

# **Handbook: Online Communication Matrix**

(www.communicationmatrix.org)

Charity Rowland, Ph.D.

Oregon Health & Science University

© 2011, Charity Rowland



# **Contents**

THE BASICS	3
What is the Communication Matrix?	3
Why an Online Version?	3
Target Population	4
Who Uses this Service?	4
How Long Will It Take?	4
Your Contribution	5
Your Privacy	5
The Buzz: What Users are Saying	5
What's Next?	6
DESIGN and ORGANIZATION	7
Seven Levels of Communication	7
Four Reasons to Communicate	8
Nine Categories of Communicative Behavior	9
Results	10
Profile	10
Communication Skills List	10
GETTING STARTED	11
ENTERING DATA	13
GENERAL NAVIGATION	17
REVIEWING YOUR RESULTS	19
Profile: Standard View	19
Profile: Mastery View	21
Communication Skills List	24
USING RESULTS	25
CONTACT INFORMATION	26

### THE BASICS

### What is the Communication Matrix?



The Communication Matrix is an assessment tool designed to pinpoint exactly how an individual is communicating and to provide a framework for determining logical communication goals. It was first published in 1990 and was revised in 1996 and 2004 by Dr. Charity Rowland of Oregon Health & Science University. It was

designed primarily for speech-language pathologists and educators to use to document the expressive communication skills of children who have severe or multiple disabilities, including children with sensory, motor and cognitive impairments. The original version for professionals is still available in print for purchase at www.designtolearn.com. It uses a concise format that is designed for rapid administration by persons familiar with the assessment.



A new version was developed especially for parents in 2004. This newer version is designed to be more "user friendly". It is available for purchase (in English and Spanish) through www.designtolearn.com.



# Why an Online Version?

www.communicationmatrix.org is based on the parent version of the Matrix. It was developed for several reasons:



- It's easy to use. It guides you step-by-step through the process of entering information, so you do not have to leaf through pages that are irrelevant for your child, student or client.
- It generates clear results: a one-page Profile, a comprehensive Communication Skills List and animated views of progress.
   You can easily share the results with others.
- It's free! This is a free service that is available to anyone.















# Target Population

The Communication Matrix is appropriate for individuals of all ages who are at the earliest stages of communication. In the typically developing child the range of communication skills that the Matrix covers would occur between 0 and 24 months of age. The Matrix accommodates any type of communicative behavior, including "augmentative and alternative" forms of communication (AAC) and pre-symbolic communication (such as gestures, facial expressions, eye gaze and body movements). It is appropriate for individuals who experience any type or degree of disability, including severe and multiple disabilities, intellectual limitations and sensory or physical impairments. The Communication Matrix is NOT suitable for individuals who already use some form of language meaningfully and fluently.

Throughout the Matrix material, the person being assessed is referred to as "your child". Please note that the Matrix is equally applicable to adults who are functioning at the earliest stages of communication.



# Who Uses this Service?

People all over the world use the online Communication Matrix. At this writing, about 38% of users are speech-language pathologists, about 26% are educators, and about 13% are family members. One of our goals is to encourage professionals and parents to complete a Matrix on the same child so that they can compare and discuss the similarities and differences that they see at home and at school.

# How Long Will It Take?

It will probably take you from ten minutes to an hour to complete the Communication Matrix for the first time, depending on how many communicative behaviors the individual uses. If you run out of time, you may save a partially completed Matrix and resume it later.

### Your Contribution

When you complete the Matrix online, the information you provide will be stored. This information will provide valuable data about the communication skills demonstrated by individuals with various disabilities. This information may be summarized in scientific reports, professional presentations, articles in professional journals and book chapters.

# Your Privacy

The information you enter is completely secure and cannot be identified. When you use this free service, we ask you to provide some very basic information about the individual you are assessing (gender, age, ethnic background, country of residence, disability and specific impairments) and your relationship to that person. However, we DO NOT request any identifying information and we have no way of indentifying who has used this service. Your email address is only retained briefly in our database, just long enough to send you a confirmation email with your login and password. Your email address is then encrypted. The encrypted version is stored for login purposes and to make it possible to retrieve a lost password. This information is never associated with any other information that you enter.

# The Buzz: What Users are Saying

"The Communication Matrix has had such a huge impact on my practice in our center program! Your work is simply wonderful." (Speech-Language Pathologist)

"Very valuable tool, I think, and wonderful with the most involved and challenged communicators out there." (Speech-Language Pathologist)

"I discovered this tool when I was desperately lost about my multiply disabled child...It [is] very easy...and you can see your child very successful even in the tiny steps. Thank you." (Parent)

"I haven't been able to find the 'perfect' assessment tool to begin an introduction into what communication looks like—but yours does seem ideal!" (Professor, Researcher, Speech-Language Pathologist)

"I saw your Communication Matrix—it is the clearest, most user-friendly, detailed, with explanations—test I have seen." (Special Education Teacher)

"I am very excited about using this matrix as part of our assessment and treatment plan for students with ASD." (Special Education Teacher)

# What's Next?

This web site is currently supported by grants from the U.S. Department of Education which were awarded to underwrite improvements, evaluation and marketing. We will add four new languages soon, as well as a custom report package. We are also seeking sponsors to underwrite the cost of maintaining this free service.



# **DESIGN and ORGANIZATION**

### of the Communication Matrix

The Communication Matrix involves three major aspects of communication: the behaviors that someone uses to communicate (such as pointing), the messages that someone expresses (such as "I want that") and the level of communication (such as abstract symbols).

### Seven Levels of Communication

#### Level I. Pre-Intentional Behavior



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

children, this stage occurs between 0 and 3 months of age.

#### Level II. Intentional Behavior



Behavior is under the individual'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. In typically developing children, this stage occurs between 3 and 8 months of age.

#### INTENTIONAL COMMUNICATION BEGINS HERE, AT LEVEL III

#### Level III. 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 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). In typically developing children, this stage occurs between 6 and 12 months of age.

#### **Level IV. 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. The meanings of some gestures may be unique to the culture in which they are used. Communicative behaviors include pointing, nodding or shaking the head, waving, hugging, and looking from a person to a desired object. Note

that many of these gestures (and especially pointing) require good visual skills and may not be useful for individuals with severe vision impairment. Some vocal intonations may also be used at this stage. In typically developing children, this stage occurs between 12 and 18 months of age.

### SYMBOLIC COMMUNICATION STARTS HERE, AT LEVEL V

(symbols represent, or stand for, something else)

#### **Level V. 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 (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. 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, generally between 12 and 24 months of age, but not as a separate stage.

### **Level VI. 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. They are used one at a time. In typically developing children, this stage

occurs between 12 and 24 months of age.

#### Level VII. 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. In typically developing children, this stage begins around 24

months of age.

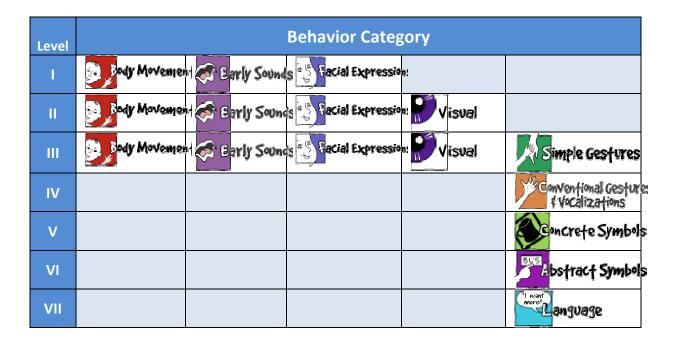
### Four Reasons to Communicate

The Matrix is organized into four major reasons to communicate that appear across the bottom of the Profile: to **REFUSE** things that we don't want; to **OBTAIN** things that we do want; to engage in **SOCIAL** interaction; and to provide or seek **INFORMATION**. Under each of these four major reasons are more specific messages that people communicate: these correspond to the questions that you must answer as you complete the Matrix. The specific messages are arranged by level in the table below.

Level	Refuse	Obtain	Social	Information
- 1	-Expresses discomfort	-Expresses comfort	-Expresses interest in other people	
П	-Protests	-Continues an action -Obtains more of something	-Attracts attention	
III		-Requests more of an action -Requests a new action	-Requests attention -Shows affection	
IV	-Makes choices -Refuses or rejects something		-Greets people	-Answers "Yes" and "No" questions -Asks questions
V			-Offers things or shares -Directs someone's attention to something	
VI		-Requests objects that are absent	-Uses polite social forms	-Names things or people -Makes comments
VII				-ivianes confillents

# Nine Categories of Communicative Behavior

Behaviors are classified into 9 categories: some categories span several levels of development, while others are unique to one level, as shown in the table below:

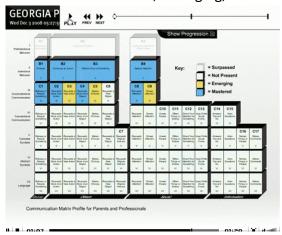


### Results

The information that you provide is used to generate two major products: a one-page Profile and a Communication Skills List.

### **Profile**

The Profile provides a one-page visual summary of the information that you have entered about an individual's communication skills. The Profile contains 80 cells, each representing a particular message at a particular level of communicative behavior. Each cell is color coded to show skills as mastered, emerging, not used or surpassed.



### Communication Skills List

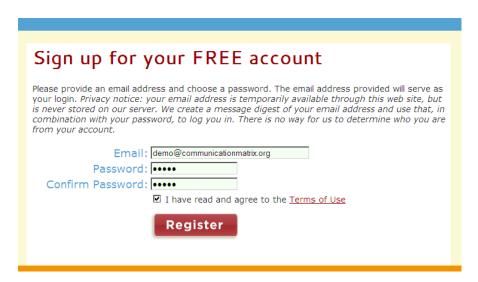
The Communication Skills List simply lists each message (such as "Obtains More of Something"), the categories of behavior that the individual uses to communicate that message (such as Body Movements or Facial Expressions), the specific behaviors used under each category (such as Leg Movements or Smile) and the level of mastery (Mastered or Emerging). This list shows you exactly which behaviors your child uses to communicate which messages.



### **GETTING STARTED**

It's easy to register for this service or to log in as a returning user.

*New user registration*. New users can register for this free service by providing an email address and a password.



Returning users. Returning users may login with their email address and password.

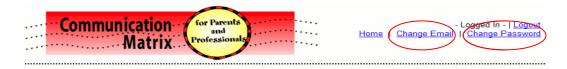


User ID (for users of earlier versions). Individuals who used an earlier version of this service may already have a "User ID" and password: if that is the case, you may continue to log in with your old User ID instead of an email address. Or, after you log in you may use the "Change email" link at the top of the page to enter your email address for future logins.

Forgot your password? If you forget your password, use this link to have it emailed to you.



Changing email address or password. After logging in, you may change your email address or password at any time by clicking on the links at the top of the page.



Log in confirmation email. To protect your privacy, your email address is only retained briefly in our database, just long enough to send you a confirmation email with your login and password.



### **ENTERING DATA**

The data you will enter includes demographic information (for a new child) and information about the child's communication behaviors.

Demographic information. After logging in, you will provide some basic information about the individual you are assessing. First, you will enter a personal identifier to help you keep track of your assessments. Please do not use full names here, since we do not want any identifiable information to appear in our database.



Where to start. Next, you will answer from 1 to 3 questions to determine whether to start at Section A (Level I), Section B (Level II) or Section C (Levels III and above). These are:

#### Statement A

My child doesn't seem to have real control over his body yet. The only way I know that he wants something is because he fusses or whines when he's unhappy or uncomfortable, and he smiles, makes noises or calms down when he's happy and comfortable. Does this statement describe your child?

- O Yes
- O No, my child has surpassed this stage

#### Statement B

My child has control over her own behaviors, but she doesn't use them to try to communicate to me. She doesn't come to me to let me know what she wants, but it's easy for me to figure out, because she tries to do things for herself. She knows what she wants, and her behavior shows me what she wants. If she runs out of something to eat, she will just try to get more, rather than trying to get me to give her more. Does this statement describe your child?

- O Yes
- O No, my child has surpassed this stage
- O No, this stage is beyond my child's ability

#### Statement C

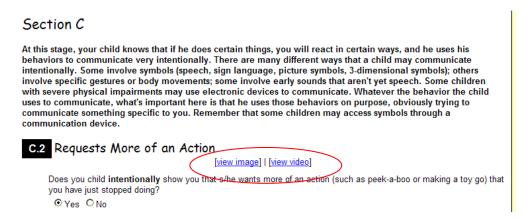
My child clearly tries to communicate his needs to me through gestures, sounds or language. He knows how to get me to do something for him. He uses some of the kinds of behaviors below to communicate:

- Gestures such as pointing, shaking his head, tugging at my arm or looking back and forth between me and what he
  wants
- · Sounds such as squealing to show you he wants something or fussing when he doesn't want something
- Language or symbolic forms of communication such as speech, written words, Braille, picture symbols, 3-dimensional symbols or sign language

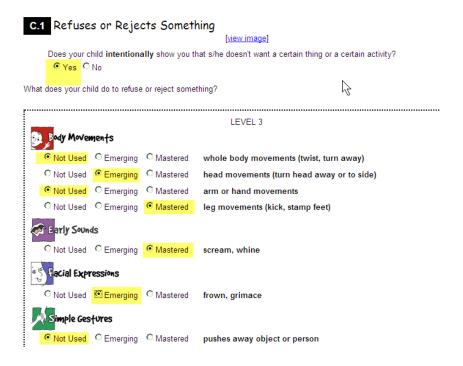
Does this statement describe your child?

- O Yes
- O No, this stage is beyond my child's ability

Answering questions. Once you have been directed to Section A, B or C, you will answer from 3 to 24 questions (depending on where you started) about what specific messages the individual communicates. Each Question has a sample photo and video clip. These samples present only one of many ways that someone might communicate each message.



Entering specific behaviors. When you indicate that the individual CAN communicate a specific message (by checking "Yes" under the question), you will then indicate exactly what behaviors he or she uses to express that message.



*Scoring*. For each behavior that the individual uses to communicate, you must decide whether it is "emerging" or "mastered."

- **Emerging** behaviors are used inconsistently or only when prompted or encouraged. They are used only in one or two contexts or with only one person.
- **Mastered** behaviors are used independently most of the time, when the opportunity arises. They are used in a number of different contexts, and with different people.

### Note about Use of High Tech Communication Devices

Children with severe physical impairments may use mechanical communication devices that involve some sort of symbol system. For instance, they might use an electronic device with various panels to push that are identified by picture symbols or perhaps by printed words. When they press a panel, a recorded voice might be activated that relays the message that is identified by the picture or printed word. In such cases, you would give the child credit for using the **type of symbol** incorporated into the communication device (that is, pictures of the printed words, or whatever type of symbol is used to identify the messages that can be expressed). Symbols that might be accessed through communication devices are:

Concrete Symbols:

- Photos or drawings
- Objects

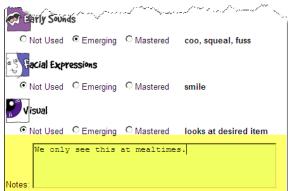
Abstract Symbols

- Written words
- Brailled words
- Abstract 3-dimensional symbols
- Abstract 2-dimensional symbols

Language

Combinations of any of the above types of symbols

Adding Notes. At the bottom of each question screen is a text box in which you may enter notes.



Correcting information. You may go back at any time to a previous Question and change your answers.



*Next Question.* Use the Next button to continue to the next question.

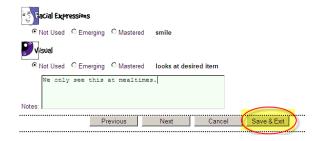


**Next Section.** When you complete Sections A and B you are asked questions to determine whether to proceed to the next Section or whether you have gone as far as is appropriate for the individual you are assessing.

### Section Complete!

Does your child also have a few behaviors that he or she clearly uses with the purpose of communicating something to you? If so, go on to Section C and see if you can answer "Yes" to any of those questions.

- O Yes, take me to the next section O No, I am finished. Generate my profile.
- Saving a Matrix. You may Save a Matrix at any time, whether you have completed it, or whether you plan to return and resume it later. You may also Cancel at any time. If you have completed all appropriate questions, the Matrix will be considered complete and you will be able to view the results. If you have not completed all the questions, you will not be able to see results. You may resume an incomplete Matrix at any time. A completed Matrix may be edited for up to 30 days after its completion.

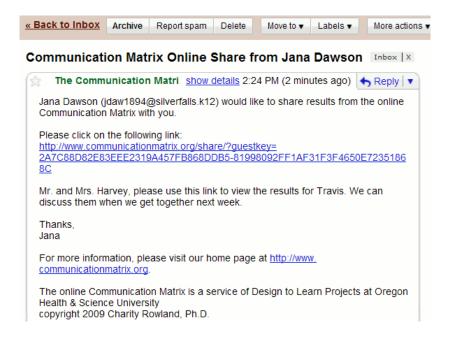


### GENERAL NAVIGATION

*My Home*. If you have previously used this service, you will go directly to your Home page when you log in. Here you will see every Matrix you have begun or completed. Your home page gives you access to a number of options for editing, resuming, viewing and sharing your matrices.



*Email Results*. Use the *Email Results* button to the right of the Personal ID to email a link to the Profile and Communication Skills List to someone else with whom you have permission to share information. The recipient will receive an email from communicationmatrix.org with links to the results and to information about the Communication Matrix.



*Edit demographic information.* Click on Edit to the right of the Personal ID to change or add demographic information about this individual.

*Delete child.* Click on Delete to the right of the Personal ID to permanently delete all data on this individual.

Resume a partially completed matrix. Click on Resume to finish a Matrix that you did not complete earlier.

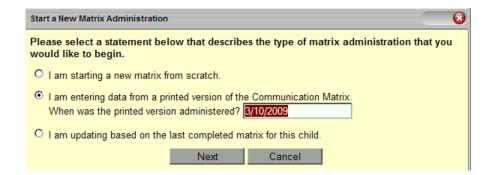
*Edit Matrix data.* A Matrix completed within the last 30 days may be edited. Click on Edit to the right of the Matrix # that you want to change.

*View profile.* Click here to view or print the one-page profile of results and gain access to unique online viewing options.

Skills list. Click here to view or print the Communication Skills List.

*Delete Matrix.* Click on Delete next to a specific Matrix that you want to delete permanently.

Start a New Matrix Administration for This Child. When you are ready to reassess an individual, click here. You then are given a choice of starting a completely new Matrix from scratch or simply updating the last completed Matrix. When you start a new Matrix "from scratch" you may be entering data from a printed copy of the Matrix that you completed earlier. If this is the case, you will have the opportunity to enter the administration date, since it may be different from the date that you enter the data.



Add a New Child. Click here to assess a new individual.

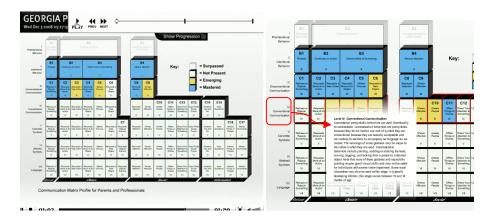
NOTE: 30 days to edit. Once you have completed a matrix you may edit it for 30 days after it is saved. Until that point, you may edit a completed matrix to change data in it. After that it is locked.

# **REVIEWING YOUR RESULTS**

We provide a number of exciting options for reviewing your results. It is our hope that families and professionals will be able to view the results together on a computer to get the most out of the features that can only be appreciated online. There are several options for viewing your results; you may print out results, you may email them to someone else, and you may review them online using special animation features.

### Profile: Standard View

The **Standard View** of the Profile provides a 1-page printable overview of results. It shows a matrix with 80 cells, each representing a particular message at a particular level of communication. When you first complete a Matrix you are automatically guided to this view. You also may get to this view from your Home. When you "mouse over" the name of a level, you will see a description of the level.

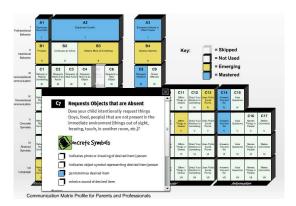


Each cell is shown as mastered, emerging, not used, or surpassed. Here's the key:



The designation is based on the HIGHEST score for any behavior in that cell: in other words, if ANY behavior is scored as mastered for a particular cell, then the entire cell will appear as mastered, even if you also checked other behaviors as emerging or not used for that cell. If you indicated that Section A or B has been surpassed, that section is grayed out.

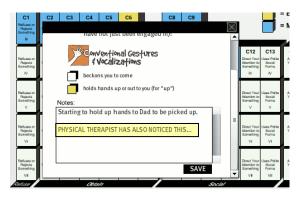
The Standard View provides a quick overview of the communicative messages that the individual uses. In this view, you may also click on each cell to see exactly how each behavior was scored for that message.



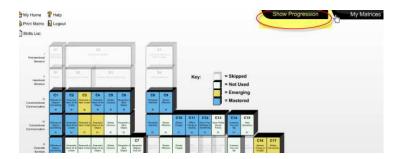
You will also see any notes that you made as you answered the questions.



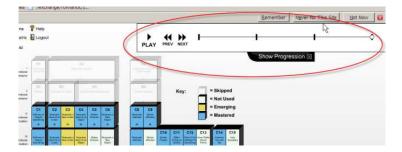
Note that you may add and save NEW notes when you are in the Standard View.



*Show Progression*. Choose **Show Progression** to review the development of an individual for whom you have completed two or more assessments.

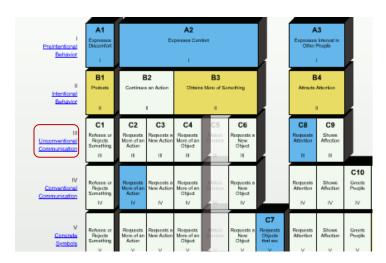


Choose **Play** to view an animated sequence of the matrices completed for that individual. Choose **Next** to step forward through the matrices one at a time, or choose **Previous** to step backwards through them.

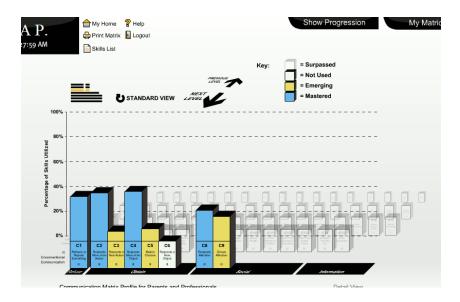


# Profile: Mastery View

This **Mastery View** shows you the degree to which the individual has mastered each of the seven Levels of communication. To access this view, click on the name of the Level that you want to view (to the left of the Standard Profile).

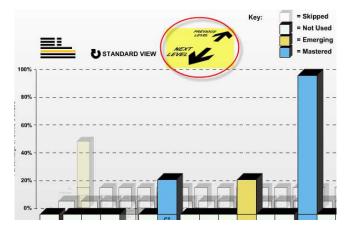


Here's the Mastery View for Level III of a sample Profile:

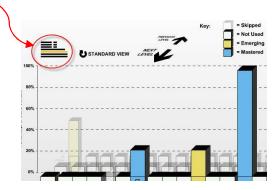


Each bar represents a message at the chosen level, represented by one of the 80 cells on the profile. The height of each bar reveals the degree of mastery of all possible behaviors that might be used to express each message at that level. This score is calculated by allowing 2 points for each *mastered* behavior and 1 point for each *emerging* behavior. The total score for each cell is divided by the maximum possible score for that cell to obtain a percent. In the example above, the first bar on the left shows mastery of C1 ("Refuses or Rejects Something") at Level III (Unconventional Communication). There are seven behavior options in this cell, so the maximum possible score is 2 X 7 = 14. For this individual, two behaviors are scored *mastered* and one is scored *emerging*, for a total score of five (5). 5 divided by14 is 36%, so the bar goes to that level.

Use the **Next** and **Previous** arrows to step through the levels.



This icon shows you which of the seven levels you are currently viewing.

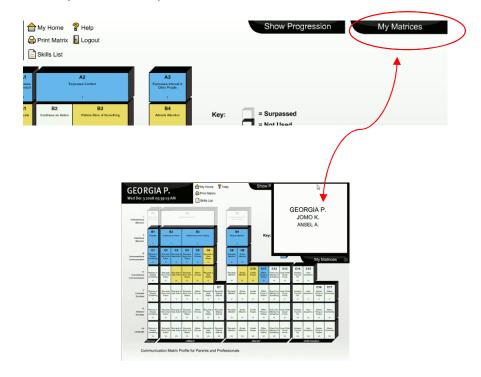


NOTE: Remember that an individual with severe physical limitations may not be able to use many behaviors and would not be expected to show a high degree of mastery using this view.

Note that the Progression features also work in the Mastery View.

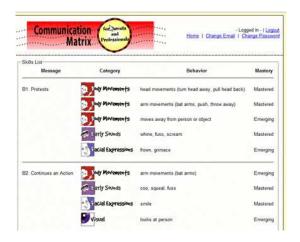
You may choose to print out the Mastery Views for each level of the Profile for a complete record of results.

View a Different Profile. When in the Standard or Mastery Profile view, choose My Matrices to view all the individuals you have assessed. From here you may choose to view the profile of a different individual. You may also choose a Matrix administered on a different date if you have completed more than one Matrix on an individual.



## Communication Skills List

The printable **Communication Skills List** shows exactly what behaviors the individual uses to express each message.



You may find it either from your Home page or by clicking on **Skills List** at the top left of a Profile.



If more than one Matrix has been completed on an individual, you will see a tab for each Skills List.



# USING RESULTS TO PLAN INSTRUCTION









The Communication Matrix results may help parents and educators to decide upon general communication goals that are appropriate, given the individual's current skills. You may develop a general intervention goal (what **level** of communication to target), as well as specific intervention goals (what specific communicative **behaviors** and **messages** to target).

In general, an individual should be allowed to perform at his or her current level of communication, while being steadily encouraged to progress to the next logical level of communication.

The first decision to make is whether to focus primarily on increasing competence at the current Level (which you would do if the individual has a very small number of communication behaviors or messages at the current Level) and/or whether to target some behaviors at the next higher Level.

The next decision is which specific communicative behaviors to target. Should you target only existing behaviors or strive for new ones? This decision must take into account the individual's motor, fine motor, vocal and sensory abilities and any limitations that may make it difficult or impossible for the individual to produce certain behaviors. You must also consider any cognitive limitations that may prevent an individual from understanding certain types of symbols.

**Finally**, you must decide exactly which messages to target. Refer to the Profile to determine where there are gaps in the individual's

communication skills and consider targeting new messages that the individual really needs to learn to express.

# **CONTACT INFORMATION**

## Suggestions?

Thank you for your interest in the Communication Matrix. You may send feedback and suggestions to info@communicationmatrix.org

### Author contact information

Charity Rowland, Ph.D.
Child Development & Rehabilitation Center
Oregon Health & Science University
707 SW Gaines St.
Portland, OR 97239-3098
rowlandc@ohsu.edu

### **Technical Development**

OX Data Systems 1831 SE 7th Ave Portland, OR 97214 http://oxdata.com/ info@oxdata.com

(e)maginorium 1831 SE 7th Ave Portland, OR 97214 http://emaginorium.com info@emaginorium.com

