

CAUSES AND THERAPY OF COMMON ARTICULATION DEFECTS IN SCHOOL CHILDREN

Moji Oyebola ¹, Isaiah O. Elemukan ² and Joseph M. Okuoyibo ³
Department of Special Education,
University of Ibadan, Ibadan ^{1,2} and
Federal College of Education (Special) Oyo ³

Abstract. Articulation disorders can be either functional or organic. Functional disorder is however viewed in this paper as a disorder due to defective learning for the speaking act in one form or another. Types of functional disorder include substitution, omission, distortion or addition of phonemes of speech sound. Causes of functional articulation disorders are generally due to faulty learning from a poor speech model. To correct the problem, the child can be exposed to four therapeutic approaches, namely: traditional, behavioural, linguistic and modeling. It is suggested that parents/care takers of children should show good speech and be concerned when articulation problems occur.

Introduction

Speech is the actual behaviour of producing a language code by making appropriate vocal sound patterns observed Hubbell (1985). There are other possible vehicles for expressing language such as gestures, manual signing, pictures, reading and written symbols, but the most effective and efficient method is through speech. In fact, Ademokoya (1996) suggested that "man is the only species of his kind (homo-sapiens) that has remarkably developed communication by speech; and that the rare achievement has greatly enabled man to attain several complex accomplishments, nearly in all his endeavours." Speech sounds are the product of four separate but related processes according to Hult and Howard, (1993). It include respiration (breathing provides the power supply of speech), phonation (the production of sound when the vocal folds of the larynx are drawn together by the contraction of specific muscles, causing the air to vibrate); resonance (the sound quality of the vibrating air is shaped as it passes through the throat, mouth, and sometimes the nasal cavities or chest); and articulation (the formation of specific, recognizable speech sounds by the tongue, lip, teeth and mouth. Any damage or disturbances to these organs causes speech disorders or defects which amount to articulation errors.

Although speech is a component of language, Bakare (1983) opined language is a psychic process centered in the brain. In its widest sense

language signifies the expression of thoughts and ideas'. Ademokoya (1996), rightly observed language as the total system of symbols used in communicating through speaking, reading and writing; while Bakare (1988) observed it, as a link between hearing and speech. It is understanding sounds in words, word as messages, thinking in words and clothing ideas in words. This made Bakare (1985) to observed that human beings are communicators, and that their desires to communicate verbally with others constitutes one of their most important characteristic as social beings. A man who cannot speaks at all, or who speaks defectively, can hardly find his place in his family and society. He could become a social misfit in the social circle or an object of pity and ridicule among his fellows, observed Ademokoya (1996).

In essence, speech is a very basic essential for world's socialization processes, and that with speech communication, man co-operates with his fellow man, to do what he could not do alone. In fact, Brooks and Health (1989), emphasized that, 'Man through speech exerts greater control over his environment. This buttresses the fact that man's quality of life depends largely on his ability to communicate effectively through speech. A person with Articulation defects (speech defects) is bound to be severely disadvantaged in many aspect of life such as in education, job opportunities; anxiety and frustration may set in as well as mental defects; while the ability to speaks fluently refines our inner thoughts and minds. Lerner (1986) observed that speech is one of the greatest human achievements, it is more important than all physical tools man has invented in the last 2,000 years ago.

Essentially, however Van Riper and Emerick (1984) P. 34 observed, speech is abnormal when it deviates so far from the speech of other people that it calls attention to itself, interferes with communication or causes the speaker or his listeners to be distressed.

More so, Ita (1995) observed, 'Speech disorder is therefore a condition that makes communication fails to produce a desired effect or result. Ysseldyke and Algozzine (1990) identified three kinds of speech disorders as

- (a) Disorders of Articulation,
- (b) Voice disorders
- (c) Fluency disorders.

Importantly these various type of speech disorders, have adverse effects on communication, among which articulation disorder is more prevalent in our schools, which then requires on adequate attention of both the public, teachers, therapists and parents alike.

More so, the general goal of specialists in communication disorders is to help the child speak as clearly and pleasantly as possible, so that a listener's attention will focus on what the child says, rather than how he or she says it,

hence the need for this article to help the parents/specialists to understand and manage effectively the articulatory defects in our schools or among our wards.

Incidence, Meaning and Types of Articulation Disorders

Heward (2,000) observed that Articulation disorders are the most prevalent type of speech impairment among our school children. And that the correct articulation or utterance of speech sounds requires us to activate a complicated system of muscles, nerves and organs. Hence children with articulation disorders cannot produce all the speech sounds in the usual accepted manner. Among the type of speech disorders, articulation disorder appears to be in the majority of incidence. This made Emerick and Van riper (1984) to contend that articulation disorders represent a prevalent type of speech disorder the public school clinicians contend with.

Van Riper (1984) further estimated that articulation problems represent about 75 percent of the speech disorders encountered by such professionals.

Ysseldyke and Algozzine (1990) defined Articulation disorder as "the abnormal production of speech sounds". When a youngster says 'The rabbit was on the road', he or she is using spoken language appropriately, but is not producing sounds correctly.

Hardman, Drew, Ega (1987) further described articulation disorders as abnormality in the speech sound production process, that results in inaccurate or otherwise inappropriate execution of the speaking act. It is then a condition, which makes one's speech deviates markedly from the speech of others, and thereby induces embarrassing attention from the listener to the speaker (Abiodun 1993).

Manifestations, Problems and Test for Articulation Disorder

Articulation defects may manifest in substitution, omission, slighting of sounds, distortions and addition. In fact, Heward (1996) identified four basic kinds or articulation errors consisting substitution, distortion, omission and addition. He emphasized that children may substitute one sound for another as in saying "train" for crane, or 'dose' for those. It can cause considerable confusion for the listeners. Mba (1995) identified that substitution can occur at the beginning, middle and end of words. Children may distort certain speech sounds while attempting to produce them accurately. The /s/ sound, for example, is relatively difficult to produce; children may produce the word sleep as 'schleep' 'zleep', or 'thleep'.

Some speakers have a lisp; others a whistling /s/. Distortions can cause misunderstanding, although parents and teachers often become accustomed to them but new listeners will not understand it.

Many putative simplification processes occurs which accounts for children's phonemic errors, such as when syllable are being abandoned when 'banana' becomes 'nana'; again becomes 'gen' while cluster reduction accounts for consonant errors as it is reduced to single consonant an in 'pain' for plane. Similarly consonant harmony may also occurs when different consonant within a word are modified to produced similar consonants at either side of a vowel as in 'dog' becoming 'gog'. Children may omit certain sounds as in saying 'cool' for school. They may drop consonants from the end of words as in 'pos' for post.

Most of the left out sounds at times, especially an extensive omission problem, can make speech impossible to understand. Children may also add extra sounds, making comprehension difficult. They may say 'buhrown' for brown or 'hamber' for hammer.

More so, like all communication disorder, articulation problems vary in degree of severity, it may range from mild or moderate (speech can be understood) to severe type, when many sounds are pronounced poorly, that the speech become unintelligible. Teachers, parents and peers cannot easily understand him/her.

In essence, Emerick and Hayness (1986) observed, "An articulation disorder severe enough to interfere with intelligibility is... as debilitating a communication problem as many other disorders... articulation disorders are not simple at all, and they are not necessarily easy to diagnose effectively (p. 153).

Dysarthria and apraxia refer to two groups of articulation disorder caused by neuromuscular impairments, which is a result of lack of precise motor control needed to produce and sequence sounds which then causes distorted and repeated sounds. Essentially articulation disorders may be functional or organic. Functional articulation disorder refers to articulation problem that are not due to structural, physiological or neurological basis in the speech mechanism or in supporting structures, but which can be accounted for by normal variations in the organism or by environmental or psychological factors as Powers (1971) observed in Ysselydyke Algozzine (1990). Functional articulation disorders can therefore be viewed as being due to defective learning of the speaking act in one form or another, Hutchmson, Hanson and Mecham (1979). Organic articulation disorders on the other hand refer to disorders caused by a conspicuous physiological defect such as cleft palate or some other malformed structures of the oral cavity such as bad dental

formation, very big tongue, very small tongue, short frenum, the size of the mouth (too big or too small) extra thick lips, laterality, mental retardation. Educational background or parents, environment, illnesses, emotional conflicts at home, etceteras can cause articulation disorders.

However, the fact that articulation disorders are prevalent does not mean that teachers, parents and specialists should regard them as simple or unimportant. Anxiety, frustration in speech situation, discouragement and other psychological problems aggravate articulatory problems. In short, many students even find it difficult to coordinate their speeches in the presence of their peers and develop maladaptive social model. Roeyers (1995) observed that the disturbed children may encounter problems in their communicative or academic lives, but not with other social aspects and organization as in school adjustment. Bayliss (1995) further asserted that the social experiences of these children with these significant disabilities is seen as being problematic, with a clear manifestation, which sets the students apart from their groups in terms of friendship and academic interactions. To this end Schaerf (1996) observed that, if a child experiences language difficulties of any kind, educational and social development are almost certain to be affected, this then made Taylor (1996) to ask the regular teacher and therapist to introduce circle of friends in order to manage the isolation characteristics of the speech defects.

Importantly, to carry out a test of articulation, the speech errors of the child are assessed and a record is kept of the sounds that are defective, such as how it is being mispronounced, number of errors. One can use photo Articulation Test, Goldman Fristoe Test and other Arena assessment by multiple members of trans-disciplinary team.

Bernthal and Bankson (1986) therefore suggested that speech and language pathologists usually feel more comfortable and competent, when dealing with articulation disorders than with other types of speech and language impairments since it can be readily broken down to segments than voice, language or fluency disorders.

More so, children can logically progress from articulating simple sounds in isolation to syllables, words, phrases and sentences as well to sustained conversation. A large percentage of functional articulation disorders either are treated successfully or simply fade away as the child matures.

Importantly, most often, functional articulation disorders are common among school children. This writes up therefore focused on those common causes, nature of functional articulation disorders and the simple therapies applied for improvement/managing it in our schools/homes.

Types of Functional Articulation Disorders

As observed earlier, functional articulation disorders are the disorders that have no physiological origin. They include substitution, omissions, distortion or addition of phonemes of speech sound.

Substitution

Substitution of one sound for another is one of the articulatory errors that can be identified in the speech of people especially children. Greaghead *et al.* (1989) states that this type of error is commonly found among young children with immature speech. Substitution of phonemes however can take different forms. The child may substitute 'w' for 'r' as in wight for right or 'w' for 'l' as in 'yewo' for 'yellow' or more still, 'th' for 's' as in 'yeth' for 'yes'. The position of a letter in a word, determines whether it is substituted or not. In other words, words can be substituted at the beginning (initial position), in the middle (medial position) or at the end (final position).

Omissions

Omission of sounds, can make any speech very unintelligible, thereby creating communication break down between speakers. The consonants appear to be most likely to be dropped from the ending of words. However, they may be dropped from the beginning or the middle and sometimes from all three positions. For example, when a speaker says, 'ky' instead of 'sky', 'cool' instead of 'school' or 'sop instead of 'shop', omission can be said to have taken place in either the middle, the initial or ending positions.

Distortion

This occurs when a speaker attempts to approximate the correct sound. This condition occurs more in older children than in younger ones and is relatively more frequent than omissions or substitutions of sound. Most often, a younger child may omit a sound or substitute another; an older child may try to imitate the proper sound but produces a distortion. A distorted 's' sound can have many near approaches to the correct sound as the sibilant "s" (whistling), the lateral "s" (air emitted at side of tongue) and the dental 's' (tongue thrust against teeth), all of which can be corrected by the modification of the air stream and shift in aural pressures and positions (Greagehead *et. al.* (1989).

Addition

This is a speech situation where vowel sounds or sometimes consonants are added between other syllables. This is very common in unintelligent speeches or jargons, such as the ones of young siblings or in the speech of deaf children. In such situations, a child may say 'on a the table', thereby adding the vowel /a/ unnecessarily or say 'footuball' for 'football' and similarly adding the vowel /u/.

Causes of Articulation Defect in Children

Generally, causes of articulation defects can be classified into two main groups. They include:

- (1) Those that are due to physical oral malformations;
- (2) Those that is clearly functional because of the absence of physical deformity.

The former condition occurs mainly due to some deformities or malformation of any of the articulatory organs such as cleft of the palate lips as well as dental occlusion. The latter, which is the focus of this write up, includes all the environmental factors that could lead to wrong pronunciation of sound. In other words, functional articulation disorders are generally thought to be caused by faulty learning. It is however quite difficult to pin down the sources of the faulty learning. That notwithstanding, defective learning can occur mainly from poor speech models. Children are exposed to the language of parents, caretakers and others close to them. At this learning stage, if a mother or in short any model shows defective articulation, the child is likely to copy it. Such models could include, friends, peers, teachers and people who are close to the child. Such articulation problems are functional since they have no organic origin.

Therapy/Treatment/Management

Generally four models of treatment are widely used observed Bernthal and Bankson (1986); Greaghead, Newman, and Second (1989) as well as Heward 2000 observed. In the discriminating model, emphasis is on developing the child's ability to listen carefully and detect the difference between similar sounds such as the 't' in take and 'c' in cake. The child learns to match speech to that of a standard model by using auditory, visual and tactual feedbacks.

The phonologic model also seeks to identify the pattern of sound production and teach the child to produce gradually more acceptable sounds.

You can teach a child who omits final consonants to recognize the differences between word pairs as in two and tooth and then to produce it accurately.

The sensorimotor model further emphasizes the repetitive production of sounds in various contexts, with special attention to the motor skills involved in articulation, frequent exercises are employed to produce sounds with differing stress patterns.

The operant conditioning model seeks to define antecedent events, present specific stimuli and shape articulatory responses by providing reinforcing consequences.

Creaghead *et al.* (1989) observed that, there is a general consistent relationship between children's ability to recognize sounds and their ability to articulate them correctly. Importantly all the four models are not exclusively of one another, it can be combined by speech therapists. However, therapy for articulation disorder will definitely include therapy for patients with physical as well as functional disorders. Discussions on treatment here are focused on the latter.

As earlier on observed, functional articulation disorders are viewed generally as being due to defective learning of the speaking act by a model. Treatment of functional articulation disorders will also focus on relearning the speaking act. This can be done through the following approaches.

1. Traditional Therapy

In applying this method, the child is trained to recognize and discriminate error sounds. This includes training on individual error sounds, one at a time, by techniques such as phonetic placement or sound approximation, the sound is produced in isolation, nonsense syllables, words, phrases, lesson conversation and finally in daily conversation (Secord, 1989).

2. Behavioural Approaches

In this method, error sounds are directly targeted for relearning. Moerer (1985) state that in behavioural approach therapy, first, baseline behaviour is established; next, is careful selection and schedule of reinforcers, then charting of behaviour change; and monitoring the maintenance of behaviour acquired.

3. Linguistic Approach

This approach focuses on changing disordered processes of sound production such as final consonant omission, or remediating distinctive features, e.g. voicing unvoiced consonants that are in error in the entire phonological system (Creaghead 1989).

4. Modeling

Probably, modeling is the most frequently used in the treatment of articulation disorders (Hegde and Davis 1992). This is an approach where the clinician or teacher model the correct production of the target sound and instruct the patient to imitate. This can also be done through taped modes for the patient to playback and imitate.

Conclusion

Functional articulation disorders have been identified to be defects commonly found in the speech of children. Sometimes they are as a result of the immature or under developed speech of a child. But when such defective conditions persist, parents or caretakers should show concern, and appropriate arrangements for therapy should be made.

A general goal of specialists in communication disorders is to help the child speak as clearly and pleasantly as possible, so that a listener's attention will focus on what the child says, rather than how he or she says it.

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MOJI OYEBOLA is a lecturer in the Department of Special Education, University of Ibadan. She was the former Head of Department and currently the Head of Audiology unit. Her areas of research interest bordered on education of the hearing impaired, speech impairment, audiology and therapy for the disabled.

ISAIAH O. ELEMUKAN is a resource person and a research student in the Department of Special Education, University of Ibadan. He is a renowned teacher of the Deaf. His research interest is in the Education of the Hearing impaired, speech impairment, Audiology and Teaching Technology in Special Education.

JOSEPH M. OKUOYIBO is a lecturer at the Federal College of Education (Special) Oyo. He was the former Head of Department of the School of Hearing Impairment, and currently a research student in the University of Ibadan. His research interest bordered on education of the hearing impaired, Special Education and Audiology.