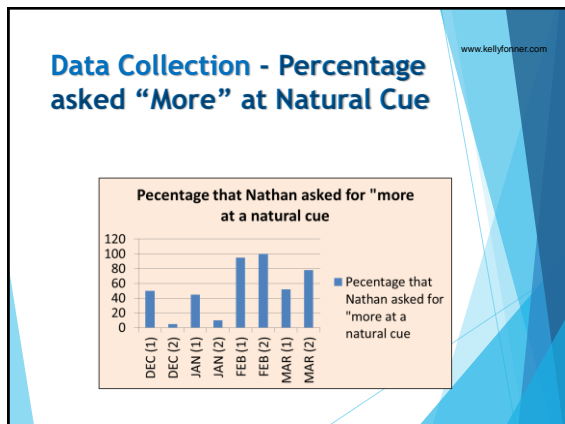
128

## Data Collection in “More” Reading Activity

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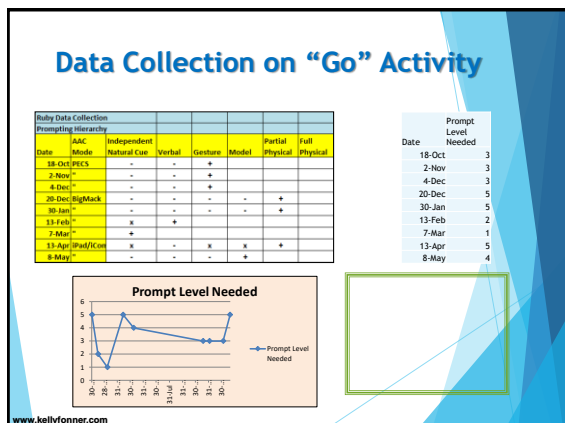
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## "Go" Activity with Prompt Hierarchy

Script ID #: Megan Hudschak and Megan Schulz District: Huron Valley Schools Age Range: 3-8  
Activity Topic: Letters Communication Purpose: Make choice  
Sub Topic: Click here to enter text. Criteria (Measurable): 2x daily

ENVIRONMENT	TEACHING ROUTINE	Student Target Behavior	Consequence given by staff
Setting: classroom Materials: big mac, switch and natural choices of walk, wagon, scooter, and walk on big mac. Positioning of student: ambulatory in classroom. Positioning of AAC device: big mac is permanently placed on window next to door. It is within height range of all students. Positioning of student: ambulatory and needs to walk to door. Position of Communication Partner: at door Position of Communication Facilitator: Click here	Staff Setup of Activity Step #1 Staff cues (verbal, visual): Support: Depends upon the time of day. Ruby, it's free choice time, what do you want to do? Staff assistance (physical): Click here	What student communicates: I want to go bike, go walk, go wagon ride etc. How student communicates: By manipulating big mac with the picture. Choose one wants say "go walk or ..."	If student does: walk towards door Then staff: Stand by door and wait. If student doesn't: manipulate switch Then staff: point to big mac. NO VERBAL. If student doesn't: manipulate switch Then staff: Model manipulating switch. NO VERBAL. If student doesn't: Manipulate switch Then staff: Say, What do you want to do? and move her hand to switch. If student doesn't: manipulate switch Then staff: Tell me you want to go & move hand to switch. If student doesn't: manipulate switch Then staff: tell me you want to go & physically assist

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## The Communication Enhancement Process

REVIEW:

- ▶ Targeting Students at the Emergent Communication Level
- ▶ Communication developed within Real Classroom Activities (not performances)
- ▶ No, Lo & Hi-Tech AAC Products incorporated
- ▶ Scripting so that the whole Team is on board
- ▶ Data Collection built-in

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▶ Learn everything you can, anytime you can, from anyone you can -

▶ There will always come a time when you will be grateful you did.

- Sarah Caldwell

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