



Abstract

Twenty-seven 3-4 year old preschoolers with articulation impairment received five 45-minute speech sessions targeting /r/ consonant blends in the prevocalic consonant cluster position (e.g., "scrape"). Standardized articulation pretesting and post testing was analyzed to determine if gains were achieved with /r/ in both the prevocalic and postvocalic position on the Clinical Assessment of Articulation and Phonology-2.

Methods

All twenty-seven preschoolers participating in this intervention produced a single prevocalic consonant cluster containing /r/ in the context of sentences to request desired objects and actions approximately 30 times each 45-minute session across six high interest activities with a second year graduate speech pathology student. For example, "Can you scrape it to me please?" would be used continuously throughout the five sessions and exclusively to request.

Key Components of the Intervention

Evidence-Based Practices Systematically Implemented: Pivotal Target Word: Select later developing, maximally distinct consonant clusters that would carryover to other sounds (e.g., s-blend over th-blend).

Multi-Modal Prompting: Dynamically provide prompts using visual, verbal, tactile, and spatial (temporal) cueing depending on child's error. **Promote Self-Efficacy:** Teach students to self-cue and fade verbal,

visual, tactile and spatial cues with 80% accuracy.

Quality and Quantity: Present activities that are engaging with multiple opportunities for natural reward, requesting using the target word in a sentence. Pieces=practice.

Generalization of Learning: Instruct caregivers through direct modeling, video clips, email and provision of a hands-on activity.









Figure 2. Temporal Cues.

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Targeting /r/ Consonant Clusters: **Does Generalization Occur Across Phonetic Contexts?**

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Figure 3. Engaging Home Practice.



Chart 1. Pre and Post Testing CAAP-2 Scores.

Results

Key Findings:

Clinical Articulation and Assessment of Phonology-2 indicated an age equivalent increase of 12 months over a 7 week period and approximate Standard Score increase of *10*.

Although post-vocalic /er/ was not targeted, there was an 11% increase in improvement of production.

The pre-vocalic /r/ words that were directly targeted, improved 16% in production despite all children being 3-4 years of age with 48 months being the group average.

In the initial position of words as a singleton, /r/ production was improved upon for 1/3 of the participants.

All preschoolers included were 3 or 4 years of age that participated in a summer enrichment program focused on a single prevocalic /r/ consonant cluster. Targets that were selected: 20 Participants=/skr/; 4 Participants=/gr/; 2 Participants /spr/; 1 **Participant /dr/.** No participants were included that targeted /thr/.

Chart 2. Post Vocalic /er/ and Prevocalic /r/ Improvements



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Figure 4. Child Self Cueing. The same target sentence ("Can you scrape it to me please?") is used throughout the ntervention so the child can focus on not what is said but **how** it is said. Here, the child is independentl cueing "an angry dog" /r/ sound. She is becoming her ow peech teacher. Generalization to other /skr/ words comes through this active learning approach, not through passive

In my work, I've found earlier developing, complex untrained sounds, such as /f/, /v/, /k/, /g/ to naturally develop when I blends and r-blends are targeted, illustrating the cascading effect of the complexity approach



made:

period (as little as five therapy sessions). week period) with best practices implemented. production.

4-Targeting more complex sound combinations results in a cascading effect to simpler ones.

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Discussion

Based on this research, the following clinical implications can be

- 1-Children with articulation impairment as young as 3-4 years of age can make progress in production of /r/ over a short time
- 2-Substantial progress can occur over a short time period (7)
- 3-Prevocalic /r/ therapy generalizes to improved postvocalic/er/

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