Phonological Awareness and Pre-Reading Skills for Children with Childhood Apraxia of Speech

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Disclosure

- I have no relevant financial or nonfinancial relationships to disclose.
Reading Performance 2015
• Data from the National Assessment of Educational Progress. (National Center for Educational Statistics, 2016)
  - 36% of 4th grade students are at or above a proficient reading level, leaving 64% of 4th grade students reading below grade level.
  - 34% of 8th grade students are at or above grade level
  - 37% of 12th grade students are at or above grade level

Reading Difficulties
• Children with a history of speech-language impairment are 4-5 times more likely to have reading difficulties than children from the general population. (Catts et al., 2001)
Phonological Awareness

- Understanding of the phonological system of our language.
- The ability to manipulate sentences into words, words into syllables, and syllables into sounds (phonemes).
- Any language manipulation activity you can do without print.
- Metalinguistic skill
- Performance on phonological awareness tasks is a good predictor of future reading ability. (Webster and Plante, 1992; Gillon, 2004)
- Preschoolers phonological awareness and ability to use phonological information when decoding are “strong and robust predictors of early reading outcomes.” (Raitano et al., 2004; Rvachew et al., 2003)

Phonological Awareness Development

- Skills develop in a sequential fashion (not linear), and they tend to develop in this order:
  - Rhyme awareness
  - Word and syllable awareness
  - Phoneme awareness
- Skills develop early.
- Do not appear to develop naturally, but can be taught.
Phonemic Awareness

- Part of phonological awareness.
- Awareness of phonemes, which are the smallest unit of sound that holds meaning.
- Ability to isolate sounds in words.
- Understanding of how sounds make up words.
- One of the best predictors of children's ability to read. (Ehri et al., 2001, Gillon 2002)

Phonological Awareness Skills in Children with CAS

- Children with CAS present with multiple risk factors for reading and spelling disorders. (Gillon and Moriarty, 2007)
- Children with CAS are likely to experience severe written language deficits. (Lewis et al., 2004; Gillon and Moriarty, 2007; McNeil et al., 2009)
- Children with CAS are more likely to have expressive written language deficits than children with other speech-language deficits. (Lewis et al., 2004; McNeil et al., 2009)
- 50% of 4 year olds with isolated speech difficulties showed poor reading and spelling performance at 6 years despite improvements in speech production. (Nathan et al., 2004)
Phonological Awareness Skills in Children with CAS

- Despite improvements in speech production, children with CAS continue to show deficits in phonological awareness (specifically phoneme segmentation and blending strategies in non-word reading and spelling). (Stackhouse and Snowling, 1992)

- McNeill et al., (2009) compared the phonological awareness, decoding and letter knowledge ability of children with CAS, children with inconsistent speech disorder without oral-motor impairment and typical speech development.
  - Children with CAS group exhibited inferior phonological awareness.
  - Had more children performing below average on standardized letter knowledge and decoding measures than the other groups.

  - Children with CAS group exhibited more severe decoding, spelling and reading comprehension difficulties at follow up than the two comparison groups.
Phonological Awareness Skills in Children with CAS

• Marion et al., (1993) found significant deficits in rhyme generation and identification in 4 children with CAS aged 5-7 years compared to their matched peers with typical speech and language development.

• Marquardt et al., (2002) found severe deficits in syllable segmentation, phoneme identity and manipulation tasks in 3 children with CAS aged 6 to 7 years.

• Moriarty and Gillon (2006) found phoneme awareness deficits on a standardized measure in 3 participants with CAS who were age 6 and 7 years.

• Marion, Sussman and Marquardt (1993) found severe deficits in rhyme generation and rhyme detection in 4 children aged 5-7 with CAS.

• Marquardt, Sussman, Snow and Jacks (2002) found severe deficits on a syllable segmentation task, a novel phoneme identification task and a phoneme manipulation tasks in 3 children aged 6-7 with CAS.
Persistent Deficits

- Phonological awareness, reading and spelling deficits in CAS appear to persist into adolescence irrespective of gains in speech production ability. (McNeil et al., 2009)
- Stackhouse and Snowling (1992) found ongoing phoneme and rhyme awareness deficits and an inability to use phonological strategies in reading and spelling for 2 children with CAS, aged 10.7 and 11 years despite gains in speech production and intensive phonics training over a 4 year follow-up period.
- Lewis et al., (2004) found continued reading and spelling deficits at follow up for children with CAS at age 8 to 10 years when the speech production deficits of the group had largely resolved.

Phonological Awareness Skills in Children with Speech Sound Disorders

- Preschoolers with SSD are at increased risk for phonological awareness deficits. (Anthony et al., 2011; Bird et al., 1995; Hoy & Mann, 2012; Preston et al., 2013; Raitano et al., 2004; Rvachew et al., 2003)
- For some, these deficits may continue to be observed at school age. (Lewis & Freebairn, 1992; Nathan et al., 2004; Preston & Edwards, 2007)
- It is more common to see phonological awareness, reading and spelling deficits in children with co-occurring language impairments, however some children with SSD who have typical language skills are at elevated risk for phonological awareness and reading problems. (Bird et al., 1995; Overby et al., 2012; Raitano et al., 2004; Rvachew et al., 2003)
- Children with moderate or severe speech impairment frequently demonstrate poor performance on phonological awareness tasks when compared to children without speech impairment. (Raitano et al., 2004; Rvachew et al., 2003)
Risk Factors – Nature of the disorder

- Stachouse and Wells (1997) proposed that inconsistent and inaccurate speech in CAS may provide inadequate input to the child’s developing linguistic system and may thus affect auditory processing, vocabulary knowledge and literacy development.

- Children with CAS may be at risk for literacy difficulties because of the impact of the motor-planning deficit on the child’s developing linguistic system.

- Children with CAS may have imprecise and/or poor access to phonological representation of spoken words, disrupting the development of motor programs based on those representations. (Marquardt et al., 2002)

- Gillon and Moriarty (2007)
  - Although speech intelligibility improves with increasing age and intervention, children with CAS may break down when their system is stressed with more complex phonological production tasks.
  - The persistence of phonological difficulties in children with CAS during the early school years (the period of explicit reading and spelling instruction) places them at increased risk for written language difficulties.
  - Outcomes are better for children whose speech-language impairments have resolved by school entry AND who have adequate phonological awareness skills when approaching literacy instruction.
  - Children with CAS have shown breakdown in linguistic areas other than phonology, such as syntax and morphology.
Risk Factors - Representational deficits

- The Hierarchical Hypothesis in CAS: (Marquardt et al., 2002)
  - Representational deficits - children with CAS have difficulty representing linguistic information within a hierarchical structure.
  - These deficits may impaire the ability to build larger linguistic structures from smaller linguistic structures, such as syllables from phonemes and phrases from words.
  - Phonological awareness tasks are dependent on access to a segmental representation of lexical items in long term memory.
  - A deficit in phonological representation may disrupt phonological awareness development and thus predicts reading and spelling difficulties in children with CAS.

Risk Factors - Genetic risks

- Lewis et al., (2004) examined the family history of 22 children with CAS aged 3-10 years.
  - 86% of the CAS sample had at least one nuclear family member who had experienced speech, language of reading disorder.
  - Only a small incidence of a family member also having CAS.
  - Suggests that families of children with CAS hold more affected genes for speech or language disorders.
  - Similar patterns of breakdown in phonological processing in children with a family history of reading disorder (dyslexia).
  - Suggests a genetic risk factor for the phonological processing deficits associated with the cluster of symptoms of CAS and therefore places these children at increased risk for reading and spelling difficulties.
Risk Factors - Cumulative negative effects of early reading difficulty

• Unresolved speech and language impairment and poor phonological awareness ability suggest that children with CAS will struggle with reading acquisition upon school entry.

• Difficulty with early reading development places these children at significant risk for persistent reading and spelling difficulties in later school years. (Hogan et al., 2005)

Risk Factors - Cumulative negative effects of early reading difficulty

• Gillon and Moriarty (2007)
  - Children who experience early reading failure are less likely to engage in literacy activities, limiting their amount of reading practice and exposure to new vocabulary and semantic structures.
  - Less successful decoding experiences will restrict children’s knowledge of more complex grapheme-phoneme relationships and restrict advanced phonological processing development.
  - This will negatively affect efficiency in word decoding and reading comprehension performance.
  - Children with CAS are at risk for experiencing a negative spiraling effect on advanced phonological, semantic, syntactic development and subsequent reading and writing performance generated from early reading difficulties.
Predicting Phonological Awareness Difficulties in Children with Speech Sound Disorders

- Preston et al., (2013) suggests that preschool error patterns help predict articulation and phonological awareness skills in children with SSD.
  - Typical Error Patterns
  - Atypical Error Patterns
  - Distortions

Predicting Phonological Awareness Difficulties in Children with Speech Sound Disorders

- Atypical Error Patterns
  - May reflect phonological representations that are particularly weak or poorly defined. (Preston & Edwards 2010)
  - May indicate potential for long term weakness in the foundation of the child's phonological system.
Predicting Phonological Awareness Difficulties in Children with Speech Sound Disorders

- Distortions
  - Dentalized /s/ /z/
  - Lateralized /s/ /z/
  - Derhoticized /r/
  - May represent lower level phonetic problems.
  - Motoric based errors and lack articulatory precision. (Shriberg et al., 2005)
  - Proper phoneme category but imprecise in the detailed specifications for the sound.
  - Can occur in typically developing children as well as those with SSD.

- Distortions in later developing sounds (/s/ and /z/) tend to remain in school aged children.
- Possible that early distortion errors may become solidified motor templates that are resistant to change and may lead to persisting speech errors in some children. (Karlsson et al., 2002; Shriberg et al., 2001)
Predicting Phonological Awareness Difficulties in Children with Speech Sound Disorders

• Preston et al., 2013 found the number of atypical errors per consonant in preschool is correlated with school-age phonological awareness.

• Children with >10% atypical speech sound errors in preschool scored significantly lower on all of the school-aged phonological awareness, reading and spelling measures.

• Weak phonological representation may underlie both atypical speech errors and poor phonological awareness skills.

• Children with the greatest percentage of atypical speech sound errors in preschool (35%) was diagnosed at the age of 8 years with a reading disability and scored below a standard score of 92 on all of the reading, spelling and phonological awareness tasks.

Predicting Phonological Awareness Difficulties in Children with Speech Sound Disorders

• Atypical speech sound errors predicted phonological awareness outcomes.
  - Reflect differences at a higher linguistic representational level.
  - Their occurrence at age 4-5 years may be indicative of weakness in how children with speech sound disorders process and organize phonological information and put these children at risk for long term phonological awareness difficulties. (Preston & Edwards, 2010)
  - Children who produce a high proportion of atypical phonological errors might be particularly good candidates for an integrated intervention.

• Distortion errors predicted speech sound production outcomes.
  - Motoric basis
  - Their occurrence in preschool may suggest long term speech sound production difficulties. (Shriberg et al., 2005)
Typical Intervention for CAS

- Principals of Motor Learning
- Multimodal cues for articulatory placement
- Imitation
- Drill based exercise
- Systematic progression from simple to more complex targets (Marquardt and Sussman, 1991)

Integrated Phonological Awareness Approach

- Gillon (2002) states research supports focus on phoneme level activities and integrating speech-to-print tasks.
- Integrate targeted speech production practice AND phonological awareness activities using letters and phonological cues to prompt speech production. (Moriarty and Gillon, 2006)
- For children with spoken language impairment who have a significant reading delay, skills at the phoneme level only appear to develop in response to specific intervention.
  - blending and segmenting words
- Rhyme and syllable level activities for school-aged children often develop without intensive intervention.
Integrated Phonological Awareness Approach

• Involve a variety of tasks that may be both efficient and effective for children with spoken language impairments who have a severe phonological awareness deficit. (Gillon 2002)
  - Phoneme awareness level tasks
  - Articulation tasks
  - Letter-sound knowledge tasks

Moriarty and Gillon (2006) combined speech production practice into phonological awareness activities.
- 3 children with CAS aged 6 and 7 years.
- Used letters and phonological cues to prompt speech production.
- 7 hours of individual intervention over the course of 3 weeks.
- Target words were based on the child's error pattern.

• Results:
  - 2 children showed significantly improved targeted speech skills.
  - All 3 children showed significantly improved phonological awareness skills.
  - 2 children transferred these skills to an untrained non-word reading task.
Integrated Phonological Awareness Approach

- McNeill et al., (2009) looked to improve speech in single words and connected speech, letter-sound knowledge and phoneme awareness skills.
  - 12 children with CAS aged 4 to 7 years.
  - 24 individual 45 minute sessions over 18 weeks (6 week intervention for first speech error pattern, 6 week break, 6 week intervention for second speech error pattern).
  - 10 trained words (in intervention) and 5 untrained words (not used in intervention) for each speech error pattern.
  - Targeted 2 speech error patterns for each child.
  - All session included phonological awareness tasks (letter-sound knowledge, phoneme identity, segmentation and blending, manipulation) involving words containing chosen speech targets.
  - Errors were corrected by bringing the child’s attention to the phonological structure of the word.

Results:
- 9 children suppressed the use of speech error patterns in trained words for both targets and 6 children also suppressed use of speech error patterns in untrained words for both targets.
- 9 children generalized gains in the first speech error pattern target to the connected speaking context and 5 generalized gains in the second speech error pattern target to the connected speaking context.
- 5 children showed improvement in phonological awareness skills for both speech error targets, 3 children showed improvement in phonological awareness skills for one speech error target. 4 children did not show improvements in phonological awareness.
- The children learned an average of 8.5 letter-sound combinations during intervention.
Integrated Phonological Awareness Approach

- An integrated approach targeting speech error patterns rather than drilling certain words and phrases, may be more likely to create widespread change in children’s phonological systems.
- It is possible to simultaneously target speech production, phonological awareness, letter knowledge, reading and spelling skills in children with CAS, even in children as young as 4 years old.
- 8 of the 12 children were stimuable for at least one target speech error pattern.

Integrated Phonological Awareness Approach

- Supports the use of visual-verbal paired associated learning (letter-sound training) rather than visual-visual (letter-letter) or verbal-verbal (sound-sound) learning, to improve phonological awareness and reading ability. (Hulme et al. 2007)
- Marquardt et al., (2002, 2004) suggests that using a target speech word may increase specificity of phonological representation of that word, and provide a more stable motor program to direct speech production.
Integrated Phonological Awareness Approach

- Sénéchal et al., (2012)
  - Invented spelling (with feedback) can help children understand the link between speech and print when reading and spelling.
  - Say the word slowly, exaggerated articulation.
  - Encourage children to write the sounds they hear in the word (integrate phonological and orthographic cues).
  - Provide feedback or approximations to correct spelling.


- Use letters and printed words (with picture cues) to prompt speech goals.
- Phoneme segmentation, identification, blending, matching, manipulation.
- Use invented spelling in written stories, reading stories using print referencing.
Pre-Reading Activities (Age 0-3)

- Teaching listening skills
  - Sound Spotter: Sit/lay quietly together with your eyes closed. Talk about listening. Identify the sounds you hear in your environment.
  - Simon Says
  - We are going on a picnic / trip: Have each person in the group repeat all the previously said words and add one new item at the end of the list. It could be in alphabetical order (for older children) or any item they would like to bring on the picnic / trip. “We are going on a picnic and we are bringing Apples, Bananas, Cookies…”

- Teaching basic concepts
  - beginning, middle & end
  - same & different

- Awareness to Print
  - Point out letters. Teach the difference between pictures and words in books.

- Awareness to reading pattern of top to bottom and left to right
  - Practice counting groups of objects (with pointer finger).

Rhyme Awareness (Age 3-5)

- Hearing Rhymes
  - Read stories that rhyme.
  - Nursery Rhymes
  - Dr. Seuss
  - Is your Mama a Llama?
  - Use rhymes in everyday language – “See you later alligator.”
Everyday Rhymes
Terry Mullin

- Don't Flip, Potato Chip.
- Don't Get Rough, Powder Puff.
- Don't Get Wise, Bubble Eyes.
- Get Out Of Bed, Sleepy Head.
- Give A Hoot, Don't Pollute.
- How Now, Brown Cow?
- I'm The Boss, Applesauce!
- Know What I Mean, Jelly Bean?
- No Way, Jose!
- Okey Dokey, Smokey.
- Ready, Freddy?
- Stay Loose, Mooze.
- Understand, Rubber Band?
- What's The Deal, Banana Peel?
- What's Shakin', Bacon?
- What's The Plan, Stan?
- What's The Story, Morning Glory?
- What's The Word, Hummingbird?
- Why So Cranky, Yankee?

Good-bye Rhymes
(Feldman, 2005)

- See you later, alligator!
- After while, crocodile!
- In an hour, sunflower!
- Maybe two, kangaroo!
- Gotta go, buffalo!
- Adios, hippos!
- Chow, chow, brown cow!
- See you soon, baboon!
- Adieu, cockatoo!
- Better swim, jellyfish!
- Chop chop, lollipop!
- Gotta run, skeleton!
- Bye-bye, butterfly!
- Better shake, rattle snake!
- And That's The End, My Friend!
- Better Skadoodle, Poodle!
- Hit the Road, Toad!
- Later, Tater!
- Out The Door, Dinosaur!
- So Long, King Kong!
- Take Care, Teddy Bear!
- 'Til Then, Penguin!
Rhyme Awareness (Age 3-5)

- Identifying Rhymes
  - Understanding that some words have the same ending sounds.
  - Tell if words are same or different.
    - dog / dog    dog / door    dog / cat    hat / hat
  - Tell if words rhyme.
    - hen / pen    fan / fork    hat / cat    sit / bit
  - Tell which word does not rhyme with the rest.
    - top / tug / rug    sun / fish / fun
  - Can use a more obvious non-rhyming word for younger kids like spoon / tug / rug.
Rhyme Awareness (Age 3-5)

- Producing Rhymes
  - When reading a book with rhyming words at the end of the sentence, pause and see if the child can fill in the rhyming pair (Would you like them in a house? Would you like them with a ______?).
  - Play "duck duck GOOSE" with rhyming words, such as "hat hat hat hat... SAT."
  - Discuss real words and nonsense words.
  - Willaby Wallaby Woo - "Willaby Wallaby Watt, an elephant sat on ____ (Matt).
  - Tell me a word that rhymes with "tree."
  - "I'm thinking of something that starts with "p" and rhymes with hen."

Rhyming Riddles
(West, 2015)

- You sleep in me and I rhyme with sled.
- I am an animal that can hop and rhyme with log.
- You need me to eat and rhyme with spoon.
- You wear me on your head and I rhyme with cat.
- I say “oink” and rhyme with wig.
- I light up the sky and rhyme with fun.
- You have ten of these and they rhyme with rose.
- I am red, white and blue and rhyme with bag.
Word Families

- Most Common word families:
  - -at: bat, cat, fat, hat, mat, pat, rat, sat
  - -ing: ding, king, ping, ring, sing, sling, wing
  - -et: bet, get, jet, let, met, net, pet, set, vet, wet
  - -it: bit, fit, hit, kit, lit, mitt, knit, pit, quit, sit, zit
  - -ot: cot, dot, hot, lot, not, pot, rot, slot, tot
  - -op: bop, cop, hop, mop, pop, shop, top
Alliteration (Age 3-5)

- Alliteration – repetition of initial consonant sounds.
- Identifying Alliteration
  - Identify when groups of words start with the same sound.
  - While reading books: Shel Silverstein’s Bear in There:
    - With his seat in the meat
    - And his face in the fish
    - And his big hairy paws
    - In the buttery dish,
      - He’s nibbling the noodles,
      - He’s munching the rice,
      - He’s slurping the soda,
      - He’s licking the ice.
- Consonant plus vowel (bay, bee, bye, bow, boo)
- Sentence level / tongue twisters (Leah licks lime lollipops)
- Producing Alliteration
  - Pull an animal from a bag, and give it a name that starts with the same letter (Larry the Lizard, Simon the Seagull).
  - Play “I’m going on a picnic and I’m bringing amazing apples, big bananas, crunchy carrots.”
  - Chant “My name is Ben. I live in Boston. I like to eat bananas. I want a baseball.”

Segmenting Activities (Age 4-5)

- Segmenting sentences into words
  - Count, tap or clap the number of words in a sentence. Start with 3-4 word sentences (I am happy.) then work to 5-7 word sentences (Let’s go see animals at the zoo.)
  - Use manipulatives as needed (blocks, felt squares) to help make the concept concrete
  - Gross motor activities such as jumping or rolling a ball back and forth for each word of the sentence
  - Read a sentence, have the child move the same number of spaces on a game board as there are words in the sentence
Segmenting Activities (Age 4-5)

- Segmenting Words into Syllables
  - Identify each word in a compound word (cowboy, birthouse, baseball, pancake, hairbrush, airplane). Can use 2 fists in front of you as visual aid.
  - Identify each syllable in a word.
    - 1 syllable: can, hat, toes, hug, sock
    - 2 syllables: cookie, balloon, monkey, turtle, water
    - 3 syllables: bubblegum, lemonade, magazine, hamburger, elephant
    - 4 syllables: elevator, caterpillar, thermometer, january, macaroni
    - 5 syllables: hippopotamus, multiplication, refrigerator, electricity, auditorium
    - 6 syllables: encyclopedia, autobiography, capitalization, responsibility, veterinarian
  - Use manipulatives (magnetic train cars) or musical instruments (drum, rhythm sticks) to help segment words.
Segmenting Activities (Age 4-7)

- Segmenting Words into Sounds
  - Identifying the sounds in words.
  - Clapping or tapping phonemes.
    - CV / VC words (zoo, it)
    - CVC words (man, keep, get, dog)
    - CVCC words (jump, best, kind, paste)
    - CCVC words (plates, grapes, stamp, drink)
  - SLP: I will say a word and you say it slow. SLP can pull hands apart to show sound stretching, have child tap table or a block for each sound in the word.
    - SLP: zoo, it, man, jump, plates
    - Child: z-o-o, i-t, m-a-n, j-u-m-p, p-l-a-t-s
Blending Activities (Age 4-6)

- Blending Syllables into Words
  - State the word when presented with 2 or more syllables (do-nut, ne-ver, ba-na-na, cat-er-pil-lar).
  - Old MacDonald – sing “And on his farm he had a “ti-g” “mon-key” “chi-ck-en” “butt-er-fly” “al-i-ga-tor” with an adequate pause between syllables.
  - Use blocks to represent the number of syllables in a word. Say each syllable as you touch each block. Move the blocks closer together to help the child blend the word.

- Onset-Rime
  - Syllables can be broken down into the first sound (onset) and the rest of the syllable (rime).

- Blending Onset-Rimes
  - State the word when presented with the onset and then the rime.
    - m-lk, r-un, l-ook, s-top

- Blending Phonemes
  - Stating the word formed when 2 or more segmented sounds are presented.
    - SLP: I will say a word s-l-o-w and you say it fast. (Can use finger/hand to help blend)
    - SLP: z-oo, i-s, m-a-n, f-ish, m-o-o-n, r-a-i-n, p-o-p, b-i-g
    - Child: zoo, is, man fish, moon, rain, pop, big
  - Start with familiar words or objects such as colors if you are coloring.
Video #5

Phoneme Awareness (Age 5-6)

- Identifying the beginning (initial), ending (final) and middle (medial) phonemes in single word.
  - Read a list of words, have the child put their thumb up when they hear a word that starts with the “b” sound / ends with the “b” sound.
  - I Spy something that starts with the “f” sound / ends with the “t” sound.
  - What is the first sound in “cat?” (“k”)
  - What is the last sound in “mug?” (“g”)
  - What is the middle sound in “rake?” (“a”)
  - Sound Soup – Put out a variety of pretend food objects or picture cards and have the child find all the foods that start with “L” (lettuce, lentils, licorice, lemon, lobster, lasagna, lucky charms) or end with “L” (bagel, meatball, pretzel, apple, cereal).
Manipulation Activities (Age 6-9)

• Deleting Syllables
  - Stating what remains when asked to delete a syllable from a word.
  - Making words shorter/ giving a word a haircut (use manipulatives or long piece of playdoh).
    - SLP: Say the word “donut.” Now say it again but don’t say “do.”
    - Child: nut
    - SLP: Say the word “monkey.” Now say it again but don’t say “key.”
    - Child: mon
    - SLP: Say the word “lemonade.” Now say it again but don’t say “ade.”
    - Child: lemon

• Substituting Syllables
  - Interchanging syllables in words to form new words.
  - Manipulate parts of a compound word (use your hands or manipulatives).
    - SLP: Say the word “birdhouse.” Now take away “bird” and add “dog.”
      - Child: doghouse
    - SLP: Say the word “bookcase.” Now take away “case” and add “mark.”
      - Child: bookmark

• Deleting Phonemes
  - Stating what remains when asked to remove one or more sounds from a word.
    - SLP: Say the word “sing.” Now take away the “s” sound.
      - Child: ing
    - SLP: Say the word “meet.” Now take away the “t” sound.
      - Child: me
Manipulation Activities (Age 6-9)

- **Substituting Phonemes**
  - Interchanging sounds in a word to form a new or nonsense word.
  - SLP: Say the word “cat.” Now take away the “k” sound and make it an “m” sound.
  - Child: mat
  - SLP: Now take away the “m” sound and make it an “s” sound.
  - Child: sat
  - SLP: Now take away the “t” sound and make it a “p” sound.
  - Child: sap
  - Sing Row, Row, Row Your Boat, then change the initial sound of key words to the same sound. For example for “t” sing “Tow, tow, tow your toat, tently town the team, temly, temly, temly, tife is but a team.”

Manipulation Activities (Age 8-9)

- **Reversing Phonemes**
  - Reversing sounds in a word to form a new (real) word.
  - Beginner Level (use manipulatives or 3 children)
    - SLP: Say the word “pass.” Now say “pass” backwards.
      - Child: sap
    - SLP: Say the word “pool.” Now say “pool” backwards.
      - Child: loop
  - Advanced Level (use manipulatives)
    - SLP: Say the word “peach.” Now say “peach” backwards.
      - Child: cheap
What else can an SLP do?

- Educate families on the importance of reading to children every single day.
- Use books in your therapy session.
- Use picture books for receptive and expressive language activities.
- Photocopy pages of books, have children
  - highlight their target sound in words to increase letter recognition.
  - identify sound placement in words.
  - practice targets during reading or drill.
- Play with inflection when you read.
- Consider lending books to children who may not have any at home.
- Provide resources for community libraries such as location, hours and upcoming programs.

What else can a parent do?

- Read to your children every single day.
- You cannot start reading to your children too early.
- It doesn’t matter if you read the same book every day.
- Hold the book so your child can see the pictures. Let them sit on your lap while reading.
- Use index finger to show where you are on the page.
- Read slowly and with inflection.
- Talk about what it going on. Ask open ended questions about the story rather than quizzesing the child with wh-questions (I wonder where the bear went? Do you think they will eat spaghetti for breakfast?) Or, make absurd statements (I think the water in the ocean was pink).
What else can a parent do?

- Take advantage of the library for books and programs, and book fairs.
- Keep books everywhere.
- Set a good example – let them see you reading.
- Listen to audio books in the car, especially for longer trips.
- Download audio books onto their iPods.
- Introduce different types of books:
  - Nursery Rhymes
  - Poetry
  - Pattern Stories
  - Wordless picture books
  - Graphic novels
  - Choose your own adventure

Questions?
References

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