Speech and Auditory Development of Students who are Deaf or Hard of Hearing

EPSE 565A

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Speech Target Description for the Phoneme /r/:

The liquid consonants are the phonemes the lateral /l/ and the rhotic /r/ which both share the same place of articulation in the alveolar region. The alveolar ridge is the point just behind the upper teeth. To articulate a liquid, the tongue must be able to raise or retroflex to this area. They are also similar in the speed of movement, the degree of oral tract constriction and the vocal fold action. A listener requires up to 1000Hz to detect the liquids but needs up to 3000Hz to identify them. Children with only low frequency hearing will not be able to discriminate /r/ from /l/ or hear the glides between 1500-3000 Hz that vary according to vowel context. In the literature of Daniel Ling, “multi channel cochlear implants and tactile devices may permit detection of some of the glide.” (1989).

The two consonants differ from one another in the manner in which the tongue is shaped to form the constriction. Another one of their differences is the manner of articulation in which /l/ is a lateral approximant and the /r/ is an approximant. Since /r/ is harder to articulate, a prerequisite is to pronounce the /l/ first. The speaker must also be able to raise or retroflex the tongue. The target description discussed in more detail below is the liquid, /r/.

There are two ways of producing an /r/: the retroflexed /r/ and the other is the bunched/r/. They both have the velo-pharyngeal port closed with the lips slightly rounded. The differences are in the manner in which the tongue moves. The retroflex /r/ is where the tip of the tongue is turned back with the underside close to or touching the palate just behind the alveolar ridge. The bunched/r/ is where the sides of the tongue touch the upper molars and the tip is raised. The air stream should go through the oral cavity between the palate and the tongue. The /r/ is unique in that every speaker will have their own personal way of moving their tongue to reach this phoneme and it will change depending on the coarticulation with other consonants and vowels.

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| Stage | Sense (Modality) | Techniques | Materials | Comments |
| Elicitation | Auditory | Have child repeat the target sound /r/ or /rrrrrr/ | You say the /r/ with a plastic ring and then they do and if they make the sound they keep it for the end of the activity to play with all of them. |  |
|  | Visual | Demonstrate: Tongue tip raised and curled upward pointing just behind the alveolar ridge, voiced, and an airstream that glides over the tongue in a fluid | Give them a stamp on a token chart so at the end when it’s full they can play with a toy of their choice. |  |
|  | Tactile | Hold on to both lips with both hands to inhibit rounding. Move the lower jaw downwards to next vowel | Stickers |  |
|  | Tactile | Since the prerequisite for an /r/ is an /l/. Play the Peanut butter game. Lift your tongue up behind your front top teeth for L then slide it back towards your throat to produce R like you are licking peanut butter off the roof of your mouth. | Give them a fish for every time they try and then they can put them in the fish tank after. |  |
|  | Visual and Auditory | Try the w-r smile trick. Make the /w/ sound and then smile to turn it in to an /r/. The smile spreads out the mouth and tongue with a constant airstream. | Smiles and a sticker with an object starting with R |  |
| Stabilization | Auditory | Have child produce an /r/ sound in medial position with a central vowel. /ərə/ | Get a piece of a puzzle each time. |  |
|  | Auditory | Have child produce an /r/ sound in medial position with a back vowel. /oro/ | Receive swords to play Pop-Up Pirate Game. |  |
|  | Auditory | Have child produce an /r/ sound in medial position with a front high vowel. /iri/ | They get ants for Ants in the Pants game. |  |
|  | Auditory | Have child produce an /r/ sound in an initial position with a central vowel. /rə/ | Give them little erasers and they can count them at the end to see how many they got. |  |
|  | Auditory | Have child produce an /r/ sound in an initial position with a back vowel. /ra/ | They will collect Operation Game pieces and at the end they can play, |  |
|  | Auditory | Have child produce an /r/ sound in an initial position with a high front vowel. /ri/ | Each time they make the sound they get to take a block out of the game Jenga. |  |
| Multiple Repetitions | Auditory | Reduplicated syllables:  Have child produce an /r/ in medial position with central vowels with variations in duration. /ʌrʌ/, ʌrʌrʌrʌrʌ/ | Have them spin a spinner every time they try to make the sound and then they can spin the spinner and try to see how many points they can get at the end. |  |
|  | Auditory | Reduplicated syllables:  Have child produce an /r/ in with front vowels with variations in intensity. /iririri/ , /iririri/ | Marbles for Hungry Hungry Hippos. |  |
|  | Auditory | Reduplicated syllables:  Have child produce an /r/ with back vowels. /orororo/ | Give pieces for the game Frustration so they can play after. |  |
|  | Auditory | Alternated syllables:  Have child produce an /r/ with different vowels with variations in rising and falling pitch. /riruriru/ , /riruriru/ | Receive magnetic band-aids to place on Howie in the game Howie’s Owie. |  |
|  | Auditory | Alternated syllables:  Have child produce an /r/ with different vowels with variations in pitch. /iririri/ , /iririri/ | Give them Little People toys and animals that they can put into the barn. |  |
|  | Auditory | Recursive syllables (changing consonants):  Have child produce an /r/ with a /w/ with back vowels. /wuruwuru/ | They can collect dots to play Plinko with after the session. |  |
|  | Auditory | Recursive syllables (changing consonants):  Have a child produce an /r/ with a /d/ and central vowels. /rədə/,/rədə/ | Rings for a ring toss. |  |
|  | Auditory | Recursive syllables (changing consonants):  Have a child produce an /r/ with a /n/ and front vowels. /rænæ/ /rænæ/ | Each time they pronounce the word, they get a piece of Mr. Potato Head. |  |
|  | Auditory | Recursive syllables (changing vowel and consonant):  Have a child produce an /r/ with a /d/ and different vowels. /rədi/,/rodi/ | Have play money with Velcro/ magnet/ tape on the back. Each sound they make they get a dollar. See if they can make $50. |  |
|  | Auditory | Recursive syllables (changing vowel and consonant):  Have a child produce an /r/ with a /w/ and different vowels. /ræwa/,/ræwi/ | Have them pick an upside down lemon card. If it’s sweet, they put them in the pitcher. If it’s sour they can give them to another person. |  |
| Meaningful Practice | Auditory | CarryOver Rover Activities for /r/ is a great articulation game about a silly dog named Rover. There are three sets of cards in which the 1st set has r- initial sounds, the 2nd set has medial –r- sounds, and the 3rd set has –er in the final position. The –er is it’s own phoneme and does not reach the target of /r/ but it does make use lots of other /r/ sounds in it. The child picks one out of each set so they have 3. With these three cards, they can construct extremely funny sentences. The combinations are endless.  Example: Rover rode race cars with…Carl the careful cowboy….had a large red ferris wheel in the front yard. | Each time they make a silly sentence, they can smash out one of the ice cubes in Don’t Break the Ice. |  |
|  | Auditory | Use “A Far out Fairy Tale” from the Sparc Artic Scenes book. There is a comic made solely of pictures without words for a joint attention task that contains a multitude of /r/ words in medial position. There also is a list of activities to do to elicit the child to produce the target sound. There are questions for the student to answer where they can see the answer in the pictures. There are rhyming questions such as, “What rhymes with parrot?” with the answer being “carrot”. They can make up silly sentences using two of the words or fill in the blank for closed sets. There are also story starters that have the child make up a story using the picture cells as a guide and use the vocabulary. The vocabulary includes /r/ words in the medial position and are: barrel, cereal, forest, hayrack, squirrel, camera, cherries, giraffe, kangaroo, starry, carrot, clarinet, gorilla, Marita, celery, earrings, hairy, and oranges | They get a token each time they answer right. After the session, for each token they have they can cash in for a spin in the game Twister. |  |

Segmental activities for Pitch:

1) A Fractured or Twisted Fairytale of Goldilocks and the Three Bears. There are many different versions but I just thought that it would be more age-appropriate for older children. These types of fairy tales are suspenseful to keep the students interest, funny to keep it light, and lend an element of surprise. There has the deep papa bears voice, the midrange mama bear voice, the higher pitched Goldilocks voice, and the highest pitched baby bears voice. These voices lend well for teaching pitch.

Ask the student to close their eyes and listen to the different voices and describe them. Have a discussion about the pitch of the voices.

Write the following phrases on sentence strips and work on speech skills, concentrating on expression in the students’ voices. They can be colour coded so that each colour coincides with a pitch (low, med, high).

a. “This is too hot!”

b. “This is too cold!”

c. “This is just right!”

d. “This is too hard!”

e. “This is too soft!”

f. “It broke!”

g. “This is too high!”

h. “Somebody has been eating my porridge!”

i. “Somebody has been eating my porridge and has eaten it all up!”

j. “Somebody has been sitting in my chair!”

k. “Somebody has been sitting in my chair and has broken it to bits!”

l. “Somebody has been sleeping in my bed!”

m. “Somebody has been sleeping in my bed and here she is!”

Practice saying them with the students so that they can perceive and then produce pitch.

Read the book and when the line comes up, they can choose the right strip and say the line with the right pitch.

2) A joke exchange game is a good way of teaching pitch.

Jokes usually have a certain rising and falling of pitch for effect. Attached are some Joke Dominoes. The students have to match the joke to the punchline. When they find the right place, they have to tell the joke to the other person. This can be done in pairs with either their TDHH or a peer.

The first line is the question that has a rising pitch at the end. Then, the “punch line” starts high and ends in a statement which lowers the pitch. It really depends on the effect the joke teller wants to achieve.

Knock-knock jokes have a rhythm with pitch. “Knock-Knock” (high-low) “Who’s there?” (falling pitch) “Lettuce” (med) “Lettuce who?” (low-high) “Let us in! It’s cold out here!” (High). They have variations within each phrase and this can be taught.

There are many good joke books for kids out there that you can usually find in the Library. They contain many puns and can also be seasonal or have a theme (Halloween, April Fools, Knock-Knock). This may tie in to their curriculum, may help support social skills or just be a fun activity.

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