

Speech and Language Impairment: A Case Study

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ABSTRACT

Boy C was 8 years and 4 months when he was diagnosed with significant language impairment with mild articulation disorder. He commenced speech and language therapy (SLT) in individual as well as a small group setting of two students three months later. Boy C was discharged from SLT after twenty weeks of 2 hours per week of intervention. He made good progress. At the end of the twenty weeks of intervention, it was observed that boy C was more confident in expressing himself and he sounded more fluent in English. Boy C also showed good improvement in his mid-year examinations at school.

The purpose of this case study is to provide educators and parents an understanding on:

- ◆ What is language impairment and the degree of severity
- ◆ What is articulation disorder and the degree of severity
- ◆ How do language impairment and articulation disorder affect a child's learning at school
- ◆ The intervention goals set for a child with significant language impairment
- ◆ Some of the intervention activities carried out by the Speech and Language Therapist to improve the child's speech and language abilities
- ◆ Some teaching strategies and fun language-based activities that the educators, parents and caregivers can do with the child in the classroom or at home to improve the child's language abilities

WHAT IS LANGUAGE IMPAIRMENT?

Language impairment (LI) can be an impaired ability to understand spoken language and/or the impaired ability to use spoken and/or written language. This impairment may involve the content, form and/or function of language in communication. (American Speech-Language-Hearing Association ASHA, 2003)

Bishop (2006), stated that specific language impairment (SLI) is diagnosed when a child's language development is deficient for no obvious reason. Children with language impairment are usually as healthy and competent as their peers in all ways but they have difficulties in the understanding and use of language. According to Law J, Garrett Z and Nye C., it is thought that approximately 6% of children have speech and language difficulties of which the majority will not have any other significant developmental difficulties.

Language impairment has a broad category. Some children have mild difficulties that are easily treated with short-term intervention. Others have significant and persistent difficulties with both understanding and talking that need long-term intervention to become more competent in communication. These children do not 'outgrow' language impairment but they are likely to improve their speech, language and communication when they receive appropriate help from the Speech and Language Therapist.

Children with language impairment are all very individual. Hence, there is no "one size fits all" intervention programme for children with language impairment.

WHAT IS ARTICULATION DISORDER?

Articulation disorder is an impairment of the production of sounds to form words for communication. Dr Caroline Bowen, an Australian Speech-Language Pathologist said that most children who are said to have 'articulation disorders' have nothing wrong with their articulators (tongue, lips, palate, etc.). Instead, they have a functional difficulty at the phonetic level that makes it difficult for them to say the sounds they need in speech. Dr Bowen's examples of speech errors children (and adults) with articulation disorders make:

- ◆ The word 'super' pronounced as 'thooper'.
- ◆ The word 'zebra' pronounced as 'thebra'.
- ◆ The word 'rivers' pronounced as 'wivvers'.
- ◆ The word 'leave' pronounced as 'weave'.
- ◆ The word 'thing' pronounced as 'fing'.
- ◆ The word 'those' pronounced as 'vose'.

NOTE: Some of these sound changes are acceptable in a number of English dialects

A child with mild articulation disorder produces speech that is generally intelligible and you are able to understand what the child is saying without much difficulty. On the contrary, a child with severe articulation disorder produces unintelligible speech that is hard to understand. You will need time to get use to the child's speech and most of the time, you may not decipher what the child is saying. You are likely to rely on context clues to guess what the child has said.

CASE PRESENTATION

Case profile of Boy C

Boy C is the second of four children in a bilingual speaking family. He was 8 years and 4 months when he was diagnosed with significant language impairment with mild articulation disorder. He spent his weekdays at the children's home. Boy C spoke English at the children's home and in school. When he spent time with his parents, he spoke a mixture of Malay and English. It was reported that boy C was more fluent in Malay. His birth and early development history were unremarkable. Due to a difficult family situation, boy C missed school on several occasions when he was in primary 1 and he changed schools on a few occasions.

Boy C was diagnosed with dyslexia in August 2012. Boy C demonstrated below average single-word reading and spelling accuracy with low phonological decoding as well as very low phonological processing abilities for his age. The Psychologist from the Dyslexia Association of Singapore (DAS) referred him for a speech and language assessment as his language IQ score was below average. Boy C's caseworker was concerned about his very poor academic performance at school, his poor communication skills as well as some articulation difficulties.

The Clinical Evaluation of Language Fundamentals 4th Edition UK (CELF-4UK) was used to get an overview of boy C's ability to understand and use spoken language. The standardised language assessment revealed that he had significant language impairment. His core language score placed him below the 1st percentile with more than 99 out of 100 children his age doing better than him. The development of language skills can be affected by ESL (English as Second Language) as well as situational factors such as 'missing school and/or changing school. Taking this into account with regard to boy C's case history, there is sufficient evidence to suggest that boy C presents with significant language impairment.

This means that any skills such as listening, speaking, reading and writing which depend on language can be severely impaired and such impairment is likely to prevent boy C from showing his true level of intelligence. His speech was occasionally unclear during the assessment as a result of numerous sound substitution errors (e.g. window ->/bindo/ 'bindow'). However, his speech was generally intelligible. Nonetheless, the level and inconsistency of speech sound substitution errors were indicative of an articulation disorder.

How could language impairment and articulation disorder affect boy C's learning at school?

Due to his poor understanding of language-based concepts, boy C could have problems understanding what he had been told to do even if he appeared to have understood and was seen working in the classroom. He might also struggle in working through Math problem sums and Science because they require boy C to grasp and apply many different language-based concepts to problem solve.

When boy C failed to pay good attention (he might look like he was daydreaming) in the classroom, it might be due to him losing track of information that was delivered in a highly auditory-verbal environment.

His extremely poor knowledge of grammar rules would hinder his academic performance as his oral and written work were likely to be heavily penalised for grammatical errors.

In addition to the decoding difficulties identified as part of his dyslexia, boy C might not understand age-appropriate story books as they often use syntactically complex sentences.

Boy C's mispronunciation of words might affect his ability to spell words correctly. For example, he might spell 'trunk' as "twng", according to the way he said it.

INTERVENTIONS FOR BOY C

An individual intervention plan was drawn up based on the profile of the child obtained from the speech and language assessment.

The long term intervention goal set for boy C was to be able to effectively use his speech and language skills in a functional manner.

The short term intervention goals were set to address the five aspects of communication namely,

- ◆ Speech - the ability to produce the sounds in words
- ◆ Phonological awareness - the ability to hear and 'play' with the sounds that make up the words in spoken language
- ◆ Receptive language - the ability to understand spoken language
- ◆ Expressive language - the ability to use spoken language
- ◆ Vocabulary - a set of words that a person knows and uses daily

Speech

Whenever boy C was observed substituting sound/s in a word, attention was drawn to the Speech and Language Therapist's mouth and he was reminded to do good listening and good looking while the right way of saying the word was modeled. Boy C practised until he could pronounce the word clearly. If boy C had difficulties imitating the sound production, the spoken word would be presented to him in the written form so he could relate the speech sound/s he needed to produce to the written letters.

When teaching boy C to say long (multisyllabic) words, he was shown how to break the word into syllables (e.g. con / den / sa / tion) and point to each syllable as he listened to the slow articulation of the word with exaggerated pauses between syllables. This would facilitate him in remembering all the sounds in the word. Boy C would repeat the word a few times aiming to help retain it in his memory.

Phonological Awareness

Phonological awareness forms the basis for developing good articulation, reading and spelling skills. A child needs to recognise sounds in words and learn the skills of 'playing' with the sounds in words to read and spell well. Children with SLI have often been noted to have phonological processing deficits (Catts, 1993; Snowling, Bishop, & Stothard, 2000).

Hence, phonological awareness was included in boy C's intervention plan.

The short term goals set to improve boy C's phonological awareness were:

- ◆ To identify first and last sound in monosyllabic words with 80% accuracy in a structured activity in therapy setting
- ◆ To identify the number of syllables (up to five syllables) in a spoken word with 80% accuracy in a structured activity in therapy setting
- ◆ To blend and segment *C*VC words followed by CCVC words and CVCC words with 80% accuracy in a structured activity in therapy setting

**C represents consonant and V represents vowel*

Phonological awareness skills were taught using a variety of fun physical activities such as board game, clapping hands and dartboard game.

Receptive Language

The short term goals set to improve boy C's ability to understand spoken language in the classroom were

- ◆ To develop understanding of position concepts (prepositions) of 'in', 'on', 'under', 'in front', 'behind', 'over', 'above', 'below', 'beside', 'between', 'through', 'along' and 'across'. Examples of activities carried out were 'place an object in the position requested' and 'use a pencil and paper to draw out spoken directions containing prepositions'.
- ◆ To develop understanding of sequential concepts of 'first', 'second', 'third'...'last'. Manipulatives including toy vehicles (car racing game) and activity sheets were used to get boy C to follow 1-step simple spoken directions containing sequential concepts.
- ◆ To develop understanding and the ability to answer wh-questions. Activities carried out were 'get the child to draw the semantic (meaning) association to each wh-question word (e.g. 'when' refers to 'time')' and play wh-questions cards/board games/ipad apps.

Expressive Language

The short term goals set to improve boy C's expressive language skills were

- ◆ To formulate grammatically and semantically acceptable sentences with the use of Colourful Semantics Programme as visual prompts. The following is an example of the visual prompt used:



More information about the Colourful Semantics Programme can be found at:

www.londonspeechtherapy.co.uk/wp-content/plugins/downloads-manager/upload/Colourful%20Semantics%20Programme.pdf

In the sentence formulation task, boy C would pick a picture card and formulate a sentence to describe the picture using the target sentence structure. Board games such as 'snakes and ladders', ipad apps as well as a scoring system were used to convert the sentence formulation task into a game.

- ◆ To develop the ability in producing a simple narrative using sentence starters 'first', 'next', 'then' and 'last'. Boy C was told to sequence three picture cards and guess what would happen in the last picture card (predict the outcome).
- ◆ As boy C loved to draw, he was allowed to present his ideas (outcome) through drawing and described what he had drawn using the appropriate sentence starter.
- ◆ The Colourful Semantics Programme chart was used as a visual prompt whenever he demonstrated difficulties in stringing words to form a grammatical and informative sentence.

Vocabulary

One of the ways to teach vocabulary was to sort, group and name manipulatives or picture cards.

- ◆ Pretend play. For example, set up the theme of "At the supermarket" to teach vocabulary related to fruits and vegetables. First, boy C acted as the store assistant who was asked to sort the manipulatives into the respective group 'fruits' and 'vegetables'. He was taught the name of the objects which he did not know. Next, boy C switched roles with his classmate and pretended to be the customer. He had to tell the store assistant what he wanted to buy. When he had everything in his shopping bag, he moved to the check-out counter to make payment.
- ◆ Boy C was told to sort a stack of picture cards into the respective word categories. For example, sort animal cards into 'farm animals' and 'jungle animals'. When boy C did not know the name of the animals, phonemic cuing was sometimes used to prompt the child. For example, to retrieve the word 'crocodile', boy C would be prompted with "croco" and then he would say "crocodile".

Teaching strategies for the educators, parents and caregivers to make understanding easier for boy C

- ◆ Use simple words which are accompanied by pictures to explain concepts. For example,



Raindrops

+



Sunlight

=



Rainbow

- ◆ Teach boy C new concepts through experiential learning. For example, to explain the concept of condensation, let boy C feel the outside of a glass which is dry. Put some cold water and ice cubes into the glass. Leave the glass at room temperature. After a while, get boy C to look at and feel the outside of the glass which should be wet. The use of this experiment, together with the use of simple 1-

syllable equivalent term 'rain' for 'condensation' helps boy C to grasp and retain concepts meaningfully.

Teaching strategies for the educators, parents and caregivers to develop boy C's expressive language skills

- ◆ Recast (quick correction)
When an adult spots an error-utterance produced by boy C during conversation, repeat the error-utterance back to him with the error corrected. For example:
 - Boy C:** Children *is* playing game.
 - Adult:** The children **are** playing a game.
- ◆ *(use your voice to give a little extra emphasis on the word—'are')*
- ◆ Sentence expansion
Repeat Boy C's sentences and add on them. Then, get him to repeat them. For example:
 - Boy C:** Brother is playing.
 - Adult:** **My** brother is playing **Minecraft at home.** *(stress the words in bold).*
 - Boy C:** My brother is playing Minecraft at home.

Fun activities for the educators, parents and caregivers to do with Boy C to build his vocabulary

- ◆ "I spy with my little eye" is a guessing game. One player will identify an object that all other players can see. The player will provide clues about the object until someone is able to guess the object correctly. For example, one player will say "I spy something that is thin and long; the tip is sharp; it is made of wood; it is for writing" to describe a pencil.
- ◆ This game allows boy C to make meaningful associations to a word, organise the information he heard into logical chunks and retrieve the word that matches well with the given attributes. At the same time, it also trains boy C to differentiate critical from unimportant attributes of a word as well as using language to describe an object.
- ◆

- ◆ Engage boy C in practical everyday activities such as shopping, cooking and PE lessons as a way of teaching him vocabulary. For example, give boy C a shopping list and assign him to pick the items at the supermarket; give boy C a recipe and get him to prepare the ingredients or teach him action verbs in a dynamic way during PE lesson.

CONCLUSION

After forty hours of SLT and indirect intervention via the advice given to the educators and the caregiver, boy C achieved 85% of his therapy targets. Boy C seemed to learn better in small group, ability based teaching with maximal use of visual, demonstration and self-practice. Engaging boy C in multi-sensory learning activities that he enjoyed doing such as drawing, playing games and pretend play helped him to focus and retain language-based information.

At end of the twenty weeks of intervention, it was observed that boy C was more confident in expressing himself. He spoke English with fewer hesitations and pauses. Boy C also showed an increase in the length and complexity of his utterances as he was able to join two ideas in a sentence using a connector more readily in conversations. For example, boy C said "When I go to school, my friend play with me. I am happy".

Boy C's caregiver noticed that he was more confident in using English to communicate at the children's home and he would share with her what he did during SLT. His caregiver also mentioned that he had shown good improvement in his mid-year examinations at school. Boy C felt that his English was much better after he had attended SLT and he had enjoyed attending the classes at the DAS.

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She provides speech/language/communication assessment and intervention services to children with specific learning differences. Her clinical experience includes working with children between the ages of 5 and 16 years. In addition, she provides advice and clinical support to Educational Therapists and junior Speech and Language Therapists at DAS. She also gives advice to parents on speech and language and communication issues. She conducts Social Skills workshops as well as give public talks on speech/language/communication difficulties faced by children with specific learning differences.