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**« Linguistics »**

**The use of Ahkam El-Tajweed on Children with suspected Apraxia of  
Speech**

**Case study: Primary school "Aisset Edir "- Relizane**

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## Dedication

I dedicate this work to my dear grandmother who passed away lately, with my love and to my father, Bouziane Yagoub, the person keep me level headed throughout the years and shown me the way to be a great women.

To the queen of my heart, my mother who was the alarm clock that wokeme up to go to school, otherwise I would be asleep now.

To my younger sister khaoula, bless you for always being there for me.

To my brothers Mohamed and Abdellah, the personal saviours and the ones I can count on in my life.

To my best friends Samah Karnashnin and Yasmine Nouar. I appreciate the moment we met the first time. I love you.

Thank you all for your support...

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### **Abstract**

The term Childhood Apraxia of Speech continues to be assigned to a group of children who has a neurological deficit in the production of sounds. The current study aims at gaining an understanding of teachers' view about the effect of the use of Ahkam El-tajweed on children with Apraxia of Speech (CAS) to enhance their sounds' movement. In addition, this study examines the appropriateness of curriculum used in special classes of Aisset Edir primary school in Relizane. This research is mainly descriptive using the qualitative approach to gather data. The questionnaire was divided into three sections to cover all the aspects of CAS disorder in Algeria; teachers of special classes, the appropriateness of curriculum, and the suggested treatment. Teachers believe that Ahkam El-tajweed may present a suitable guide to control the pronunciation mechanism and to preserve the tongue from making mistakes in pronouncing word, which may benefit Children with Apraxia of Speech to enhance their sounds' movement.

**Key words:** Childhood Apraxia of Speech, Ahkam El-tajweed, Sounds' movement.

### **List of Abbreviations**

**ASHA:** American Speech Hearing Association

**AOS:** Apraxia of Speech

**CAS:** childhood Apraxia of speech

**NIDCD:** National Institution on Deafness and other Communication Disorder

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## General Introduction

Speech is the main mode of communication in humans. It is a part of normal growth and development of human beings. Normal young children have some trouble saying words the right way during their learning process. Their speech skills develop over time as they master certain sounds and words at each age. However, a child who does not say sounds by the expected ages may have a speech sound disorder. Some children have speech problems because the brain has trouble sending messages to the speech muscles telling them how and when to move this is called Apraxia, Childhood Apraxia of Speech is not common but will cause speech problems. The focus or the goal of treatment in CAS is to improve the child's ability to specify parameters of movement so that the articulators reach the right place at the right time for the target utterance. Therefore, the focus or target of treatment is the movement versus the sound. In contrast teachers work on production of sounds in isolation forgotten the movement gesture for the whole syllable.

This is what led us to shed light on this disorder using Ahkam El-tajweed a strategy to help children with this disorder. It is important to recall that the aim of this study is to gain an understanding of teachers' view about the effectiveness of the use of Ahkam El-tajweed on Children with Apraxia of Speech. In addition, this study examines the curriculum used to teach this category of children. To conduct this study, a questionnaire was given to teachers of Aisset Edir and two other primary schools in Relizane. The Research questions of this study are

1. What is the opinion of teachers about the use of Ahkam El-tajweed on children with apraxia of speech to improve their speech movements?
2. Are the curriculum used to teach children with Apraxia of speech useful for them?

To answer those questions the following hypotheses were suggested:

1. Ahkam El-tajweed may positively affect the sounds' movement of children with Apraxia of Speech.
2. The curriculum used by teachers are not modern and appropriate for this category of children.

The study consists of three chapters. The first chapter presents an overview about the disorder of Childhood Apraxia of Speech, the possible causes and symptoms. Moreover, it presents the diagnosis of CAS and the suggestion treatments along with the definition of Ahkam El-tajweed and the Algerian curriculum used in special classes. The second chapter deals with the description of methodology of our study including sample population, the approach followed, the relation between CAS and Ahkam El-tajweed and the context of the study. The third chapter is devoted to the data analysis, results and recommendations.

**CHAPTER ONE**  
***LITERATURE REVIEW***

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## Chapter One : Literature Review

### 1. Introduction:

As a theoretical basis of this research work, the present chapter presents a general overview of different types of speech sound disorders that can hinder communication. It focuses on Children with Apraxia of Speech (CAS), and highlights its possible causes and symptoms. The chapter also presents the diagnosis of CAS and the possible treatments suggested for children with apraxia of speech part of which Ahkam El-Tajweed are tested in this research along with the strategies used to teach them.

#### 1.1. Speech sound disorders

According to the American-Speech-Language-Hearing Association (ASHA) (2007) speech sound disorders refer to any difficulty or several difficulties at the level of perception, motor production, and phonological representation of speech sound including rule based-errors that affect more than one sound. (para.1).Speech sound disorder can affect the way a person creates sounds to form words; it can be also defined as S.L.Green, and C.D.Qualls (2010) describe it:

As children develop, many will typically make some mistakes in their speech, particularly in early childhood when they attempt to learn new and complex words. Speech sound disorder exists when such mistakes continue beyond the development age at which the child should correctly produce the sound(s).The prevalence of children with speech sound disorders range from 2% in older children (8 years old) to 24.6% in younger children (5years old), (p.654)

The issue of speech sound disorders emerged recently in several fields, such as psychology, linguistics, medicine, and pathology, etc

According to ASHA (2007) speech sound disorder contains a number of difficulties which is enclosing into two main types.

##### 1.1.1. Types of speech sound disorders

**a- Organic speech sound disorder:** this disorder results from an underlying *motor/neurological* (e.g. dysarthria and childhood apraxia of speech), *structural abnormalities* (e.g. cleft lip/ palate and other structural deficits), and *sensory/ perceptual disorders* (e.g. hearing impairment). (ASHA, para.1)

**b- Functional speech sound disorder:** refers to *Articulation disorders* (e.g. distortion and substitutions), *Phonological disorders* (e.g. fronting, stopping and final consonant deletion). (ASHA, para.1)

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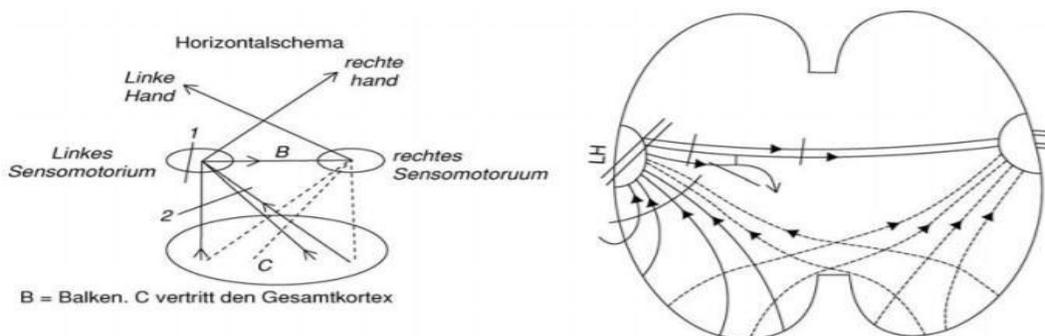
Speech sound disorder is a communication disorder in which a person has a difficulty saying words or sounds correctly, one of these difficulties is Apraxia.

### 1.2 Apraxia

Apraxia was crucial to Hugo Liepmann's proposal (1900) that the left hemisphere is dominant for the control of motor action. As cited in the Journal of Clinical Medicine by JMS Pearce (2009) Liepmann studied a 48-year-old man who had sustained a left hemispheric stroke in which he found that he was unable to button a shirt performing the necessary movements. Similar disturbances were found when he tried to light a cigar. However, Liepmann noted that the patient was able to carry out spontaneous movements such as using a spoon while eating, perform simple gestures on command, or pantomime (p.467).

JMS Pearce (2009) emphasized that Liepman observed that patients with left hemispheric lesions, but not those with right hemispheric lesions were unable to perform praxis movements. The observations made in patients with lesions of the corpus callosum led Liepmann concluded that "motor planning" occurred in the motor area of the left hemisphere (p.467).

Bellow figure (1.1) that show the schema of Liepmann *colossal motor signalling*.



. **Figure.1.1:** The arrows between the two hemispheres, direction from left to right.

#### 1.2.1. Types of Apraxia

As cited in the European Journal of Special Education Research by Wangchuck Tshering Pema (2015, p.47) there are several types of apraxia including:

- Ideomotor Apraxia is a deficit to organize or complete motor actions that depend on semantic memory. The patients are capable to describe how to perform an action, but unable to "imagine" or act out a movement such as "pretend to brush your teeth" or

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“pucker as though you bit into a sour lemon”. The ability to perform an action automatically when cued, however, remains intact. This known as automatic-voluntary dissociation.

- Ideational/conceptual apraxia: Patients have incapability to theorize and impaired ability to complete multistep actions. Consists of an ability to select and carry out an appropriate motor program.
- Buccofacial or orofacial apraxia: Non verbal-oral or buccofacial ideomotor apraxia resulting in difficulty carrying out movements of the face on demand.
- Constructional apraxia: the inability to draw or construct simple configuration, such intersecting shapes.
- Gait apraxia: The loss of ability to have normal function of the lower limbs such as walking. This is not due to loss of motor or sensory functions.
- Limb-kinetic apraxia: Difficulty making precise movements with an arm or leg.
- Oculomotor apraxia: Difficulty moving the eye, especially with saccade movements that direct the gaze to targets.
- Apraxia of speech (AOS): Difficulty planning and coordinating the movements necessary for speech. It can independently occur without issues area such as verbal comprehension, reading comprehension, writing, articulation or prosody.

### a- Apraxia of Speech

Russell J.Love,Ph.D and Wanda G.Webb,Ph.D (1992) argue that “ apraxia of speech is an impaired ability to execute voluntarily the appropriate absence of paralysis, weakness, or incoordination of the speech musculature” (p.209). So, apraxia of speech is an impaired ability of speech development in which a person has trouble saying what he or she want to say correctly and consistently. It is not due to paralysis or weakness of muscle control.

According to the National Institute on Deafness and Other Communication Disorders (NIDCD) (2017, para.1) there are two main types of apraxia of speech.

### b- Types of Apraxia of Speech

- **Acquired Apraxia of Speech** can affect someone at any age, although it most typically occurs in adults. Acquired AOS is caused by damage to the parts of the brain that are involved in speaking and involves the loss or impairment of existing speech abilities. It may result from a stroke, head injury, tumor, or other illness affecting the brain.
- **Childhood Apraxia of speech** is present from birth. This condition is also known as developmental apraxia of speech, developmental verbal apraxia, or articulatory apraxia. Childhood Apraxia of Speech (CAS) is not the same as developmental delays in speech, in which a child follows the typical path of speech development but does so more slowly than is typical.

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### 1.3. Childhood Apraxia of speech

Childhood Apraxia of speech has a long history in the field of speech language pathology, in which, it has gone by several name: Developmental Apraxia of Speech, Developmental Verbal Apraxia, and Childhood Apraxia of Speech. In 2007, ASHA adopted a technical report on CAS.

The American-Speech-Language-Hearing Association (2007) defines CAS as neurological deficits:

Childhood apraxia of speech (CAS) is a neurological childhood (pediatric) speech sound disorder in which the precision and consistency of movements underlying speech are impaired in the absence of neuromuscular deficits (e.g. abnormal reflexes, abnormal tone). CAS may occur as a result of known neurological impairment, in association with complex neurobehavioral disorders of known and unknown origin, or as an idiopathic neurogenic speech sound disorder. The core impairment in planning and/or programming spatiotemporal parameters of movement sequences results in errors in speech sound production and prosody. (Definitions of CAS section, para.2)

In order for speech to occur, messages need to go from the brain to the mouth. These messages tell the muscles how and when to move to make sounds intelligible. When a child has Apraxia of Speech, the messages do not get through correctly. The child might not be able to move their lips or tongue in the right way, even though their muscles are not weak.

Edythe A, Strand (2015, 3:56 min) explained that Children with Apraxia of Speech (CAS) do not have any signs of damage in their brain, the speech difficulty that they have leads us to believe that they have inefficiencies in the way the brain is processing that proper receptive information and planning movement that affect their ability to easily learn to talk.

The European journal of Special Education Research (2015, p.48) mentioned three significant features that differentiate CAS from other childhood speech sound disorders. These features are:

1. Inconsistent errors on consonants and vowels in repeated production of syllables and words.
2. Lengthened co-articulatory transitions between sounds and syllables.
3. Inappropriate prosody, especially in the realization of lexical or phrasal stress. Even though CAS is a developmental disorder, it will not simply vanish when children grow older. Children with this condition will not follow classical patterns of language acquisition and will need special treatment in order to make progress.

#### 1.3.1. The consequences of CAS

The medical reference WebMd (2019, p.1) states the problems that can happen along with CAS, in which childhood Apraxia of Speech rarely occurs alone. It is often accompanied by other language or cognitive deficits, which may cause:

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- Limited vocabulary
- Grammatical problems
- Problems with coordination and fine motor skills
- Difficulties chewing and swallowing
- Clumsiness

### 1.3.2 Childhood Apraxia of Speech /Dysarthria / Phonological disorder

Children with CAS have problems saying Sounds, Syllables, and words. This is not because of muscles weakness or paralysis (Dysarthria). So, David W. Hammer, M.A., CCC-SLP (2001, p.1) mentioned the differences between Childhood Apraxia of Speech (Verbal Apraxia) and Dysarthria as listed below:

<b>Verbal Apraxia</b>	<b>Dysarthria</b>
No weakness, no paralysis of speech musculature, or inconsistencies in articulation performance (the same word may be produced differently )	Weakness, strength and coordination of speech musculature, errors generally consistent
Errors include substitutions, additions, repetitions, and omissions in initial position	Errors are generally distortions
Well rehearsed, “automatic” speech is easiest to produce, “on demand” speech most difficult	No difference in how easily speech is produced based on situation
Receptive language skills are usually significantly better than expressive skills	Typically no significant discrepancy between receptive and expressive language skills
Generally good control of pitch and loudness, may have limited inflectional range for speaking	Monotone voice, difficulty controlling pitch and loudness
No difficulty at the level of muscle movements (chewing, swallowing)	Difficulty of chewing, swallowing, etc. due to muscle weakness and incoordination

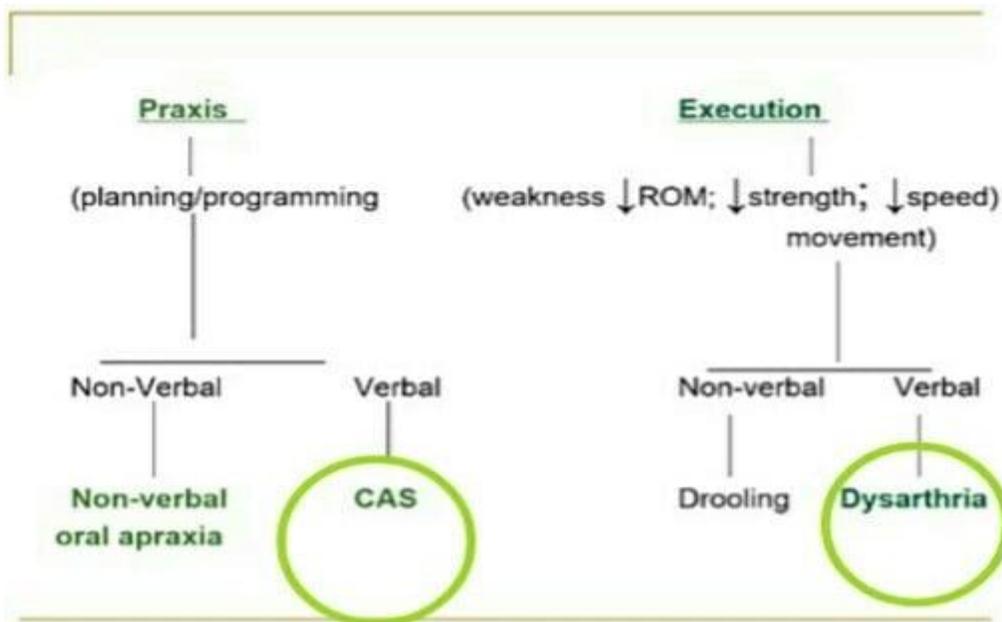
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Age-appropriate voice quality

Voice quality may be hoarse, harsh, hypernasal, etc. depending on type of dysarthria

On the other hand, Edythe A, Strand (2019, 9:11min) differentiate between CAS and Dysarthria as follow:

**Figure 2.1:** The difference between CAS and Dysarthria



Apraxia of Speech and Dysarthria are motor speech disorders results from neurological impairment. The core deficits in CAS is planning and programming speech movement sequences rather than executing the movement (Dysarthria) including weakness, paralysis, in-coordination, etc. Therefore, in a lot of cases it is easy to distinguish between them.

Childhood Apraxia of Speech is totally different from phonological disorder as cited in Speech and language kids (2016)

Childhood Apraxia of Speech	Phonological Disorder
inconsistent errors (same words said differently each time)	consistent errors
often have vowel errors	rarely have vowel errors

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errors increase as utterance length increases	consistent errors
automatic or well rehearsed speech is much easier	all speech equally hard
rate, rhythm and stress of speech is disturbed	rate, rhythm and stress of speech is not disturbed

As we said before Childhood Apraxia of Speech is not an isolated disorder, in some cases it may happen together with phonological impairment as Edythe Strand(2015) shown us this case in her video of *examples of different levels of severity in CAS* , in which this child have phonological errors with mild CAS . Childhood Apraxia of Speech occurs in a context of the child learning all the aspects of language and speech, so most children that have apraxia of speech also have other disorders as language problems.

### 1.3.3. Causes and Symptoms of CAS

According to ASHA (2007, para.1) Childhood Apraxia of Speech can be congenital, or it can be acquired during speech development. Both congenital and acquired CAS can occur:

- As an idiopathic neurogenic speech sound disorder (i.e., in children with no observable neurological abnormalities or neurobehavioral disorders or conditions)
- In association with known neurological events (e.g., intrauterine or early childhood stroke, infection, trauma, brain cancer/tumor resection; see, e.g., Brown et al., 2000)
- As primary or secondary signs within complex neurobehavioral disorders (e.g, autism, epilepsy, and syndromes, such as fragile X, Galactosemia, and Rett syndrome)

Similarly, The nonprofit medical practice and medical research group, Mayo Clinic (2019) (It employs a lot of physicians, scientists and health staff) states the causes and symptoms of CAS, in which it has a number of possible causes. In many cases the causes cannot determined. Doctors often do not observe a problem in the brain of a child with CAS.

- CAS may be the result of brain (neurological) conditions or injury, such as a stroke, infections or traumatic brain injury.
- CAS may also occur as a symptom of a genetic disorder, syndrome or metabolic condition. For example, CAS occurs more frequently in children with galactosemia.
- CAS is sometimes referred to as developmental apraxia. However, children with CAS do not necessarily grow out of CAS as they develop. In many children with delayed speech

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or developmental disorders, children follow usual patterns in development of speech and sounds, but they develop more slowly than usual.

- Children with CAS do not make typical developmental sound errors. They need speech therapy to make maximum progress.

Symptoms or characteristics of children with CAS may vary depending on their age and severity of their speech problems.

Childhood Apraxia of Speech (18 months-2 years) can be associated with:

- Delayed onset of first words
- A limited number of spoken words
- The ability to form only a few consonant or vowel sounds

Children between ages 2 and 4 characterizes by:

- Vowel and consonant distortions
- Separation of syllables in or between words
- Voicing errors, such as "pie" sounding like "bye"

Many children with CAS have difficulty getting their jaws, lips and tongues to the correct positions to make a sound, and they may have difficulty moving smoothly to the next sound. Children with CAS also have language problems, such as reduced vocabulary or difficulty with word order.

### 1.3.4. Diagnosis of CAS

There is no single symptom or a specific test that can be used to diagnose children with apraxia of speech. So, speech language pathologist plays a key role in diagnosing and treating children with apraxia of speech. The person making the diagnosis generally looks for the presence of several symptoms and the pattern of problems that are seen, such as muscle weakness or language production problems, also assessing language skills (vocabulary), sentence structure and ability to understand speech. As cited in Mayo Clinic (2019, para.6)

The specific tests conducted during the evaluation of CAS will depend on the child's age, ability to cooperate and the severity of the speech problem.

Tests may include:

**Hearing tests:** your doctor may order hearing tests to determine if hearing problems could be contributing to your child's speech problems.

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**Oral-motor assessment:** speech-language pathologist will examine your child's lips, tongue, jaw and palate for structural problems, such as tongue-tie or a cleft palate. They will observe some of his or her activities as blowing, smiling and kissing.

**Speech evaluation:** this test based on your child's ability to make sounds, words and sentences during play, repeating syllables such as "pa-ta-ka", or other activities.

Speech-language pathologist may evaluate your child's coordination and smoothness of movement in speech during speech tasks. In which he or she may be asked to name picture to see the difficulty in making specific sounds or speaking certain words or syllables. But if your child can produce sentences, the focus changed to his or her rhythm of speech (stresses syllables and words).

Speech-language pathologist may help your child be more accurate by providing cues, such as saying the word or sound more slowly or providing touch cues to his or her face.

We have also other formal tests for CAS as cited by Libby Kumin (n.d, p.2): The Kaufman Speech Praxis Test for children (KSPT) the most one used, The Apraxia Profile, and the Verbal Motor Production Assessment for Children (VMPAC).

Nancy Kaufman, MA, CCC-SLP (1983) define *The Kaufman Speech Praxis Test (KSPT)* as “a norm-referenced, diagnostic test assisting in the identification and treatment of childhood apraxia of speech. Easy to administer and score, KSPT measures a child's imitative responses to the clinician, identifies where the speech system is breaking down, and points to a systematic course of treatment. Breakdowns in KSPT match the levels of treatment in the K-SLP Treatment Kits, allowing for a seamless transition to therapy. Ages: 2; 0 – 5; 11. Admin time: 5-15 minutes” (para.1)

American-Speech-Language-Hearing Association (2007) concluded that assessment and diagnosis of CAS are the responsibility of the speech-language pathologist with specialized knowledge, training, and skills in this area. The symptoms of CAS change over time and may be influenced by development in other behavioral domains, it may be more appropriate in some diagnostic reports to use classification terms such as *CAS cannot be ruled out, signs are consistent with CAS, or suspected to have CAS*, rather than an *unequivocal CAS*. Although no single differential diagnostic marker with high sensitivity and specificity has been documented to date, there is some consensus among clinical researchers on three segmental and supra-segmental features observed in children suspected to have CAS. (para.5)

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### 1.3.5. Treatment of CAS

Speech –language-therapy is necessary for children with Apraxia of speech as well as for people with acquired apraxia of speech, because CAS cannot out-grow the problem on their own also they do not acquired the basics of speech just by being around other children.

The most common tool used to help children with language disorders is Audiblox system. One researcher defines this program as an intriguing system of cognitive exercises to develop fundamental learning skills. It claims to improve concentration, perception, memory, reasoning, sensory, auditory and visual discrimination. The Audiblox program was actually developed as a reading readiness program. Dr. Jan Strydom of South Africa designed a series of cognitive training exercises to help his preschool children prepare for school. It soon became apparent that the program had far-reaching benefits for children with learning disabilities. (Christine Field, 2006, para.1)

According to Neil Lava, MD (2019,p.3) Speech –language-pathologist use different methods to treat Apraxia of speech (AOS) , and no single approach has been proven to be the most effective, in which each child has an individual approach and for the best results, apraxia treatment must be developed to meet a given individual’s needs. Support and encouragement from family members, friends and extra practice in the home environment are important.

Therapy for childhood Apraxia of Speech aims to improve speech coordination, exercises may include:

- Repeatedly practicing the formation and pronunciation of sounds and words
- Practicing stringing together sounds to make speech
- Working with sings and melodies
- Using multisensory approaches, such as watching in a mirror while trying to form words or touching the face while talking

Very few studies have done to determine the effectiveness of various treatment approaches for CAS. But many therapists believe that sign language is beneficial for children who have difficulty being understood.

Caroline Bowen (2015, p.320) mentioned some points of CAS treatment:

- Use paired auditory and visual stimuli in intensive practice trials.
- Use sign/AAC to facilitate communication, intelligibility and language development, and to reduce frustration.

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- Pair movement sequences with supra-segmental facilitators: including stress, intonation, and rhythm.
- Use reduced production rate with stimulus monitoring, also present regular, consistent, effective homework.
- Be flexible. Treatment changes over time.
- Keep the focus in therapy (and at home) on movement performance drill and Expect 'good days and bad days' in terms of the child's performance.
- Train sound combinations (CV VC CVC ...) rather than isolated phones; also use simple carrier phrases and simple close tasks.
- Establish a core vocabulary or a small number 'power words', especially for non-verbal or minimally verbal children.

On the other hand Edythe A. Strand, Ph.D (2019) explained that in CAS the goal or the focus of treatment is to improve the child's ability to specify parameters of movement so that the articulators reach the right place at the right time for the target utterance. Therefore the focus or target of treatment is the movement versus the sound, and that changes everything:

- The words we use
- Choice of approach/ method
- Choice of techniques
- Choices in type of cueing
- Organization of practice during the sessions
- Types and amount of feedback

The message you have to put it in mind: don't work on production of sounds in isolation, but work on the movement gesture for the whole syllable.

### 1.4. Ahkam El-Tajweed

Focusing on the movement of sounds for children with Apraxia of Speech, led us to think about *El-Tajweed*. Because, it has some conditions or rules on how we pronounce words (AYAT) with a certain speed and specific movements(HARAKAT) to create correct words and more especial, to give each syllable all its characteristics when we produce it.

#### 1.4.1 Definition of Tajweed

Sheikh Mustafa (2018, p.1) define Tajweed as "a set of rules for the correct pronunciation of the letters with all its qualities and applying the various recitations. When reciting the Qur'an, it means giving every letter of the Qur'an its rights and dues of characteristics and observing the rules that apply to those letters in different situations. We give them their dues by observing the

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characteristics of each letter that are present in them some of the time and not present at other times”

Also Ali Ibn AbdRahmen Elhedayfi, Ph.D and Others (2016, p.14) define Tajweed as

"التجويد: هو في اللغة مصدر جَوَّدَ أي حَسَّنَ, فهي بمعنى التحسين والإتقان, يقال: هذا الشيء جيد, وجوَّدت الشيء أي حسنته وفي الاصطلاح: إخراج كل حرف من الحروف القرآن من مخرجه الصحيح, مع إعطائه حقه ومستحقه "

“Tajweed: linguistically is from the word improved or ameliorate, which means beautified and make batter, is said this thing is good, therefore we make it better.

In convention: produce each sound from Quran from the correct aspect of the articulation points and the inherent and transient characteristics of the letters” translated by the author.

### 1.5. Childhood Apraxia of Speech in Arab studies

Since we do not have any study of apraxia of speech in Algeria we attempt to collect some studies from Arab countries.

The first study was by Mammor Nawaf from University of Damas, education faculty (2013). His research is about *the articulation characteristics of children with verbal apraxia according to some variables*: a case study. The research aimed at highlighting the characteristics of apraxia of speech by analysing the language production of four children and investigating its causes. Thus, the main results of his work were:

- Phonological errors include substitutions, additions, repetitions, and omissions.
- Low of Intelligence Quotient
- Apraxia of speech does not have any relation with gender.
- Child with apraxia of speech suffer from luck of vocabulary, he does not have the ability to communicate and separation of syllables in or between words.

The second study is about *the development of sensory integration in reducing apraxia of speech in children of Autism* by the researcher Islem Salah Edin Ahmed Salem University of Egypt (Ain chams).

The aim of this study was to investigate the effect of the development of sensory integration in reducing apraxia of speech in children of autism. In which the sample of the study was selected from a group of children of Autism. At the end of this work the effect of researcher’s method is well confirmed.

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1.5.1. Curriculum used for Children with Mild Mental Retardation in Algeria

Education is a constitutional right for each child whatever his or her disability is. According to the joint declaration between Ministry of National Education and Solidarity dating on 10\_12\_1998, in which this category of children is able to integrate in primary schools. This law did not apply till the 13\_03\_2014 where they created classes in schools named as “special classes” for children with hearing impairment and mild mental disabilities, in addition to prepare a unified curriculum or activities in Algeria, but each case has its unique curriculum. The thing that we have to shed light on is that children with Apraxia of Speech are integrated under the category of mild mental disabilities without distinguishing their disorder or even their appropriate activities.

The copy bellow is a pedagogic curriculum for special classes in primary school of Aisset Edir.

Figure 4.1

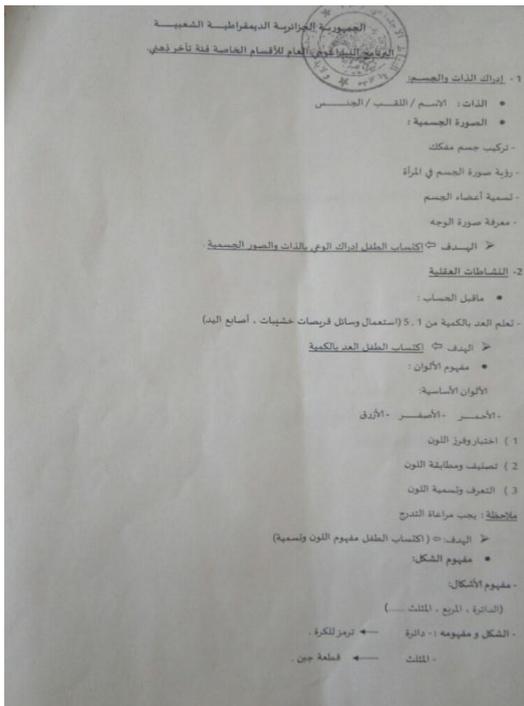
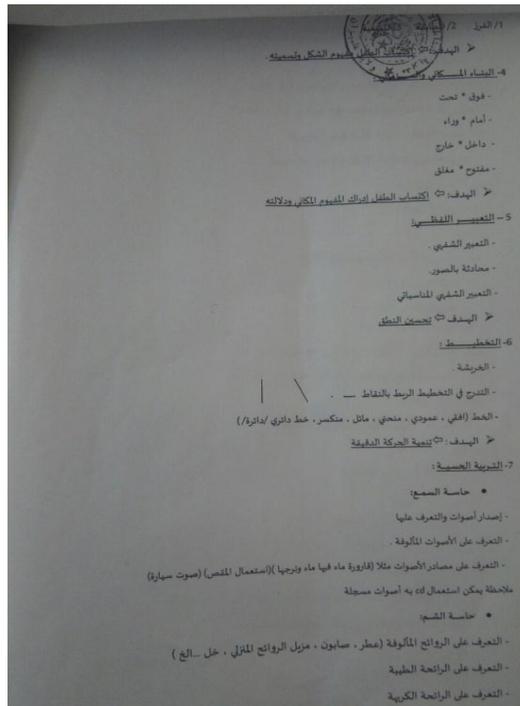


Figure 5.1



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Figure 6.1

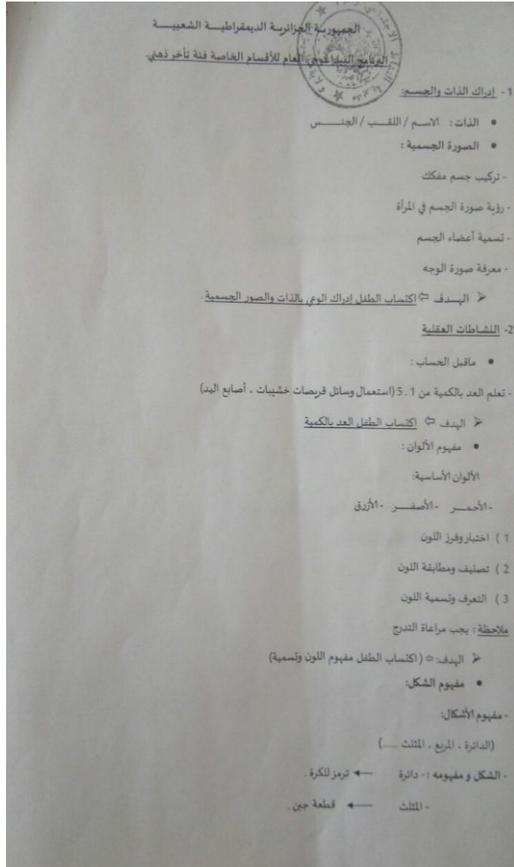
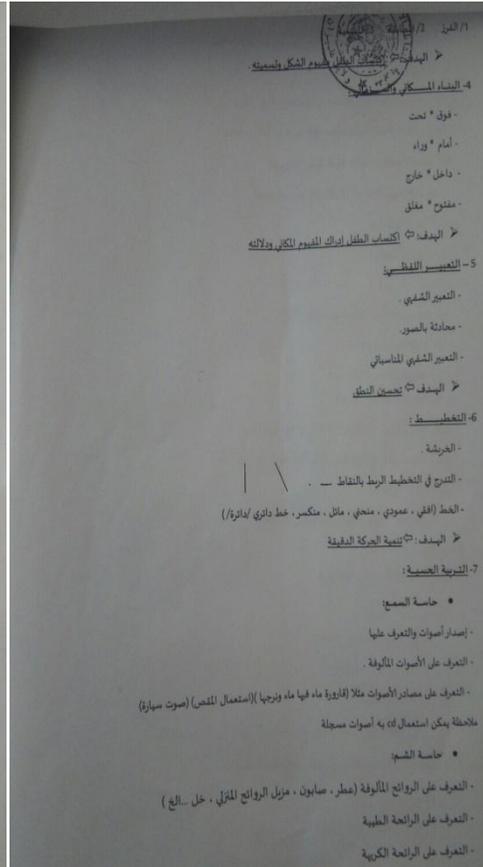


Figure 7.1



These activities aim at giving a general overview of the surrounding things like: (translated by the Author)

- See your face in mirror
- See your body in mirror
- The child learn how to name his/her parts' of body
- He have to learn counting from 1 – 5 (using his/ her hand's finger)
- Learning the basic colors (green – yellow – red)
- Using the appropriate words in relation to time and place

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- Teachers try to improve pupils' smell and hearing sense (using some common things that are related)
- Teachers focus also on their physical motor education without forgetting to enhance their manual activities

### 1.5.2. Teachers of special classes in Algerian primary schools

In Algeria (2017, p.6) the curriculum of primary education: children with mild mental retardation cited the:

Pedagogic framing: the special classes are supervised by:

- Special education teachers (رئيسي)
- Special education teachers (رتبة آيلة للزوال)

In case of lacking one of these teachers, we can find:

- Special education professors
- Special educators (رئيسيون)

They work on:

- They teach and educate in the morning and afternoon periods
- Go together with pupils after the end of sessions
- The attendance of teacher's meeting
- The attendance in formation courses made by Directorate of National Education
- The attendance in seminars and formation meetings

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- Teachers have to participate in formation courses made by Ministry of National Solidarity to improve their level

Beside this pedagogic group these pupils might have:

- Assistant of their daily life
- Maternity assistant
- Special educators
- Special educators (رئيسي)

They work on:

- They give a good reception to pupils in the morning and they go with them when these pupils go to spend their needs.
- They have to stay with these pupils in their rest period of the morning and during the lunch.

### **Conclusion**

From this literature review, a plenty of findings can be drawn. Childhood Apraxia of Speech is modern disorder, in many cases we cannot determine the causes behind this impairment which leads to difficulty finding the effective treatment. In Algeria, Childhood Apraxia of Speech is uncommon disability and till now is not distinguished from other speech disorders.

**CHAPTER TWO**  
***RESEARCH METHODOLGY***

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## Chapter Two : Research Methodolgy

### 2.1. Introduction

The first chapter aims at presenting a theoretical background about the disorder of Childhood Apraxia of Speech (CAS) and its relation with Ahkam El-tajweed. However, the present chapter tackles the practical part of this research. It provides the description of the methodology of the present research including sample population, the approach followed, the context of the study and the data analysis' method. It is important to recall that the aim of this study is to assess the effectiveness of the use of Ahkam El-tajweed on children with Apraxia of Speech, the case of Aisset Edir primary school in Relizane, and to examine the curriculum used to teach this category of children. To achieve this aim the following research questions were set:

1. What is the opinion of teachers about the use of Ahkam El-tajweed on children with apraxia of speech to improve their speech movements?
2. Are the curriculum used to teach children with Apraxia of speech useful for them?

To answer those questions the following hypotheses were suggested:

1. Ahkam El-tajweed may positively affect the sounds' movement of children with Apraxia of Speech.
2. The curriculumm used by teachers are not properly modern and appropriate for this category of children.

### 1. Research Method

Research, according to Leedy & Ormrod (2001), is a process that aims to collect, analyze and interpret data to understand a given phenomenon. Moreover, a research is purposeful as it has clear objectives. However, to achieve the aim of any research, methodology is considered the essential and practical way. For Wheeldon and Ahlberg, a methodology is “the design, strategy, or plan of action required to gather and analyze data” (p. 5). In addition, “the purpose of survey investigations may also be to provide scientifically gathered information to work as a basis for the researchers for their conclusions” (C. R. Kothari, 2004, p.9).

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### **2. Context of the study**

The study was conducted in special class, Aisset Edir primary school–Relizane during the academic year 2019-2020, this special class contains three children with Apraxia of speech.

The study was done with three teachers from Aisset Edir primary school. Moreover, to collect more information and to give several points of view, the questionnaire were expended for other teachers from two special classes in two different primary schools–Relizane. As far as our research is concerned, the case of the selected sample for this study who are supposed to be familiar with speech sound disorders and related issues especially, in relation to the realm of teaching children with Apraxia of Speech.

#### **2.1. Special classes**

According to the joint declaration of Ministry of National Education and Solidarity dating on 13\_03\_2014, children with hearing impairment and mild mental retardation are able to integrate in special classes that are part of normal schools.

The concept of inclusion replaced the earlier term ‘integration’, which was used in the 1980s to refer the replacement of pupils with special educational needs in mainstream schools (Dr Eileen Winter and Mr Paul O’Raw, 2012, p. 12)

#### **2.2. Definition of ‘inclusion’**

Inclusive education is a process involving changes in the way schools are organized, in the curriculum and in teaching strategies, to accommodate the range of needs and abilities among pupils. Through this process, the schools built its capacity to accept all pupils from local community who wish to attend and, in so doing, reduces the need to exclude pupils (Sebba & Sachdev, 1997, as cited in Dr Eileen Winter and Mr Paul O’Raw, 2012)

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Inclusive education looks at both the rights of pupils and how education system can be transformed to respond and to diverse groups of learners.

Special classes emphases the need for opportunities for any students with disabilities or special needs in the education system.

### **3. Participants**

As far as our research is concerned, and for the purpose of checking the hypotheses previously stated that gain an understanding of teachers' view about the use of Ahkam El-tajweed on children with Apraxia of speech, and the examination of the appropriateness of curriculum used to teach those children. The sample was composed of twelve teachers from three special classes that belong to three different primary schools in Relizane and their median age was 25. This sample seems to be representative, where they are supposed to be acquainted with the issues of Childhood Apraxia of Speech. Teachers of this category of children have to identify the child's ability before choosing the appropriate method to teach him or her as they do with children of our concern. Therefore, they play the role of speech therapists and they teach at the same time.

### **4. Data collection tools**

There are various tools and techniques to gather data. These tools are determined largely by the research questions and objectives identified by the researcher. Any technique used for collecting information for the study is called a research tool or a research instrument.

The most common tools are observation forms, interviews and questionnaires. Unequivocally, the type of data needed to be collected by the researcher determines the type of tool to be used.

Despite the different tools available for collecting data, this chapter focuses more on the questionnaire tool. In the present situation and for obtaining reliable data, the questionnaire approach was selected. A questionnaire was used to investigate and gather both quantitative and qualitative data since it mainly consists of close-ended and open-ended questions. Kabir (2016) postulated that quantitative approaches generally address the forms that evoke numerical data such as the what, how, many and how much, whereas qualitative ones address the how and the why and use unstructured methods to fully explore the topic under investigation.

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Questionnaire refers to the process of collecting data through several questions that asks a range of individuals the same questions related to their characteristics, attributes, and their opinions.

The questionnaire divided into 3 parts. The first part aims at showing the awareness of teachers about the disorder of Childhood Apraxia of Speech (CAS). While, the second part was designed to examining the syllabus used to teach these children. The aim of the third part of questionnaire is to answer the research question of whether Ahkam El-tajweed affects positively the sounds' movement of children with apraxia of Speech.

### 5. Ahkam El-tajweed and its relation with CAS

According to Kareema Carol Czerepinski (2005) define Ahkam El-tajweed as:

linguistic definition: betterment

Applied definition: articulating every letter from its articulation point and giving the letters its rights and dues of characteristics (إعطاء كل حرف حقه ومستحقه)

As we mentioned in literature review Edythe A. Strand, Ph.D (2019) explained that the message you have to put it in mind: do not work on production of sounds in isolation with CAS disorder, but work on the movement gesture for the whole syllable.

Focusing on the movement of sounds for children with Apraxia of Speech, led us to think about *Ahkam El-Tajweed*, because it has some conditions or rules for the correct pronunciation of letters.

Ahkam El-tajweed guide the way pronounce words (*Ayat*) with a certain speed and specific movements (*Harakat*) to create correct words and more especially, to give each syllable all its characteristics when we produce it.

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### 6. Questionnaire

A questionnaire is a research tool used for data collection. Merriam Webster dictionary defines it as “a set of questions for obtaining statistically useful or personal information from individuals”.

In a research, it is a set of questions distributed to search for answers and to gather information that can be interpreted. O’Leary. Z (2017) states that the questionnaires have many uses, most notably to discover what the masses are thinking. These include market research, political polling, customer service, feedback, evaluation, opinion polls, and social science research.

As already mentioned, questions can be either open-ended or close-ended. In open-ended questions, respondents are allowed to express their thoughts in words. Therefore, enough space should be provided to give complete answers. More importantly, the cardinal features of the questionnaire should be respected. These features are validity, reliability and objectivity.

The questionnaire proved to be the most popular and efficient technique for data collection. It is suitable in our current situation (Corona Virus) to use questionnaire rather than using the experiment of Ahkam El-tajweed on children with apraxia of speech. As it mentioned before, the aim of questionnaire is to gain an understanding of teachers’ view about this experiment as those teachers are experts and can provide insights about the effectiveness of this experiment, showing the awareness of teachers about the disorder of Childhood Apraxia of Speech (CAS) and to examine the syllabus used to teach these children.

#### 6.1. Description of teachers’ questionnaire

In the present work, a questionnaire was distributed to twelve teachers from three special classes that belong to three different primary schools in Relizane as stated previously. It consists of both open-ended and close-ended questions. The close-ended questions aim at gathering quantitative data to be compared and to limit the teachers’ answers to choose from the answers provides by ticking in the right box. On the other hand, the open-ended questions give more

## Chapter Two : Research Methodolgy

opportunity to the respondents to answer freely and express their ideas in more details. The questionnaire is composed of three sections. They are structured as follows:

**The first section:** Teaching experience information.

The first section aims at gathering teaching experience information about the participants. This includes data about their university specialization, training, how long they have been teaching, difficulties they faced during their teaching experience and the annual plan that describing their teaching objectives.

**Second section:** Curriculum used to teach children of special classes with different disabilities.

This section is devoted to test the appropriateness of syllabus used in special classes. It includes four questions. The first question targets to know the common types of disabilities mentioned in the syllabus. The respondents are giving free space to mention theses disorders. The second question aims to know whether Apraxia of speech one of these disabilities mentioned in the syllabus. The third question intends to know whether the teachers are agree with the curriculum used to teach these children. The next question aims at providing a set of suggestions to improve this curriculum.

**Third section:** the effectiveness of Ahkam El-tajweed on Children with Apraxia of Speech

The third section in this questionnaire looks for answer of our research question of whether Ahkam El-tajweed affects positively the sounds' movement of Children with Apraxia of Speech (CAS).The section is composed of four close-ended questions where the respondents are given yes/no or no idea options to tick the appropriate answer and the final question is open-ended one to give the respondents free line to express his/ her opinion.

The first question attempt to know if the teachers are agreeing with the idea of speech disorder is treatable problem. In the second question, the informants were asked about their opinions concerning the specialists' view of Ahkam El-tajweed that it is a good way for reserving the tongue from pronunciation errors. The third and the fourth questions seeks to discover the results of the comparison between the method of intensifying lessons or Focusing on treating the

## Chapter Two : Research Methodolgy

aspects of articulation points to enhance speech production of those children. The final question, teachers are given the opportunity to describe their opinions about the effectiveness of Ahkam El-tajweed on Children with Apraxia of Speech

### **7. Data Analysis' Method**

Data analysis is the process of systematically applying statistical and/or logical techniques. It involves the interpretation of data gathered using analytical and logical reasoning to determine patterns, relationships or trends.

Data analysis is how researchers go from a mass of data to meaningful insights. There are many different data analysis methods, depending on the type of research to analyze quantitative and qualitative data.

The research work was done preceding a qualitative approach to answer a specific research question. It is the most appropriate method to gather opinions from respondents using questionnaire.

### **Conclusion**

In the chapter at hands, we provide a detailed description of the procedures that we designed in order to conduct our research with. Moreover, the chapter highlights the principal points related to our research as Ahkam El-tajweed, special classes and inclusion term.

The next chapter will provide the practical part of this study to see the extent to which Ahkam El-tajweed affects the sounds' movement of Children with Apraxia of Speech

# **CHAPTER THREE**

## ***DATA ANALYSIS AND RESULTS***

### **Introduction**

- 1. Findings**
- 2. Discussion of results**
- 3. Recommendation**
- 4. Limitations**

### **Conclusion**

## Chapter Three: Data analysis and Results

### Introduction

The present chapter presents the analysis and interpretation of the data obtained through the questionnaire. The analysis is presented in tables and statistics. Additionally, the results show the method that may help improve the pronunciation difficulties of children with apraxia of speech in Algerian special classes. Finally, the chapter ends with an attempt to provide recommendations that could be efficient for further research.

### 1. Findings

Important to recall is that the questionnaire was distributed to twelve teachers from three special classes that belong to three different primary schools in Relizane. However, to collect more information I send my questionnaire to other teachers of special classes from two primary schools in Relizane. Before the analysis was conducted, I checked if teachers have answered all questions and if there was any information necessary for the study that was missing. The data collected was translated from Arabic to English

#### First section:

##### 1. How long have you been teaching?

The reason behind this question is to know the experience's duration of our participants.

**Table 01: Duration of teaching experience**

One year	Three years	Four years
1	4	7

The obtained data elucidate that teachers of special classes in Relizane are new in the field of education. Thus, the teaching experience of our participants ranges from one year to four years.

## Chapter Three: Data analysis and Results

### 2. What was your university specialization?

The reason behind this question is to know if there is a relation between the university specialization of participants and their job.

Faculty of social sciences			Faculty of Arabic literature
Psychology	Sociology	Humanities	Arabic literature
4	5	2	1

**Table 02: Participants' Speciality of University.**

When I checked the syllabus of each specialty above, I found that Speech Sound Disorder was mentioned at the level of some courses or modules. Therefore, Teachers of these specialties learn about language disorders.

### 3. Have you been trained to teach?

#### 3.1 Are you familiar with language disorders?

The reason behind these two questions is to know if our participants had been training on teaching children with language disorder.

The teachers were given “yes/no” options. The following graph demonstrates the teachers' answers.

Yes	No
09	03

**Tables 03: Participants' experience of training.**

The results show that, the majority of our participants had been training before getting their jobs and it is about language disorders.

## Chapter Three: Data analysis and Results

### 4. How do you describe the quality of your teaching?

I try from this question to know the level of teachers in relation to their teaching experience.

Acceptable	Medium
5	7

**Table 04: The participants' quality of teaching.**

As it mentioned in the table above, most of teachers describe their quality of teaching as medium (7) and the other teachers (5) describe it as acceptable.

The following question to be analysed in this section addresses the difficulties faced teachers during teaching period.

### 5. What are the difficulties that you faced when teaching this category of children?

They mentioned several difficulties we summarize them as:

- All the teachers explained that the lack and deficiency of tools is the major difficulty they faced when teaching these category of children.
- Most of our participants are agreeing with the point of incognizance of parents to the problem of their children.
- Three teachers talked about the difficulties in diagnosing the child's disability.
- Ten teachers focused on the absence of excursions and recreational activities to help children interact with normal children outside their school.

## Chapter Three: Data analysis and Results

### **6. Do you put an annual plan of your teaching objectives for children with language disorders?**

The reason behind this question is to know if the sample guided by using only the required syllabus or they added their experience to enhance the speech production of those children.

We found that all the participants answered this question by yes; we put an annual plan of our teaching objectives for this category of children. The results put on show that, our participants added their experience as an annual plan to enhance their pupils' skills.

### **Second section:**

### **7. What are the main syllabuses used in special classes?**

The teachers of our research work mentioned four kinds of syllabus: *'Teach for Children with Autism, syllabus for children with mental retardation (low degree), preparatory syllabus and pre-preparatory one'*. Beside this syllabus there are some strategies that teachers work with it: *The behavioural therapy, Occupational therapy, and the strategy of Medication treatment.*

From the following question, we can know if the syllabus covers many categories of children with several disabilities.

### **8. What are the common types of disabilities mentioned in the syllabus used?**

According to the answers of our participants, all teachers mentioned that there are three types of disorders: Autism, Mental Retardation, and Down syndrome.

The results reveal that there are just three highlighted disorders mentioned under this curriculum. It does not cover all the disorders needed to integrate in the curriculum where children with hearing impairment must be part of the agreement.

## Chapter Three: Data analysis and Results

### 9. Is Apraxia of Speech one of those difficulties mentioned in the curriculum?

All the participants answered this question by yes, and they explained that the disorder of Apraxia of speech is mentioned in the curriculum used, but it does not have an individual syllabus it is just cited above some strategies to help children with apraxia of speech.

The next question looks into the teachers' opinions of the appropriateness of curriculum.

### 10. Is the curriculum of special classes appropriate?

Yes	No
01	11

**Table 05: The appropriateness of curriculum.**

Most of the teachers are not agreeing with this curriculum.

To collect more information and to clarify the image to the readers we attempt to set some suggestions points. The following question illustrates the important point to enhance the curriculum of special classes.

### 11. What are your suggestions to improve the Ministry curriculum?

Eleven of our participants suggested the following points:

- Develop the syllabus used to teach this category of children.
- Create syllabus and strategies for each category of children.
- Extending the specific curriculum of education so that they cover all the categories of children with different disabilities.

## Chapter Three: Data analysis and Results

All teachers emphasised:

- The necessary investment in tools to help children learn more easily.
- The role of the press in shedding light on children with linguistic disabilities.

### Third section:

In an attempt to know teachers' view of children with Apraxia of Speech and their treatment, we asked several question.

#### 12. Is the problem of speech disorder treatable?

This question was asked to get into the topic of treatment.

It noticed from the teachers' answers that all the respondents (12) said that the issue of language disabilities could be treated.

#### 13. Did you think that Ahkam El-tajweed is a good way for reserving the tongue from pronunciation errors?

Yes: 10

No idea: 2

No: 0

The majority of teachers are agreeing about the view of specialists above and two persons have no idea about the subject. While, no one denied that this view does not exist.

Yes	No	No idea
10	0	2

**Table 06: the effectiveness of Ahkam El-tajweed**

## Chapter Three: Data analysis and Results

The following two questions are prepared to compare between the methods of intensifying lessons or focusing on treating the articulation points of the letters

### **14. Do you think that intensifying lessons is a good way to treat children with CAS?**

**Yes:** 7

**No:** 5

<b>Yes</b>	<b>No</b>
07	05

**Table 07: Intensifying lessons' method.**

Form this questions we conclude that, the majority of participants prove that intensifying lessons is a good strategy to help children with Apraxia of speech improving their speech production.

### **15. Focusing on treating the aspects of the articulation points is the connection between apraxia of speech and its treatment.**

We want to gather from this data the teachers' view about the most effective way that helps to enhance the speech movement of these children.

As it noticed, all the participants are agreeing with using Ahkam El-tajweed strategy, where the majority of teachers saw that the focus of treating the articulation points of the letters is a good way to specify the pronunciation problem.

## Chapter Three: Data analysis and Results

### **16. To what extent can Ahkam El-tajweed affect the sound's production of Children with Apraxia of Speech.**

This question has a direct link to our research question of whether Ahkam El-tajweed affects positively the sounds' movement of Children with Suspected Apraxia of Speech.

Refers to the teachers' answers this question obtained diverse answers summarised below:

- Ahkam El-tajweed improves the mechanism of sounds' production and the airflow power generation required for pronunciation process.
- Adjust the production of rhythm that helps improve the quality of pronunciation.
- Adjust the appropriate time indicator for pronouncing the words or letters and stop them by controlling the airflow.
- It is a good way to organize the pronunciation characteristics by controlling the source of production of sounds and to preserve the tongue from making mistakes in pronouncing words.

## **2. Discussion of the results**

After having analysed the data collected through the questionnaire, it seems that all of the twelve respondents were familiar with speech sound disorders, while nine of them were trained on the methods of teaching children of special education needs. Moreover, the majority of teachers faced many difficulties in dealing with children of special classes. These difficulties are the lack of tools to communicate and to teach these children. In addition, the most significant problem that faced our participants is the unconsciousness of parents to the risk of their children's disorder.

The analysis reveals that the syllabus did not cover all the categories of disorders such as hearing impairment, this led us to ask the question of whether the curriculum used to teach children with Apraxia of Speech is appropriate or not. The questionnaire showed that eleven of participants are not agreeing with this syllabus because it does not fit all the needs of children of special needs and they have suggested some important points to improve this curriculum. For

## Chapter Three: Data analysis and Results

instance, the necessary investment in tools to help children learn more easily, and to create syllabus and strategies for each category of children.

The analysis of the third section shows that the problem of speech disorder can be treated by focusing on the articulation points of sounds and that this is the most useful method to improve speech production of children with Apraxia of Speech.

The participants of my study strongly believe that Ahkam El-tajweed represents a promising strategy for children with Apraxia of Speech mainly because Tajweed rules of the Qur'an are meant to correct the pronunciation mechanisms and observe the airflow while uttering the sound.

This research has investigated the awareness of teachers about the disorder of Childhood Apraxia of Speech. Furthermore, the syllabus used in special classes is not appropriate and does not fit all the education needs of children. Additionally, the disorders mentioned do not cover all the education categories. Finally, I have suggested a new strategy to improve speech sound movement of Children with Apraxia of Speech using Ahkam El-tajweed and have checked the opinion of teachers dealing with children of Apraxia Speech. Ahkam El-tajweed help guide and control the pronunciation mechanism to preserve the tongue from making mistakes in pronouncing words and thus may constitute a successful strategy by which to correct and improve the pronunciation problems of children with Apraxia of Speech as it helps organize the pronunciation characteristics by controlling the source of production of sounds.

### **3. Recommendations**

Communication in the school environment presented particular challenges for children with speech sound disorder. One of these challenges for parents is the unconsciousness about their children's problem. Therefore, this is a source of further demands on institutions to maintain speech-language pathology service in Relizane classroom environment.

The restricted support available for children with speech sound disorder within the community and in schools illustrates limitations of awareness especially in Relizane environment. This is why we suggest developing an expended awareness of the particular

## Chapter Three: Data analysis and Results

challenges faced children with speech sound disorders and providing appropriate tools, also developing complimentary strategies to support the engagement of these pupils in learning.

The unsuitable syllabus of special classes is another challenge for teachers to enhance and improve learning for children with speech sound disorders.

Ahkam El-tajweed is new strategy that can be used in special classes to improve the sounds' pronunciation of children with Apraxia of Speech and it provides a good starting point for discussion and further research.

### **4. Limitations**

Corona virus restrictions hampered the experiment of Ahkam El-tajweed on Children with Apraxia of speech. Thus, only a few numbers of participants could be reached. The absence of speech-language pathologists in primary schools with whom I could discuss the potential effectiveness of Ahkam El-tajweed made the diagnosis of children with Apraxia of speech difficult.

### **Conclusion**

This chapter has presented the findings and its analysis. The questionnaire's results showed that Ahkam El-tajweed may positively affect the sounds' movement of children with Apraxia of Speech. The data gathered reveal that Ahkam El-tajweed guide and control the pronunciation mechanism to preserve the tongue from making mistakes in pronouncing words.

The fact that participants reported that the syllabus used in special classes is inappropriate reveal that further research is needed to highlight the deficiencies and to suggest new strategies to enhance this curriculum. This chapter closes with some recommendations that may help improve the pronunciation difficulties of Apraxic children in particular and to create a suitable environment for children with different disabilities in general.

### **General Conclusion**

This study was designed to know the opinion of teachers about the potential effectiveness of Ahkam El-tajweed on children with Apraxia of Speech and to examine the curriculum used to teach this category of children in special classes. This research is mainly descriptive using the qualitative approach to gather data. The questionnaire was divided into three sections to cover all the aspects of CAS disorder in Algeria; teachers of special classes, the appropriateness of curriculum, and the suggested treatment. The study was conducted in special class, Aisset Edir primary school–Relizane during the academic year 2019-2020. This study has shown that children with Apraxia of Speech face challenges in learning in the early years of schooling.

Analysis of questionnaire showed that the participants of my study strongly believe that Ahkam El-tajweed represents a promising strategy for children with Apraxia of Speech mainly because Tajweed rules of the Qur'an are meant to correct the pronunciation mechanisms and observe the airflow while uttering the sound. In addition to that, teachers are aware about the disorder of Childhood Apraxia of Speech. Despite their awareness, they face some obstacles such as the lack of materials and parents awareness. Teachers also reported that the curriculum unsuitable for special classes, there is therefore a need to develop strategies that might better meet the needs of those children in the educational environment. Therefore, the first hypothesis proposed that the strategies used by teachers are not properly modern and appropriate for this category of children is confirmed. The second hypothesis concerning the effectiveness of Ahkam EL-tajweed on the sounds' movement of Children with Apraxia of Speech is also confirmed.

Teachers believe that Ahkam El-tajweed may present a suitable guide to control the pronunciation mechanism and to preserve the tongue from making mistakes in pronouncing word, which may benefit Children with Apraxia of Speech to enhance their sounds' movement. This research also highlighted the main deficiencies in the syllabus used in special classes and have suggested few recommendations that might enhance and improve the educational environment for those children.

This study focused on the appropriateness of the curriculum used in special classes, the opinion of teachers CAS and the use of Ahkam El-tajweed and lacks fieldwork. This is why it is

hard to tell from this study if Ahkam El-tajweed will effectively improve speech disorders of Children with Apraxia of Speech and it provides a good starting point for discussion and further research and assess its effectiveness.

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## Appendix

Dear teachers,

You are kindly requested to answer this questionnaire. The latter will help us gain an understanding of the syllabus used to teach children with Apraxia of Speech and to know the teachers' view of using Ahkam El-tajweed on this category of children. The information you provide will contribute to the required fulfilment of a master dissertation at Mostaganem University.

Thank you for your interest and your collaboration.

**1. What was your University specialization?**

.....  
.....

**2. Did you train before teaching?**

Yes

No

**3. If yes, is it about children with language disorder?**

Yes

No

**4. How long have you been teaching?**

.....

**5. How you describe your teaching experience?**

Acceptable

Medium

Less than medium

**6. What are the difficulties that you faced when teaching this category of children?**

.....

**7. Do you put an annual plan of your teaching objectives for children with language disorders?**

Yes

No

**8. What are the common types of disabilities mentioned in the syllabus used?**

.....  
...

**9. Is Apraxia of Speech one of those difficulties mentioned in the curriculum?**

Yes

No

**10. Do you see that the curriculum used to teach these children appropriate for them?**

Yes

No

**11. What are your suggestions to improve the Ministry curriculum?**

.....  
.....  
.

**12. Is the problem of speech disorder treatable?**

Yes

No

**13. A lot of specialists indicate that Ahkam El-tajweed is a good way for reserving the tongue from pronunciation errors**

Yes

No

No idea

**14. Do you see that intensifying lessons is a good way to treat children with CAS?**

Yes

No

**15. Focusing on treating the aspects the articulation points is the connection between apraxia of speech and its treatment.**

Yes

No

**16. To what extent can Ahkam El-tajweed affects the sound's production of children with Apraxia of Speech.**

.....

.....

## الاستبيان

نرجو من حضرتكم الإجابة على الاستبيان التالي الذي سيساعدنا في الاطلاع على البرنامج الدراسي لأطفال أبرا كسيا اللغة ومعرفة رأي الأساتذة في استعمال أحكام التجويد على هذه العينة من الأطفال. كل المعلومات التي تقدمونها ستساعد في انجاز الدراسة المكتملة لمتطلبات نيل شهادة الماستر من جامعة مستغانم, كما أننا سنحرص على أن نستغل أجوبتكم للبحث العلمي فقط

نشكر حسن تفهمكم وتعاونكم.

### • ما هو تخصصك الجامعي؟

...

### • هل استفدت من فترة تكوين قبل الالتحاق بالتعليم؟

نعم

لا

### • إذا أجبت بنعم, فهل كان التكوين حول تعليم الأطفال ذوي الاضطرابات اللغوية؟

نعم

لا

### • ما هي المدة التي أمضيتها في التعليم؟

### • ما هي نسبة انتشار الاضطرابات اللغوية عند الأطفال؟

### • كيف تقيم مسارك المهني؟

مقبول

متوسط

دون المتوسط

- ما هي أهم الصعوبات التي تواجهونها في التعامل مع هذه الفئة؟

- هل تضع خطة سنوية تذكر فيها الأهداف التعليمية لفئة الأطفال ذوي الاضطرابات اللغوية؟

نعم

لا

- ما هي أهم أنواع الاضطرابات المندرجة ضمن البرنامج الدراسي؟

- هل يوجد برنامج خاص بأطفال أبراكسيا اللغة؟

نعم

لا

- هل ترى أن البرنامج الدراسي بصفة عامة ملائم؟

نعم

لا

- ما هي اقتراحاتكم لإصلاح البرنامج الدراسي؟

.....  
.....  
.....  
.....

- هل مشكل اضطرابات النطق قابل للعلاج؟

نعم

لا

- يرى الكثير من المتخصصين أن أحكام التجويد تحفظ اللسان من الخطأ

نعم

لا

لا أعلم

• هل ترى أن تكثيف الدروس وسيلة للوصول لعلاج اضطراب أبراكسيا اللغة؟

نعم

لا

• التركيز على تصحيح مخارج الحروف هو حلقة الوصل بين أبراكسيا اللغة وطرق علاجها

نعم

لا

• إلى أي مدى يمكن لأحكام التجويد أن تؤثر على كيفية النطق لدى عينة أطفال أبراكسيا اللغة؟

.....

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