



Implementing a Phonetically Consistent Approach to /r/ Remediation


Christine Ristuccia


 **Implementing a Phonetically Consistent Approach to /r/ Remediation**


R Strategies that Work

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 Are you feeling frustrated about R?
... You are not alone!



 **Course Objectives**

You will be able to:


- Identify the 6 /r/ controlled vowels.
- Know how to phonetically evaluate and treat the various word positions of the 6 /r/ controlled vowels.
- Write measurable, objective IEP goals for the /r/ phonemes.
- Differentiate between visual and non-visual /r/ controlled vowels.
- Implement at least 3 articulation techniques to elicit the /r/ phoneme.
- Know the benefits of evaluating and treating /r/.


 **Presentation Overview**


- This presentation is targeted for intermediate level of knowledge
- Research review
- Evaluation procedures
- Specific treatment strategies
- Multi-media: Video and case studies.


 The job of a SLP can be exciting and challenging





 Every SLP faces challenges when evaluating & treating children with /r/ misproductions



 Traditional strategies of using Initial, Medial and Final /r/ add to the challenges of the SLP



 Using a phonemic approach to /r/ remediation will greatly assist you in meeting the needs of your students



 The lack of a comprehensive remediation strategy has four primary causes:



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My first year out of graduate school, my supervisor gave me all of her students with R problems...

Correcting the R sound is challenging because...

R can be produced many ways.

Surrounding vowels and consonants often affect the manner and place of production for R.

References:
 Bernthal, J.E., & Bankston, N.W. (1993). *Articulation and phonological disorders*. Englewood Cliffs, NJ: Prentice Hall.
 Clark, C.E., Schwartz, L.E., & Bialek, R.W. (1993). The removable r-appliance as a practice device to facilitate correct production of /r/. *American Journal of Speech-Language Pathology*, 2(1), 84-91.
 Elbert, M., & McFeynolds, L.V. (1973). Transfer of /r/ across contexts. *Journal of Speech and Hearing Disorders*, 40, 380-387.
 Shriberg, L.D. (1975). A response evocation program for /r/. *Journal of Speech and Hearing Disorders*, 40, 90-105.
 Shriberg, L.D. (1980). An intervention program for children with persistent /r/ errors. *Language, Speech and Hearing Services in Schools*, 11, 102-110.

There Are More /R/'s Than You Think!

Many unique /r/'s to consider!

Some students can produce one R controlled vowel but not another due to the changing nature of the sound.

The phoneme /r/ in the word "CAB" (/æ/ final) is pronounced differently from the word "FOR" (/ɔr/ final) or the word "BUTTER" (/ər/ final).

Figure 1.1 /r/ mouth positions, as in CAB

Figure 1.2 /r/ mouth positions, as in FOR

However, the final /r/ phoneme in the word "ANCHOR" is pronounced the same as the /r/ phoneme in the word "BUTTER". This is because they are both phonetically /ər/ final words despite the spelling differences.

/R/ Is different From other phonemes

There is no consistent placement as there is for other phonemes (e.g. /t/ or /s/, alveolar ridge).

R can be divided into three categories.

1. Prevoical, Initial or Consonantal R
2. Vocalic or R-controlled
3. Consonant Blends

Few standardized measures fully assess vocalic R.

Four main categories of /r/

Prevoical R Blends Vocalic RL

The traditional approach to articulation therapy focuses on correcting one sound at a time.

L → S → R → TH (Van Riper, 1978)

Word Phoneme Sequence: conversation

Sound in Isolation: conversation

Treating R is a major source of frustration for many speech-language pathologists.

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Comparison of Approaches:

Initial Position	Medial Position	Final Position
ribbon	barefoot	car
run	buttercup	near
rain	thorn	four
race	wireless	butter
ring	barn	software

Traditional Approach

versus

Initial AIR	Medial AIR	Final AIR
Arizona	dairy	millionaire
Erin	ceremony	square
heless	haircut	scare
arrowhead	barefoot	tear
aerosol	stairs	pair

Phonetically Consistent Approach

Practice saying traditional /r/ approach practice words lists with your neighbor

Traditional Approach

Initial	Medial	Final
Ribbon	Barefoot	Car
Run	Buttercup	Fear
Rain	Thorn	Four
Race	Wireless	Butter
Ring	Barn	Software

Practice saying phonemically consistent words with your neighbor

Phonemic Approach

for I Initial	for I Medial	for I Final
Orville	Award	Snore
Ornament	Export	Adore
Organ	Fork	Core
Orient	Board	Floor
Oriole	Worn	Soar

The traditional approach is not very effective when evaluating and treating R.

What is the solution?

The solution is to treat R Phonetically!

Benefits of using a phonetically-based approach:

- o Evaluates all variations of R
- o Provides a starting point for treatment
- o Targets individual needs
- o Reduces time in therapy
- o Measures student progress

The phonetically-based approach evaluates all of the many variations of R.

Oral positioning will vary for each post-vocalic R.

Overview of R Blends

PR Pride Pretty	BR Brought Brown	TR Tried Tree
DR Drain Drum	FR Frog Friend	KR Crash Cry
GR Great Green	SHR Shrug Shrink	STR String Street
SPR Spring Sprint		THR Thread Three

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How to decide which tool to use:

21 Word Screening Tool Advanced Screening for R

Most Rs are correct	You have limited time	No Rs are correct on the 21 Word Tool	You have 2 or more possible targets
The student can't read	Interfering disorders are present	The case is particularly challenging	You want more information

Help! What if my student can't say any of the Rs on the Advanced Screening Tool?

Elicitation Probe

Interpreting the Elicitation Probe

- Look for patterns of correct and incorrect productions
- A useful pattern is to identify differences between voiced and voiceless cognates
- Vertical and horizontal patterns often help you find facilitating contexts for various R variations

Example: student can produce ARP but not ARB

Use The Elicitation Probe to Find Patterns

Phonetically Consistent Probe Lists

Plan Remediation

- Choose target based on screening results, noting correct and incorrect productions.
- Apply elicitation techniques based on the specific word position of the target (will vary student to student).
- Consistently focus on chosen target until mastery.
- Use phonetically consistent probe lists for selected target.

Choosing an Intervention Target

You don't have to remediate all 21 allophones of /r/!

- Target only the misproduced /r/ allophones!
- Only need to remediate if all /r/ allophones were **chronically** misproduced and there was lack of generalization.

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Write a treatment Goal for [AR] final

- Sample IEP Goal:
- Sample Working File Goal:

Treatment Goal Samples

Sample Goal:

Alex will produce [ar, or, ire, and ear] with 80% accuracy at the sentence level for 5 consecutive sessions.

Sample Working File Goal:

Alex will produce [ar] initial, medial & final word positions with 80% accuracy for 5 consecutive sessions. [ar] final will be the first target followed by [ar] initial.

The EWR Approach is based on establishing what the student does most naturally.


- Establish retroflex or retracted R then focus on one target at a time until mastery is achieved.
- Elicitation strategies are based on the target selection.
- Use the phonetically consistent probe lists to help pinpoint your therapeutic direction.

The Phonetically Consistent Approach...

- Focuses on one target at a time.
- Matches techniques to target.
- Maximizes target utterances per session.


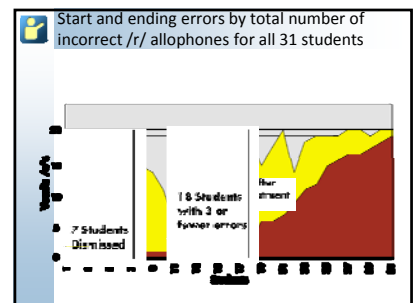
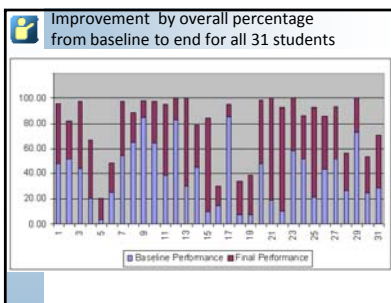
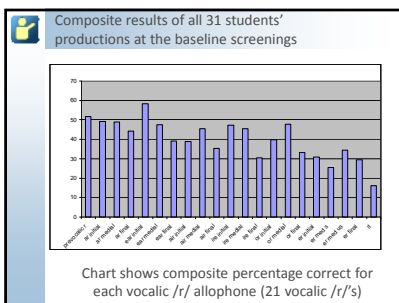
San Diego Unified School District study supports using a phonemic approach to treat R (2005)

- 31 students aged 6-14 years
- Tracked for 6 months
- Single subject design
- Two baselines screenings per student



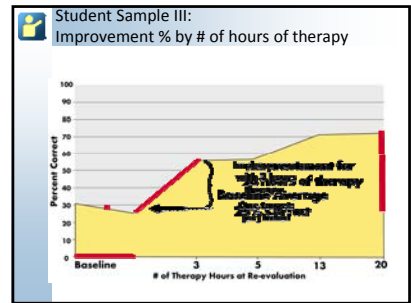
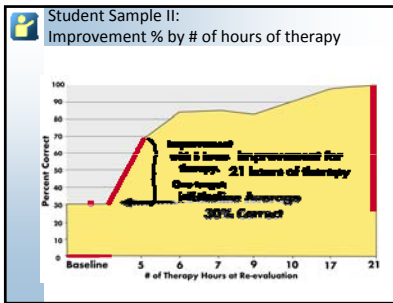
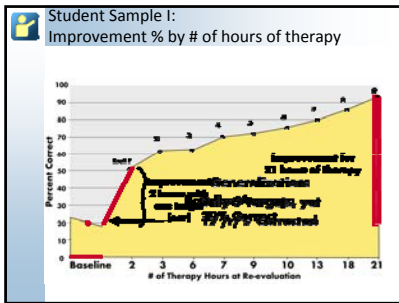
San Diego Unified School District study supports using a phonemic approach to treat R (2005)

- Between 15 and 20 hours of treatment
- Method was to treat a single target until 80% accuracy achieved at the sentence level for 5 sessions.


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Study Results

- 80% of students corrected 5 or more R variations
- 58% ended with 3 or fewer errors
- 7 students were dismissed



Study findings support the No Child Left Behind Act and help add accountability for your student's R therapy goals.


No two students were exactly the same...



...but all made progress.
100% of students generalized /r/ allophones!



SLPs in study had common feedback

- SLPs pleasantly surprised at the improvement and the student's positive response to treatment.



SLPs in study had common feedback

- Screening proved to be an excellent tool to determine present level of performance.


SLPs in study had common feedback

- Having one intervention target proved effective in achieving generalization.




Tips for Working with Students

- Multi-modality--involve many senses.
- Repetition-get as many practice words in as possible.
- Homework are words student can produce perfectly in therapy.
- Consistent, consistent, consistent.



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Blocked vs. Random Practice

Traditional Blocked Practice	Random Practice
Isolation	Sentences
Single Words	Isolation
Phrases	Structured Conversation
Sentences	Single Words
Structured Conversation	Phrases
Spontaneous Conversation	Spontaneous Conversation
Maintenance	Single Words
	Maintenance

(Motor learning theory, Skelton, 2004)

Overview of Our Favorite Techniques

Cueing

- Cognate Pairs
- Coarticulation
- Whisper Technique
- Prevocalic R
- Single vs. Multi-syllabic words
- Nonsense Words

There are four basic ways to cue:

Auditory Cues

Arnie is an artist. versus AAAArnie is an aaaartist.

Verbal Cues

Visual Cues

Pictures are often helpful when teaching R.

Tactile-Kinesthetic Cues

Tactile cues are often very effective.

Tactile-Kinesthetic Movement

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Tactile-Kinesthetic Movement Benefits

Cueing Example: Jordan

Voiced versus Voiceless Cognates

Coarticulation

ERnie → teachERnie → teachER
teachER → teachERnie → ERnie

Coarticulation Example: Chase

Gradually fade the cues as soon as the target is consistently produced using the technique.

Whisper Technique

Most often the whisper technique is used with coarticulation but it may also be used alone.

bakERy → bakERY → bakER

Whisper Technique Example: Blake


Whisper Technique Example: Chase

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Using Prevocalic R

Use a word like **RED**, **RING**, or **READY** that the student already says well to elicit final R variations in words such as **FLOWER**, **TEACHER**, or **DEER**.



+ **READY**

Prevocalic R Example: Jordan

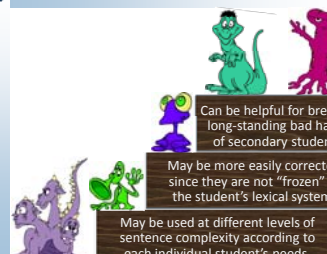
One-syllable versus Multi-syllabic Words

Single syllable words need to be **elongated**.

Multisyllabic words need to be said **quickly!**

Four
14!

Nonsense Words




Can be helpful for breaking long-standing bad habits of secondary students.

May be more easily corrected since they are not "frozen" in the student's lexical system.

May be used at different levels of sentence complexity according to each individual student's needs.

Mikie



- Beginning of 6th grade year, 5 years of therapy for R, 3 SLPs
- Straight A student who was embarrassed by his speech but made light of it in public
- 4 SLPs for R by middle school
- Father told that structural abnormalities were preventing Mikie from saying R
- Mikie also worried that there was something physically wrong with him

Initial Screening of Mikie

Overview of Mikie's Results



Therapy with Mikie: One Hour Later

Eligibility involves more than simply making good grades in school.



These statements may also apply if your district is using a Response to Intervention (RTI) service delivery model.

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Grant




- 8th grade; involved with the National Honor Society and played many extracurricular sports
- 5 years of therapy for R, 3 SLPs; IEP goals included Prevocalic R, EAR, and AIR
- Significant avoidances tendencies were impacting academics, friendships, and future career aspirations
- School speech therapy services had already been discontinued due to previous lack of success

Grant Interview

Eligibility Factors to Consider Include:

- Stage 1:** Is there a disability condition (i.e. does the child have a speech or language disorder)?
- Stage 2:** Is there an adverse effect on educational performance (academic achievement and functional performance) resulting from the communication disorder?
- Stage 3:** If so, are specially designed instruction and/or related services and supports needed from the SLP to help the student make progress in the general education curriculum?

The Law



Federal Position on the Issue of Educational Need


In November 2006, The U.S. Department of Education clarified "adverse effect on educational performance" as it relates to a speech or language impairment:

Under 34 CFR §300.101 (c) (11), "Speech or language impairment means a communication disorder, such as stuttering, impaired articulation, a language impairment, or a voice impairment, that adversely affects a child's educational performance. It remains the Department's position that the term 'educational performance' as used in the IDEA and its implementing regulations is not limited to academic performance. Whether a speech and language impairment adversely affects a child's educational performance must be determined on a case-by-case basis, depending on the unique needs of a particular child and not based only on discrepancies in age or grade performance in academic subject areas."

Office of Special Education Programs' (OSEP) Interpretation:

"In the event that the speech-language pathologist establishes through appropriate appraisal procedures the existence of a speech-language impairment, the determination of the child's status as a 'handicapped child' cannot be conditioned on a requirement that there must be a concurrent deficiency in academic performance".

Does the disorder require the services of a speech-language pathologist?



Most students are easy to motivate with the following activities:

- Use games to make therapy fun. <http://www.speechtherapyforum.com>
- Use interesting, relevant materials.
 - Car, fashion or sports magazines
 - Books on their favorite topics
 - Language arts, science, or social studies textbooks
- Let students work for rewards.
- Collaborate with parents and teachers.
- Help students to track their own progress.

Motivation Example: Brisa

What are your ways of getting multiple responses in therapy?

- Use word lists or picture cards.
- Use a tally counter.
- Set a timer and reward for correct productions.
- Have a contest to encourage competition between two or more students or you and the student.

Ways to Measure Student Progress:

- Briefly review previously mastered targets to check for retention.
- Use advanced screening tool to collect current data and evaluate direction of therapy.
- Use Daily Data Collection and Daily Tally Sheets to measure progress day to day.

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Matthew goals

IEP Goals Matthew will produce [ar], [ir], and [or] with 80% accuracy over 5 consecutive therapy sessions as measured by SIP tally and probe test.

Working File Goals Matthew will produce [ar] initial, medial, and final word positions with 80% accuracy over 5 consecutive sessions. [ar] final is the first target followed by [or] initial. Matthew will open his mouth wider during [ar] productions.

Case Study #2: Shelly

- Shelly is 7-year-old 2nd grader.
- Referred by resource teacher.
- Directions: Using results of screening to determine intervention target.



Shelly Screening Results

Percentage	100	33	0	100	55	21	100	66	0	66	33	0	33	0	66	0	88	22	0	0
Target	100	33	0	100	55	21	100	66	0	66	33	0	33	0	66	0	88	22	0	0
100	33	0	100	55	21	100	66	0	66	33	0	33	0	66	0	88	22	0	0	0

- Student uses retracted /r/.
- Successfully produces all initial /r/ blends

Which target would you choose? Why?

Percentage	100	33	0	100	55	21	100	66	0	66	33	0	33	0	66	0	88	22	0	0
Target	100	33	0	100	55	21	100	66	0	66	33	0	33	0	66	0	88	22	0	0
100	33	0	100	55	21	100	66	0	66	33	0	33	0	66	0	88	22	0	0	0

↑ ↑ ↑ ↑

Potential Targets

Which are below 80% and above 50%

- [ear] medial - 55%
- [er] medial unstressed - 66%
- [ire] medial - 66%
- [air] medial - 66%

Shelly's target considerations using elicitation techniques

- Coarticulation within a sound family.
- ear final (0%) + ear initial (100%)
- air final (0%) + air initial (100%)
- or final (0%) + or initial (88%)

Which target do you choose? Why?

Percentage	100	33	0	100	55	21	100	66	0	66	33	0	33	0	66	0	88	22	0	0
Target	100	33	0	100	55	21	100	66	0	66	33	0	33	0	66	0	88	22	0	0
100	33	0	100	55	21	100	66	0	66	33	0	33	0	66	0	88	22	0	0	0


Which target do you choose? Why?

Intervention

Target = Depends on success using the elicitation techniques

Case Study # 3: Billy

- Billy is 11 years old.
- Referred by his teacher because he can't say /r/.
- He loves race cars and trucks, but kids make fun of his speech when he's playing.




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In group we talked about...

- Deep breathing to help with relaxation (also eliminated shoulder shrug.)
- Shorten production of /r/ to eliminate glottal fry.
- Natural tongue position (He was indeterminate).
- Combined nonsense word [airch] to work on [air] and [ch]. It worked! First time EVER he was able to produce [ch].

Case Study #5: Dustin



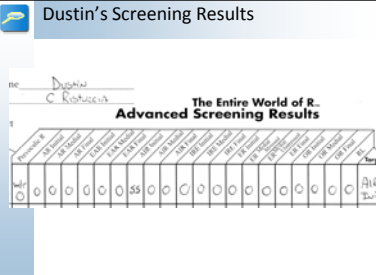
- Dustin is a 3rd grade boy. He has been in speech for /r/ for 2 years.
- Physical Characteristics noted:
 - Received OT and PT prior to transferring.
 - Awkward gait.
 - Talks incessantly.
 - Needed constant reminders to wait to take his turn.
 - Extremely anxious and impatient when attempting to produce his /r/'s.

Dustin: Physical Characteristics

- Received OT and PT prior to transferring.
- Awkward gait.
- Talked incessantly.
- Needed constant reminders to wait to take his turn.
- Extremely anxious, shrugs shoulders, and impatient when attempting to produce his /r/'s.
- Slouching posture.
- Has difficulty making friends.

Dustin's Screening Results

The Entire World of R - Advanced Screening Results



The Entire World of R - Elicitation Probe: Vocalic /r/

Student Name: Dustin
 Date: 4-22-08
 Probe #: 1

Palatals (r, ʃ, ʒ, ʒh)

airch	airch	airch
airch	airch	airch
airch	airch	airch
airch	airch	airch

Vitals (k, g)

ark	ark	ark
arg	arg	arg

Nasals (m, n, ŋ)

arm	arm	arm
arn	arn	arn
ang	ang	ang

Liquids (l)

arl	arl	arl
-----	-----	-----

Glide (w, j)

arw	arw	arw
ary	ary	ary

Glottals (h)

arh	arh	arh
-----	-----	-----


Dustin's Treatment Plan

- Individual session to eval. and try strategies w/o interference.
- Discussed deep breathing and visualization (beach – his idea) for relaxation.
- Talked about not expecting perfection, but doing our best.

Dustin Treatment

- Find the word on the screening that he closely approximated or could produce correctly (heirsch, area, Paris)
- Elicitation Probe for [air] initial
- Use nonsense words on pg 162. He was 100% for nonsense words.
- Alternate between real and nonsense words to reduce anxiety.

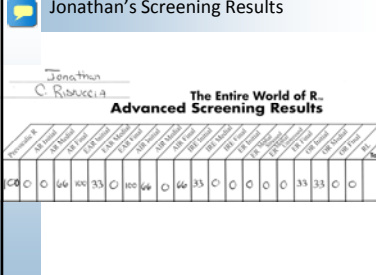
Case Study #6: Jonathan



- Jonathan is 9 years old and has been receiving speech for /r/ for one year.
- The previous SLP taught all her students the retroflexed /r/.
- Jonathan tended to over exaggerate his retroflexed /r/ (rolled eyes, no eye contact with listener), which sounded distorted.
- Very stimutable (not anxious).


Jonathan's Screening Results

The Entire World of R - Advanced Screening Results




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 Trevor Sample Session

- Warm-up: Try a word.
- Tongue positioning (review).
- 3 syllable words (easier).
serious, period
- Review what he's doing.
- Nonsense words (easier).
- Sometimes sentences & phrases are easier than single words.
- Make one syllable words into 2 syllables.

 Questions?

 Handout & References

www.sayitright.org/resources