Using the Communication Matrix to Guide Intervention

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PA HELIX CONFERENCE

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ADAPTED BY N. STEELE FROM THE WORK OF , L. A., HAINES, K., CAREY, A., KING, R. A., STEELE, N.

Acknowledgements

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None of this would be possible without the work of Charity Rowland and the Communication Matrix Foundation.

Myths about Behavior and Communication

- “We have to wait for intervention until his behavior is under control.”
- “She is too uncooperative to communicate.”
- “She’s not motivated to communicate.”
- “He only communicates to get his way.”
- “She needs to know cause and effect before we try other things.”
- “He spits and bites! I can’t get near him.”
- “We have to stop the headbanging before we can think about communication.”

Determining Goals Requires Assessment of What the Individual Can Do

"…accurate assessment of communication will lead to realistic educational goals and appropriate learning experiences, not only for communication, but across developmental domains."

"While state and local regulations may require that standardized measures be administered, they are unlikely to provide information useful in program planning or in predicting outcomes for children who are deafblind or who have multiple disabilities."

From: *Assessing Communication and Learning in Young Children Who are Deafblind or Who Have Multiple Disabilities Project Investigators: Deborah Chen, Ph.D., Harvey Mar, Ph.D., Charity Rowland, Ph.D. Robert Stillman, Ph.D.*

The Communication Matrix

Developed By : Charity Rowland, Philip Schweigert

Design to Learn Products

Oregon Institute on Disability & Development

www.designtolearn.com

1-888-909-4030

www.communicationmatrix.org

What is the Communication Matrix?

The assessment targets early expressive communication, which encompasses skills that typically develop between birth to 24 months. Language typically begins at 24 months.

The assessment is comprised of a series of questions that captures the various communicative behaviors and communicative intents across seven levels of early communication.

It **guides** intervention, not just progress monitoring.

Target Population

- The Communication Matrix is an appropriate, valuable tool for both children and adults, regardless of chronological age, or identified disability/diagnosis at the earliest stages of communication.
- Individuals who use any type of communicative behavior, including "augmentative and alternative" (AAC) forms of communication and pre-symbolic communication.
- It is NOT intended for individuals who already use some form of meaningful and fluent language.

Things to Remember

- The Communication Matrix was designed to document expressive communication for anyone functioning at the early stages of communication or using forms of communication other than speaking or writing. This is an excellent tool for individuals who have severe or multiple disabilities including individuals with sensory, motor and intellectual impairments. We will refer to these individuals as having complex communication needs (CCN).
- It is important to remember that the Communication Matrix is an appropriate, valuable tool for both children and adults, regardless of chronological age.
- A team approach is key to success. Families are a vital part of the team.

Things to Remember

The Communication Matrix measures communication, not cognitive ability. Lack of communication does not equate to lack of intelligence.

Components of the Matrix

The Communication Matrix involves four major aspects of communication:

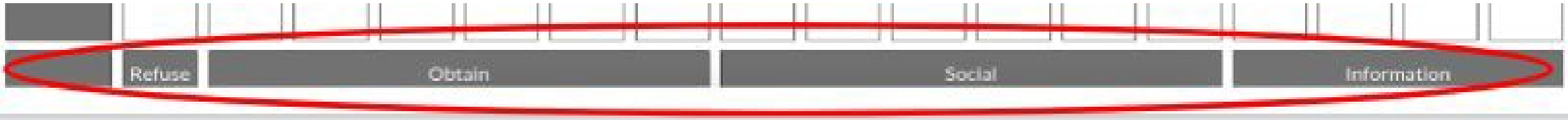
- four of the earliest reasons for communicating;
- seven levels of communication;
- 24 specific messages that someone expresses (such as “I want that”); and,
- nine categories of behaviors that someone uses to communicate (such as simple gestures).

These four aspects are captured in a skills rating from Not Used to Surpassed.

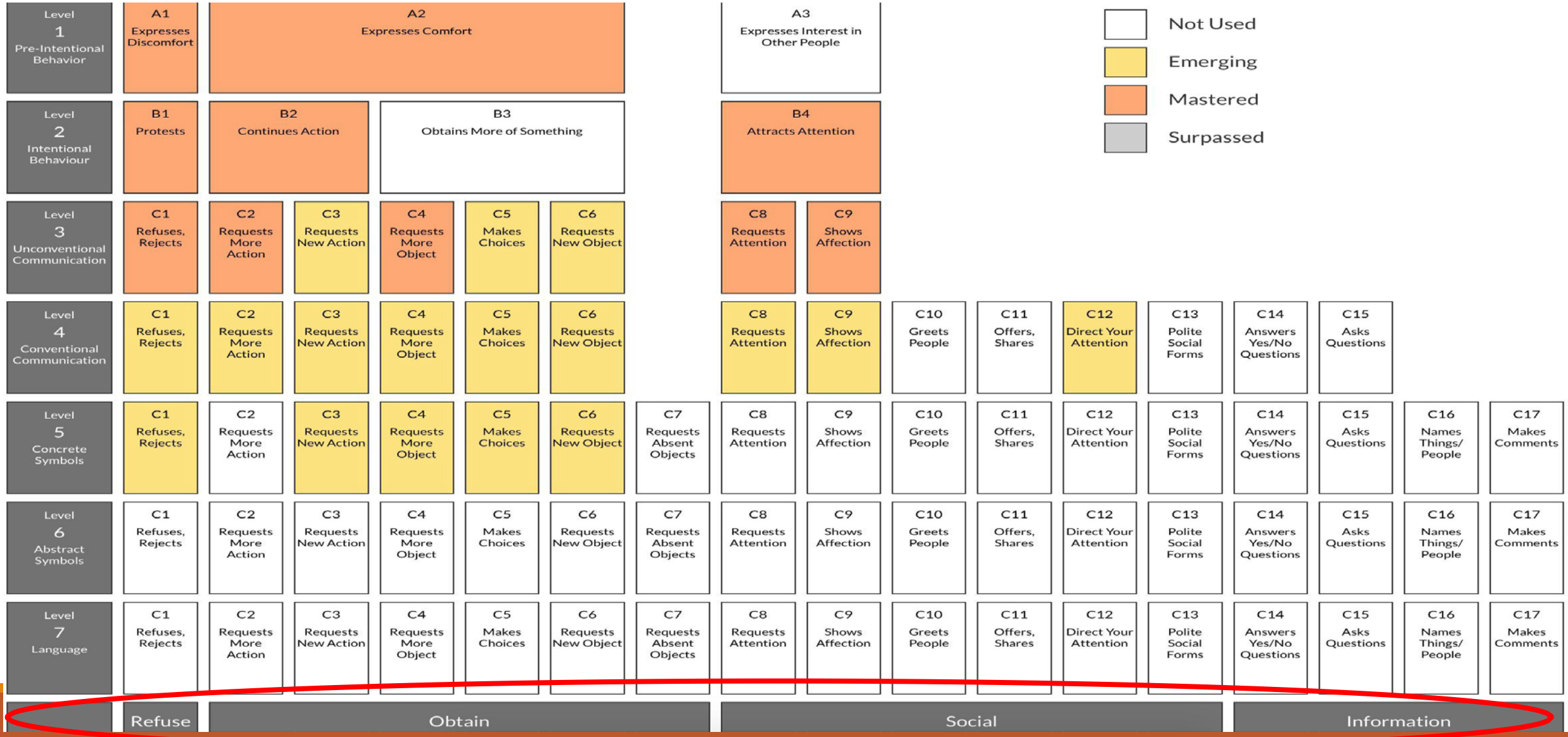
The Communication Matrix Profile

Components of the Matrix: Reasons

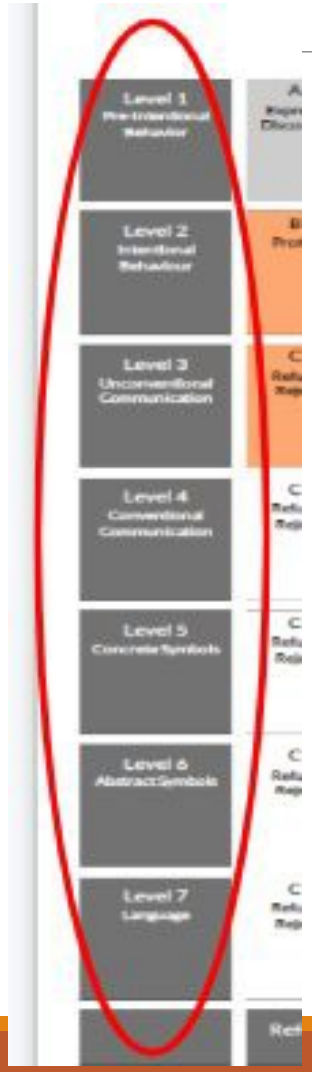
- To **REFUSE** things that we don't want;
- To **OBTAIN** things that we do want;
- To engage in **SOCIAL** interaction;
  and,
- To provide or seek **INFORMATION**.



Dave's Sample Profile



Components of the Matrix: Levels



Level I Pre-Intentional Behavior

Level II Intentional Behavior

Level III Unconventional Communication (pre-symbolic)

Level IV Conventional Communication (pre-symbolic)

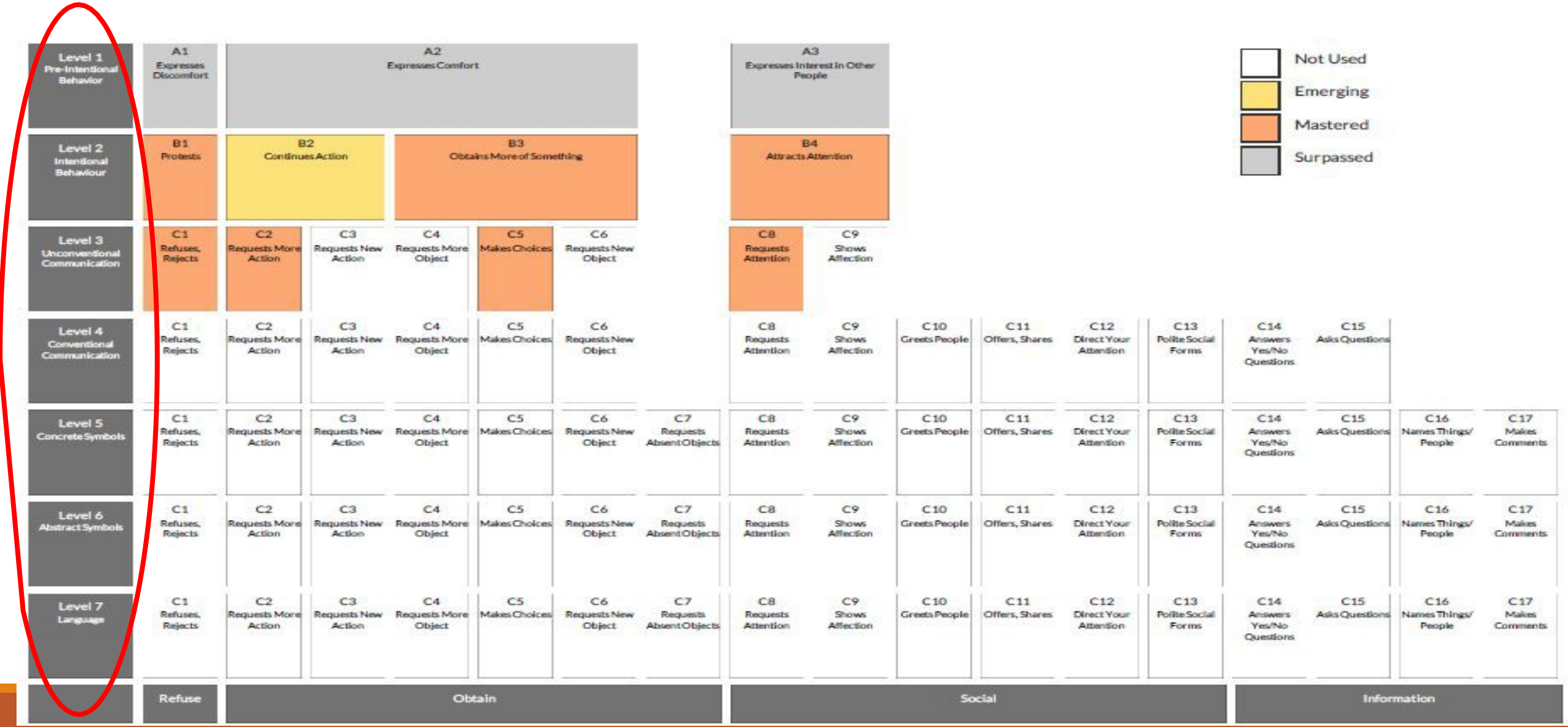
Level V Concrete Symbols*

Level VI Abstract Symbols

Level VII Language

*Level V is a transitional step for an individual who has difficulty moving from pre-symbolic to symbolic communication. Most individuals skip this step.

Hannah's Sample Profile



7 Levels of Communication Skills

Pre-symbolic levels

Level 1 Pre-intentional behaviors (reflexes, like crying that is interpreted by adults)
Cry, Coo, Grunt, Gurgle, Head and limb movement, Postural changes, Facial expressions

Level 2 Intentional, but not purposefully communicative behaviors – kicking, turning head away – interpreted by adult, but not directed toward adult.
Fuss, Babbling sounds, Gaze at object, Smile, Approach object, Avert head, Move away from, Push away, Take object

7 Levels of Communication Skills

Pre-symbolic levels

Level 3 Pre-symbolic, non-conventional behaviors (like tugging on adult, pushing things away) that are directed to a communication partner This is a critical stage because now the child understands that he can impact someone else's behavior. He is intentionally communicating because he acknowledges a communication partner

Laugh, Scream, Cry, Eye contact, Manipulate person, Calling device

Level 4 Pre-symbolic, conventional behaviors like pointing, nodding head.

Intonated sounds and Vocalizations accompany gestures, Alternating gaze, Shrug, Open palm, Hands up/out, Point, Extend object, Nod/Shake head, Wave, Kiss/Hug/Pat, Raise hand, Two-choice option with symbols or device, Yes/no option

7 Levels of Communication Skills

Symbolic Levels

Level 5 Uses concrete symbols that physically resemble what they represent in a way that is obvious to the child – they look like, feel like, move like or sound like what they represent. *Mimic sounds of objects, iconic gestures (mine, come, sit) pantomime action, object, selection of concrete 2- or 3-dimensional symbols*

Level 6 Abstract symbols such as speech, manual signs, or braille or print words. These symbols do not look, feel, or sound like what they represent. They are used one at a time. *Single spoken words, single manual signs, selection of abstract symbols, abstract shapes, abstract graphics, written words, brailled words*

Level 7 Combines symbols (any sort of symbols) into ordered two or three-symbol combinations (“want juice”, “me want juice”), according to grammatical rules. *Combination of 2 or more spoken words, combination of 2 or more manual signs, selection of a combination of 2 or more symbols*

24 Specific Messages

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

Nine Categories of Communicative Behavior

Body movements

Early sounds Facial

expressions Visual

Simple gestures

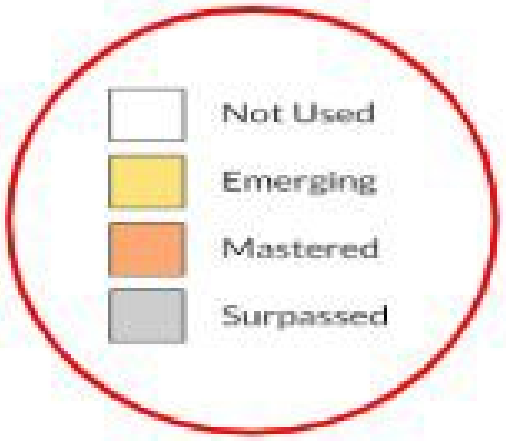
Conventional gestures and vocalization

Concrete symbols

Abstract symbols

Language

Components of the Matrix: Skills



- **Surpassed** skills are not assessed because they are presumed to be below the individual's ability level.
- **Mastered** skills should be expanded through vocabulary, multiple communication partners, and across environments.
- **Emerging** skills should be practiced through daily activities.
- **Not Used** skills should be introduced utilizing mastered and emerging skills to support growth.

The focus of the individual's communication plan should solidify the **Mastered** skills, expand on the **Emerging** skills and introduce the skills **Not Used** yet.

Who Should Complete the Communication Matrix?

Are multiple perspectives needed?

The most reliable results occur when the assessment

is completed by a team that includes the family.

It is not unusual to have a difference in results when various individuals complete the Matrix separately.

- Observable behavior subject to interpretation
- Emerging for one may be mastered by another and vice versa
- Relationships influence behavior
- Motivation impacts communicative intent

Where to Begin: It's all Connected

- Individuals with complex communication needs will display splintered communication skills.
- Often these splintered skills occur across levels and/or communicative intent.
- The communication plan may include a focus on communicative intent at levels lower and higher than the current assessment placement. When this is the case, choose the next logical level demonstrated. (Why would one work on tangible symbols when they can understand abstract symbols?)
- This decision must take into account the individual's gross and fine motor, vocal, and sensory abilities and any limitations that may make it difficult or impossible for the individual to produce certain behaviors.

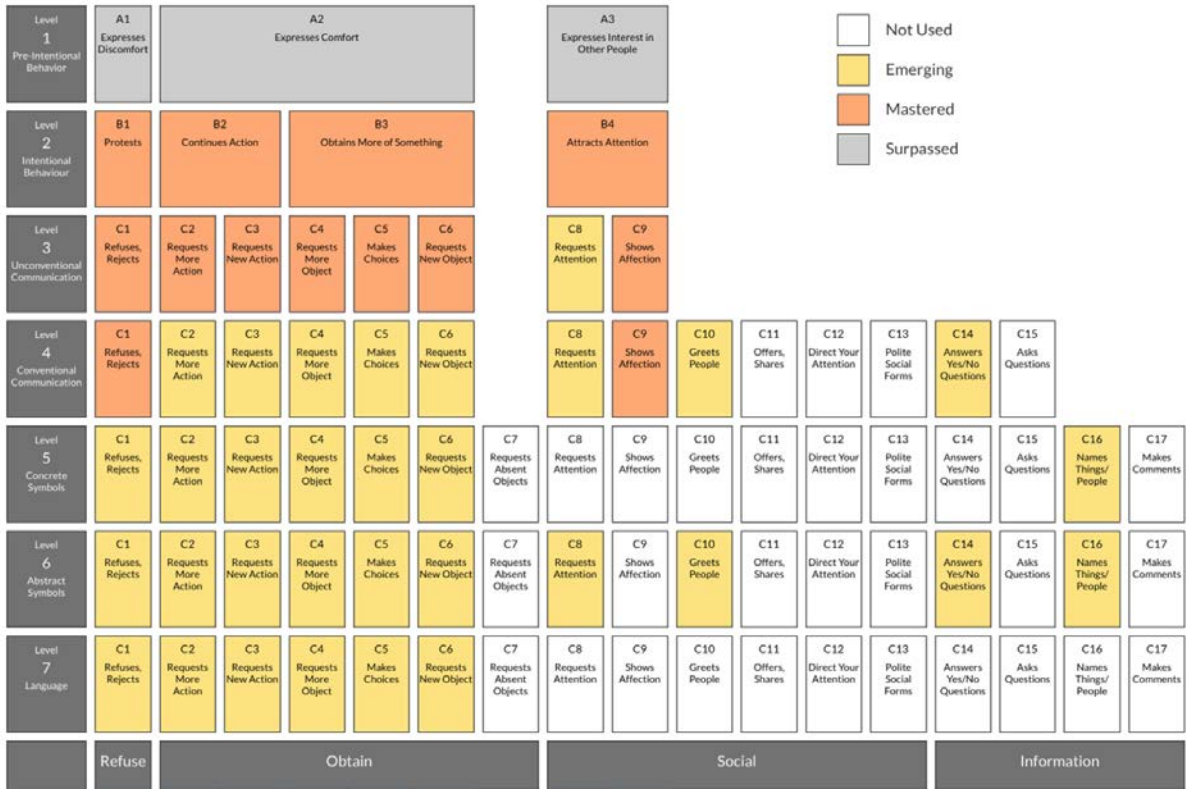
Targeted Skill Considerations

- You must consider the individual's gross 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 consider the impact of sensory systems and/or lack of experiences that may prevent an individual from **understanding** certain types of symbols.

  Example: A miniature car may not be an appropriate symbol for an individual who is blind and never seen a car; rather, consider what he touches- it may be a piece of the seating, or a piece of a seatbelt. For some with limited experience, symbols **must** be introduced and consistently used for understanding.

Communication Matrix Profile Comparison

JOHN



JANE

Background

JOHN

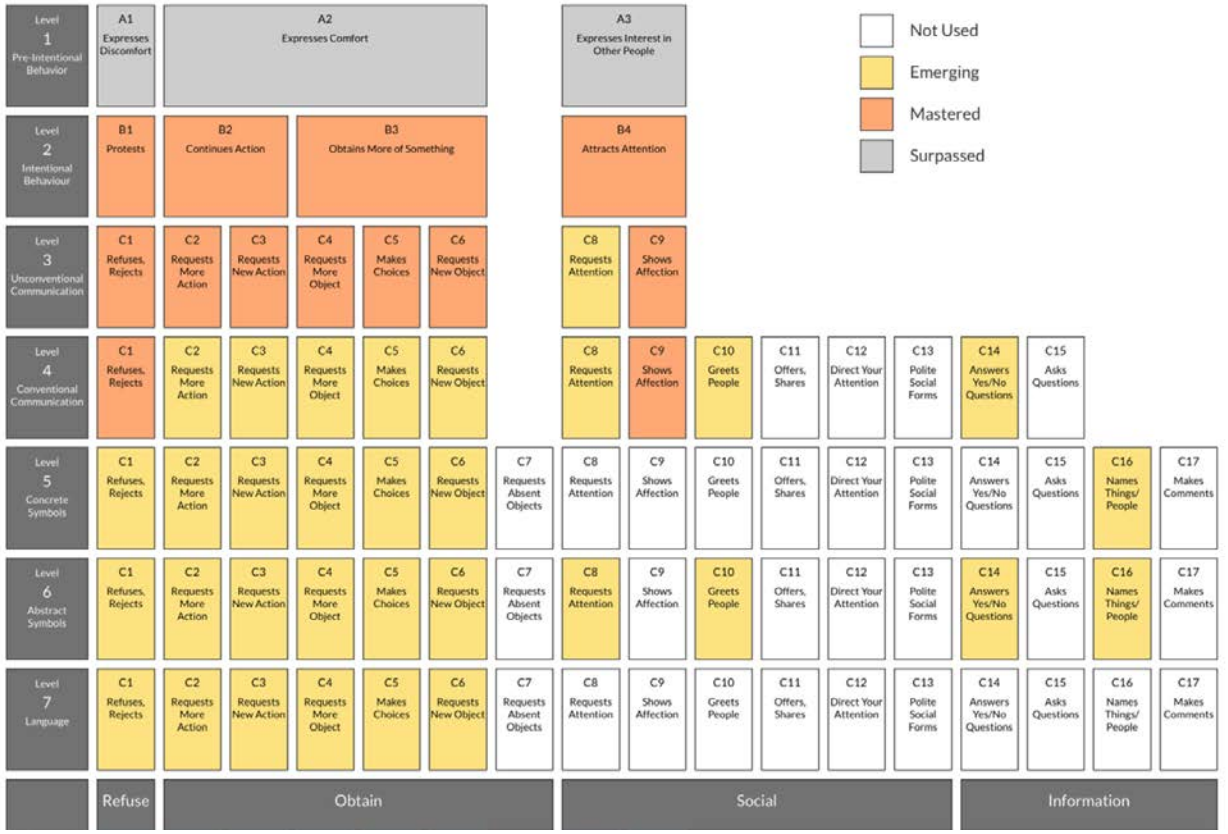
- Mastered skills up through Level III Unconventional communication
- Two skills mastered at Level IV Conventional Communication
- Emerging skills up to Level VII
- 18 months old chronologically
- Developmental Delay
- Emerging initiation skills
- Uses a few signs and vocalizations

JANE

- Mastered skills up through Level III Unconventional communication
- Emerging skills up to Level VII
- 9 years old chronologically
- Removed brain tumor
- Requires constant prompting
- Has iPad with symbol-based app and vocabulary stored on various pages
- Has spontaneously created appropriate, two-word utterances with app and familiar partners

Components of John's Communication Plan

- Continue with sign language
- Introduce tangible symbols paired with pictures – Level V – Concrete Symbols
- Focus on personalized words that are important to John



Components of Jane's Communication Plan

- Continue with iPad app
- Encourage single- and two-word productions
  - Modeling by all partners
  - Expand communication intents
  - Fade prompts
- Focus on Level VI & VII goals

Development and Format of the Modules

Perspective

Each member of the development team brings 40+ years of experience in working with individuals with unique and **complex communication needs** (CCN).

Each brought their own educational “silo” with them. (Teachers, Speech Language Pathologist, EI practitioner, Higher Education, Technical Assistance Providers, Consultant [local, state, national].)

Common denominator:

- Knowledge of the quality, effectiveness, and power of the Communication Matrix for individuals with complex communication needs.
- Respect and recognition of the role families play.

Each recognized a critical need: Strategies and interventions **specific to the individual** based on his Communication Matrix profile.

Down the Rabbit Hole

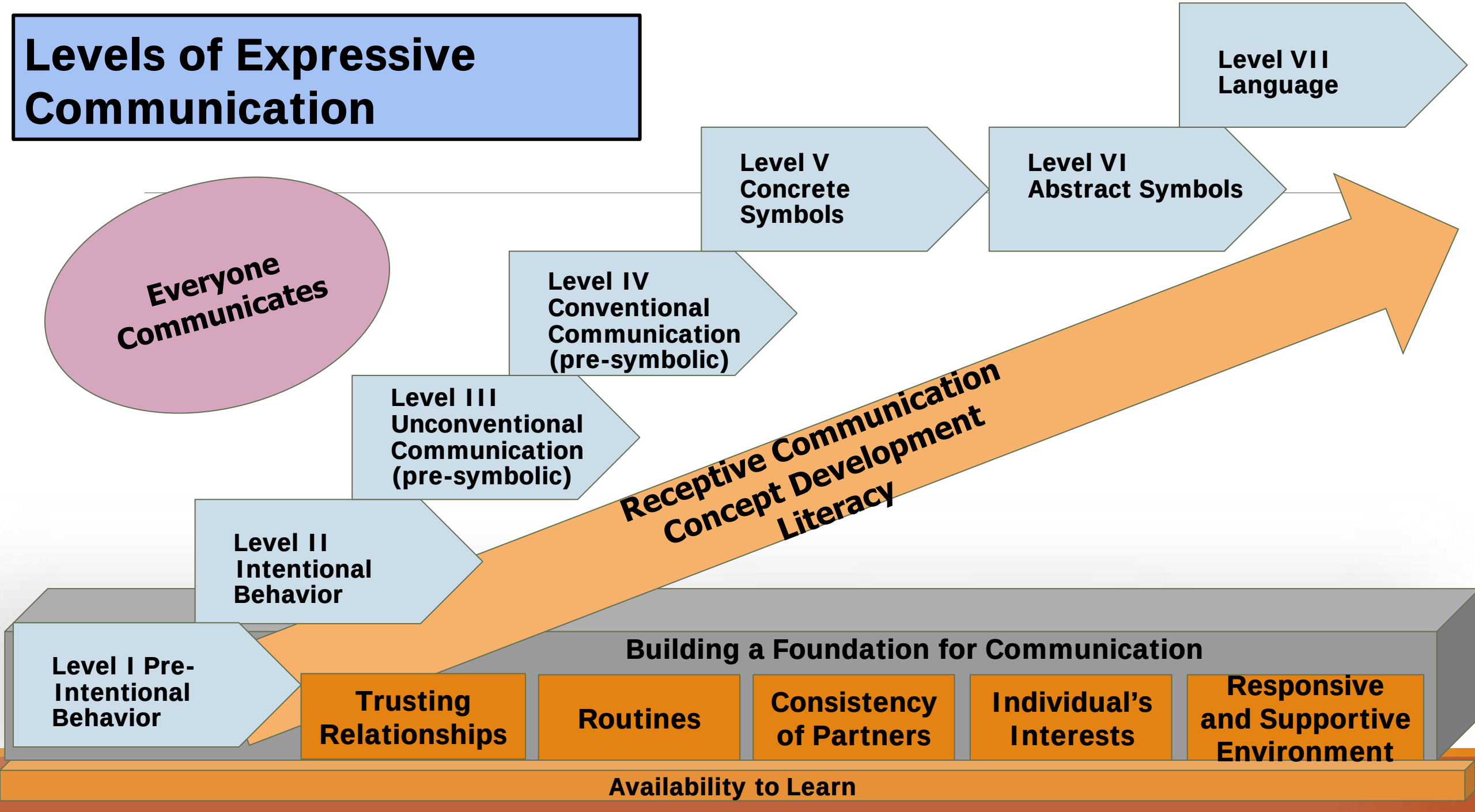
Four years ago, Lee Ann Brammer, WVDE, established this development team.

Our intent and initial goal was to create modules and resources specific to each level in the Communication Matrix.

We anticipated creating 25-30 minutes module for each level on tips and strategies to be used by SLPs, teachers, practitioners, and families.

As we began our work, we quickly realized and continue to grapple with the complexity and "messiness" of communication. These modules grew **and grew** as we addressed the many other factors impacting communication and your successful intervention.

Levels of Expressive Communication



In These Modules…..

- We will refer to these individuals as having **complex communication needs** (CCN).
- A team approach is key to success.
- Families are a vital part of the team.
- “Special Thanks” at the end of each module reflects awesome information out there that we “borrowed” from in developing comprehensive modules.

Module Structure

Each module targets the level identified through the Communication Matrix Profile.

The basic structure for all levels is as follows:

- Key reminders explicit to all communication levels
- Overview of specific level
- Intervention strategies
- Receptive communication
- Essential takeaways

Module Structure: Key Reminders

- Sensory is defined in this module as use of any sense the individual uses to access information. This includes vision, hearing, tactile, vestibular, proprioceptive, smell, and taste.
- Intervention strategies are designed to support the individual at their current communicative level as well as target future goals.
- Goals must target the communication skills for today and for tomorrow.

Module Structure: Level Overview

Overview of the specific characteristics of individuals at each level (Level I - VII)

Videos (Levels I - VII)

Communicative behaviors (Levels I - VII)

Receptive communication development (Levels I - IV)

Where to begin (Levels I - VII)

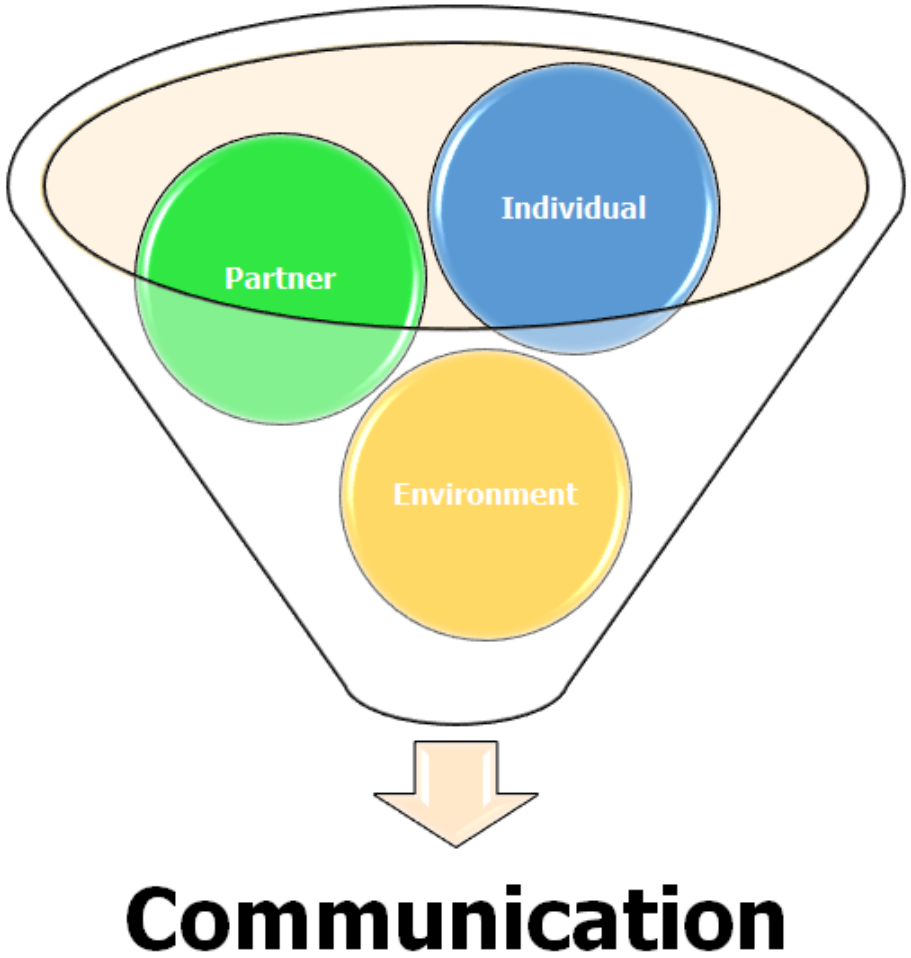
Stages of communicative intentionality development (Levels I - III)

Augmentative and Alternative Communication (AAC) Considerations

Alternate forms of communication are included at appropriate levels for individuals who are nonverbal.

Module Structure: Intervention Strategies

The Interconnectedness of Communication: Framework for Modules Strategies



Strategies' Components

Overarching Goal(s)
Intervention Principles
Strategy Template:

- General Strategy
- Targeted Behavior
- Partner's Response
- Outcome

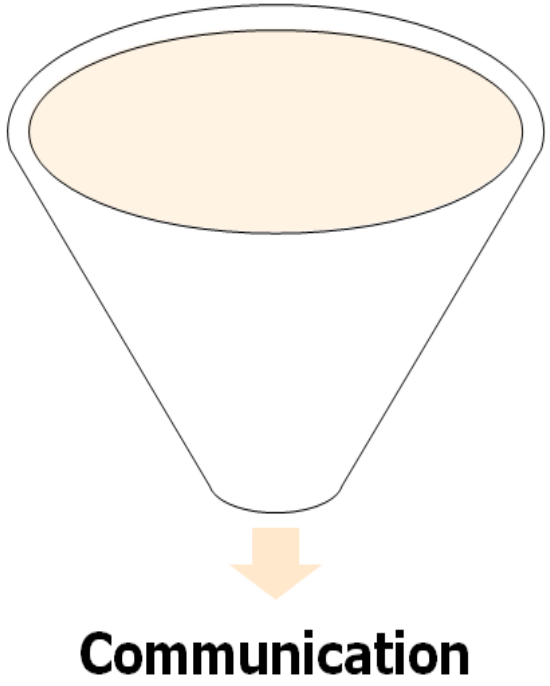
Routines
Dictionary (step-by-step instructions and example)
Calendar Systems (Anticipation Calendars- Level IV)

Data Collection and IEP/IFSP Considerations

Specific to each level

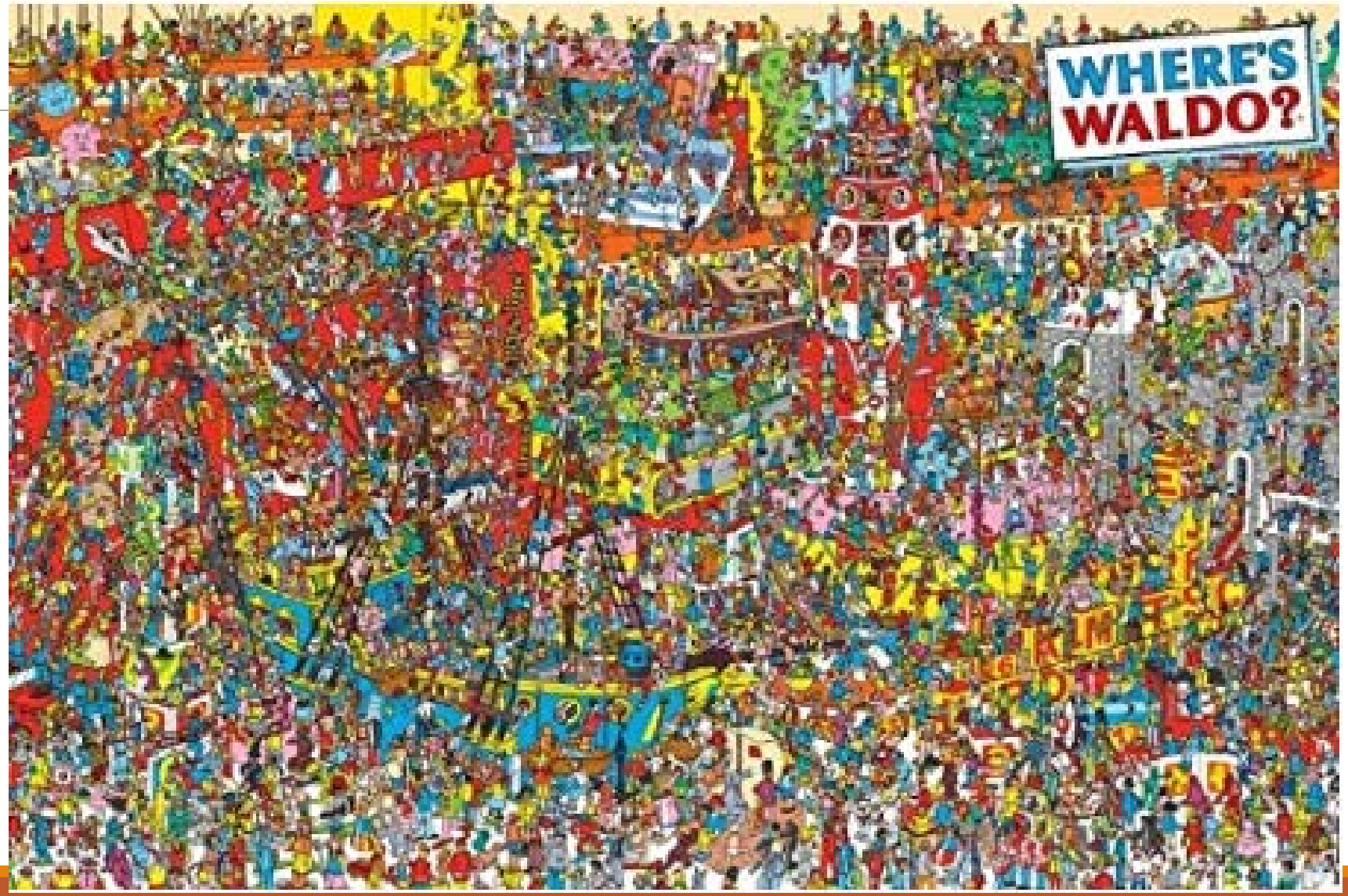
Rabbit Hole Factors

- Availability to Learn
- Incidental Learning
- Development of Intentionality
- Concept Development
- Literacy



Availability to Learn

- Internal Factors
- External Factors



Availability to Learn

Internal Factors:

What's happening inside the body and brain?

- How does the individual feel physically and emotionally?
- Does she have any medical conditions?
- Is he ill or in pain?
- How do medications affect him?
- How much sleep has she had?
- What influences her visual, auditory, tactile and motor abilities?
- Does he have any difficulties with sensory processing or sensory integration?

External Factors:

What is happening outside the individual that may positively or negatively influence communication?

- Lighting
- Sound
- Background noise
- Smells
- Movement
- Tactile input
- The number of people that are around
- Physical supports, positioning or equipment
- Clutter (visual, physical, tactile)

Impact of Incidental Learning on Communication

"Incidental learning is some form of accidental/indirect/additional/unplanned learning within an informal or formal learning situation." (D. Schneider, 2009)

Individuals with motor issues, sensory loss, or other disabilities such as autism, often need the environment engineered for learning or have the concepts directly taught.

Concept development for a typical individual is learned incidentally through experiences and interactions with the environment.

Development of Intentionality

Sequence of Communicative Intentionality Development

- Pre-Intentional – Level I
- Transitional – Level II
  - Behavior IS intentional, but NOT intentionally communicative.
- Intentional – Level III
  - Unconventional, pre-symbolic behaviors
- Intentional – Level IV
  - Conventional, pre-symbolic behaviors

In Levels III and IV, behavior is **BOTH** intentional and intentionally communicative.

Concept Development

Concepts

Why is it Important

How Concepts Develop

Concepts vs Skill

Complexity of Concepts

- Concrete
- Semi-concrete
- Abstract

Understanding Tangible Concepts (from object exist to they have a function)

Important Concepts to Consider

Literacy and the Communication Matrix

- Communication, language, and literacy are all connected.
- In typical development, literacy develops hand-in-hand with communication and language.
- Individuals who need targeted intervention for expressive communication development will similarly need targeted intervention for developing literacy.
- These modules focus on the development of expressive communication and touch briefly on literacy at each level.

Module Structure: Receptive Communication

- What is receptive communication
- Overview of receptive communication development with strategies specific to that level
- Supporting receptive communication

Module Structure: Essential Takeaways

Essential takeaways are at the end of each module.

Essential takeaways are the critical “must knows” for successful intervention at that level.

Supporting Your Work

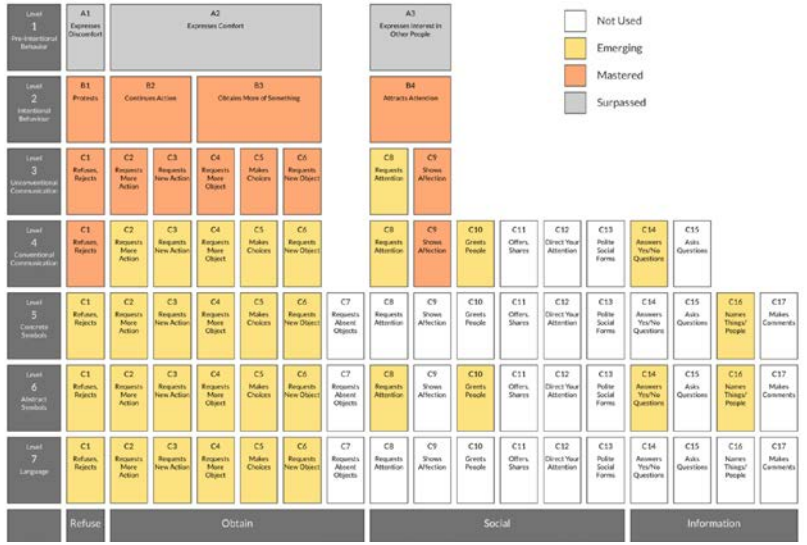
Along with these modules, we have provided selected materials to support your work which includes:

- Always Ask Yourself
- Likes/Dislikes
- Reinforcer Assessment
- Symbol Hierarchy
- Touch Cues
- Object Cues
- Routines
- List of on-line resources

You will also find an acknowledgement list of the wonderful experts from across the country that we have relied on to guide us in creating these modules.

- Design to Learn
- Project SALUTE

Tips for Using the Modules



Complete the *Communication Matrix*.

The *Communication Matrix Profile* determines which module(s) will guide the team.

Watching **all** the modules prior to beginning intervention is **not** recommended.

- Look at profile and identify the highest level where all or most items are mastered (current functional level of expressive communication). Consider viewing the intervention module for the next level.
- If the Matrix Profile shows scattered performance, where there are items emerging and mastered at various levels, consider viewing the module for the highest level of performance, although the team may need to view some of the lower levels to fill in the missing skills.
- Each module addresses “where to begin”. The team may discover quickly the need to go to the earlier or later module.

Tips for Using the Modules

- Everyone on the team should watch the relevant modules (The Foundation and identified Level module).
- Provide opportunities for the family to view the relevant modules.
- The modules should guide the ongoing team discussions of the communication plan and the provision of intervention strategies.
- Additional Resources are available to support teams in providing implementation.
- Use these modules to maintain fidelity of implementation strategies and future planning as team changes occur.

Use the Profile as Your Guide

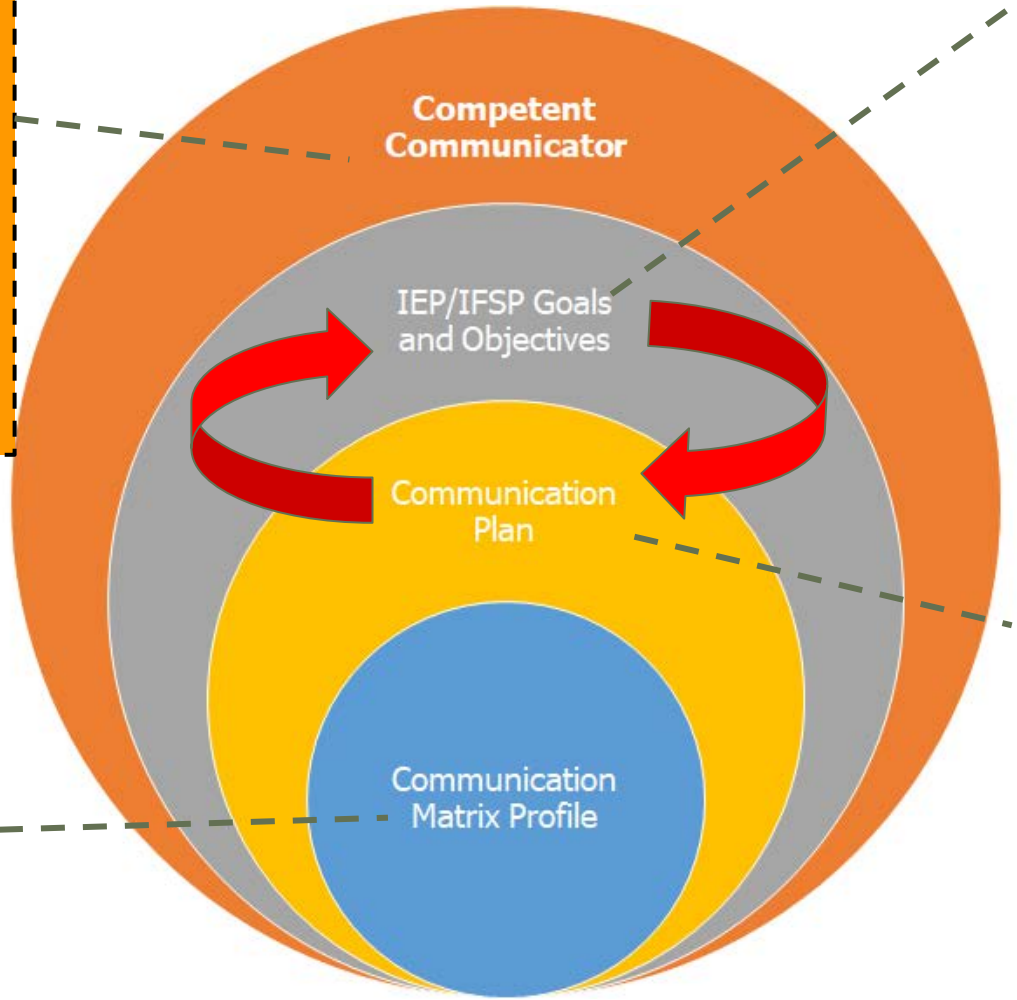
The completed Matrix becomes the individual's communication profile which guides intervention.

The *Communication Matrix Profile* is designed to "pinpoint" how the individual is communicating and assists in identifying logical communication goals.

- Be flexible and observant
  - Skills marked as mastered may need to be revisited
  - Areas thought to be emerging may actually be mastered
- Follow the individual's lead
- Collect data and adjust intervention frequently

Competent Communicator - one who has maximized their communication skills. This is the ultimate goal.

IEP/IFSP Goals and Objectives - measurable annual goals and short term objectives to meet the individual's needs.



Communication Matrix Profile - profile developed from the Communication Matrix.

Communication Plan - a flexible guide the team uses to apply the analyzed data to determine the specific daily interventions for achieving the individual's IEP/IFSP goals.

Intervention Considerations

- You must consider the impact of sensory systems and/or lack of experiences that may prevent an individual from **understanding** and impact incidental learning.

- Intervention must take into account the individual's gross and fine motor, vocal and sensory abilities and any limitations that may make it difficult or impossible for the individual to **produce** certain behaviors.

Intervention Considerations

- Determine which specific communicative behaviors to target. Should you target only existing behaviors or strive for new ones?
- Refer to the Profile to determine where there are gaps in the individual's communication skills.
- Target new messages that are important to the individual, not what the partner wants to hear.

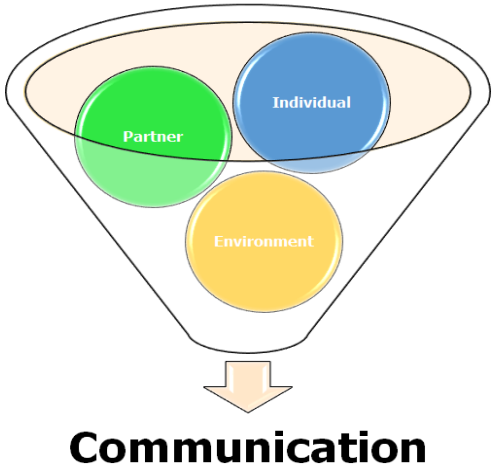
Modules for Levels I-VII provide intervention strategies.

The Team's Responsibility - Data

The *Communication Matrix Profile* provides the foundational data to determine the individual's targeted goals for the communication plan.

Data needs to be collected around the three critical components of effective communication.

- Partners
- Individual
- Environment



The team should determine the data collection system.

Data must be collected by the team and shared among the team members.

Sample Team Data Collection Tool

Think about the individual's typical day and write the "big chunks" or class periods.
Under each class period, write the number of times the individual was given the opportunity to communicate.
In the next row, identify the number of communication partners they had during that time.

	Arrival	Whole Group	Therapy	Bathroom/Changing	Literacy	Lunch	Bathroom/ Changing	Math	Free Time	Departure
# of Opportunities										
# of Partners										

As you develop their communication plan and identify communication goals, the team will need to increase the opportunities to communicate across the day and with multiple partners.

Considerations for IEP/IFSP Development

Teams must consider the interrelationship of the following factors:

- individual's availability for learning
- individual's motivation to communicate the message
- number of opportunities throughout the day and across environments
- age and past history of the individual
- previous interventions (what worked and what didn't)
- strength of trusting relationships between the individual and the partners
- physical access to the communication system (motor, visual, auditory, tactile)
- degree of prompting
- age appropriateness (interventions, messages, materials)

It Really Does Take a Village

- For typical individuals, learning to communicate occurs naturally and is learned incidentally.
  - No one taught you how to communicate.
  - For your individual, this did not occur.
  - We must engineer the environment and stimuli.
- Implementing an effective communication plan requires everyone.
  - Speech Language Pathologists
  - Teachers
  - Paraprofessionals and Aides
  - Family members
  - Peers
- Determine roles and responsibilities for each team member.
  - Who will collect and analyze the data?
  - How and when will data be collected?
  - Who will guide the team?

Always Ask Yourself

- Am I giving the individual opportunities to communicate throughout the day?
- Have all supports been addressed and been provided for both receptive and expressive communication?
  - Is the individual positioned correctly?
  - Are sensory (vision and hearing) supports provided?
  - Have I considered all access methods? (i.e. direct selection, scanning)
  - Am I positioned correctly and respectfully? (On the individual's level, at eye level and positioned for a two-way exchange)
  - Does the individual understand what I am asking them to do?
- Is the individual ready to move on to a higher level or do I need to focus on increasing his/her competence at this current level? Or should I do both?
- Does the individual readily exhibit his/her current communication skills whenever the opportunity arises or does it only occur when he/she is given very specific prompts and partners?
- Have I considered all of the individual's communication behaviors?
  - Is he/she able to communicate in a variety of ways?
  - Are these behaviors possible for him/her to do?
  - Do others recognize these behaviors as communicative?
  - Are these the most natural behaviors he/she could use to communicate?
  - Are the behaviors being considered within his/her sensory abilities?

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Always Ask Yourself

- What message will the individual communicate?
  - Do I continue to target only the existing functions/intents or do I add new functions?
  - What other functions/intents does the individual need?
  - What opportunities does the environment provide him/her to use other communicative functions/intents?
- Where do I target communication opportunities?
  - Am I continuing to increase opportunities throughout the day?
  - Where are the individual's interests the greatest?
  - Where can I ensure the most responses from communication partners, including peers?
- Is the individual able to use his/her present skills across a variety of topics, settings and different people?
- Is the whole team, including the family, sharing strategies to ensure consistency?
- Am I continually identifying and incorporating peers as communication partners?
- Is the team collecting sufficient data to design, implement and monitor the communication plan?
- Is the communication plan on the path for the individual to become a competent communicator?

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Special Thanks

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Choice Making ~~Hierarchy (Stafford, 2005)~~

Communication Matrix Foundation http://communicationmatrix.org

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Presentations by Susan M. Bashinski, Missouri Western State University

Project SALUTE: Successful Adaptations for Learning to Use Touch Effectively (Touch cues) *https://www.nationaldb.org/media/doc/SALUTE-Touch-Cue-es_a.pdf*

Project SALUTE: Successful Adaptations for Learning to Use Touch Effectively (Object cues) https://www.nationaldb.org/media/doc/SALUTE-Object-Cue-es_a.pdf

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