

☆ Good morning!

Becoming Verbal with Childhood Apraxia

Application to Autism



Pam Marshalla, MA, CCC-SLP
Speech-language pathologist
National Autism Conference, May 5, 2008

Pam Marshalla

1

☆ Elementary-age boy on autism spectrum

Michael

- **Age:** 5 years
- **Cognitive:** seems very bright
- Kindergarten class
- **Diagnosis:** Autism
- **Speech:** mostly non-verbal, just starting to say a few words occasionally
- **Behaviors that qualify:** routine play, rigid routines, takes your hand to lead you to what he wants you to do, writes "letters" with markers on paper
- **Question:** How can I help him say more?



Pam Marshalla

2

☆ Very young with no diagnosis

Brian

- **Age:** 2 years
- **Cognitive:** seems very bright
- **Speech:** non-verbal, only one sound
- **Behaviors that qualify:** very rigid play routines, carries around magnetic letters all the time; obsessed with letters and patterns; can do complex puzzles but doesn't see the picture on it – focuses on shape only
- **Behaviors that seem to disqualify:** seems to like people, affectionate, interacts non-verbally; parents do not believe this could be autism
- **Question:** How can I help him begin to say sounds and words?



Pam Marshalla

3

★ Discuss with your neighbor

Your child or client

Who are you concerned about?

- First name, gender, and age range
- How smart is he?
 - Do you know his cognitive level?
- Expressive speech-language skills
 - Does he talk? How much?
- What behaviors qualify him for the autism spectrum?
 - Rigid? Ignores people?
- What makes him/her seem apraxic?



Pam Marshalla

4

☆ Today's focus

Becoming Verbal

- How typical children become verbal
- Stages of imitation as seen in kids who are developing without SL interference
- Throughout we shall make application to children on the autism spectrum
- I am not an expert on autism. I have expertise in apraxia. Some say that autism is severe apraxia
- I'm not sure. I see autism as a severe sensorimotor disorder or as a social-cognitive disorder.



Pam Marshalla

5

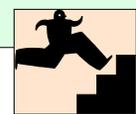
Imitation

Developmental time line



What is "normal"?

Most kids develop speech and language in a fairly predictable way. They hit the "developmental milestones" within certain age ranges. This is not rigid. There is much flexibility and overlapping of stages.



Pam Marshalla

6

☆ *Overlapping stages*

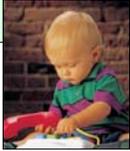


Samples at each stage

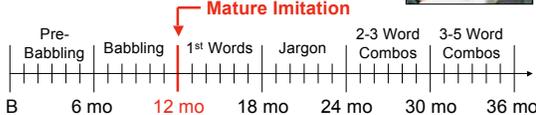
Months	Stage	Samples
36	3-5 word sentences	<i>I wanna go outside; I got a blue one</i>
24	2-3 word combinations	<i>Oh mama; Doggie eat; Me a outside</i>
18	Jargon	Unintelligible "connected speech"; often embedded with real words
12	First Words	<i>Mama, dada, bye-bye, no, me, mine, that, go, up, doggie, baby, okay, all gone</i>
6	Babbling	<i>Mamama..., dadada..., bababa..., wowowo..., eeyaheeya..., gaigaigai...</i>
B	Pre-Babbling	Cry, coo, prolong, squeal, growl, intone

Pam Marshalla 7

☆ *Words emerge because imitation matures*



Imitation



The mature ability to imitate comes in by 10-14 months of age and corresponds with a child's production of his first words. (Piaget)

Pam Marshalla 8

☆ *Definition*



Mature imitation

- To copy, mimic, or duplicate
- To copy a sound, word, action, or gesture

Adult	Child
Say, bye-bye	Bye-bye #

End

Characteristics of Speech Imitation

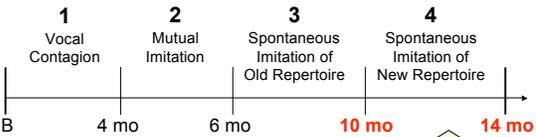
- Adult *initiates* the turn, *models* the word
- Child *imitates* the word in response
- The word has never been said before by the child

Pam Marshalla 9

☆ *Building the house of imitation* Jean Piaget



Four Stages of Imitation



Becoming Verbal
Developing the ability to say words. Since words have never been spoken before, they must be imitations.

Beginnings of Mature Imitation

Pam Marshalla 10

Stage 1. Vocal Contagion



Turns and no turns

No Turns

- Birth through five months
- Makes sound to self
- Piaget: "Purposeful and repetitious sound play"
- Piaget: "Circular reactions"
- Makes more sound when no one is paying attention to him
- Makes more sound in a noisy environment (vocal contagion)

VC

Pam Marshalla 11

☆ *Real life sample: Five-month-old*



Sara

Vocal contagion

Crowd	Child
Crowd noise	Pre-babbling sounds
Pays attention to child	Looks back in silence

- No turns
- Makes sound to join in
- Makes sound to entertain self
- And thus discovers what he can do

How do we discover this? Watch and listen to the child

Pam Marshalla 12

☆ Absence of turn taking common in clients

Application to autism

- Many say sounds and words spontaneously
- But won't say them when asked
- I call them "Pop-out sounds/words"
- Stress, emotion, sudden interest seems to cause sounds/words to spring forth



Adult	Child
Can you say, <i>shoe</i> ?	(Silence) #
Do you want juice? Say, <i>juice</i> .	(Silence) #
Let's count, 1, 2, 3...	(Silence) #
(Not paying attention to child)	Phone! #

Pam Marshalla

13

☆ Therapy reflects the stage of imitation

Goals for VC



The fact that early sounds and words often are spoken spontaneously and without turns tells us that this should be our first aim of therapy

- GOAL: To make sounds (any sounds)
- GOAL: To make more sound per unit of time

Pam Marshalla

14

★ THERAPY IDEAS: Read with your neighbor

What makes a baby vocal?



Jiggling
Tossing
Cuddling
Swinging
Bouncing
Squeezing

Tickling hair on the face
Gently pulling on the toes
Blowing raspberries on tummy

Unexpected Circumstances

Water play

Alone in the crib
Riding in the car

Boxes, Bowls
Closets, Forts
Cups, Corners

Put hands in the mouth
Put food in the mouth
Put toys in the mouth
Put feet in the mouth

Barking like a dog
Meowing like a kitty
Growling like a bear

Crying
Singing
Shouting

Laughing
Babbling

W W

15

☆ What else can we do to stimulate voice?

Basic toys



Kazoo to learn how to produce voice



Amplification system to stimulate listening



Sirens: Learn to inhale and exhale on purpose

Pam Marshalla

Toys that are voice-activated like the Green Machine Frog Band



16

☆ Movement often stimulates voice

Movement



Pam Marshalla

☆ Success with vocal contagion

Synchrony



- The key to success at this level is to produce these vocalizations at the same time the child does
- Become one voice together
- Make this a joint sound-making experience
- This encourages the child to make more sound



Laughter

- Access, Energy, Stamina, Family Cohesiveness
- Does my client/child laugh?

Pam Marshalla

18

☆ *Therapy reflects the stage of imitation*



Our Willingness

- Sometimes the difference between success and failure in speech-language therapy is a matter of what we are willing to do
- Are we willing to take a step back and look at what the child is doing instead of what he is not doing?
- Are we willing to do what he is doing instead of trying to make him do what we want him to?

Pam Marshalla

19

☆ *Be careful. Think about it.*



However

There are no guarantees

This method works very well with many children who have simple speech delay, apraxia, and autism

- However, it is better for some children with autism to stay quiet because they cannot control themselves well
- They may become loud, obnoxious, rude, inappropriate, weird, or scary to other children and adults as a result
- It is our decision whether or not to use these methods based on our observations of the particular child at hand
- Ask: Do we want this particular child to make more sound?

Also, children with autism do not necessarily learn in a linear fashion. More sound may not develop into more speech

Pam Marshalla

20

☆ *The first stage also has turn-taking*



Turns

Child makes sound in turns with others

Adult	Child
	Hm-hm.
Hi sweetie.	Hm
Daddy loves you.	(Smiles)
Daddy loves you.	Hm
You are a good girl.	Oo
Yes, you are.	Hm

- This is turns for the sake of turns
- No imitation
- Just turns
- Child initiates
- Adult follows
- No relationship of the productions from one turn to another

Pam Marshalla

21

☆ *How does turn-taking apply to our kids?*



Application to autism

- Some of these children do not take turns at all
- We have to help them learn to take turns
- Turns come about when the ADULT makes them so
- We watch and listen for the spontaneous things the child says and then we take a turn
- Then we wait silently for the child to take his turn by saying something spontaneous again

Pam Marshalla

22

☆ *Teach the client what babies do naturally*



Dialogue

Turns but no imitation

Adult	Child
	Moo.
Moo. That's a cow.	(Silence)
(Silence)	(Silence)
(Silence)	Doggie.
Doggie... Woof! Woof!	(Silence)
(Silence)	Bird.
That birdie's flying.	(Silence)...

- Babies do this at a pre-speech level
- We can use sounds or words in therapy
- Child Initiates
- Adult follows
- Working at this level can be painful for the adult. Patience!

Pam Marshalla

23

☆ *What are we trying to accomplish?*



Goals

- To create dialogue frames
- To extend the number of turns that the child can wade through
- To increase the number of turns taken per unit of time

Question:	What makes a child's turns develop?
Answer:	O _____ R _____ T _____

Pam Marshalla

24

☆ Giving the turn back to the child



The Pregnant Pause

- Turn-taking is a balanced give-and-take
- We give the turn back to the child with silence
- This creates a *pregnant pause*: A pause pregnant with the anticipation of the next comment
- The pause is a gap that the child will be driven to fill – just like we are driven to fill it
- If we remain silent, and look to the child with anticipation, he may fill in that gap
- It's like giving him a present. The present is his turn (i.e., shut up and give the child a chance to talk!)

Pam Marshalla

25

☆ For how long do I try this?



RTI Model

Response to Intervention

- I work in 3-month intervals (quarters)
- By end of first quarter we should be
 - Starting to see a greater number of utterances per unit of time
 - Wading through the turns
 - Starting to see a little bit of a dialogue frame
 - Meaning that Vocal Contagion is emerging

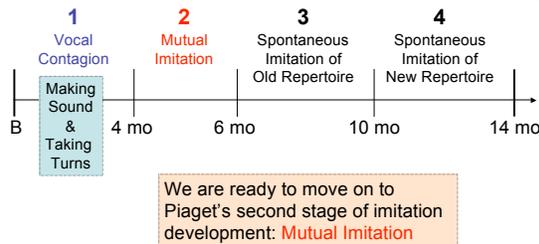
Pam Marshalla

26

☆ Let's look at the time line again



Review



Pam Marshalla

27

Stage 2. Mutual Imitation



Imitating himself

- By 5-7 months of age an infant's behavior begins to mature
- Babies begin to repeat themselves over and over for self entertainment (MI)
- And they begin to repeat themselves in dialogue turns

Pam Marshalla

28

☆ Child looks like he is imitating the adult



MI Turns

Adult	Child
	Ba-ba-ba-ba
Ba-ba	Ba-ba-ba
Ba-ba	Ba-ba-ba
Ma-ma	Ba-ba-ba
Da-da	Ba-ba-ba...

- Turns established
- Looks like the child is imitating the adult
- He's not
- Child actually is imitating himself within the dialogue frame
- Child is still initiator
- Adult is still responder

Pam Marshalla

29

☆ Catch the child in the act of sound making



MI with sounds

Adult	Child
	Ba-ba-ba-ba
Ba-ba	Ba-ba-ba
Ba-ba-ba	Ba-ba
Ba-ba	Ba-ba-ba
Ba-ba	Ba-ba-ba...

Child is the initiator

Imitate the child's sounds

Adult	Child
Ba-ba	Moh
Moh	Moh
Moh	Ba-ba
Ba-ba	Ba-ba
Ba-ba	Ba-ba...

Pam Marshalla

30

☆ *Making words back and forth*

MI with words

Adult	Child
	Cookie
Mmm. Cookie	Cookie
Lots of cookies	Eat?
Not now	Cookie
Cookie	Cookie?

Child is still the initiator

Pam Marshalla

Imitate the child's words

Adult	Child
Later	Eat
Eat later	Cookie
Yes, eat cookie later	Eat
Eat	(Silence)
(Silence)	Mine ...

31



☆ *Read together with your neighbor*

The importance of MI

- The stage of mutual imitation is the most **important** stage in the development of imitation
- Mutual imitation is the stage during which the child begins to understand the **relationship** between what he is doing and what the adults are doing
- When we imitate the child, we teach him **how** to imitate us
- We can do this with sounds, words, and even gestures
- Mutual Imitation requires **patience** on our part
- We **wait** for the child to say something, then we echo it back to him within the dialogue frame
- We let the child say anything for his turn
- It is more important to have the child **rehearse** what he can say that it is for him to say **new** sounds and words at this stage

Pam Marshalla

Continue to next slide 32



☆ *Continue to read together carefully*

What to imitate

We can imitate in three ways to facilitate words. These were described in the early language literature.

1. Echo – Imitate back to the child exactly what he said
 - When naming an apple, child says, "Ball".
 - Adult says, "Ball".
2. Echo correction – Imitate back to the child what he said with correction
 - Child says, "Ball". Adult says, "Ball. Apple".
3. Echo expansion – Imitate back what he said with additional words
 - Child says, "Ball".
 - Adult says, "Ball. That looks like a ball. That's an apple."

Pam Marshalla

Stop! 33



☆ *Language vs. Speech*

MI for pronunciation

We also can use mutual imitation and the three types of echoing to facilitate **pronunciation**.

1. Echo
 - Imitate back to the child exactly what he said
 - In naming shoe, child says, "Doo". Adult says, "Doo".
2. Echo correction
 - Imitate back to the child what he said with correction
 - Child says, "Doo". Adult says, "Doo. Shoe".
3. Echo expansion
 - Imitate back what he said with additional information
 - Child says, "Doo". Adult says, "Doo. You said, "Shoe". Doo... Shoe..."

Pam Marshalla

34



☆ *Read together with your neighbor*

Rules for MI

Put primary emphasis on imitating the child

Celebrate mature imitation when it occurs spontaneously

Don't forget to have a mirror around for the child to watch himself

Imitate the child multiple times per day

Teach others to listen to and imitate the child

Continue to play with sound for the sake of play

Imitate the child for several turns per engagement

Slowly increase the number of turns within your dialogues

Don't worry about the client's ability to answer questions yet

Pam Marshalla

35



☆ *For how long do I try this?*

RTI

- Again, work in 3-month intervals
- By the end of the second quarter (six months into therapy), the child should be taking turns and engaging in mutual imitation turns
- Remember, the adult is still taking the responder role; The child is still producing words spontaneously
- At this time, characteristics of the third stage should be emerging

Pam Marshalla

36



☆ Let's look at the time line once again

Review

1 Vocal Contagion: Making Sound & Taking Turns (0-4 mo)

2 Mutual Imitation: Imitating himself alone and in turns (4-6 mo)

3 Spontaneous Imitation of Old Repertoire (6-10 mo)

4 Spontaneous Imitation of New Repertoire (10-14 mo)

We are ready to move on to Piaget's third stage of imitation development: **Spontaneous Imitation of Old Repertoire**

Pam Marshalla 37

Stage 3. Spontaneous Imitation of Old Repertoire

SI-Old

Changing roles

- A child's *old repertoire* is the set of sounds and words he already can say
- These are the things that "pop out" here and there throughout the day, e.g., sees a car and says, "Car!"
- In this third stage, we now can begin to get him to say these words on demand
- We do this by getting him to say what he already can say. Call this "Imitating the repertoire"
- Willingness vs. capacity to produce the old repertoire on demand. Can we tell the difference?

Pam Marshalla 38

☆ Now we can get child to speak on demand

Sample

Imitating the repertoire. Parents who are good language models do this naturally.

Adult	Child
Are you ready to <u>go</u> ?	Go
Okay let's <u>go</u> .	Go
Here's your <u>bear</u> .	(Silence)
Say, "bear"	Bear
Good job. Go get your <u>coat</u> .	Coat
Yes, go get it. <u>Okay</u> ?	Okay

- Child is now the responder
- Adult is the initiator
- This is a big change
- Use only words child already says
- Have the key word be the final word
- Imitating the final word seems to be a natural process

Pam Marshalla 39

☆ How does this apply to autism?

Therapy

Take a moment here and there throughout the day to have him imitate part or all of his repertoire

Adult	Child
Time to go. Say, <u>go</u> !	Go!
Say, <u>coat</u> .	(Silence)
Coat. Put it <u>on</u> .	On.
Nice. Say it again, <u>on</u> .	On.
Good. Say, <u>go</u> .	Go.
Let's <u>go</u> .	Go.

- We can use the child's skill in imitating his old repertoire within simple dialogues
- This helps him practice what he already can say

Pam Marshalla 40

☆ Kids with very low intelligibility can use SI-Old

Pronunciation Problems

Adult	Child
What's that? Truck.	Ah-dah?
Yes, truck.	Uck.
(Silence)	Uck.
What's that? Shoe.	Ah-dah?
Shoe.	Oo.
(Silence)	(Silence)
(Silence)	Ah-dah?

Adult	Child
What's that? Airplane.	Nn.
Airplane.	Nn.
Right.	T.
(Silence)	Ah-dah?
Baby.	Ee.
Baby.	Ee.
Yes.	Ss...

Pam Marshalla 41

☆ Woo-hoo!

Success!

- This is a huge step
- A child who can spontaneously imitate his old repertoire can be made to speak as long as you are using his words
- This means keeping an inventory of his words
- If he can do it – do it!
- Rehearse his words with him
- If he can't, he's not ready
- Drop back to MI

Pam Marshalla 42

☆ *Many ways to stimulate the repertoire*



Tools for success

The term "on demand" means that the client will say one of his words when we want him to.

- Command: "Say, *car*."
- Question: "What is this? *Car*?"
- Fill-in-the-blank: "I see a _____"
- Fill-in-the-sequence: "Boat, train, bike, _____."
- Challenge: "I bet you can't say *car*."
- Reverse psychology: "Don't say *car*. Please! Don't say *car*!"
- Awe: "Are you going to say *car* again?"
- Amazement: "I can't believe that you can say *car*."
- Insistence: "This is not a *car*!"
- Acting stupid: "What?" (Child: "*Car!*") "What?" (Child: "*Car!*")
- Shout/Whisper: "Say it loud!" "Say it soft."

Pam Marshalla

43

☆ *Read with your neighbor*



Rules for SI-Old

Create the dialogue frame

- Take the initiator role
- Expect the responder role
- Wait for the mood
- Model sounds precisely
- Broaden the audience
- Praise imitations
- Expect errors
- Celebrate the small set
- Know the child's repertoire
- Describe the process to the child
- Devise games
- Create routines
- Assign meaning to consistent vocalizations
- Rehearse with ease
- Equate his productions with real words
- Note all new sounds and words
- Allow for child preference
- Expect new words to appear
- Respect the child's phonetic and phonological patterns

44

☆ *The children are all different*



Success and failure

- Some children with autism become vocal but not verbal
- Some become verbal but stay at the level of MI. They say words and take turns, but must always lead the turns.
- Some reach the level of SI-Old. They say words, and they can be made to say their repertoire of words, but it is very difficult to get them to say new words. These children do get more verbal, but they never seem able to say "their words" on demand. They seem to take in new words accidentally. Or words seem to go into long term memory, but they can't act on them immediately.
- Is this the nature of autism?

Pam Marshalla

45

☆ *What to do in the meantime*



The long haul

- A child's lack of ability to imitate his old words spontaneously does not prevent us from having conversations with him
- We can have conversations at a mutual imitation level. This can go on for years
- The more sophisticated and fast the dialogue, the more difficult it becomes to tell who's leading and who's following
- Therefore what starts out as MI quickly can become SI-Old
- E.g., read the "Animal Dialogue"

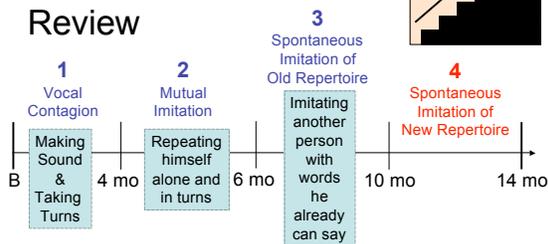
Pam Marshalla

46

☆ *What we have covered so far*



Review



We are ready to move on to Piaget's fourth stage of imitation development: **Spontaneous Imitation of New Repertoire**

Pam Marshalla

Stage 4. Spontaneous Imitation of New Repertoire



Imitating anything

- This is it! The final stage. The stage at which imitation reaches maturity.
- Piaget: 10-14 months of age
- The child now can try to imitate any gesture, sound, or word that he so chooses
- This does not mean he does it perfectly
- But he understands what he is to do and he can try if he wants to

Pam Marshalla

48

☆ Now it really gets fun with babies



First Words

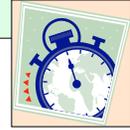
- This final stage corresponds to the production of a child's first words
- *Mama! Dada! Bye-bye! Up! No! That. Mine. Kitty.*
- This means that they can say their first words on demand – when they want to

Adult	Child
Say <i>bye-bye</i> to grandma	Bye-bye.
Yeah! (Clapping)	(Smiling, clapping)

Pam Marshalla

49

☆ Important note



It takes time

- This didn't happen overnight
- It took about 12 months to get here
- If it takes the average little kid 12 months develop SI-New, how long does it take a child with a severe speech-language disability?
- Patience. Work the steps. Be mindful of what step you're working at.

Pam Marshalla

50

☆ Typical development vs. autism



SI-New and autism

- Children with autism are different than babies
- They may be saying all kinds of words, phrases, and sentences when we first start working with them
- But they may not be able to use them in direct conversation when they should, or on demand
- For example: You may know he can say *ball*, but getting him to say it, ah, that's the rub
- That's what makes speech-language therapy so difficult with children who have autism
- We know what we want them to do. How do we get them to do it?

Pam Marshalla

51

☆ Another problem



Echolalia

SI-New gone bad

Adult	Child
Do you want juice?	Do you want juice?
No, do YOU want juice?	Do you want juice?
I have juice. Do you want some?	Want some?
You want some?	You want some?
Say, I want some.	Say, I want some.

Pam Marshalla

52

☆ How does this apply to autism?



Relation to autism

- Children with autism often will repeat certain things over and over again
- We call it **Echolalia** and **Delayed Echolalia**
- Most of us were trained that echolalia is a problem. We want to get rid of it
- I believe that echolalia is spontaneous imitation of old repertoire
- The child simply has learned to imitate himself and he is stuck at that level

Pam Marshalla

53

☆ What is the role of the SLP?



Idea

We can't make the disorder go away

Maybe we just allow them to be who they are

And we teach them as much as we can despite the autism

All we can do is help the child function the best way he can with his autism

Over time, he will speak with less rigidity, more topics, a bigger vocabulary, better pronunciation more advanced grammar, and more on-topic utterances

Pam Marshalla

54

☆ *What makes the child tick?*



Idiosyncratic focus

- What makes the child tick?
- How do you get an idea into the child's mind?
- What helps him attend and process information?
- Does he have "Tunnel vision"?
- How can you get the idea of sound, word, and grammar into his conscious mind?
- We can use his echolalia to teach him how to say new words and grammatical structures
- We can help him look like he is participating in dialogue like the rest of us

Pam Marshalla

55

☆ x



Rules for SI-New

- Select new words of high value
- Sneak in new words
- Watch for appropriate moments to teach new words
- Practice, practice
- Assign new meanings to old sounds
- Keep track of your child's words
- Present new words for long term memory
- Begin to request words
- Teach others to encourage the child to say his new words
- Don't expect new words to come out right away
- Don't make a big deal out of his new productions

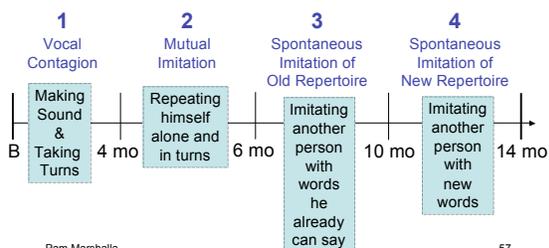
Pam Marshalla

56

☆ *We've made it!*



Summary



Pam Marshalla

57

☆ *We communicate in various ways*



Definitions

Verbalizations	Spoken words, phrases and sentences
Vocalizations	Spoken pre-speech sounds: Laugh, grunt, squeal, growl, raspberries, etc. Spoken phonemes: "Shhh" "Mmmm"
Gestures	Arm and hand movements Signs and facial expressions
Images	Symbols, pictures, objects Written words: hand or computer

Pam Marshalla

58

☆ *Levels of verbal and vocal communication*



More definitions

Verbal	Speaking words
Non-verbal	Speaking no words
Minimally Verbal	Speaking a few words
Vocal	Making sounds
Non-vocal	Speaking no sounds
Minimally Vocal	Speaking a few sounds

Pam Marshalla

59

☆ *What is EBP?*



Evidence-based practice

Evidence comes from three basic sources:

- Laboratory research
 - Scientific studies done within the field
 - Clinical trial-and-error
 - Experimentation by individual therapists
 - Borrowing ideas from other professions
 - Study other fields and apply their ideas to your field
- Resource: Dollaghan

Pam Marshalla, MA,
CCC-SLP NAC 2008

60

☆ What is RTI?



Response to intervention

- **Description:** A multitiered approach to providing services and interventions to struggling learners at increasing levels of intensity. (Source: ASHA website)
- **Process:** Initiate a trial period of therapy. Monitor the client's response. Use his responses to determine whether or not to continue.
- **Old Idea:** RTI is an old idea that is just now being formalized

Pam Marshalla

61

☆ References



- Biel, L., & Peske, N. (2005) *Raising a sensory smart child*. NY: Penguin
- Dollaghan, C. A. (2007) *The handbook for evidence-based practice in communication disorders*. Baltimore: Paul H. Brooks.
- Gilpin, R. W. (1993) *Living and loving with autism: A collection of real life warm and humorous stories*. Arlington, TX: Future Education.
- Ginsburg, H., & Opper, S. (1969) *Piaget's theory of intellectual development*. Englewood Cliffs: Prentice-Hall.
- Grandin, T. (1996) *Thinking in pictures*. USA: Vintage Press.
- Kranowitz, C. S. (2005) *The out-of-sync child*. NY: Penguin.
- Marshalla, P. (2001) *Becoming verbal with childhood apraxia*. Mill Creek: Marshalla Speech and Language.
- Williams, D. (1992) *Nobody nowhere: The extraordinary autobiography of an autistic*. NY: Avon Books.

Pam Marshalla

62

☆ Contact Information



Pam Marshalla

Online

- Website: www.pammarshalla.com
- Email: pam@pammarshalla.com
- Also see: www.oralmotorinstitute.org

Address

- Marshalla Speech and Language
- 914 - 164th Street B-12, Suite 128
- Mill Creek, WA 98012-6339
- Phone: 425-379-6443

Pam Marshalla

63

☆ More information on-line



Oral Motor Institute

- **Purpose:** To publish monographs that demonstrate the scientific basis of oral-motor treatment
- **Offering:** Free distribution of monographs via internet downloads
- **Mission:** To contribute to the advancement of the field of speech-language-hearing science.
- **Established:** September 2007
- **Founder:** Pam Marshalla, MA, CCC-SLP
- **Co-chairs:** Pam Marshalla, MA, CCC-SLP and Diane Chapman Bahr, MS, CCC-SLP, CMT, CIMI

Pam Marshalla

64