

P A M M A R S H A L L A



# VOWELS & INTELLIGIBILITY

Vowel Training to Improve Intelligibility in  
Severe Apraxia and Dysarthria

*Previously published as  
"Vowel Tracks for Improving Intelligibility"*

ONE-HOUR AUDIO SEMINAR



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Vowel Training to Improve Intelligibility in  
Severe Apraxia and Dysarthria

*Previously published as "Vowel Tracks for Improving Intelligibility"*

by Pam Marshalla, MA, CCC-SLP  
Speech-Language Pathologist



## **Vowels & Intelligibility: Vowel Training to Improve Intelligibility in Severe Apraxia and Dysarthria**

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Previously published as *Vowel Tracks for Improving Intelligibility*

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**Pam Marshalla**, MA, CCC-SLP, completed a Master's Thesis in phonology in 1976 and worked with clients of all ages and ability levels for over 35 years. For decades, Pam taught continuing education workshops around the United States and Canada. She is celebrated as a "clinician's clinician" whose practical books and seminars successfully integrate research data and clinical experience.

**Financial Disclosure:** Pam Marshalla was the owner of Marshalla Speech & Language (MSL), through which this lecture was originally published and from which she received a monthly salary. Pam Marshalla passed away in 2015; this lecture continues to be published by MSL.

**Non-Financial Disclosure:** Neither Pam Marshalla nor Marshalla Speech & Language have any non-financial relationships to disclose.

## NOTE

This lecture, *Vowels & Intelligibility*, is a re-release of a previously discontinued lecture titled *Vowel Tracks*. To preserve the original material, the audio tracks have not been changed from the original recordings, and within the lecture, the previous title is used.

**The following slides are part of an audio presentation and should be explored along with the accompanying audio lecture of the same title.**



## About This Material

## Slide 1

### **The Power of Training the Vowels to Improve Intelligibility in Severe Apraxia and Dysarthria**

This material is designed to help make decisions about vowel training in clients with very low intelligibility; SLPs have to figure out for themselves what to do with clients such as these, and that means that we have to make up our own methods.

Based on decades of clinical observations and experimentation, Pam reveals how children can become significantly more intelligible when the focus of speech-language treatment shifts from the consonants to vowels in apraxia and dysarthria.

## Slide 2

## The Problem

- Children with expressive speech disorder are *very* hard to understand
- Severe apraxia and dysarthria
- We tend to focus on the consonants and phonological patterns involving consonants

HOWEVER

**Vowels are the most important component of intelligibility.**

## The Importance of Vowels

### Slide 3

- Vowels CREATE the syllables of a word
- Syllables are the BASIC UNIT of speech  
“Can I go with you?”     *Ca-ni-go-wi-th-you?*
- We do NOT speak in phonemes  
We do not say: “*C-a-n-i-g-o-w-i-th-y-o-u?*”
- Each syllable MUST have a vowel
- Vowels carry the PROSODY – tone, intonation, pitch, rhythm, resonance
- Vowels carry the MESSAGE of the consonants – we speak consonants through vowels

## Slide 4

## The Animal in the Window

What is the animal?



"aw-ee" \_\_\_\_\_

"oo-ah" \_\_\_\_\_

"jaw-jee" \_\_\_\_\_

"dee-goh" \_\_\_\_\_

## Problems We See in Clients

## Slide 5

Apraxia	Severe lack of phonemes Thus lack of both consonants and vowels Overuse of undifferentiated vowels ( <i>Uh</i> )
Dysarthria	Significant distortion of phonemes Therefore distortion of vowels e.g., <i>Go</i> pronounced “guhoheh”
Phonological	Vowels usually not a problem (Hodson, 2005)

## Slide 6

## What We Usually Do

We usually emphasize the consonants and ignore the vowels.  
For example, we model:

- Buh-Buh-Ball
- Buh-Buh-Boat
- Buh-Buh-Baby
- Buh-Buh-Bee
- Duh-Duh-Doggie
- Muh-Muh-More
- Puh-Puh-Please
- Guh-Guh-Go

This method solidifies unintelligibility. It focuses the consonants while training the child to use neutral vowels.

## What We Should Do

## Slide 7

### Set the Vowel and Speak the Consonant Through It

- Oo-Oo-Moo
- Ee-Ee-Bee
- Ah-Ah-Mommy
- Oh-Oh-Open
- Uh-Uh-Cup

This helps intelligibility because it sets the vowel and helps the child speak the consonant through it

## Slide 8

## Experience Co-Articulation

**Co-Articulation:** Overlapping speech movements

Set the Vowel and Speak the Consonant Through It

Word	Lip Position on Consonant	Word	Lip Position on Consonant
Boo	Forward Protruded	Bee	Back Retracted
Moo	Forward Protruded	Me	Back Retracted
Fool	Forward Protruded	Feet	Back Retracted
Sue	Forward Protruded	Seat	Back Retracted
Loop	Forward Protruded	Leap	Back Retracted



## Choosing Vowels

Slide 9

 Beet

- Bit
- Bate
- Bet
- Bat

 But Boot

- Book
- Boat
- Bought

 Box

The earliest to emerge: 2-3 months of age.  
Baby produces by cooing: prolonged sound

## Slide 10

## Vowel Tracks: First Level

Vowel	Sample Words
Ee!	wee, me, B, three, pee, eat, baby, mommy, owie, cookie, doggie
Oo!	two, boo, you, blue, shoe, Pooh
Ah!	hot, mama, dada, got, la-la
Oh!	no, go, open, mo(re), Elmo, po
Uh!	up, yucky, puppy, butt/bum, one

## Multi-Sensory Training

## Slide 11

Show	Visual model, making faces, setting postures Live model, picture, puppet, 3D model, cues, orthographic
Tell	Auditory input; spoken model, live model, amplification, prolongation, repetition, minimal pairs; e.g., <i>Boo</i> vs <i>Bee</i>
Touch	Tactile input to discover parts, oral exploration, feeding, temperature, vibration
Resist	Pressure against direction of movement, work a little harder to create new movement and to increase awareness, strength, and control
Apply	Verbal descriptions for conceptual ideation of the vowel, its sound and shape, "Make a big mouth," "Smile big," "Kiss mommy," "I hear a mouse! Eee! Eee!"

## Slide 12

## Second Level

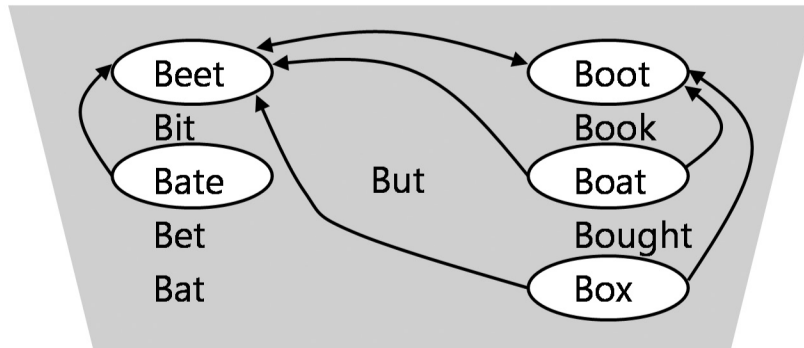
Diphthongs: one vowel made from two

Word	1st Vowel	2nd Vowel	Diphthong
Bye	Ah	Ee	Ah-Ee
Bough	Ah	Oh	Ah-Oh
Boy	Oh	Ee	Oh-Ee
Beauty	Ee	Oo	Ee-Oo
Bait	E	Ee	E-Ee

## Diphthongs

## Slide 13

Sliding from one vowel to another to create a new sound



## Slide 14

## Without Diphthongs

Intelligibility on early words is effected without the ability to produce diphthongs

Listen			
Bye	Bah	Baby	Be-Be
Hi	Hah	Baby	Bee-Bee
Ouch	Ahch	Beautiful	Bootiful
Couch	Cahch	Music	Moosic
Toy	To		

## How Does Speech Sound?

Slide 15

Listen	Lack
<ul style="list-style-type: none"><li>• Bye-bye, see you.</li><li>• My dad is noisy.</li><li>• They are beautiful.</li><li>• I like the toy boat.</li></ul>	<ul style="list-style-type: none"><li>• Speech sounds choppy, cut off, truncated</li><li>• Melody, intonation are limited</li><li>• Rate sounds fast</li><li>• No space is created for final consonants!</li></ul>
<p>There will be consonant problems, too</p>	

## Slide 16

## Training Diphthongs

- Make sure to begin with clear First Level vowels  
Ee, Oo, Ah, Oh, Uh
- Use same multi-sensory techniques
- Train to sequence 1st and 2nd vowel  
Say, "Ah." ... Say, "Ee." ... Say, "Ah-Ee."
- Work on the diphthongs alone
- Then set them into simple one-syllable words
- Work in Diphthong Tracks



## Diphthong Tracks

## Slide 17

	A    V V	B    V V	C    V VC
1	I, Eye (H)i, (B)ye	Hi, Bye, Pie, My, Why Ni(ce), Ki(te)	I'm, Ice (L)ight, (N)ice
2	Ow! (Now)	Cow, How, Now, Pow Dow(n), C(l)ow(n)	Ouch, Out (H)ouse, (M)ouse
3	Oy! (B)oy	Boy, Toy, Joy, Roy Fai(l), Noi(se)	Oil
4	Eeooo! You	Meew, Few, Q Mu(sic), Beau(tiful)	(M)eew, (Q)ue
5	Ay!	Hey, Day, Way, Pay, Lay P(l)ay, (O)kay	

## Slide 18

## Third Level

Third Tier Vowels - very difficult

- Beet

- Bit

- Bate

- Bet

- Bat

- But

- Boot

- Book

- Boat

- Bought

- Box

## Errors on Third Tier Vowels

Slide 19

- Usual substitution: the nearest vowel client is able to produce



The diagram illustrates three vowel substitution errors. Each row consists of a word on the left, a horizontal arrow pointing to the right, and a substituted word on the right. The first row shows 'Pig' being substituted with 'Peeg'. The second row shows 'Book' being substituted with 'Boook'. The third row shows 'Bought' being substituted with 'Bot'.

Pig	→	Peeg
Book	→	Boook
Bought	→	Bot

- These are minor errors that do not interfere with intelligibility too much
- But they are important to develop complete intelligibility

## Slide 20

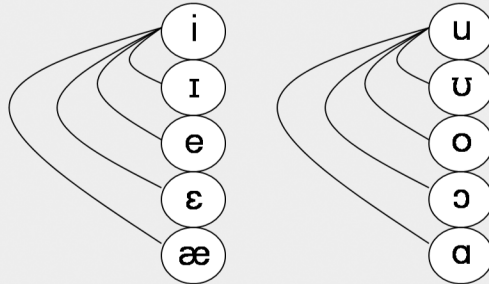
## Developing Short Vowel Skill

- **Hear** subtle changes in sounds while you
- **Make** subtle oral position changes
- Start with long vowels and train short ones off of them

Hit the top vowel  
and drop the jaw

**Easiest:**  
Top to bottom

**Hardest:**  
Subtle gradation



## Short Vowel Learning

## Slide 21

Represents the way very young children  
produce many very early words

/ i /	Ee!
/ i-ɪ /	Yippie!
/ i-e /	Yeah!
/ i-ɛ /	Yes! Yep!
/ i-æ /	Yay!

/ i-u /	Ee-Oo!
/ i-u /	Ee-Oo! You!
/ u-i /	Oo-Ee! Wee!

/ u /	Oo!
/ u-ʊ /	Wook!
/ u-o /	Whoa!
/ u-ɔ /	Watch!
/ u-ɑ /	Wah!

**Result:** Production of very early word patterns

## Slide 22

## High Functioning Clients

Vowel problems in older and higher-functioning clients

- Clients who have a certain vowel they cannot produce. Train them using the same methods already described.
- Clients who have distortion of vowels when there is an R or L problem
- Clients who pass the articulation test but who are very hard to understand in connected speech

## R and L Problems

## Slide 23

Car	/ kɑ /
Store	/ steɪ /
Deer	/ dɪ /

Carry	/ kɛwi /
Girl	/ gɜ /
Squirrel	/ skɜ /

## THERAPY PROCESS

- Teach R and L with one good vowel
- Produce R and L before and after every vowel
- Keep the vowel clear, clean, and crisp
- Add a syllable with the schwa
- Make R and L their own syllables

## Slide 24

## Diphthongs, R and L

Diphthongs cause further problems with R and L

Higher	/ ha-i-ə /
Tower	/ tɑ-u-ə /

## THERAPY PROCESS

- Divide the diphthong into two parts; Add a syllable
- Teach the client to retain each part of the diphthong along with the R or L



## Pass the Test / Fail Conversation

Slide 25

Helicopter

/ he ... e ... ka /

I want three of them

/ ʌ ə θi ʌ ðe /

- Client sounds great on single words but intelligibility breaks down in connected speech
- Client is talking too fast for his own speech movement abilities
- Syllables and consonants drop out and vowels neutralized

### In Therapy

- Help client maintain clear, clean, crisp vowels by over-exaggerating the syllables and phonemes
- Produce – Hear – Listen – Self-monitor

## Slide 26

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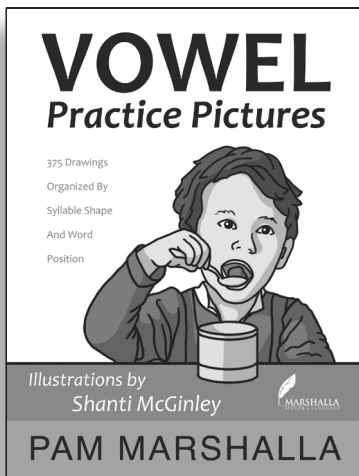
	Front	Mid	Back
High	Eli i Oomie		
	Ichabod I U Cookie		
Mid	Amy e Owen	Upton A	
	Eddie E Austin		
Low	Abbey æ Oscar		

## VOWEL PRACTICE PICTURES

*375 Drawings Organized for Vowel Practice*

Contains hundreds of words carefully chosen for their vowel content. Words are arranged simple-to-complex by syllable shape and phonological pattern.

This book serves as a quick drill resource for clients of all ages and ability levels. *60 pages*





### **Pam Marshalla**

completed a Master's Thesis in phonology in 1976 and worked with clients of all ages and ability levels for over 35 years. For decades, Pam taught continuing education workshops around the United States and Canada. She is celebrated as a "clinician's clinician" whose practical books and seminars successfully integrate research data and clinical experience.



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During this audio seminar, listeners will learn how to use vowels to facilitate improved intelligibility in children with severe expressive speech delay or disorder.

This one-hour recorded lecture can be used for individual or group study. The lecture material follows the booklet page-by-page and is identified by the numbered audio tracks. The material is designed for professional speech-language pathologists, but can be used with parents and other service professionals as well.

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