CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter provides description of theoretical frame work of the study, focusing largely on the study problem and methodology.

1.1 Context of the Study

In learning L2 one of the most difficult area facing L2 learners is getting a better grasp of pronunciation. Compared with other branches of linguistics such as; syntax, morphology,…. over which learners can have a reasonable understanding, pronunciation poses a much difficult stance to learn. According to Avery & Ehrlich (1992) the nature of a foreign accent is determined to a large extent by the learners' L1. In other words, the sound system and the syllable structure of L1 have some influence on the production of the L2. In the same view, Swan & Smith (1987) suggest that the pronunciation errors made by L2 learners are considered not to be random attempts to produce unfamiliar sounds, but rather reflection of their L1 sound system. In 1953, Ulrish Weinreich wrote about interference as instances of deviation from the norms of other languages which occur in the speech of bilinguals as a result of their familiarity with more than one language. Consequently, this fits with the transferring of entire L1 system in the process of learning of L2. In other words that is of transferring phonemes and their variants, stress, rhythm patterns and their interaction with other phonemes. Similarity of sounds structure and distribution in learning occurs by simple transfer without any sort of difficulty, but when there is no similarity, an L2 learner finds difficulties.

It's natural to accept that an L1 speaker can easily recognize a foreign pronunciation or accent of non- L1 speakers. A foreign pronunciation or accent is the constant occurrence of the phonemic differences from the norm or standard of a language, in which L1 speakers can recognize as unfamiliar to their own sound system.

Due to the interference of L1 in L2, as mentioned above, Sudanese Arabic speaking learners of English as L2, are influenced by their L1 when they speak English Language. Therefore, naturally Sudanese Arabic learners of English language face many difficulties in pronouncing English words or connected speech. Different accents or pronunciation is natural phenomena of L1 interference, in which L1 speakers substitute or transfer phonemes and their variants, and their interaction with other phonemes in speaking L2.

1.2 Statement of the Problem

This study sets out to investigate the difficulties that face Sudanese Native Speakers of Arabic (SNSA), (i.e. who are teaching English at universities), in pronouncing English word or connected speech. In order to investigate these difficulties, David.W (1990) two notions of the second languages should be taken as a point departure for the clarification of SNSA difficulties. According to him, there are two situations in which learning of a second language or a foreign language typically takes place. The first is where the individual, usually but not inevitably a child, lives in an environment in which more than one language is used under conditions which lead that individual to become in some degree bilingual. In contrast, the other situation is one in which the learning is tutored, typically as a part of the curriculum of an educational establishment. This is typically foreign language learning of schools and colleges.

Sudanese Speakers of Arabic, who are learning English as a foreign language (EFL), are influenced by their L1, when speaking English language. As a result of this, most of them face difficulties in pronouncing English words or connected speech. In this instance, substitution takes place as a result of L1 interference. This may provide reasonable scholarly investigation and comparison of the two languages. In such observation of L2 pronunciation difficulty, Contrastive Analysis (CA) is needed to provide insights into the differences and similarities between L1

and L2 phonological characteristics. In this regard, Sudanese learners often find difficulties in pronouncing the sounds that do not exist in their language such as: consonant sounds; / p/, / v/, / ʒ /, / ʧ /, / ŋ /, and vowel sounds, pure vowel sounds and diphthongs. Another difficulty can also be found within some sounds exist in Modern Standard Arabic (MSA) and do not have existence in Sudanese Arabic (SA) such as: / θ, ð, q, ðˀ /. The result of these difficulties of not recognizing some sounds from the two languages, this may give rise to difficulty in phonological constrains (i.e. phonemes and their variants, and their interaction with the other phonemes, where, in which substitution takes place. In these cases a learner might mispronounce a sound in a foreign language because there is no comparable sound exists in the phonemic inventory of his language, Lado (1959). In this matter learners intend to substitute a sound that does not exist in their language with another one has mostly the same features. Therefore, once there differences between the two sound systems of English and Arabic languages, so we predict some difficulties in the realization of these sounds in connected speech.

1.3 Objectives of the Study

This research aims at investigating the difficulties encountered by Sudanese native speakers of Arabic, in pronouncing English language. In order to devote a greater care to pronunciation that is experienced by English teaching staff at Sudanese universities. The study will attempt to investigate the extent to which phonological characteristics of SNSA interfere when the learners speak English or interact with L1 speakers of English. The process of describing and analyzing the difficulties of SNSA when pronouncing English, in both languages phonological systems will involve the following:

1. Investigating the extent to which the phonological characteristics of Sudanese Arabic interfere with English language.
2. Investigating the range of differences between Sudanese Arabic and English languages.
3. Investigating the most widely encountered difficulties of SNSA's pronunciation of English language.
4. Identifying, describing and analyzing the linguistic causes of pronunciation difficulties of SNSA.

1.4 Questions of the Study

The study will try to find answers to the following questions:

1. What are the phonological contexts where do Sudanese learners (SLs) substitute English Alveolar sounds / t / ,/ d /, / s / and / z / with Arabic emphatic sounds / $t^{?}$ / ,/ $d^{?}$ /, / $s^{?}$ / and / $z^{?}$ / respectively?
2. To what extent do SLs have difficulties in pronouncing sound clusters?
3. Under what condition do SLs of English pronounce the English vowel letter 'o' and pronounce the English diphthong /ei/ as /e/ or /e:/ ?
4. What are the possible difficulties that face SLs in pronouncing English connected speech (i.e. assimilation, elision and weak forms)?

1.5 Hypotheses of the Study

In order to investigate the difficulties, the above questions have been put into hypothetical statements.

1. SLs of English substitute /t/,/ d /, /s/, and /z/ with Arabic emphatic sounds /$t^{?}$/, /$d^{?}$/, /$s^{?}$/, and /$z^{?}$/ SLs of English have difficulties in pronouncing clusters.

2. SLs of English have difficulties in pronouncing English consonants cluster.
3. SLs of English tend to pronounce the English vowel letters ‘o’ as / ɔ:/ instead /əʊ/ and /e/ instead of /ə/ and /ɒ/ or vice versa, and English diphthongs /ei / replaced by /e/ or /e:/.
4. SLs of English face difficulty in English connected speech such as; assimilation, weak forms and elision.

1.6 The Significance of the Study

The significant of the present study arises from its attempts to highlight those areas that potentially pose difficulty to SNSA. It will investigate for the first time the difficulties of pronunciation among who are teaching English at universities. The study also will touch some difficulties of pronouncing Arabic sounds by SNSA, in order to help in giving full understanding of these difficulties which are faced by SLs.

The study also acquired significance of being one of the few studies carried out in this area targeting more specifically tutors upholding the job of teaching English language at tertiary level. The study is however, regarded as an attempt to continue the previous studies conducted in this area. Moreover, the study will keep link with research conducted in this realm such as (*see e.g*. Kharma and Hjjaj 1989, *Errors in English among Arabic Speakers: Analysis and Remedy* – ,Mohamed Zomrawi Mohmed Ali, 2004 *Awareness of Pronunciation Among Sudanese EFL Students at Tertiary Level: the Case of SUST*-, Tajeldin Ali Ezzeldin 2011, *Speech Intelligibility Problems of Sudanese Learners of English: An Experimental Approach,* Sana Izzadin Hassan 2012, *Pronunciation problems of Sudanese Learners of English*). These studies have adopted students as the samples or the case study at tertiary level. Moreover, most of these studies used inappropriate tool

to collect data. In that some researchers have applied written teats and questionnaires which run counter to the nature of the problem in question. Unlike, the preceding studies, the present study demonstrates most of the phonological features by comparing the two languages, English and SA languages but it gives some light on MSA. Therefore, the way of comparing of three languages as; English vs. MSA, MSA vs. the vernacular SA, and English vs. SA is considered an important aspect of this study.

1.7 Methodology

The researcher will use two major methods in this study: descriptive and analytical. A descriptive method is used to describe what exists at the present. The main characteristic of this method is that the researcher has no any control over the variables. He is only concerned about reporting what has happened or what is happening. On the other hand, analytical method attempts to describe and explain why certain situation exist, by using facts or information already available, and analyzing these to make a critical evaluation of the material gathered.

1.8 The Limits of the Study

The study is confined only to the investigation of English pronunciation difficulty that faces Sudanese native speakers of Arabic (SNSA). The study will consider the pronunciation difficulties encountered by SNSA, who are teaching English language at tertiary level. The observation study consists of some teachers of English at some universities in Khartoum State.

1.9 Summary of the chapter

This chapter has provided description of the frame work or the plan of the study, in which the researcher displayed the statement of the problem, objectives, and the

method of collecting the necessary data. The next chapter will review the related literature.

CHAPTER TWO

LITERATURE REVIEW AND PREVIOUS STUDIES

2.0 Introduction

Arabic and English languages are two distinct languages. They are from two different families, i.e.; Semitic and Germanic, respectively. Since there are so many differences exist in a wide range in all linguistics elements. In learning one of these two languages as L2, learners will face some difficulties. These difficulties are based upon the amount of differences and similarities between L1 and L2 structures. Whitman (1970) mentions two kinds of language transfer, negative and positive transfer. Negative transfer take place when the structures of two given languages are different, while positive transfer will occur when the two structures are similar. Accordingly, a negative transfer is likely to occur.

In order to find out the differences between the two languages in this connection, Contrastive Analysis Hypothesis (CAH) can be drawn upon to clarify the whole point. CAH is the method of comparing two languages or more. It is structuralism which was expounded by Bloomfield (1933), elaborated by Fries (1945) and Lado (1957). Structuralists assume that any language has its own structure which can be documented and compared with another language when this language is under focus to be learned. CA was introduced when the structural linguistics and behavioral psychology were dominant in the sixties. The form of CA was originated from Lado's book "*Linguistics across Culture*" (1957). He made one of the strongest claim of CA in the preface: "the plan of the book rests on the assumption that we can predict or describe the patterns that will cause difficulty in learning, and those that will not cause difficulty, by comparing systematically the language and the culture to be learned with the native language and culture of the student". He continues, "In the comparison between native and foreign languages,

lies the key to ease or difficulty in foreign language learning…….those elements that are similar to the learner's native language will be simple for him, and those elements are different will be difficult". James (1955) argues that CA is concerned with the way in which L1 form affects L2 form in the individual. A very close statement which is claimed by Lado (1957) and Corder (1971), to James' argument, is that individual tends to transfer the whole features of their L1 into the learning of L2. Lado (1957) states that individual tends to transfer the forms and meanings of their native language and culture to the foreign language and culture. Another suggestion made by Ellis (1965) is that, psychological foundation of CA is transfer theory, substituting the L1 for the prior of learning and the L2 for the subsequent learning.

2.1 Speech sounds.

Speech sounds are generally classified into two categories i.e., vowels and consonants. Ward (1972) in his book "The phonetics of English", mentions the main difference between the two categories (vowels and consonants).According to him, vowels are sounds which carry power in ordinary speech. A vowel is voiced sound in the pronunciation in which the air passes through the mouth in a continuous stream without any obstruction. While a consonant is a sound accompanied or unaccompanied by voice, in the pronunciation of which there. It's either partial or complete obstruction which prevents the air from passing freely from the mouth.

Here it's necessary to begin when comparing two sound systems with identifying and explaining of the phonetic bases of sounds classification rather than phonological description of sounds. The purpose of doing so is to find out which sounds are in SA and not exist in English and vice versa, and which sounds exist in

both. This will give us a full understanding about the nature of similarities and differences. Therefore, we can predict the difficulty that faces SA learners of English. The criteria of comparing the two are; place and manner of articulations and the state of vocal cords (voicing).

2.1.1 English Sound system

2.1.1.1 English consonant sounds

English language has 24 consonant sounds, represented by 21 consonant letters. And there is a mismatch between sounds and letters: sometimes two letters combine to represent one sound, so that, ‘s’ + ‘h’ combine to represent the sound /ʃ/ and ‘t’ + ‘h’ combine for /θ/or / ð/. So the number of consonant letters in English alphabet is irrelevant when considering the number of consonant sounds (phonemes) in English. They are; six plosives /p b, t d, k g/, nine fricatives /f v, θ ð, s z ʃ ʒ, h/, two affricates /tʃ dʒ /, three nasals /m ,n , ŋ/, one lateral /l/, one trill /r/, and two semivowels /w j r/.

Table (2-1) English consonant sounds adopted from (IPA 2005)

Place of Articulations	**Manner of Articulations**															
	Stops & Plosives		**Fricatives**		**Affricates**		**Nasals**		**Retroflex Approx.**		**Laterals**		**Semi-vowels approx.**	
	V-	**V+**	**V-**	**V+**	**V-**	**V+**	**V-**	**V+**	**V-**	**V+**	**V-**	**V+**	**V-**	**V+**
Bilabial	p	b					-	m					-	w
Labio-dental			f	v										
Inter-dental			θ	ð										
Alveolar	t	d	s	z			-	n		r		l		
Plato-alveolar			ʃ	ʒ	ʧ	ʤ							-	j
Velar	k	g					-	ŋ						
Glottal	-		-	h										

2.1.1.1.1 Plosive sounds (stops) /p b, t d, k g/.

A plosive or stop consonant is produced by blocking the air passage in the mouth. The air from the lungs is compressed and suddenly released this will cause explosion. The /p b, t d, k g/ are articulated by the two lips, tongue tip against alveolar ridge and tongue back against soft palate, respectively.

- ***Bilabial plosives,* /p b/.**

  For /p, b/ the air passage in the mouth is closed by the two lips, and the soft palate is raised to shut off the nasal passage (cavity). The air from the lungs is compressed (obstructed), and when the lips are separated, it is released with explosion. When the air from the lungs passes through the vocal cords, it finds the vocal cords are held a part, wide-open, causes no vibration for /p/, causes vibration for /b/.

- ***Alveolar plosives*, /t d /.**

  For /t, d/ the air passage in the mouth is closed by the tip of the tongue making a contact with the teeth ridge and the rims of the tongue touching the upper side teeth. The soft palate is raised up to shut off the nasal passage. The air from the lungs is compressed, and when the tip of the tongue is suddenly removed from the teeth ridge (alveolar ridge), the air escapes with explosion. When the air from the lungs passes through the vocal cords, it finds the vocal cords are held a part, wide-open, causes no vibration for /t/, and causes vibration for /d/.

- ***Velar plosives,* /k g/.**

  For /k, g/ the air passage in the mouth closed completely by the back of the tongue making a contact with the soft palate. The soft palate is raised up to shut off the nasal passage. The air from the lungs is compressed, and when the tongue is suddenly removed from the soft palate. The air escapes with

explosion. When the air from the lungs passes through the vocal cords, it finds the vocal cords are held a part, wide-open, causes no vibration for /k/ but causes vibration for /g/.

A plosive sound can be pronounced in different ways according to its context (depending on where it is in a word and what sound around it). Accordingly below are the different realizations of stops as; initial, medial and final positions.

According to Roach (2009) all six plosives can occur at initial, medial or final positions of a word. At the closure phase they take place silently but during the hold phase there is no voicing in /p,t,k/; in /b,d,g/ there is normally little voicing – it begins only before the release. The release of /p,t,k/ is followed by audible plosion, that is a burst of noise. There is then, in the post-release phase a period during which air escapes through the vocal folds, making a sound like /h/. This is called aspiration. In the realization of /b,d,g/ weak ploison will take place and this happens at about the same time as the beginning of voicing.

- In initial position /b, d, g/ cannot be preceded by any consonant but /p, t, k/ may be preceded by /s/and they are unaspirated.
- In medial position, the pronunciation of all six plosives depends to some extent on whether the syllables preceding and following the plosives are stressed. In general we can say that a medial plosive may have the characteristics either of final or initial plosives.
- Final /b,d,g/ normally have a little voicing; if there is voicing, it is at the beginning of the compression phase; /p,t,k/ are always voiceless. The plosion following the release of /p,t,k/ and /b,d,g/ is very weak and often not audible. The vowels preceding /p,t,k/ are much shorter. The shortening effect of /p,t,k/ is most noticeable when the vowels is one of the long vowels

or diphthongs. All the three may also be glottally reinforced at the ends of words. See table (2-2) below, examples and phonological rules for plosives.

Table (2-2): Plosives Allophones. Adopted from (Lago & Bittner 2006)

Voiceless			
Allophones + position	/p/	/t/	/k/
+Aspirated [C^{h}] at initial position	'pan' [p^{h}æn]	'top' [t^{h}ɔp]	'cap' [k^{h} æp]
After 's' Unaspirated [C]	'spot'[spɔtˀ]	'stop'[stɔpˀ]	'scan' [skæn]
/p, t, k/ +v+nasal [C^{n}]	'open' [ˌəup^{n}n̩]]	'eaten'[ˈi:ʔt^{n} n̩]	'taken'[t^{h}eik^{n} n̩]
Unreleased in syllabic position before a consonant [Cˀ]	'hope' [həupˀ]	'coat' [k^{h}əutˀ]	'cake'[k^{h}eikˀ]
Glottal reinforcement [ʔ]	'pop' [p^{h}ɔʔp]	'cotton' [k^{h}ɔʔt n̩]	'doctor'[dɔʔkt^{h} ə]
Intervocalic [ɾ] Tap/Flap voiced	NA	'forty' [fɔɾi:]	NA
Voiced			
Allophonic position	/b/	/d/	/g/
unaspirated [C] at initial and medial positions	'ban' [bæn]	'drop' [drɔp]	'gap' [gæp]
Unreleased in Syllabic-final position before a consonant [Cˀ]	'absent' [æbˀsəntˀ]	'bad time' [bædˀ tˈ^{h}aim]	'big tree' [bigˀtri:]
Final released [C] *(when emphatic)*	'nab' [næb]	'mad' [mæd]	'leg' [leg]
Devoiced [C̥] or [C̊] before a voiceless consonant or silence	'Arab talent' [ærəb̥ t^{h}ælənt^{ˀ}]	'bad tea' [bæd̥ ti:]	'take the bag' [teik ðə bæg̊]
Dental [C̪] before a dental sound.	NA	'add this' [æd̪ ðis]	NA

*Note: 'b' *is silent in as in 'limb', 'dumb', 'climb', 'lamb' and etc*.

Velar /k/ and /g/ become palatal [c] and [ɟ] as in in 'key' [c^{h}i:] and 'car' [k̟a:] respectively, when they are followed by a front vowel. They are pronounced as [k]

and [g] in all contexts (Mc Mahon 2002). Stops /p,t,k/ work as epenthesis, when a homorganic voiceless stop may occur after /m/ a nasal before a voiceless fricative followed by an unstressed vowel in the same word. The insertion of voiceless stops will take place in the middle of words between nasal and fricative ‘ something’, /sʌmθɪŋ/, [sʌm **p** θɪŋ], ‘ youngester’ / jʌŋstəɾ/, [jʌŋ **k** stəɾ] ‘prince’,/prɪns/, [pɹɪns], Ladefoged (2014).

2.1.1.1.2 Fricative sounds /f v, θ ð, s z ʃ ʒ, h/

Fricatives consonants are produced, by bringing two organs so near to each other that the air has to pass through a narrow passage and come out with audible friction. The /f v, θ ð, s z, ʃ ʒ, h/ are articulated by; lower lip against upper teeth /f v/, tongue tip between the upper and the lower teeth, /θ ð/, tongue blade against alveolar ridge, /s,z/, tongue front against hard palate, /ʃ,ʒ/, and by the glottis /h/.

- **labio-dental fricative /f, v/**

  For /f, v/ the lower lip is brought very close to the edge with the upper teeth, making a light contact with it. The soft palate is raised up closing the nasal cavity. The air escapes through the mouth between the lower lip and the upper teeth a narrow passage is built up that causes friction. The vocal cords are vibrated in the production of /f/ because the air passes through a narrow open, and un-vibrated in the production /v/.

- **Inter-dental fricative /θ, ð/**

  For **/θ, ð/** The tip of the tongue is brought very near to the edge of the upper teeth to make a light contact, and the soft palate is raised up to close the nasal cavity. The air escapes through between the tip and the upper teeth produces audible friction. When the air passes through the vocal cords and the vocal cords are narrow-open, vibration will take place in the production

of /ð/.but no vibration will take place in production of /θ/ because they the air passes through a wide-open.

- **Alveolar fricatives /s, z/**

  For /s, z/ the tip and the blade of the tongue are brought very near to the teeth ridge and the air comes out through a narrow groove along the middle of the tongue with audible friction. The soft palate is raised up closing the nasal cavity. When the air passes through the vocal cords and the vocal cords are narrow-open, vibration will take place in the production of /ð/.but no vibration will take place in production of /θ/ because they the air passes through a wide-open.

- **Plato-alveolar fricatives /ʃ, ʒ/**

  For /ʃ, 3/ the tip and the blade of the tongue are brought very near to the teeth ridge, and the front of the tongue is also raised up to the hard palate. The air passes through the narrow passage with audible friction. The soft palate is raised up closing the nasal cavity. When the air passes through the vocal cords and the vocal cords are narrow-open, vibration will take place in the production of /ʒ/. But no vibration will take place in production of /ʃ/ because they the air passes through a wide-open.

- **Glottal Fricative /h/.**

  This sound is produced by the glottis, the area of the wind pipe behind the tongue, in which the air flows out through a tightening glottis which causes friction. The part of the windpipe below the tongue which contains the vocal cords, creating a narrow opening through which the air passes before entering the mouth, this narrow opening make the vocal cords vibrate.

Fricatives like stops divided into; fortis and lenis. The fortis (voiceless) fricatives are said to be articulated with greater force than the lenis (voiced), and their

friction noise is louder. In realization, the lenis fricatives have very little or no voicing in initial and final positions, but voiced when they occur between voiced sounds in such examples as in; 'ice and eyes'. The fricative /ʃ/ is a common and widely distributed phoneme, but /ʒ/ is not. All the other fricatives /f, v, θ, ð, s, z, h/ can be found in initial, medial and final positions. In the case of /ʒ/, however, the distribution is much more limited. Very few English words begin with /ʒ/ (most of them have come into the language comparatively recently from French) and not many end with this consonant. Only medially, in words such as '*measure*' /meʒə/, '*usual*' /ju:ʒuəl/ is it found at all commonly Roach (2009).

Table (2-4) below shows examples and phonological rules of voiced fricatives which effected by the consonant before or silent that is; /f, v, θ, ð, s, z/ and in the case of /h/ becomes glottal fricative when it's between voiced segments. Another case of /h/ mentioned by Roach, that 'h' always has the quality of the vowel it precedes as in; hit, hot, hut, etc. /h/ is omitted in unstressed pronunciations of the words 'her', 'he', 'him', 'his' and the auxiliary 'have', 'has', 'had', although few are aware that they do this. There are two rather uncommon sounds that need to be introduced; since they are said to have some association with 'h', which begin with graphemically with '*wh*' in such words (e.g. *'which', 'why', 'whip', 'whale'*) most BBC speakers pronounce the initial sound in these words as [w]. But there are some who pronounce the sound used by most American and Scottish speakers, a *voiceless* fricative with the same place and manner of articulations, when they are speaking clearly or emphatically, the allophonic symbol is [ʍ] in such words

Table (2-3). Fricatives allophones

Phonemes	Allophones + position	Allophonic transcription Examples
/v/	devoiced before voiceless consonant or silent [v̥]	'have to' [hæv̥ tʰə]
/ð/	devoiced before voiceless consonant or silent [ð̥]	'neither'[ni:ð̥ə]
/z/	devoiced before voiceless consonant or silent [z̥]	'has to'[hæz̥ tʰə]
/ʒ/	devoiced before voiceless consonant or silent [ʒ̊]	'collage'[kʰəˈla: ʒ̊]
/h/	between voiced segment, becomes glottal [ɦ]	' ahead' [əˈɦed̥]

2.1.1.1.3 Affricates /ʧ, ʤ/

Affricates are produced by a complete closure of the air passage and slow release of the air causes friction. The English Plato-alveolar /ʧ / and /ʤ / are treated as single phonemes (sounds). In the production of /ʧ, ʤ / the air passage in the mouth is completely closed by a contact between the tip and the blade of the tongue and the teeth ridge, the rims of the tongue making a contact with the upper teeth, the front of the tongue is also raised up to touch the hard palate this block the air stream. At the time the soft palate is raised up closing the nasal cavity, so there is no way for the air to escape causes obstruction then there a slow release of the air causes friction because the escapes through a narrow passage between the front of the tongue and hard palate and between the blade of the tongue and the teeth ridge. During this the vocal cords are apart, wide-open, for /ʧ / causes no vibration, but are narrow-open for /ʤ/ causes vibration.

/ʧ/ is slightly aspirated in initial position When /ʧ/ is final in the syllable it has the effect of shortening a preceding vowel Roach (2009). See table (2-5) below:

Table (2-4): Affricates Allophones

Phonemes	Allophones + position	Allophonic transcription Examples
/ tʃ/	glottal reinforcement in syllable-final position before voiceless consonant or silent	'catching' [kæʔtʃɪŋ]
/dʒ/	devoiced before voiceless consonant or silent [d̥ʒ̊]	'cage' [k^h eid̥ʒ̊]

2.1.1.1.4 Nasals /m, n, ŋ/

In the production of nasal sounds, the only way for the air to escape is through the nose. Because there is a complete closure inside the moth, the moth is closed, so thee air escape through the nose during the time the soft palate is lowered down. The vocal cords are narrow-open, vibration will take place for these sounds.

- **Bilabial nasal /m/**

  For /m/ the mouth passage is completely closed by the two lips. Once the air finds the mouth passage is blocked, immediately it will return, during this time the soft palate lowered to let the air escapes through the nose.

- **Alveolar Nasal /n/**

  For /n/ the tip of the tongue makes a closure with the teeth ridge and the rims of the tongue are against the upper sides teeth, so there is no way for the air to escape except through the nose. During this time and the soft palate lowered to let the air escapes through the nose.

- **Velar nasal /ŋ/**

  For /**ŋ**/ the back of the tongue makes a closure with the soft palate. During this contact the air immediately escapes through the nose, because the soft palate lowered down to let the air escape through the nose.

/m, n/ occur freely in initial position as well as medial and final positions. /ŋ/ never occurs in initial position and it is the only English consonant that cannot occur in initial position. In medial position /ŋ/ occurs quite frequently when we ‘n’ followed by ‘k’ and ‘g’ in the middle of a word in such words; ‘link’ /liŋk/, ‘finger’ /fiŋgə/, ‘k’ and ‘g’ always be pronounced and this not always happen ‘g’. however in some words with ‘ng’, ‘g’ not always be pronounced in such as ‘longer’, ‘singer’ ,Roach (2009). The different is that the way of their morphological structure, See table (2-6) below.

Table (2-5): Nasals allophones

/m/ allophones + position	**/n/ allophones+ position**	**/ ŋ/ allophones + position**
medial before ‘-f’ becomes labiodental as in ‘comfort’ [ˈkʰʌɱfət]	becomes dental before /θ/and /ð/ as in, ‘tenth’ [ˈtʰ en̪θ]	syllabic consonant/ final syllabic as in ‘broken key’ [brəʊkŋ kiː]
syllabic consonant [m̩] as in ‘bottom’ [ˈbɒtm̩]	syllabic consonant [n̩] as in, ‘mutton’ [ˈmʌtn̩]	
	becomes plato-alveolar before [n̠] /tʃ, dʒ/ as in ‘winch’ [wi n̠tʃ]	
	becomes bilabial [m] before bilabial plosives as in ‘manpower’ [m æmpʰuə]	

*Note: /ŋ/ as syllabic consonant where the nasal consonant occurs between velar consonant (/n/ or any could be substituted for /ŋ/) Roach (2009). In addition to this Ladefoged (2014) says “nasals are syllabic at the end of a word when immediately after an obstruent- A consonant that is produced with a partial or complete blockage of the airflow from the lungs through the nose or mouth).

2.1.1.1.5 Approximant

Martine-Celdran (2004:201) in his article points to Peter Ladefoged (1964), who coined the term approximant in the 1960s. Approximants are speech sounds that involve the articulators approaching each other but not narrowly enough nor with enough articulatory precision to create turbulent airflow. Therefore, approximants fall between fricatives, which do produce a turbulent airstream, and vowels, which produce no turbulence. This class of sound includes lateral approximants like [l] as in '*less*', drill approximants like [r] as in '*rest*', and semivowels like [w] and [j] as in '*west*' and '*yes*', respectively.

- **Alveolar Approximant /l, r/**

  This includes the two sounds /l/ and /r/, both of them; vibration takes place, because the vocal cords are narrow open during the air passes through.

  - **Alveolar lateral /l/**

  For a lateral consonant there is a closure in the middle and the air comes out through the sides. In other words, a lateral consonant is in which the passage of the air through the mouth doesn't pass in the usual way along the center of the tongue but through the sides of the tongue.

  For the English lateral /l/, the tip of the tongue makes a contact with the teeth ridge but the sides of the tongue are lowered, so that there is a free passage for the air to escapes on the sides. The vocal cords are in vibration, because the air passes through a narrow-open cause vibration.

  - **Alveolar drill /r/.**

  The consonant variety of RP., /r/ is produced by the raising of the tip of the tongue towards the back of the teeth ridge a frequent touch takes place, i.e. the air escapes though the frequent hitting of the tongue tip against alveolar ridge.

- **Semi-vowels Approximant:**

  A semi-vowel is a vowel glide to a more prominent sound in the same syllable English /j/ is a glide from /i:/ and /w/ a glide from /u:/. Semi-vowel is treated as consonant because they take normally associated with consonants.

  - **Post- Alveolar semi vowel /j/**

    For /j/ there is a quick tongue movement from a position from close and half-close to the position of the following vowel. The tips are neutral or spread.

  - **Bilabial semi vowel /w/**

    In producing /w/, the lips are certainly approximated, though not enough to cause friction or obstruct the airflow; but you should be able to feel that the back of your tongue is also bunched up. This additional articulation takes place at the velum, so that /w/ is not simply a labial sound, but a labial-velar one.

Table (2-6) shows the realization of approximant sounds in different contexts.

Table (2-6). Approximant allophones

Phonemes	**Allophones + position**	**Allophonic transcription Examples**
/l/	[ɬ] velarized (*dark*) before a consonant or silent, except /j/	
	[l̥] becomes devoiced after a aspirated /p/ and /k/	
	[l̩] Final syllabic/ syllabic consonant	
	[l̪] becomes dental before /θ/ and /ð/	
/r/	[ɻ] becomes retroflex in final position (SAE)	
	[ɾ] becomes apicoalveolar tap in linking ‘r’ or after /θ/ and /ð/	

	[ɹ̥] becomes devoiced after aspirated /p/ /t/ /k/	
/w/	[ʍ] becomes devoiced after aspirated /p/ /t/ /k/	
	[ʍ] becomes labio-velar fricative voiceless in initial	
/j/	[ç] becomes fricative voiceless after aspirated /p/, /t/ and /k/ and /hj/	

2.1.1.2 Vowel sounds

In the production of vowels the air comes out freely through the mouth. There is no closure of the air-passage and no narrowing of the passage that could cause audible friction. All other sounds are called consonants.

In the production of vowels the air comes out from the lungs in a continuous stream through the mouth, there is no closure of the air passage and no narrowing that that would cause friction.

The soft palate is raised to close the nasal cavity for oral vowels; all English vowels are oral. If the soft palate is lowered, we get nasalized vowels, which are used in some other languages.

Vowels are made by voiced air passing through different mouth-shape; the differences in the shape of the mouth are caused by different position of the tongue and of the lips.

The classification of vowel sounds can be according to:

- Any part of the tongue can be raised towards the roof of the mouth, and there can be different degrees of the raising of the tongue, that is, which part of the tongue that is raised up is it; (front, center and back).

- According to the degree of rising of the tongue, vowels are divided into four categories, that is; close (as near as possible to the roof of the mouth without causing friction or making a closure), half-close, half-open and open (as low as possible).
- The state of the tongue, whether it is lax (in rest) or tense.
- The shape of the lips; whether they are, spread, neutral (un-spread), rounded or more rounded.

2.2.1.2.3 English vowel sounds

There are twenty distinct vowels in British Received Pronunciation (R.P). Receive pronunciation or a form of English socially acceptable in all parts of the country, the twenty vowels are:

- Pure vowel sounds:

In English pure vowel sounds are 12 in number; this includes short vowels and long vowels:

Short vowels /i, e, æ, ə, ʌ, ɔ, u/ for examples as in 'bit'/bit/, 'bet' /bet/'bad' /b**æ**d/,'account' /əkaunt/, 'bus' /b**ʌ**s/, 'hot' /h**ɔ**t/,'book' /buk/, respectively.

Long vowels are , /i:, a:, ɜ:, ɔ:, u:/ represented in the these examples; 'these'/**ð**i:s/, 'card' /card/, 'serve' /s**ɜ**:v/; 'force' /f**ɔ**:s/; 'tube' /tju:b/.

- The description of English pure vowels sounds, Roach (2004)

The English pure vowel sounds are divided into three categories as follows:

1. Front vowel sounds. /i:, i, e, æ/

-/i:/ **as in sit, kid**

For /i/ the hinder part of the front of the tongue is raised to a position between close and half-close; the lips spread and the tongue is lax.

-/e/ as in set, bet

In /e/ vowel sound, the front of the tongue is raised to a position between half-close and half-open the lips are closely spread (unspread) and he tongue is is tense this vowel is doesn't occur in the final position.

-/æ/ as in man, land

For the vowel/**æ**/ the front of the tongue is slightly below the half-open position and the lips are in the neutral unspread. /**æ**/ doesn't occur in the final position.

2. Central vowel sounds. /ɜː, **ʌ**, ə, aː/

-/ʌ/ as in cut, bus

British R.P. /**ʌ**/ is a central vowel; between open and half-open the lips are neutral / unspread. This vowel doesn’t occur in final position.

-/ɜː/ as in first, firm

/**ɜ**ː/ is a central vowel between half-close and half-open, the lips being neutral/ unspread it is a long vowel, but the length is reduced before voiceless consonants.

-/ə/ as in ago, account

The R.P. /**ə**/ is a central vowel with neutral/ unspread lips position. The center of the tongue rises between half-open and half-close in the non-final position and nearly half-open in the final position. In R.P. /**ə**/ is very frequent vowel, occurring only in unaccented syllables.

3. **The Back vowels / ɔ, ɔː, u, uː/**

-/aː/ **as in arm, calm**

/a:/ is a long vowel produced by the raising the back of the tongue to the open position; the lips are unrounded with fully open of the mouth.

-/ɔ/ as in hot, god

For /**ɔ**/ is a back vowel fully open, articulated with rounded lips /**ɔ**/ is a short vowel doesn't occurred in final position.

-/ɔ:/ as in horse, force

/ɔ:/ is a back vowel between half-close and half-open, articulated with rounded lips

-/u/ as in book, look

/u/ is a back vowel just above half-close, articulated with more rounded lips.

-/u:/ as in foot, hood

/u/ is a back long vowel is fully close, articulated with more rounded lips.

- Diphthongs

Sounds, which consist of a movement or glide from one vowel to another are called diphthongs. A vowel, which remains constant and doesn't glide is called pure vowel. The total number of the diphthongs is eight, classified according to the vowel glide to as follows, /e, a. glide to /i/ , /a/ glide to /u/, and /i, e, u/ glide to /ə/.

- The description of English diphthongs

1. Glide to /ɪ/, /ei/, /aɪ/. /ɔɪ/.

- **/ei/ as in gate, age**

This diphthong begins slightly below the half-close position and moves towards /i/, the lips are spread.

- **/aɪ/ as in five, sight**

In the production of /**aɪ**/; the starting is a glide from open position towards /i/. The lips change from unspread to a loosely spread position.

- **/ɔɪ/ as in boy, boil**

The glide for this diphthong begins near the back half-open position and moves in the direction of /i/. The lips are unrounded at the beginning and unspread at the end.

2. **Glide to /u/,** /**əu**, **au**/

- **/əu/ as in home, bold**

This diphthong begins from the central position, just below half-closed and moves in the direction of /u/. The lips in the beginning are unspread and more rounded towards the ends.

- /**au/ as in about, house**

The glide from this diphthong begins between the front and the back open positions and proceeds in the direction of /u/. The lips are unspread in the beginning.

3. Glide to /ə/, /ɪə, eə, ʊə/

- **/ɪə/ as in here, clear**

The glide begins form /**ɪ**/ just above half-close front toward central /**ə**/. The lips are unspread.

- **/eə/ as in air, chair**

The glide of this diphthong begins from /**e**/ front between half-close and half-open, and moves towards central /**ə**/ central vowel. The lips are unspread.

- **/uə/ as in poor, tour**

The glide from /**u**/ begins from back just above half-close position towards /**ə**/ central. The lips are unrounded at the beginning and unspread at the end.

Ladefoged (2014) in his book '*A course in Phonetics*', he mentions rules for English vowel allophones as in the following points:

- Other thing being equal, a given vowel is longest in an open syllable, next longest in a syllable closed by a voiced consonant, and shortest in a syllable closed by a voiceless consonant.
- Other things being equal, vowels are longer in stressed syllables.
- Other things being equal, vowels are longest in monosyllabic words, next longest in words with two syllables, and shortest in words with more than two syllables.
- A reduced Vowel may be voiceless when after a voiceless stop (and before a voiceless stop).
- Vowels are nasalized in syllables closed by a nasal consonant.
- Vowels are retracted before syllable final, velarized (dark) [ɬ].

2.1.1.3 English syllabic structure and function:

According to Oxford Dictionaries, syllable is a unit of pronunciation having one vowel sound, forming the whole or a part of a word. No phonetician has succeeded so far in giving an adequate explanation of what the syllable is. Roach (2009) described a syllable as consisting of a center (nucleus) which has no obstruction to airflow and which sound comparatively loud; before (onset) and after (coda) this center there will be greater obstruction to airflow and/or less loud sound. The nucleus + coda are called rhyme. If in a syllable there is along vowel

or diphthong or more than one consonant in the rhyme, the syllable is called heavy or long, and e.g., ‘beauty’ and ‘attempt’ will be stressed. While a syllable of a short vowel is called light or short, is normally unstressed in English language.

Syllable formation in English is based on the phonological opposition vowel-consonant. Vowels are usually syllabic while consonants are not with the exceptions of [l], [m], [n], which become syllabic in a final position preceded by a voiced consonant (see tables (2-6) and (2-7)). A syllable in English can have only one vowel sound short or long all the vowel sounds are applicable except /u/, as in ‘eye’ /ai/ or the first syllable of the word ‘ago’ / ə ˈgəu/ which is called by Roach minimum syllable. The onset in English one, two or three consonants are permissible, it means the maximum number of consonants sounds are three. While in the coda four consonants sounds are allowable. If there is a sequence of two or more consonants sound this sequence is called cluster.

Cluster in English:

In linguistics a consonant cluster is a group of two or more consonant sounds that come before (onset), after (coda), or between (medial) vowels. English can actually have larger onset clusters, as in the words ‘**str**ess’ and ‘**spl**at’, consisting of three initial consonants (CCC). The phonotactics of these larger onset clusters is not too difficult to describe. The first consonant must always be /s/, followed by one of the voiceless stops (/p/, /t/, /k/) and a liquid or glide (/l/, /r/, /w/). You can check if this description is adequate for the combinations in ‘**spl**ash’, ‘**spr**ing’, ‘**str**ong’, ‘**scr**eam’ and ‘**squ**are’ Yule (2010).

Pearce (2007) says “In all languages, certain phonotactic ‘rules’ govern the ways in which consonant clusters are formed. . . . English allows initial clusters of two

or three items. There are from 33 to 46 permissible two-item initial consonant clusters in English, depending on the variety in question. . . . there are only five three-item initial consonant clusters. Syllable-final consonant clusters of two, three and four items are allowable in English". We might expect from this combination of consonants, some restrictions on which consonants can combine to create these consonant clusters. The permissible combinations are summarized as follows by Jackson (1980, p. 43):

- **Syllable-initial two-consonant clusters.**

There are, therefore, 26 two-consonant clusters in English: /sm/; 'smoke' , /sn/; 'snap' , /st/; 'stay', /sw/; 'sweet' , /sk/; 'sky' , /sl/; 'slow', /sp/; 'spell', /sf/; 'sphere' , /θw/; 'thwart', /dw/; 'dwell' , /tw/; 'twin' , /θr/; 'through' , /dr/; 'dream' , /tr/; 'tree' , /kw/; 'quick' , /kr/; 'cry' , /kl/; 'color' , /pr/; 'priest' , /fr/; 'fry' , /br/; 'bring' , /gr/; 'green' , /pl/; 'play', /fl/; 'fly', /bl/; 'blue', /gl/; 'glimpse' and /ʃr/; 'shred'.

- **Syllable-initial three-consonant clusters.**

In CCCV syllables the restrictions are even greater. We see in the examples below that all allowable three-consonant clusters are **s-clusters**, i.e. the initial consonant is /s/. Further, in English language there are only five three-consonant clusters: /spl/; 'splash' , /spr/; 'spry' , /str/; 'street' ,/skr/; 'screw' and /skw/; 'squash'.

- **Syllable-final two, three and four-consonant clusters.**

As with clusters in syllable-initial position, there are limitations on which consonants may combine and in what order in syllable-final position. Unlike syllable-initial clusters, however, it is not easy to represent all allowable

combinations diagrammatically. Suffice it to say that there are at least 48 allowable three-consonant clusters and around seven allowable four-consonant clusters in syllable-final position in English. The following are some examples of syllable-final clusters:

- VCC as in 'ant' /-nt/ , and the final syllable of the word 'present' /-nt/.
- VCCC as in; 'ants' /-nts/, and the final syllable of the word 'presents' /-nts/
- VCCCC as in; 'uncles' /-nklz/, and in 'prompts' /-mpts/.

Consonant cluster reduction:

In various English dialects, speakers intend to reduce a word-final consonant cluster in which can affect the sound sequences. This process is called 'consonant cluster reduction'. It occurs when one consonant (or more) in a sequence of adjacent consonant is dropped as in the word 'text' /teks/. Consonant cluster reduction is defined by Lisa (2002), she says "consonant cluster reduction is a process in which the final consonant group or cluster, composed of two consonant sounds, is reduced to a single consonant sound. . . . As a result of the consonant cluster process, the words *tes* ('test') and /des/ ('desk') rhyme, and are minimally different in that they contrast only in the initial '*t* 'and '*d'* sounds".

2.1.1.4. Stress.

Stress is the mark (ˈ) used to indicate the strongest degree of stress, placed on a syllable in the pronunciation of a word. According to McMahon (2002) stress is a culminative property, signaled by a number of subsidiary phonetic factors, which work together to pick out a stressed syllable from the unstressed ones which surround it. Ladefoged & Johnson (2011), say "Stresses tend to recur at regular intervals. But the sound pattern of English does not make it an overriding

necessity to adjust the lengths of syllables so as to enforce complete regularity. The interval between stresses is affected by the number of syllables within the stress group, by the number and type of vowels and consonants within each syllable, and by other factors such as the variations in emphasis that are given to each word."

2.1.1.4.1 Word stress in English:

One view is explained by Collins & Mees (2003) word stress, say **"**The words most likely to receive sentence **stress** are those termed content words (also called 'lexical words'), namely nouns, adjectives, adverbs, and main verbs. These are the words that normally carry a high information load. We can contrast these with function words (also called 'grammar words' or 'form words'), namely determiners (e.g. *the, a*), conjunctions (e.g. *and, but*), pronouns (e.g. *she, them*), prepositions (e.g. *at, from*), auxiliary verbs (e.g. *do, be, can*). Function words carry relatively little information; their role is holding the sentence together. . . . Unlike content words, function words for the most part carry little or no stress. Only two types of function words are regularly stressed: the demonstratives (e.g. *this, that, those*) and *wh-* interrogatives (e.g. *where, who, which, how*). Note, however, that when *wh-* words and *that* are used as relatives they are unstressed, e.g. *the girl who lent me the yellow hat that I wore to your wedding*."

McMahon (2002) says "that English is neither a wholly fixed-stress, nor a wholly free-stress language. This means that English uses both fixed-stress and free-stress. Fixed-stress is applicable to simple words, and varies according to the number of the syllables, two-syllable and three-syllable words, and the grammatical category of the root-word, noun, adjective, verb, or adverb, which are called simple words. While complex words, free-stress will take place on words which are made from a basic word form (lexical morpheme) with the

addition of an affix (prefix and suffix) which change the meaning or the part of speech and compound words, which are made up of two, or occasionally more, independent words.

One aspect of word stress is best treated by Roach (2009) as a separate issue. According to him, there are several dozen pairs of two-syllable words with identical spelling which differ from each other in stress placement, apparently according to word class (noun, verb or adjective). We shall treat them as a special type of word and give them the following rule: if a pair of prefix-plus-stem words exists, both members of which are spelt identically, one of which is a verb and the other of which is either a noun or an adjective, then the stress is placed on the second syllable of the verb but on the first syllable of the noun or adjective.

Therefore the words in English that take stress are of two kinds, simple (two and three syllable words) and complex words (words made from a basic stem-word with the addition of an affix and compound which are made of two or more independent English words).

Simple word stress:

In the case of simple two syllable words, the stress will fall either on the first syllable or on the second syllable. The second syllable is stressed, if the second syllable of a verb or an adjective contains long vowel or diphthong, or if it ends with more than one consonant for examples, ‘apply’ /əˈplai/,‘alive’/əˈlaiv/. While the first syllable is stressed, if the final syllable contains a short vowel and one (or no) final consonant e.g.; ‘enter’/ˈentə/ , ‘lovely’ /ˈlʌvli/.

In the case of a noun, stress will be placed on the first syllable if the second syllable contains a short vowel, ‘money’ /ˈmʌni/, otherwise it will be on the second, ‘balloon’ /bəˈluːn/.

Other two-syllable words such as adverbs and prepositions seem to behave like verbs and adjectives (cf. McMahon (2002).

Unlike two-syllable words stress, three-syllable words stress is more complicated picture. In verbs, if the last syllable contains a short vowel and ends with not more than one consonant, in this case the stress will be placed on the preceding (penultimate) syllable e.g., 'determine' /dɪˈtɜ:mɪn/.but if the final syllable contains a long vowel or a diphthong, or ends with more than one consonant, the final syllable will be stressed, e.g., 'entertain' /entəˈteɪn/.

Three-syllable simple words require a different rule. The stress will be placed on the middle syllable if the final syllable contains a short vowel or /əu/ and also if the syllable preceding the final syllable contains a long vowel or diphthong, or if ends with more than one consonant fore examples; 'disaster', /dɪˈza:stə/, 'potato',/pəˈteɪtəu /, 'synopsis' /sɪˈnɒpsɪs /. Unlike this rule, the first syllable will be stressed if the final syllable contains a short vowel and the middle syllable contains a short vowel ends with not more than one consonant (e.g. 'quantity'/ˈ kwɒntɪti/, 'custody' /kʌstədi/. Another rule of three-syllable simple nouns in which the stress will be placed on the first syllable if the middle syllable is weak and first and final are strong, the final syllable takes secondary stress(e.g. 'intellect'/ ˈɪntəlekt/, 'stalactite' /ˈstæləktaɪt/.

The rules above are applicable to adjectives to produce stress patterns such (e.g.'opportune' /ɒpətju:n/, 'anthropoid' /ænθrəpɔɪd/.

Complex word stress:

Complex words as mentioned above have two types. One type is by adding an affix or affixes to the stem or the root-word to change meaning or part of speech. The other type is a combination of two or more independent words.

Therefore, word stress on the first type (Affixes) will have one of three possibilities.

Firstly, the affix itself receive the primary stress (e.g. the prefix ‘semi-’ in ‘semivowel’ /ˈsemɪvəuwl̩/ and the suffix ‘-ality’ in ‘personality’ /pɜ:sn̩ˈælɪti/. Here are the most common suffixes of this type; (‘-ain’, ‘-ee’, ‘-ese’, ‘-ette’ , ‘-esque’, and ‘-ique’).

Secondly, the root-word or the stem is stressed as if the affix is not there (e.g. the prefix ‘un-’ in ‘unpleasant’ /ʌnˈplezn̩t/ and the suffix ‘-ing’ in ‘marketing’ /ˈma:kɪtɪŋ/. The most common suffixes of this type are; (‘-able’, ‘-age’, ‘-al’, ‘-en’, ‘-full’, ‘-ish’, ‘-like’, ‘-less’, ‘-ly’, ‘-ment’, ‘-ness’, ‘-ous’, ‘-fy’, ‘-wise’, and ‘-y’).

Thirdly, the stress remains on the root-word but keeps shifting to a different syllable (e.g. ‘magnet’ /ˈmægnət/ here the stress will shift if we add the suffix ‘-ic’ ‘magnetic’ /mægˈnetik/. In adding one of the suffixes below, the stress shifts to the next syllable of the stem. The suffixes of this type such as; (‘-eous’, ‘-graphy’, ‘-ial’, ‘-ion’, ‘-ious’, ‘-ty’, ‘-ive’, ‘-ance’, ‘-ant’, and ‘-ary’). The last two suffixes (‘-ance’, ‘-ant’, ‘-ary’) when are attached to single-syllable stems, the stress almost always placed on the stem. When the stem has two syllables the stress is sometimes on the first or the second syllable of the stem.

The other type of complex words is compound words which are defined above as a combination of two independent words or more in English. Compound words are written in different ways, sometimes as one word, e.g. ‘armchair’, sometimes words separated by a hyphen, e.g. ‘gear-change’, and sometimes two words separated by space, e.g. ‘desk lamp’. Therefore there is no clear dividing line between two-word compounds. The stress on this type of compound words will

be placed on either the first word or the second word of the compound. Words do not receive primary stress normally receives secondary stress. The most familiar type of the compound words is the one which combines two nouns. Thus the stress normally is on the first word of the compound, e.g. ‘ˈtypewriter’. However, in other compounds, stress will be placed on the second word of the compound and this includes. Firstly, compounds with an adjectival first element and the ‘-ed’ morpheme at the end, e.g. ‘badˈtempered’. Secondly, compound words in which the firs element is a number, e.g. ‘second-ˈclass’. Thirdly compounds functioning as adverbs, e.g. ‘downsˈtream. And finally, compounds which function as verbs have an adverbial as first element, e.g. ‘ill-ˈtreat’.

Unlike lexical words English has another category of words which are called ‘form words’ or ‘function words’ which carry little or no stress above. Function words can be pronounced in two different ways, which are so called by Roach (2009); strong forms and weak forms. According to him these function words ‘auxiliary verbs, prepositions, conjunctions’, etc., are in certain circumstances pronounced in their strong forms but which are more frequently pronounced in their weak forms. There are certain contexts where only the strong form is acceptable and others where the weak form is the normal pronunciation.

2.2 English aspects of connected speech

The general tendency of connected speech is the use of spoken language in continuous sequence. In this matter there is often a significant difference between the ways you pronounce a word in isolation and you pronounce a word in context. Thereby, Sara, et al. (2008) define connected speech as more than just a string of individual target segments joined together in series, since each segment is liable to influence the segments that surround it. The precise form that these influences take is determined by the particular language in question, and so the phonology of

connected speech is part of the phonology of the language that the child has to master. In the same view, Clarey & Dixson (1963) argue that, it's difficult in pronunciation whereby the organs of speech, instead of taking a new position for each sound, tend to draw sounds together with the purpose of saving time and energy. Crystal (1980, p. 81) defines connected speech as: A term used by linguists to refer to spoken language when analyzed as a continuous sequence, as in normal utterances and conversations. Its significance lies in the contrast implied with studies of linguistic units seen in isolation, such as an individual sound, word or phrase, which was the subject matter of traditional linguistic enquiry. It is now realized that important changes happen to these units when they are used in connected speech, as demonstrated by such processes as assimilation and elision, e.g. and becoming /n/ in such phrases as boys and girls.

The idea of connected speech is vary on the way an in which individual utters a continuous sequence, as in normal utterances and conversations. Some researchers classify as something that occur in fast, informal, relaxed or casual speech. See, for example, (Henrichsen, 1984; Hill & Beebe, 1980; Norris, 1995; Rogerson, 2006; Weinstein, 2001). Others characterized connected speech as naturally occurring talk or real spoken English. See, for example, (Avery & Ehrlich, 1992; Brown & Hilferty, 1989; Buck, 1995; Celce-Murcia, Brinton, & Goodwin, in press; Gimson, 2001; Guillot, 1999; Marks, 1999; Moh-Kim, 1997; Norris, 1995; Pennington & Richards, 1986; Richards, 1983; Rogerson, 2006).

Speakers of all languages typically try to articulate in efficient manner in order to make the language simple and easy understood. This happens by reducing any articulatory movement that doesn't affect the massage to be understood. Hence several simplification processes will take place. These processes of simplification and reduction of segments take place in connected speech. They systematically

change the segmental structure of words in relation to their citation forms. That is; the pronunciation of the words in their citation forms (isolation) differ a lot from the words in connected speech. In the processes segments lose their phonological information and these cause vowels and consonants reduction and elision, linking and assimilation of consonants (Giegerich 1992).

In English the nature of connected speech or linking sounds is common. This process of joining or linking words together happens, in a phrase or a sentence, when the final sound of a word joins or links with the initial sound of the next word. The possible joining or linking segments are consonant + consonant, consonant + vowel (or vice versa), and vowel + vowel. Thus; sounds (or segments) lose their phonological features during these processes of linking. The results of these processes are; vowel reduction, elision of vowel and consonants, assimilation of consonants and liaison. These connected speech features support the regularity of English rhythm and help preserve its stress-timed rhythm.

2.2.1. Vowel reduction in English:

Vowel reduction is one of the processes that occurs in connected speech, where in the phonemes of the languages are changes or minimized, or eliminated in order to make pronunciation easier with no affection on the massage. Also is said to be any various changes in the acoustic quality of vowels.

Giegerich (1992) states that vowels in non-foot-initial positions are schwa, whereas vowels in foot-initial positions have specifications like high/low or front/back. This phonotactic constraint not only works in citation forms. In connected speech schwa can occur in positions that are restricted to vowels in the corresponding citation forms. Hence, the vowel is reduced to a schwa in connected speech and thereby the syllable loses the stress. He, therefore, argues

that “a syllable that is stressed in a citation form may be unstressed in connected speech”. Therefore words lose their phonological features in connected speech.The words in English language can be categorized into two; lexical words such as, nouns, verbs, adjectives and adverbs while function words; words do not have a dictionary meaning, such as, pronouns, auxiliary verbs, conjunctions, articles, and prepositions. Function words are characterized by vowel reduction more frequently in connected speech. Function words can either be weak or strong depending on the context (Kreidler 2004). Simlarily, all the words which have a strong and weak form belong to a category that may be called function words, all of which are in certain cirecumstances pronounced in their strong forms but which are more fequntly pronounced in their weak forms.

Here are some examples adopted from Roach’s book, *English Phonetics & Phonology*. These examples represent four fairly simple rules where only strong form is acceptable. But there are two exception, first fuction words that never occur at the end of a sentence (the, an, a, and, but, that- it has only weak for when it used in relative clause), than, his, her, and your). Second, pronouns such as, she, he, we, you, him, her, them, and us, do not occur in their weak forms in final position.

i. When a function word position at the end of the sentence as in the following: ‘Chips are what I'm fond **of’ / /.**
ii. When a weak-form word is being contrasted with another word e.g.; ‘*the letter’s **from** him not **to** him.* / /.
iii. When a weak-form word is given stress for the purpose of emphasis, e.g.; *‘**you must** give **me** more money’.*
iv. When a weak-form word ‘cited’ or ‘quoted’, e.g.; ‘*you shouldn’t put **‘and’** at the end of the sentence’.*

2.2.2 Elision in English:

In linguistics, elision is defined as the omission of a vowel, consonant or syllable in pronunciation. Elision in connected speech is the process of reduction that results in the loss of segments. This means a phoneme which would be pronounced incitation form may be elided in connected speech. Phonemes are most likely to be lost in unstressed syllable Rogresson-Revell (2011). In the same view Roach (2009) gives a clear explanation of elision by saying that, the nature of elision may be stated quite simply: under certain circumstances sounds disappear. One might express this in more technical language by saying that in certain circumstances a phoneme may be realized as zero, or have zero realization or be deleted.

Elision in English takes place under certain circumstances cause a vowel or consonant disappearance or deletion. According to Gimson (2001), there are two different types of vowel-elision, which are the "allophonic variation" and the "phonemic elision". In the allophonic variation the second element of the diphthong is elided. This type of elision occurs when one syllable ends with a diphthong and the next one starts with a vowel, fore example, '*they're'* /ðeɪ ə/ becomes [ðeə]. While in the phonemic elision deals with the complete deletion of the shwa in connected speech.

Here are some examples and rules in vowel elision introduced by Roach (2009).

i. Loss of weak vowel after /p, t, k/. The vowel in the first syllable may disappear; the aspiration of the initial plosive takes up the whole of the middle portion of the syllable as see in;'*potato'* /p^{h}ətеɪtəʊ/ becomes [p^{ḥ}teɪtəʊ]; '*tomato*' /t^{h}ətеɪtəʊ/ becomes [t^{h}meɪtəʊ/; '*canary*' / k^{h}əneəri/, becomes [k^{h}neəri].

ii. Weak vowel + n, l, r becomes syllabic consonant. For example: '*tonight*' /tənaɪt/ becomes /tn̩aɪt/; '*police*' /pəli:s/ becomes /pl̩i:s/; '*correct*' /kərekt/ becomes /kr̩ekt/.

In connected speech the elision of consonants can occur in weak and strong forms and it often results in the simplification of consonant clusters (Giegerich 1992). Typically, the consonant which is in the middle of the consonant cluster. fore examples; Roach claims that no normal English speaker would ever pronounce all the consonants between the last two words fore example; '*George the Sixth's throne*' /dʒɔ:dʒ ðə sɪksθs θrəʊn/ becomes [dʒɔ:dʒ ðə sɪksθrəʊn], '*come and see*' , the /d/ of the cluster /nds/ is elided. Another case of consonant elision can be seen in such words as; '*acts'*, the /t/ of the cluster /kts/, is deleted; '*months'*, the /θ/ of the cluster /nθs/ is deleted.

2.2.3 Assimilation in English:

Assimilation is a common connected speech wherein one sound becomes more like a neighboring sound. This can occur either within a word or between boundaries of words. It's more likely to be found in rapid, casual speech. Henffner (1975), asserts that "when two sounds become contiguous in speech measure, one or both of them may in the fusion of configuration, undergo changes which tend to make each more like its neighbor". Roach (2009), affirms that, "when the word was pronounced in isolation, we find a phoneme is realized differently as a result of being near some other phoneme belonging to a neighboring word we call this an instance of assimilation". He adds that assimilation is something which varies in extent according to speaking rate and style; it's more likely to be found in rapid, casual speech and less likely in slow, careful speech.

In assimilation, the influenced of one phoneme by another phoneme belonging to a neighboring one, is grounded on the change of the distinctive features of a phoneme, i.e.; place of articulation, manner of articulation and voicing. These changes constitute two types that regressive and progressive assimilation. When final consonant of a word becomes like initial consonant of a neighboring one in some way, this kind is called regressive assimilation. But when an initial consonant of a word becomes like final consonant of neighboring one in some way, this kind of assimilation is called progressive. In this matter Crystal (2008) defines that assimilation as may be partial or total. He argues that the /n/ sound in the phrase '*ten bikes*', [tem baiks], is partial in the normal form in colloquial speech, and not /ten baiks/ in careful, that is because it has fallen under the influence of the following /b/, and has adopted its bilabiality, becoming /m/. It has not, however, adopted its plosiveness. The phrase [teb baiks] would be likely only if one had a severe cold! While in total assimilation, he introduces the phrase 'ten *mice*' [tem mais], where the /n/ sound is now identical with the /m/ which influenced it.

Collins & Mees (2013), argue direction of influence by saying, ""Features of an articulation may *lead into* (i.e. anticipate) those of a following segment, e.g. English '*white pepper*' /waɪt 'pepə/ → [waɪp pepə]. We term this *leading assimilation*……Articulation features may be held over from a *preceding* segment, so that the articulators *lag* in their movements, e.g. English '*on the house*' /ɑn ðə 'haʊs/ → [ɑn nə 'haʊs]. This we term *lagging assimilation*……. In many cases there is a two-way exchange of articulation features, e.g. English *raise your glass* /'reɪz jɔ: 'glɑ:s/ → ['reɪʒ ʒɔ: 'glɑ:s]. This is termed *reciprocal assimilation*."

However, in rapid speech native speakers of English tend to pronounce '*ten bucks*' as though it were written *tembucks*, and in anticipation of the voiceless /s/ in '*son*' the final consonant of '*his*' in '*his son*' is not as fully voiced /z/, as the '*s*' in '*his daughter*', where it clearly is /z/, Salzmann (2004). Another examples show assimilation in the Latin prefix 'in-' that means 'not', appears in in English as; *il-*, *im-*. and *ir-*, in the words, '*illegal*', '*immoral*', '*impossible*' and '*irresponsible*', respectively.

Assimilation has a very precise meaning when it's related to the studies of language. In English language, Roach (2009) argues that assimilation of place is most clearly observable in some cases where a final consonant with alveolar place of articulation is followed by an initial consonant with a consonant not alveolar for example in the phrase, 'that *person*', /ðæt pɜ:sn̩/, in rapid, casual speech /t/ will become /p/ before a bilabial consonant, [ðæp pɜ:sn̩]. In English, assimilation of place is the most common of assimilation. It occurs across words boundaries, when the final sound of the first word changes it place of articulation according to the initial sound of the second word and also within words (change in place of articulation). The most obvious examples of assimilation of place are:

•Alveolars /t, d, n/ change to bilabial before /p, b, m/: "regressive"; in such examples:

- /t/ becomes /p/ as in ; '*meat pie*' [mi:p pɑɪ].
- /d/ becomes /b/ as in; '*good boy*' [gʊb bɔɪ].
- /n/ becomes /m/ as in; '*open book*' [əʊpm bʊk].

•Alveolars /t, d, n/ change to velar /k, g, ŋ/ as in the following examples.

- /t/ becomes /k/ as in; '*that case*' [ðæk keɪs], '*quite good*' [kwaɪk gʊd].

- /t/ becomes /g/ as in; '*that girl*' [ðæg gɜ:l].
- /d/becomes /g/ as in; '*good girl*' [gʊg gɜ:l].
- /n/ becomes /ŋ/ when followed by /k or g/ in across words boundaries and with words, such as in; '*in case*' [iŋ keɪs] (across words boundries), '*going*' [gəʊiŋ] (within words).

•Alveolar consonants change to dentals before dental consonant, as in; 'eighth', 'tenth', 'wealth' [eɪt̪θ], [te̪nθ], [we̪lθ], respectively. This statement applied to across word boundries as in; '*get through*' [ge̪t̪ θru:] , '*get those*'/ge̪t̪ ðəʊz/.

• Alveolar consonants /s, z/ change to /ʃ, ʒ/ before palatal consonants /ʃ, j/ (followed by a rounded vowel sound) fore examples:

- /s/ becomes /ʃ / as in '*this shoe*' [ðɪʃ ʃu:].
- /z/ becomes /ʒ/ as in '*those years*' [ðəʊʒ jɪəz].

• Dental consonant /θ/ becomes alveolar /s/ before /s/. For examples; the phrases '*fourth season*' and '*birth **c**ertificate*', in these examples, /θ/ in '*four**th***' and '*bir**th***' change to /s/ sound as in '***s**eason*' and '***c**ertificate*'.

Assimilation of manner, in English, is much less noticeable and is only found in rapid, casual speech, generally speaking. Fore examples; the /n/ and /t/, in the phrases '*in the'* /in ðə /, and 'get *them'* /get ðəm/, become /i̪n n̪ə / and /ge̪t̪ t̪əm/ dentals, respectively Roach (2009). He says, in this particular case, "when a word-initial /ð/ follows a plosive or nasal at the end of a preceding word: it is very common to find that the consonant becomes identical in manner to the consonant but with dental place of articulation".

Unlike assimilation of place and like assimilation of manner, assimilation of voicing is found only in a limited way. It is found in across word boundaries i.e.

regressive, as seen in the phrase '*black dog*' the velar voiceless /k/ of '*li**k**e*' becomes velar voiced /g/ , [blæg dɒg]. Another kind of voicing assimilation is found in word-boundary that is by adding inflectional morphemes to the root-word, i.e. the suffixes '-s' and '-d or -ed'. The suffix '-s' is added to a plural or possessive noun and when a verb carries a third person singular. The suffix '-s' will be pronounced as [s] if the preceding consonant is voiceless, and as [z] if the preceding consonant is voiced. While the suffix '-d, or -ed' is added when a regular verb in the past tense, therefore, '-d, or -ed' will be pronounced as [t] if the preceding consonant is voiceless, and as [t] if the preceding consonant is voiced (ibid). For examples:

- The suffix '-s' will be pronounced as [s] where a final consonant is voiceless, as in plural nouns, such as; '*cats*' [kæts] and verbs with third person singular such as '*he helps*.....' [helps].
- The suffix '-s' will be pronounced as [z] where a final consonant is voiced, as in plural nouns such as in '*dogs*' /dɒgz/and verbs with third person singular such as in '*he moves*.....' [mu:vz].
- The suffix '-d' ,which add to verbs in past tense, will be pronounced [t] where a final consonant is voiceless as in the verb 'parks' /pɑ:ks/ and where a final consonant is voiced, as in the verb '*moved*' [mu:vd].

2.2.4 Epenthesis in English:

In phonology and phonetics, epenthesis is the insertion of an extra sound in a word. Epenthesis is sometimes called, liaison, or intrusion. It is the act of joining sounds together, especially when a consonant that is not usually pronounced at the end of a word, and the next word begins with a vowel sound to break up difficult to pronounce sequences. According to some linguists, Pisoni (2008) says "vowel

epenthesis is often motivated by the need to make consonant contrasts more distinct". Barry (2002), argues that "epenthetic sounds are not always vowels. For example, consider the two indefinite articles '*a*' and '*an*'. We know that '*a*' is used before consonant sounds and '*an*' is used before vowel sounds…….. We may view this [n] as an epenthetic sound that breaks up a sequence of two vowels: '*a apple - an apple*'."

In English language Roach states that the most familiar of epenthetic sound is the Linking /-r-/. He adds that the phoneme /r/ cannot occur in syllable-final position in RP as in '*four*' /fɔ:/, but when this word is followed immediately by a word begins with vowel sound as in '*four eggs*' the usual pronunciation to pronounce /-r-/ as follow, [fɔ:r egz].

Epenthesis is used to break for examples:

- sibilant clusters with –s – class**e**s, buzz**e**s, britch**e**s, judg**e**s.
- alveolar stop clusters with –ed – patt**e**d, grant**e**d, grad**e**d, brand**e**d

2.3 Arabic language and Arabic dialects

The Arab world deals with a collection of multiple variants, among which Modern Standard Arabic (MSA) has the status of the formal written standard language of the media, culture and education. The other variants are informal spoken dialects, which are the true native languages of Arabic speakers used in daily conversation.

These forms include the spoken form of many different dialects, which are quite a bit different from MSA and as well as from each other. The Arabic dialects are generally restricted to the use of informal daily communication. The form of nowadays dialects is the result of the interaction between different ancient dialects of Classical Arabic and other languages that existed in, neighbored and/or

colonized what is today the Arab world. For example, Algerian Arabic has many influences from Berber as well as French.

Sudanese Arabic (SA) is one of those dialects that influenced by indigenous languages (El Rotana) such as Nubian language. Awn Elshrief (1995) gave a historical background and linguistic patterns of the Sudanese Arabic. According to him, the Sudan was an important high way for civilization and had become a meeting-point of cultures. Our colloquial language represents in this respect the final product of this process of cultural cross-fertilization. The coming of Arabs into the Sudan was a turning point that gave a rise to ethnic and linguistic changes. This has resulted in a variety of Arabic that is unique to Sudan, reflecting the way in which the country has been influenced by both African and Arab cultures. Therefore, many variants of Sudanese Arabic have been raised in Sudan, such as; Shaiqi, Shokri, Ja'ali, Western variety, and North Kordfan variety, but the Khartoum Arabic is the dominant one especially among educated people.

2.3.1 SA sound system

Arabic language has two forms of communications, i.e. MSA and spoken form of many different dialects. MSA is linguistically based on Classical Arabic (the language of Qur'an) and it's the official language of the Arab world which it used in education and media. On the other hand, the Arabic dialects are the true native languages across the Arab world. They are generally restricted to the daily use of communication. Those dialects in turn differ quite a bit from each other especially in phonology. These differences mainly based on the influences of the neighboring languages and colonization. SA is one of the variants of Arabic which is influenced by indigenous languages and colonization (see 2.3). Thus, we can notice some variations between the two systems (SA and MSA). MAS has 28 consonant

sounds and three vowel sound (i.e. i, a and u) with their corresponding long vowel sounds (ii, aa, and uu) and two diphthongs (i.e. ai and au).

The tables (2-7) and (2-8), below show the differences between SA and MAS in consonant sounds.

Table (2-7) :MSA Consonant sounds adopted from (IPA 2005).

Place of Articulations	Manner of Articulations						
	Stops & Plosives	Fricatives	Affricates	Nasals	Trill	Laterals	Semi-vowels
	-V +V	-V +V	-V +V	-V +V	-V +V	-V +V	-V +V
Bilabial	- b			- m			- w
Labio-dental		f -					
Inter-dental (emphatics)		θ ð - ðˀ					
Alveolar (emphatics)	t d tˀ dˀ	s z sˀ -		- n	r	l	
Plato-alveolar		ʃ -	- ʤ				- j
Velar	k -			-			
Uvular	q -	χ ʁ					
Glottal	- ʔ	- h					
Pharyngeal		ħ ʕ					

Table (2-8): SA consonant sounds

Place of Articulations	Manner of Articulations						
	Stops & Plosives	Fricatives	Affricates	Nasals	Trill	Laterals	Semi-vowels
	-V +V	-V +V	-V +V	-V +V	-V +V	-V +V	-V +V
Bilabial	- b			- m			- w
Labio-dental		f -					
Alveolar (emphatics)	t d tˀ dˀ	s z sˀ zˀ		- n	- r	l	
Plato-alveolar		ʃ -	ʧ ʤ	ɲ			- j
Velar	k g			-			
Uvular	- -	χ ʁ					
Glottal	- ʔ	- h					
Pharyngeal		ħ ʕ					

2.3.1.1 SA consonant sounds

In MSA there 28 consonants sounds while in SA there are 26.It can be clear if we study tables (2-7) and (2-8), that there are some sounds, in MSA, unarticulated by SA speakers. In this matter SA speakers use to substitute these sound by another sounds. And also there are some sounds that not exist in MSA but exist in SA.

The sounds that not articulated by SA speaker are; interdental, fricative, / θ, ð, ðˀ/, emphatics, and uvular, stop, voiceless /q/. While the affricate, plato-alveolar, voiceless /ʧ/, nasal/ plato-alveolar/ voiced, /ɲ/ and stop/ velar/ voiced /g/ are exist in SA and not exist in MSA.

2.3.1.1.1 SA stops: /b, t, d, k, g, ʔ/.

Stop sounds are the result of a complete closure at some point in the mouth. The pressure builds up behind the point of articulation and the air is suddenly released causes audible explosion. The stops in SA are;

- **Bilabial** /b/.

  The sound /b/ is voiced and articulated by the two lips. It is the only bilabial stop in SA and as well as MSA. Fore examples as in SA which appears in all positions; '*balaħ*' date, '*mabrook*' congratulation, '*maglab*' to prank some body.

- **Alveolar** /t, d/:

  Alveolar stops in SA and as well as MSA are four in number. These sounds are articulated by the tip of the tongue against alveolar ridge accompany with vibration of the vocal fords (voiced), for /d/ and no vibration for /t/ (voiceless). In such words as; '*tamor*' date, '*watar*' string, '*darib*' way or bath, '*barid*' coldness.

SA speakers substitute the fricative /voiceless/interdental, MSA, /θ/ (not exist in SA) with Alveolar/ stop/ voiceless, because it's difficult to be pronounced by SA speakers such in words as ; /θ/ becomes /t/ in words such as; /θalaaθat/ (MSA) → /talaatah/ (three), /θalaadʒah/ (MSA) → /talaadʒah/ (fridge).

- **Velar** /k, g/.

  MSA has only one velar sound /k/, while in SA there are two sounds; /k, g/. The productions of these sounds are articulated by the back of the tongue against soft palate; the vibration takes place in /g/ (voiced), and doesn't take place in /k/ (voiceless). /g/ is not one of the phonemic systems of MAS, but has existence in some Arabic dialects such as; (Lebanese Arabic, Yemeni Arabic, and most of the Gulf countries Arabic) and is widely used among SA speakers to substitute stop uvular voiceless /q/. Fore examples; /qum/ (MSA) → /guum/ (stand up), /qaliil/ (MSA) → /galiil/ (a few). In the same process, /k/ in some cases substitutes uvular, and voiceless /q/ in words such as; ; /waqt/ (MSA) → /wakit/ (time), /qatal/ (MSA) → /katal/ (killed).

- **Glottal** /ʔ/.

  This sound, /ʔ/ is produced when the closure is made by bringing the vocal cords together. The glottal stop, known as '*hamza*' in Arabic, was attested in all prosodic positions in Classical Arabic: word-initially, as in /ʔakal/ 'he ate'; inter-vocalically, as in /saʔal/ 'he asked' and /suʔaal/ 'question'; pre-consonantally, as in /raʔs/ 'head'; post-consonantally, as in /badʔ/ 'begin'; and post-vocalically, as in /χadˀraʔ/ 'green', Watson (2007). The glottal stop /ʔ/ has been lost in post-vocalic word-final and pre-consonantal position in SA, and replaced by vowels /a or aa/. Fore examples in words like; /raʔs/ (MSA) 'head' becomes in SA /raas/, / kaʔs/ 'cup' → /kaas/, /safraʔ/ 'yellow'→/safraa/, /be:jdˀaʔ/ 'white' → /be:dˀa/.

2.3.1.1.2 SA fricatives:

In the production of fricatives sounds is made up, when the air stream is semi-blocked between two articulators making a narrow open for the air to escape causes audible friction. These sounds are distributed below according to their point of articulation as in SA.

Fricative sounds in MAS are eleven in number including emphatics; / θ, ð, ð^{ʔ}, s, z, s^{ʔ}, ʃ, χ, ʁ, ħ, ʕ/. In SA fricatives are; /s, z, s^{ʔ}, z^{ʔ} , ʃ, χ, ʁ, ħ, ʕ/, SA speakers do not produce interdental sounds, i.e; /θ, ð, and emphatic ð^{ʔ}/.

- **Labiodental** /f/.

  /f/ has existence in all Arabic dialects, which articulated by the lower lip and the upper teeth, the vocal cords are not vibrated (voiceless). The SA /f/ is sometimes found in loan words such as in ‘villa’, ‘Vona’ a name of powder soap products.

- **Plain-Alveolar /** s, z**/:**

  These sounds are articulated by the tip of the tongue making contact with alveolar ridge and the air escapes through a narrow passage causes audible hissing. In the case of /s/ the vocal cords are not vibrated (voiceless), while in the case of /z/ are vibrated (voiced).

  In MSA there are two plain-alveolar sounds /s, z/ the same as in SA. These sounds always replace the interdental sounds /θ and ð/ in SA. Fore examples; / θ / → /s/ as in words such as; /θaʕlab/ → /saʕlab/ (fox), /ʕuθmaan/ → /ʕusmaan/, (a male name); /ð/ → /z/, in words such as; /ðaakar/ → /zaakar/ (studied), /ðakar/ → /zakar/ (mentioned).

- **Plato-alveolar.** / ʃ /:

In the articulation of /ʃ/ the front of the tongue makes contact with hard palate leaving a narrow passage for the air to escape causes an audible hissing sound. The vocal cords don't vibrate so the result is voiced.

- **Uvular /** χ, ʁ/:

  Uvular **/** χ, ʁ/ are described by Wadson (2007), in which the tongue-root restricted to the posterior wall of the upper pharynx. These sounds almost exist in all dialects of Arabic language. Phonetically and phonologically, are better described as velar by Fischer and Jastrow (1980), or post-velar by Abdel-Massih (1975), e.g. Cairene dialect.

- **Glottal /**h**/:**

  This sound is articulated by tightening the glottis. In several dialects of Arabic, /h/ is maintained in content words. , but the initial and final *h of pronoun suffixes has disappeared (Hamid 1984, for Sudanese; Nasr 1959for a dialect of Lebanese; Fischer and Jastrow 1980: 53): while in many Peninsula dialects, including San'ani, the feminine singular nominal ending is realized with final -h (/ah/ or /ih/), in the majority of dialects spoken outside the Peninsula the feminine ending is realized as a short vowel /a/ or /i/. In SA, /h/ is unrealized in final position, in words such as; / lam'ħah/→ /lam'ħa/ (a glance).

- **Pharyngeal /** ħ,ʕ/:

  These sounds are articulated by the back of the tongue and the pharynx. They appear in all positions (initial, middle, final). The pharyngeal set is equally interesting with the voiceless **/** ħ/ occurring in only 13 languages while the voiced **/** ʕ/ is limited to only 8 languages New man (2002).

2.3.1.1.3 SA affricates / ʧ, ʤ**/:**

These sounds are produced by complete closure of the air stream by two articulators at some point in the mouth. The pressure builds up behind the closure, and the air is slowly released causes audible friction because the air escapes through a narrow passage.

The unvoiced /ʧ/ is corresponding to the English affricate sound /ʧ/. It seems this sound has been borrowed from one of the indigenous languages and it has no existence in MAS, but it has existence in some Gulf dialects such as Kuwaiti Arabic. In SA it exist in a few words such as; /ʧat/ (all), /jimaʧiʁ/ (a sound produced while eating), /jilaʧiʁ/ (speaking nonsense). /dʒ/ is the only affricate sound exists in MSA.

2.3.1.1.4 SA nasals /m, n, ɲ/:

Most MSA consonants the air escapes through the mouth (oral). However when the soft palate is lowered down and let the air escapes through the nose because the mouth is completely blocked by two articulators (two lips /m/, alveolar /n/, plato-alveolar /ɲ/) the resultant sound is called nasal.

SA has three nasal sounds /m, n, ɲ/, unlike MSA has only two nasal sounds /m, n/. The sounds /ɲ/ is one of sounds that borrowed from indigenous languages. It appears in a few words in SA such as; /ɲal/ which means ‘a person without clothes as the same French word ‘null’,/ɲaaɲa/ ‘an expression used to eating for children, /ɲamɲam/ an expression used for a meal.

2.3.1.1.5 SA trill /r/

The trill sound /r/ is produced by tapping the tongue-tip frequently against alveolar ridge. This sound has existence in MSA and as well as SA. The vocal cords are vibrated then /r/ is voiced.

In SA this sound has two allophones dark /ɾ/ and light /r/ such as; /rudʒaal/ for the dark one and /rijaal/ for light one.

2.3.1.1.6 SA lateral /l/:

This sound is articulated by the tip of the tongue pressing against alveolar ridge, so the air is forced to escape through the side of the tongue. Alveolar /l/ is voiced because the vocal cords are vibrated when air passes through.

In MSA and as well as in SA, /l/ has two allophone dark /ɬ/ and light /l/. For examples; /ʔalah/ 'god', /ʔalam/, 'pain'.

2.3.1.1.7 SA semivowels /w, j/:

The two sounds, bilabial /w/ and plato-alveolar /j/, are said to be semivowels because the air comes out freely without any closure or restriction. Both sounds are voiced, the vibration take place when the air passes through the vocal cords.

Emphatic sounds in Arabic

Arabic has a set of complex coronals /t^{ʔ}, d^{ʔ}, s^{ʔ}, ð^{ʔ}/**.** These sounds are considered to be the emphatic sounds of their plain counterparts /t, d, s, ð/ respectively. Al-solami (2013), describes emphatics as problematic both phonetically and phonologically i.e.; phonetically, the secondary articulation of these sounds is disputed, while phonologically, they are grouped with the rest of Arabic guttural class in some studies while excluded by others. He points out that some researchers have posited that emphatics phonetically are velarized (Trubetzkoy, 1969), unvelarized as in Jordanian Arabic (Zawaydeh, 1998) or pharyngealized as in Iraqi Arabic (Ali & Daniloff, 1927; Gianni & Pettorino, 1982).Phonologically, some proposals group Arabic emphatic sounds with Arabic gutturals, laryngeals /ʔ and h/, pharyngeal /ʕ and ħ/ and uvulars /ʁ and x/, (Jakobson, 1957; Zawaydeh,

1999), while other proposals posit them as a different subclass, (McCarthy 1994, Bin-Muqbil 2006).

SA Arabic has the number of emphatics but they are not the same as that in MSA. In SA there is only sound that doesn't exist in SA which is / $ð^{ʔ}$/ but exist in MSA, thus SA-speakers tend to substitute this sound with alveolar fricative emphatic /$z^{ʔ}$/. Thus the emphatics in SA are /$t^{ʔ}$, $d^{ʔ}$, $s^{ʔ}$, $z^{ʔ}$/ all of them are emphatic alveolars, two of them are stops //$t^{ʔ}$, $d^{ʔ}$/ and the other two are fricatives /$s^{ʔ}$, $z^{ʔ}$/ unlike MSA emphatic, two of three of them are alveolar and the fourth one is interdental / $ð^{ʔ}$/ .

2.3.1.2 SA Vowel sounds:

MSA has eight vowel sounds six of them representing pure vowel sounds /i, a and u/ with their corresponding long ones /ii, aa and uu/, and two are diphthongs /ai and au/. Gairdner (1925) who was first called the famous vowel triangle of the fundamental vowels; hence any description of Arabic vowel sound inclines to start with. This is the same as mentioned by mediaeval Arabic philologists like, Sibawayh, e.g. see Al-nassir (1993), Troupea, G. (1989), and Ibn Jinni, see Bakalla, M. (1982). The two descriptions of vowel sounds are mainly based closely related to tongue positions. Mitchell (1993), reported that 'the vowel system of Classical Arabic/ Modern Standard Arabic is simple one of three vowels unit or phonemes – open, close front, close back – with a superposed of short/ long distinction applicable to all three'.

In contrast, SA vowel sounds are based on MSA vowel sounds, and vary from MSA, as shown below.

- SA long back vowel, /ɔ:/ as in words such as; / ʁɔ:m/ (قووم) (a group of people), in a nick name for some female names like duʕaa (دعاء) becomes

/daʕɔ:ja/ and /hana/ (هناء) becomes /hanɔ:ja/ respectively. Another word is believed to have this sound are SA words; (مويه) /mɔ:ja/, (water).

- SA diphthongs,/ ɪə, e:, uə, ɔɪ/ appear in such words as;
    - /eɪ/ or /e:/ as in words, (بتيين) /biteɪm/, (when); /weɪm/ (ويين) (where); /ʕeɪm/ (عيين) (an eye). This sound is very close to English diphthong /eɪ/, that why I prefer to use /eɪ/ rather than /e:/, because the later sound learners of English may get confused with English central vowel /ɜ:/ which traditionally followed by /r/ in contexts such as in 'first', 'burn', these word can be sounded as /f ɜ:st/, /bɜ:n/ respectively.
    - /ɪə/ as in /mɪə/ (ميه) , (one hundred); /ʕarabɪə/ (عربيه), (a car); /almaahɪə/ (الماهيه) (salary); /gawɪə/ (قويه), very strong. I believe this sound has existence in MAS in words such as; hɪə (هي), 'she'; /maa hɪə/ (What is it?), also it appears in some words of Soraat Alqaria'a, verses number (6, 9, 10, and 11) they are sounded as; /raadˀɪə/ (رَاضِيَةٍ), /haawɪə/ (هَاوِيَةٌ), hɪə (هِيَهْ), haamɪə (حَامِيَة).
    - /uə/ this sound appears in words; /huə/ (هو) , (he); guə (قوه), (power); /dʒuə/ (جوه) , (inside). This sound also I guess to be one of MAS diphthongs as in second person singular, /huə/ (هو), …….
    - /ɔɪ/ rarely appears in SA /hɔɪ/, (a warning expression), …..

2.3.3.3 SA Syllable structure.

All syllables in MSA begin with a single consonant and are open (ending with a vowel) or closed (ending with a consonant). They are six in number, CV, CVV, CVC, CVVC, CVCC, and CVVCC. A syllable in MSA does not begin with short

or long vowel. Most of the Arabic modern dialects are divided into three groups, i.e.; VC- dialects, C- dialects and CV-dialects, by Kiparsky (2003).

- VC- Dialects includes most of the Arabic dialects spoken in the north and central of Arab Peninsula, and also includes some other dialects of eastern Libya and two groups of Egyptian dialects spoken in the eastern parts of the Delta and approximately to Asyut.
- C- Dialects are spoken in a large area in the north and west of Africa which are characterized by long consonants sequences which have been analyzed both as complex clusters and as sequences of syllable with consonant nuclei.
- CV- Dialects are spoken in Egypt (Middle and Upper Egypt to Asyut and Cairo), Saudi Arabia (Mecca) and some parts of Sudan.

The Kparsky's classification present in the salient differences of syllabification patterns in Arabic dialects. These differences of syllable structure can be summarized according to onset, nuclei and coda in which epenthesis plays a significant part in the case of consonant clusters. As is mentioned earlier that MSA allows not more than one C- at initial position and not two -CC at final position thus;

- in the two group ,VC- and C- dialects delete high vowels in initial position (open syllable) in order to reduce even initial CiC- to CC- as in such words; /kilaab/ 'dogs', → /klaab/ , /ħimaar/ 'donkey'→ / ħmaar/.
- in medial position - CCC- clusters are broken up by epenthesis in which epenthesis occurs to the right of the un-syllabified consonant (CCC→CCiC, thus: /ʔult-lu/→ /ʔultilu/ 'I told him' Cairene dialect), and those in which epenthesis occurs to the left (CCC→CiCC, thus: /gilt-la/ → /gilitla/ 'I told him' Iraqi dialect). CCC→CCiC occurs in CV- dialects and CCC→CiCC

occur in VC- dialects. C- Dialects simply drop the vowel in the corresponding case /jəktbu/ ‘they write’.

- in final position -CC, clusters occur unstrictly only the two groups CV-dialects and C-dialects. They can be broken up by an epenthetic vowel under certain conditions that is according to style and dialect, fore examples; the MSA /kalb/ becomes /kalib/, /ʔakl/ ‘food’ becomes /ʔakil/.

Halpern (2009) categorizes six structural syllable types of MSA that can be classified into three categories defined as;

- The first one is a light syllable which consists of a consonant in the onset followed by a short vowel sound, CV as in /wa/ ‘and’. Light are always open.
- The second category is a heavy syllable; this category consists of both a consonant in the onset followed by a short vowel and a consonant in the coda, CVC as in /min/ ‘from’, /katabtu/ ‘I wrote it’. This type of syllable is always closed.
- The third one is called a supper heavy syllable, this consist of a consonant followed by one or two vowels and one or two consonants, CVVC or CVCC as in, /nuum/ ‘sleep’ , /bint/ ‘girl’ respectively. This syllable occurs at the final position in open and closed syllable. Another example belongs to this type is the occurring of two identical consonants which (gemination) this can be mentioned here by -GG. For example, /madd-a/ ‘he stretches’, this occurs when there ‘*shada’*.

In contrast to MSA syllabic system, SA uses only the following syllable structure, CV, CVV, CVC, CVVC and CVCC, in such words as; /da/ ‘this’ /lei/ ‘why’, /bun/ ‘coffee’, /naam/ ‘slept’, and /dʒamb/ ‘beside’, respectively. the last syllabic

structure, CVCC, happens when a word like /wakit/ used in such example /wakt-l-salaa/ ‘time for praying’ Thus, most of the words which have consonant clusters, -CC- at medial position or -CC final position, have no existence in SA. Therefore, avoiding or breaking the cluster is the only way in such cases by inserting a vowel sound (epenthesis). Fore examples; /wakit/ CVCVC (time), while the syllable structure of the same word in MSA is /waqt/ CVCC. Another example; /katil/, CVCVC (killing); while in MSA syllable structure of this word is /qatl/ this happens in the cases of clusters at final position (-CC). in some cases in words like /katab/ ‘he / she wrote’ (CVCVC) cluster takes place when the subject is 1st person plural as in; /katabna/ ‘we wrote’, or in expression of continuous as in /biktibu/, ‘they are writing’. SA displays alternation maintenance of -CCC- medial clusters so -CCC- becomes -CiCC- or -CCiC- for examples, /kalibna/, ‘our dog’, /ʔasʔubru/ /ʔasʔburu/ ‘be patient (plural)’. Thus, SA prominently displays both VC- and CV-epenthesis patterns.

2.3.3.4 SA Stress.

Word stress in MSA and the Arabic dialects is non-phonemic i.e.; different stress within a word does not change the meaning of the word. For example, the MSA word /ka-tab-tu-hu/ ‘I wrote it’, the stress falls on /-tab-/, while in the same word e.g.; in some dialects like ‘Cairene’ dialect the stress falls on /-tu-/ Halpern (2009). Based upon the Halpern’s statement, we can say that all Arabic dialects exhibit different word stress mechanism assignment according to the socially and geographically diverse area. Watson (2007) argues that in all cases stress location is a function of both syllable weight and syllable position. She adds that the Arabic dialects differ in the distribution of the syllable type the leftmost extent of stress (third or fourth syllable from the right) the rhythmic grouping of the syllables the

interaction of stress, syncope, epenthesis, and the degree to which lexical information may affect stress (see 2.3.3.3**)**.

The assignment of stress in MSA as mentioned above according to the syllable weight and syllable position. Therefore, to assign stress on a word you must understand the three categories of MSA syllable weight mentioned above which represents the six types of MSA syllable structure. Below, are the stress rules that adopted from Halpern (2009).

- Stress always falls on the ultimate syllable if that syllable is super heavy. This rule takes precedence over all others. For examples; /ri-**dʒaal** / 'men', /dʒa-**diid**/ 'new', consist of two syllables in which the first syllables are weak while the second ones are strong. Therefore the stress falls on the last syllable.
- In monosyllabic words, stress falls on the ultimate syllable in words such as; /**bint** / 'a girl', / **χuð** / 'take'. It's very important to note that there are certain monosyllabic words which are so closely attached to proclitics (/la-/, /bi-/, definite article /?al-/ etc….) which are not to have a separate accent. e.g.; /la-**qad** / 'already' and /bi-**kam**/ 'how much is it?') are considered monosyllabic words in the case of syllable and as well as stress.
- In disyllabic words (two syllable words), stress falls on the penultimate syllable as in words such as; /**wa**-lid/ 'a father', /**kaa**-tib/ 'a writer', /**baa**-liq/ 'an adult'. In all these examples stress falls on next-to the last syllable.
- the position of stress depends on the weight of syllables i.e.; if the syllable is heavy stress falls on the penultimate as in / ri-**dʒaa**-lun /, ' men', /dʒa-**dii**-dun/, 'new', but if the if the penultimate is light stress falls on the antepenultimate as in /**ka**-ta-ba/ 'he wrote', /**ka**-li-maat/ 'words', /ka-**li**-ma-ti/ 'my words'.

2.3.2 SA aspects of connected speech.

When people speak you will notice that there are some changes in progress during normal speech or conversation. In this matter, a significant differences between the pronunciations of a word in isolation and in context, and even between a sound in isolation and in context. This leads us to the main purpose of this process that to ease the use of language and to save time in normal utterance and conversation. The reason that why a speaker of language does so, that it is because; during normal utterance or conversation, it is difficult for a speaker's organs of speech to take new position easily. So, a speaker tends to merge two sounds in one, delete some sound/s, or one sound take over the features of another sound after or next to. This process in general is called connected speech (see. 2.2.1.5). Speakers of all languages have the tendency to make the language simple and easy understood by trying to pronounce the language in efficient manner. Therefore, no doubt speakers of Arabic language undergo the same process despite their dialects differences.

2.3.2.1 Vowel Reduction SA

Vowel reduction has been mentioned earlier in this chapter that vowel reduction takes place in connected speech. Speakers of all languages try to articulate language in a simple and easy manner to be understood without any changes in the delivering massage. This process of simplification systematically changes the segmental structure of words without affecting the meaning in their relation to words in isolation (citation form) and what is so called reduction. In Arabic long vowels are reduced to short vowels as in the following contexts;

- long vowel /aa/ becomes short vowel /a/ as in; /jaχaaf/ (يخاف) /lam jaχaf/(لم يخف), /ʕalaa / (على) becomes in /ʕala maða/ (على ماذا), /jaa/ (يا المتكلم) becomes /ja/ in /ja ʕali: / (يا على).

- long vowel /ii/ or /i:/ becomes short /i/ as in the preposition /fii/(فى) becomes /fi/ in the context /fi lbeit/ (فى البيت). Also as in the word /siir/ (سير) becomes /sir ʔila ʔalʔamam/ (سرإلى الامام).
- long vowel /uu/ becomes /u/ as in these words; /ʔadʕuu/ becomes /ʔadʕu li/, and /raʔuu/ (رؤوا) becomes / raʔu ʔalʕaðaab/ (رؤوا العذاب).

SA follows the same principle as in MSA of vowel reduction.

2.3.2.2 Elision in SA

Elision is traditionally known as the omission of one or more sounds or even a syllable in a word in connected speech. The purpose of deleting a sound or sounds is to make the language easily and simply to use. In addition to this when a speaker of language is faced by such cases, will try to avoid the difficulty of the speech organs movement. For example the English word ‘hands’, /hændz/, is pronounced in this way, /hænz/ by deleting /d/ sound. The difficulty in pronouncing such as this word is due to the difficulty in the movement of the organs of speech because they share the same place of articulation (Alvealar), or articulators that are nearby. Therefore the speaker cannot pronounce these sounds together and he has to delete at least one or more sounds (see 2.2.1.5.2**)**.

Jones (1975) , Wells & Colson (1971) and Crystal, (2002), make a distinction between two kinds of elision. The first one is concern about the existence of a sound in an earlier form of a word which is omitted in a later form; this kind of elision is called historical elision. The second kind is called contextual elision in which a sound is being available in a word uttered in isolation and is dropped in a compound or in a connected speech. Different languages vary in using elision in extent and frequency of occurrence and context.

In Arabic language, the most elided sounds are the glottal stop sound /ʔ/ and /l/ or ‘alif’ and ‘laam’. /ʔa/ or ‘alif’ is elided in the Arabic definite article /ʔal-/ (i.e. attached to modify nouns). /ʔ/ ‘alif’ is dropped when the preceding sound is a part of functional morphemes such cases as in;

- /fi:/, ‘in’ as in; /filbeit/ ‘in the house’.

- /min/, ‘from’ as in; /minlsudaan/, ‘from the Sudan’.

- /fa, wa /, ‘and’, as in; /falaði/ ‘and whose’.

- /wa/, ‘and’ + ʔinkasar ‘broke’, becomes /wankasar/, ‘and broke’.

In other cases ‘alif’, /ʔ/ gets dropped, if it is preceded by the preposition ‘ل’, /li/ means ‘for’ as in these examples:

- لـ + الوَلَد /li +ʔalwalad/ ‘for the boy’ is written and pronounced as لِلْوَلد /lilwalad/.
- لـ + الوَطَن / li +ʔalwatan/ ‘for the country’ is written and pronounced as لِلْوَطَن / lilwatan/.

According to Ateeq (1991), Arabic language has two types of elision i.e.; regular and irregular. The regular one is associated with the internal structure of words, while the other one does not follow a morphological rule and is referred as arbitrary.

Some sounds of Arabic are elided in the case regular elision according to Ateeq, in such as these cases:

- the present form of the verb , present participle and past participle such as [?a?ukrimu] , (أأكرم) becomes (أكرم) /ʔukrimu/, /muʔkrimu/ (مؤكرم) becomes

(مكرم) [mukrimu] and [muʔkramu] (مؤكرم) become (مكرم) [mukramu] respectively , the glottal sound /ʔ/ is elided in each case.

- the present form of the verb derived from the past form the first consonant /w/ is elided as in this two examples words; /waʕada/ (وعد) becomes / yaʕidu/ and /was^{ʔ}afa/ (وصف) becomes / yas^{ʔ}ifu/.
- Al-Moosili, (2001) claims that, the second consonant of the present or imperative form of the verb is elided if it is followed by the vowel sound /i/ and whose third consonant is attached to /n/ functioning as subject ,3rdperson feminine plural. For example, in the word /qarra/ (قر) , /jaqrirna/ (يقررن) , /jaqirna/ (يقرن) . He argues that the cause of this elision is due to the repetition of /r/ though there is /i/ between them.

In the case of irregular elision, the elision does not follow a morphological rule. It is referred to as arbitrary. Irregular elision can be summarized as follows;

- Elision of /n/ as in /munz/ (منذ) '*since*' and /inna/ (إن) '*that*' become /muz/ and /in/, respectively. In SA /n/ MSA /ʔalbint/ is elided to /ʔalbit/ '*the girl.*
- /f/ is elided as in /uffin/ becomes /ufin/. And also in such as this example; /sawfa ʔafʕalu kaza/ (سوف أفعل كذا) '*I'll do so'* becomes / saw ʔafʕalu kaza/.
- /b/ is elided as in /rubba/ (رب) becomes /ruba/ as in this example; /rub ʔaxin laka lam talidhu ʔumuka/ (رب أخ لك لم تلده أمك) , see Ibn usfoor (1986).
- The vowel sound /i/ is elided in when occurs at initial position as in; /ʔakramani/ becomes /ʔakraman/ in context like / ʔallahu ʔakraman/ instead of /ʔallahu ʔakramani/. Other examples like /ʔalwadi/ (الوادى) becomes /ʔalwad/ as in / dʒaabu ʔas^{ʔ}χra bilwad/ (جابوا الصخر بالواد), (*Quraan alkareem, sourat Alfajr, verse 9*).
- /l/ in SA is elided from the MSA word /ʔalwald/ to /ʔalwad/ '*the boy'*.

- /u/ is elided when it occurs at final position as in; /ʔalwatˀnu/ becomes /ʔalwatˀn/ as in; /ʕaaʃ ʔalwatˀn/ (عاش الوطن), Nahar (1998).

Hamid (1984), sums up the rules of elision (syncope) of SA as into two rules which is applied across word boundaries. The rules take place in two opposite directions (left-to-right and right-to-left) deleting high unstressed vowels. He defines the level at which these rules apply as phrasal and do not delete final or initial vowels of words. He noted when applying from right-to-left, is "merely phonological in nature automatically whenever its phonological condition is met. But when the rule is applied in the opposite direction it seems to be sensitive to a certain syntactic relationship between the relevant elements. The examples below represent Hamid's two rules of elision.

- right-hand syncope or elision:
    a. Verb + Object.
        - /katabu ki̲taab/ becomes /katabu ktaab/ '*they wrote a book'*.
    b. Subject Verb +Object.
        - /ʕali ʕi̲rifna/ becomes /ʕali ʕrifna/ '*Ali knew us'*.
    c. Noun + Noun.
        - /dawa ku̲baar/ becomes /dawa kbaar/ '*medicine for adults'*.
    d. Noun + Adjective.
        - /karaasi ku̲taar/ becomes /karaasi ktaar/ '*many chairs'*.
    e. Preposition + Noun.
        -/maʕa ki̲taab/ becomes /maʕa ktaab/
- left-hand syncope or elision:
    a. Verb + Object.
        - /ʃi̲rib ʔalgahwaa/ becomes /ʃrib ʔalgahwaa/ '*he drank the coffee'*.

b. S + V.

- /ʔalkalib ʔakal/ becomes /ʔalkalib ʔakal/ or /ʔalkalb ʔakal/ '*the dog ate'.*

c. Noun + Relative clause.

- /ʔalkalib ʔalʔakal/ becomes /ʔalkalb ʔaʔakal/ '*the dogthat ate'.*

d. Noun + Noun.

- /ʃuʁul ʔa ħmad/ becomes /ʃuʁl ʔa ħmad/ '*Ahmed's work'.*

e. Noun + Adjective.

- /ʔaltaadʒir ʔalsuudaani/ becomes /ʔat-taadʒr ʔas-suudaani/ '*the Sudanese marchant'.*

f. Noun + Predicate.

- /ʔaltaadʒir ʔalsuudaani ʔamiin/ becomes /ʔat-taadʒr ʔas-suudaani/ or /ʔat-taadʒir ʔas-suudaani ʔamiin / '*the Sudanese merchant is honest'.*

2.3.2.3 Assimilation in SA.

Crystal (1991) defines assimilation as; "the influence exercised by one sound segment upon the articulation of another, so that the sounds become more alike or identical in terms of one or more of its phonetic characteristics".

Sibawayh, a classical Arab linguist lived in the eighth century, defines assimilation in his book *al-kitaab* and he uses the term '*idhgaam*'as; "the fusion of two adjacent segments by complete assimilation of the first one by the second to produce a geminate" see al-Nassir (1993). Ibn Jinni, another medieval Arab linguist, differentiates between total and partial assimilation, and coins the term '*al-idhgaam al-akbar'* (major assimilation) and '*al-idhgaam al-asaqar'* (minor assimilation) see Al-fozan (1989). Almarsafy " المرصفى " (1982), defines assimilation as; a phonological process by which two sounds overlapped forming

only one sound. The first one is quiescent (ساكن) while the second one is movable (متحرك)it is difficult to pronounce the two sounds together, and to make their pronunciation easier.

Major or great assimilation occurs when two quiescent neighboring segments are separated by a movable sound that what is so called diacritics such as ‘ al-dhamah, al-fatħah, al-kasarah’. Minor assimilation takes place when two quiescent neighboring segments are not separated by a movable sound. Assimilation happens due to neighborhood of two sounds within a word or between word boundaries.

In Arabic there are types of assimilations, partial assimilation and complete assimilation which they are the two types of‘*al-idhgaam al-asaqar’* (minor assimilation). These two types are wide spread in languages. Partial assimilation occurs when the quiescent ‘*nuun*’ or ‘*nuun al-tanween*’ ends a word and followed by a word begins with the following sounds; /m, n, w, j/ as in the following examples: (من بعد) /min baʕd/ becomes / mim baʕd/. This type is so called assimilation with nasal. Other examples by ((2008) ابن الجزرى) of this type as follows:

- quiescent /n/ + /j/: /wa ?in jaruu/ (و إن يروا) becomes /wa ?ij jaruu/.
- quiescent /n/ + /n/: /wa ?in naħnu/ (إن نحن) becomes / wa ?inaħnu /.
- quiescent /n/ + /m/: /min maa/ (من ماء) becomes / mim maa /.
- quiescent /n/ + /w/: / min waali / (من وال) becomes / miw waali /.

Complete or total assimilation is also called *assimilation without nasal* by which two sounds become one, and it is called so because when the assimilation happens, so no nasal comes from the nasal cavity. The process takes place when quiescent *nuun* or *nuun* is at the end of a word meets /l, r/ at the beginning of the following one, becomes stressed (مشددة) /r/ as in (من ربهم - مربهم) /min rabihm/ becomes

/mirrabihm/. Stressed /l/ as in (من لدنه), /min ladunhi/ becomes /mil ladunhi/ (قمحاوى). In other words the nasal does not associate /l/ and /r/ because the two sounds do not allow the process of the nasal pass through them, that is the /n/ or '*nuun*' disappears completely, (2006) القارئ).

In Arabic, the most common assimilation occurs with the definite article '*alif'* and '*laam'* which is resemble to English definite article '*the*'. /l/ gets assimilated when the following sound begins with the so called 'sun letters'; / t, tˀ, d, dˀ, θ, ð, ðˀ, s, sˀ, z, ʃ, dʒ, l, r, n/ as in; /ʔalʃams/ (الشمس) becomes /ʔaʃ ʃams/, /ʔaltˀaalib/ (الطالب) becomes /ʔatˀtˀaalib/.

Assimilation in SA follows the same principles of assimilation in MSA, especially great or major assimilation '*al-idhgaam al-akbar'*. This type of assimilation is wide spread in SA, as well as some Quranic readings (الخليفة (2008)). The features of this type of assimilation tend to delete a diacritic (vowel sound) that separates two quiescent sounds so the assimilation happens on the following sound. The SA speakers tend to delete diacritics at the ends of words.

Assimilation in SA occurs in the following cases;

- /d/ becomes /dʒ/ as in; /wad dʒamiil/ 'handsome boy or Jameel's son' becomes /wadʒ dʒamiil/, also in /baʕad dʒa/ 'after he came' becomes /baʕadʒ dʒa/.
- /d/ becomes /s/ as in; /wad saalim/ (ود سالم) becomes /was saalim/, /rad sariiʕ/ ' a quick replay' becomes /ras sariiʕ/.
- /d/ becomes /z/as in; /wad zeinab/ (ود زينب) becomes / waz zeinab/.
- /d/ becomes /sˀ/ as in /wad sˀaliħ/ (ود صباح) becomes /wasˀ sˀaliħ/.
- /d/ become /ʃ/ as in /wad ʃallʕii/ (ود شلعى) becomes /waʃ ʃallʕii/, /baʕad ʃinu/, (بعد شنو) becomes /baʕaʃ ʃinu/.

- /t/ becomes /tˀ /, as in; /mintazˀrak/ ‘ I’m / he is waiting’ becomes /mintˀ zˀrak/, /lam ʔastatˀiiʕ/ (لم استطييع) becomes /lam ʔastˀatˀiiʕ/ , /ma tatˀiir/ becomes /matˀatˀiir/, ‘go away’.
- /n/ becomes /j/ as in /wa in jakun/ ‘so what’, becomes / wa ij jakun/, /man jaraa/ (من يرى) becomes /maj jaraa/.
- /n/ becomes /l/ as in; /min ladonk raħmah/ (من لدنك رحمه) becomes /mil ladonk raħmah/, /wein lama fihu/ (وين لم فيهو) becomes /weil lama fihu/
- /l/ becomes /l/ as in /katil ragaba/ (قاتل رقبة) becomes / katir ragaba/.

2.3.2.4 Epenthesis in SA

The linguistic term epenthesis is defined as the act of inserting an extra sound in a word. The purpose of epenthesis is to break up difficulty of pronouncing sequences of sounds. In Arabic language there are two types of epenthesis. The first type is the insertion of a vowel sound to the right of –VCC sequence (left-to-right epenthesis) which is discussed by Broselow (1993) whiles the second type is discussed in Kenstowicz (1986 & 1994) and Hamid (1984) is argued to insert a vowel sound to the left of CCV sequence (right-to-left epenthesis). Broselow claims that these processes are motivated by a constrain that requires syllables be maximally and optimally biomoraic. She notes that in SA an epenthesis vowel /a/ is inserted to the right of an underlying -VCC sequences creating thereby a new syllable.

It has been noted earlier in this chapter that Arabic dialects are divided into three groups according to syllable structure i.e.; VC- , C-, and CV- SA belongs to the latter two groups in which epenthesis takes place and this happens when there is cluster at the beginning, middle and end of words.

The MSA word /kalb/ ‘dog’ has only one syllable CVCC, SA speaker tend to break up cluster in such word by inserting a vowel sound as in the followings.

SA epenthesis the vowel sound /i/:

- MSA word /qatl/ ‘killing’ becomes in SA /katil/.
- MSA word /waqt/ ‘time’ becomes in SA /wakit/.

SA epenthesis the vowel sound /a/:

- MSA word /ʃahd/ (شهد) ‘a female name means sweet or honey’ becomes / ʃahad/.
- MSA word / laħd/ (لحد) ‘in a grave’ becomes /laħad/ in the following context /wadalaħad/ (ود اللحد).

Other notable case of the insertion in SA of vowel epenthesis when the last sound in a word is quiescent as in;

- /ʔajna kunt/ (أين كنت) ‘where were you’ becomes /wein kuta/ for masculine singular, and /wein kuti/ for feminine singular, its observable here that elision of /n/ sound also takes place.

2.4 CA of English and SA languages sound systems

English and Arabic are two distinct languages. In comparing the two languages sound systems much variation will be appeared on the surface. Therefore, in learning one of these languages as L2, learners will experience some difficulties which are based on the amount of differences and similarities between L1 and L2 sound systems. In order to find out the points of differences and similarities between English and SA sound systems, the way to do so is the use of CA. In the matter and by taking the all sound system of each language we bear in our mind

the two linguistic term classifications i.e.; the phonetics and the phonology of English and SA. The former one will be represented by speech sounds, consonant and vowel sounds, in addition to syllable structure and stress, whilst the later one will be represented by connective speech such as; reduction, elision, assimilation and epenthesis.

2.4.1 English and SA speech sounds in contrast.

Speech sounds are generally classified into two categories i.e.; consonant sounds and vowel sounds. There are 44 sounds in English, this includes 24 consonant sounds and 20 vowel sounds, 12 are pure vowels and 8 are diphthongs. In contrast, SA has 39 sounds; this includes 28 consonants, six pure vowels and 5 diphthongs. But when we compare the sounds of SA with MSA the result will shows that there are some sounds not exist in SA but exist in MSA (see tables 2-2 and 2-3). Thus, it's necessary to begin when comparing two sound systems with identifying and explaining the phonetic bases of sounds distinctive features rather than the phonological description of sounds. In order give full understanding about the nature of similarities and differences between the English and SA inventory systems.

2.4.1.1 Consonant Sounds

English has 24 consonants generally classified according to their manner of articulations and place of articulations into seven (see table 2-1). On the other hand SA has seven manners of articulations and eight places of articulations. Here we should note that MSA has the same number of place of articulations but in contrary has nine manners of articulations. Therefore, it is clear that there are some sounds that exist in English but not exist in SA and vice versa. In order find out the contrasts between the two consonant sounds of English and SA, we should exhibit

this according to their manner of articulations in addition to their consonant realizations and their influences on the neighbor sounds.

- **Stops**

Stops in English are seven in number namely /p, b, t, d, k, g, ʔ/, while in SA there are eight / b, t, d, $t^{ʔ}$, $d^{ʔ}$, k, g, ʔ/. English lacks the equivalents of the emphatics /$t^{ʔ}$, $d^{ʔ}$/ and in the same manner SA lacks the equivalent of the stop voiceless /p/. The realization of the stops /p, t, k/ are aspirated /p^{h}, t^{h}, k^{h}/ in initial positions but are not aspirated in SA. One other futures English stops /p, t, k/ is that are always voiceless and the vowels preceding them are much shorter. Stops in English are unrealized in syllabic-final position before a consonant for example as in the English word ‘send’. The English stops velar /k, g/ become palatal when followed by front vowel as in ‘key’ /k̟i:/ Unlike SA stops, English stops are frequently lateralized and nasalized as in ‘play’, ‘black’, ‘fatty’, ‘open’, ‘cotton’. The Glottal stop /ʔ/ in English and in SA are different in term of using, in SA it’s used to start syllables beginning with vowel sounds and elsewhere, unlike English language this sound, as Cleghorn & Rugg (2011), Crystal (1997) and Ladeforged (2005), claim that glottal stop /ʔ/ in English often used in the way of to reinforce a voiceless stops /p, t, k/ at the end of a word and it’s rarely noticed because it doesn’t make a difference in the meanings of English words. Unlikely, SA speakers do not tend to reinforce the voiceless stops /t, k/.

Accordingly, SNSA learners of English as foreign language will experience some difficulty on the realization of English stops, especially the voiceless stop /p/ in which SNSA tend to substitute this sound with its counterpart /b/ and the result of this lead to meaning for example no distinction between ‘park’ and ‘bark’.

- **Fricatives**

The English language has nine fricatives in the labiodental, interdental, alveolar, palatal and glottal /f, v, θ, ð, s, z, ʃ, ʒ, h/ respectively. While SA has eleven fricatives in the labiodental, alveolar, palatal, glottal, uvular and pharyngeal /f, s, z, $s^{?}$, $z^{?}$, ʃ, h, χ, ʁ ħ, ʕ/. Thus SNSA learners of English encounter much difficulty in the sounds that do not have any existence in SA fricatives such sounds as; labiodental voiceless /v/ and the interdental sounds /θ, ð/. SNSA tend to substitute /v/ with its counterpart /f/ and this lead confusion between words such as 'live' /laiv/ and 'life' /laif/, 'save'/seiv/ and 'safe' /seif/. Similarly, the substitution of interdentals /θ, ð/ by alveolar /s,z/ can be clear, when SNSA tend to pronounce words that have interdentals /θ, ð/and this even happens in MSA words. SA is featured by its emphatics /$s^{?}$, $z^{?}$/, uvular sounds / χ, ʁ/ and pharyngeal sounds / ħ, ʕ/.

The other English sounds / ʃ, ʒ, h/, these three sound, two of them are exist in SA, i.e.; / ʃ/ and /h/ and the third one /ʒ/ has no existence in SA but exist in some Arabic dialects to substitute /dʒ/. The glottal /h/ has different realization in English and in SA. In English this sound is unaccented in weak forms as in 'her' / ə (r) /, 'him' /im/, 'has' / æz/.Similarly, /h/ is unaccented in final position as in /ʔalla gaal/ instead of /ʔallah gaal/, /lamħah/ 'a glance' becomes /lamħa/ in SA. Thus SNSA learners of English encounter difficulty in /h/ sound especially in weak forms that begin with /h/.

- **Affricates**

English and SA languages possess the two affricate sounds /ʧ/and /dʒ/. These two sounds create some difficulty to SNSA learners of English despite their existence in SA. The cause of this difficulty is that the result of the English orthographic system (writing system), in other words the presentation of '-ch' at the end of English words and '-age' and '-dge' we should pronounce them as only one sound unit /ʧ/ and /dʒ/ or as two sound units '/t/ , /ʃ/' and '/d/, /ʒ/'. This also makes some problems even for native speakers (see Roach 2004). /ʧ/ occurs in a few words in SA words that are borrowed from indigenous languages. /ʧ/ appears in some Gulf dialects such as Kuwaiti dialects whilst /dʒ/ is replaced by the fricative voiced palatal sound /ʒ/.

- **Nasals**

Nasals in English has three sounds, bilabial /m/, alveolar /n/ and velar /ŋ/, while in MSA has two /m, n/. In contrast SA has three sounds two of them exist in English and MSA, /m, n/ and the other sound is a palatal nasal sound /ɲ/ that doesn't exist, in neither MSA nor English. Similarly as the fricative voiceless /ʧ/ also is borrowed from indigenous languages and is basically these languages has no alveolar sound /n/ as it appears in some words that has /n/ but accented as /ɲ/ as in /ɲaala/ (نيالا), /aɲaaɲa/ (انانيا). In SA this sound occurs in; / ɲaaɲa/ 'food' this word is used to notice a child to eat, /ɲal/ 'naked', /ɲam/ 'hum' an expression use in description of a person when attaching meal. This sound in SA is also as allophone of /n/ as in these words; /sindʒa/ (سنجة) 'a name of Sudanese twon', the sound /n/ here becomes palatal, /siɲdʒa/ or as /siɲdʒa/ other words which have the same process like; /landʒ/ (جديد لنج), /windʒid/ (ونجد باشا). The other sounds /m, n, ŋ/, the sounds exist in English, but only two sounds exist in MSA and SA. The velar sound /ŋ/ in English always appears when /n/ precedes some words with orthographic 'ng' and 'nk'. In the case of 'ng', /g/ is not accented as in; 'singer' /siŋə/ and is accented as in; 'finger' /fiŋə/, so the difference is in the way the words are constructed morphologically i.e.; 'singer' is constructed with two morphemes 'sing + er', while finger is constructed with one morpheme 'finger'. The English nasal sounds /m, n, ŋ/ stand as the center of the syllable instead of the vowel. These sounds are so called syllabic consonants and indicated by means of small vertical mark under them /Ḍ/. The most frequent syllabic nasals is /n/ as in 'happen' /hæpən/ which could be pronounced as //hæpn̩/, 'eaten' /i:tən/ becomes /i:tn̩/. In some cases we cannot find syllabic nasal /n̩/ after /l/, /ʧ/ or /dʒ/. / ŋ/ in SA or MSA is allophone of /n/ before velars /k,g/ and uvular stops /q, ʁ/ as in these examples; the MSA word /minqaar/ (منقار) 'beak' for SA /minʁaar/ (منغار) become /miŋqaar/ and /miŋʁaar/, other example /zingaar/ (زينقار) a name of Sudanese singer', //ziŋgaar/.

- **Lateral**

/l/ is a lateral consonant sound, articulated by the tightening the tip of the tongue against alveolar ridge so the air escapes through the sides of the tongue. /l/ exists in English and as well as MSA and SA. The realization of /l/ in English found before vowels sounds quite different from that found in other contexts. For example, in the word 'lea' /li:/ is quite different in the word 'eel' /i: ɬ/, in the former /l/ is clear

but in the later one /l/ is dark / ɬ /. Clear /l/ will never occur before consonants or a pause, but only before vowels in contrast dark / ɬ / occurs before consonants and never occurs before vowels. Accordingly, English has two realizations of the lateral sound /l/ allophones 'clear /l/ and dark /ɬ/'. /l/ in English becomes devoiced when occurs after aspirated sounds /p^h/, /t^h/ and /k^h/ and becomes dental /l̪/ before / θ/ and /ð/. On the other hand MSA and SA have also two allophones of /l/ similarly as in English 'clear /l/ and dark /ɬ/'in these examples; /bismi ʔallah/ (بسم الله) and /ʔin ʃaa ʔaɬɬah/ (إن شاء الله). In these examples it can be clear that clear the lateral sound /l/ in SA or MSA is pronounced clear /l/ after the vowel sounds /i/ and /i:/, and pronounced dark after /a, aa or a:, u, uu or u:/. /l/ in English is a syllabic consonant /l̩/ as in 'bottle' /bɒtl̩/, 'personal'/pɜ:snl̩/. In contrast MSA and as well as SA have no syllabic consonants at all.

- **Tap & Flap in English or Trill in MSA and SA /r/**

/r/ is a consonant sound that exists in English and MSA and as well as SA, despite of the description of the position of the tongue against (touches or make contact) alveolar ridge is alveolar sounds. The realization of this sound differs in English and MSA and as well as SA. In English is considered as syllabic consonant as in 'particular' /pɻtikjəlɻ/. Syllabic / ɻ / is less common in RP (see Roach 2001). /r/ in English is not pronounced in the middle of a word when preceded by a vowel sound as in; 'first' / fɜ:st/, 'form' /fɔ:m/, 'farm' /fa:m/ or in final position as in 'are' /a:/, 'player' /pleiə/.Standard dictionaries like Oxford Dictionary tend to put the sound /r/ between two brackets (r) this means be pronounced or unpronounced in some contexts. Other two allophones of /r/ in English take place, i.e.; when /r/ occurs after / θ/ and /ð/, becomes apico-alveolar tap and when it occurs after aspirated /p^h/, /t^h/ and /k^h/, becomes devoiced. On the other hand the sound /r/ in SA is always pronounced in all positions. One other feature that doesn't exist in English i.e.; SA has two allophones of the alveolar sound /r/ similarly like alveolar sound /l/. These two allophones are light /r/ and dark /ɾ/ as in words such as; /ɾaʔj/ (رأى) 'an opinion', /ri: ħ/ (ريح) 'wind', /ɾaʔs/, SA /ɾaas/ (رأس), 'head'. The result of this variation generates difficulty to SNSA learners of English in pronouncing /r/.

- **Semivowels**

Semivowels are two in number /w/and /j/, exist in English and MSA and as well as SA. /w/ is articulated by the two lips while /j/ is articulated by front of the tongue

against hard palate. /w/ in English becomes devoiced after aspirated sounds /p^h/, /t^h/ and /k^h/ and becomes labio-velar after /p^h/, /t^h/ and /k^h/. On the other hand /j/ in English becomes fricative voiceless /ç/ after aspirated sounds /p^h/, /t^h/ and /k^h/ and /h/.

In comparison, English language has 24 consonant sounds while in SA there are 26 consonant sounds. There are some consonant sounds that do not exist in SA and as well as some consonants those do not exist in English but exist in SA.

SA consonant sounds has some consonant sounds that do not exist in English especially the uvular sounds / χ,ʁ/ and the pharyngeal sounds / ħ, ʕ/ and lastly post-alveolar sound / ɲ/.

In contrast, consonant sounds that exist in English and do not exist in SA are; /p, v, θ, ð, ŋ,ʒ/. SA-speakers may tend to substitute these sounds with their counterparts except the sound /ʒ/; /b, f, s, z/. Hence these sounds are substituted by SA-speakers this may create problem on ineligibility. For example when an SA-learner of English pronounce words like, ‘park’/pa:k/ ‘live’ /laiv/, ‘think’ /θiŋk/,as /ba:k/ ‘bark’, /laif/ ‘live’ ,/ siŋk/ ‘sink’, this may lead to a problem of intelligibility. The nasal sound /ŋ/ doesn’t exist in SA but exist as allophone of /n/ before /k/ or /g/. So, the two sounds /ŋ/ and /ʒ/ may show no difficulty among SNSA. In other view SNSA may also face some difficulties on the realization of English consonant phonemes especially the aspirated plosive voiceless sounds such as /t^h, k^h/ and as well /p^h/.

2.4.1.2 Vowel sounds

The number of vowel sounds in SA language is lesser than the number in English language. SA has thirteen vowel sounds; eight pure vowel sounds / ɪ, i:, a, aa, e:, ɔ:,u, uu/ and five diphthongs /ai, au, ɪə, ɔɪ, əʊ/. On the other hand English language has twenty vowel sounds; twelve pure vowel sounds / ɪ, i:, e, æ, ɑ:, ə, ɜ:, ʌ, ɒ, ɔ:, u, u:/ and eight diphthongs, / eɪ, aɪ, ɔɪ, ɪə, eə, ʊə, əʊ, aʊ/.

SA vowels can never occur in initial position but English can, so in this environment SA vowels are preceded by a glottal stop /ʔ/. They occur freely in the words medial and final positions. The vowel sounds, / i:, a, aa, e:, ɔ:,u, uu/, in SA

become emphatics when preceded by emphatic sounds emphatics, /tˀ, dˀ, sˀ, zˀ/. For examples in words such as; /ʕasˀiiˀr/ (عصير) 'juice', / tˀaaˀr/ (طار) 'flew', /dˀaˀnab/ (ضنب) 'tail', /tˀiin/ (طين) 'mud', /dˀaabitˀ/ or /zˀaaˀbitˀ/, /zˀaˀbatˀ/, /sˀabur/ 'patiant'.

English and SA languages are distinct in term of vowel sounds i.e.; there are seven vowel sounds don't exist in SA; four pure vowels /e, ɜ:, ʌ, ɒ/ and three diphthongs , / eɪ, eə, əʊ/. Accordingly, SNSA are expected to have a lot of difficulty in pronouncing English vowel sounds, especially, the vowel sounds that do not exist in SA and exist in English language.

2.4.1.3 Syllable structure, cluster and stress

Syllable structure in SA and English languages are different in the ways; that SA syllable-initial is always begin with a consonant sound, On the other hand English begins with a vowel sound, and as well as one consonant of more (maximum three). SA syllable-final permits up to two consonants, while English allows up to four consonants. Accordingly SNSA learners of English are expecting to break clusters especially at syllable-final and also at syllable-initial which the first consonant is /s/ initial.

One other feature related to syllable structure plus consonant clusters is that the assignment of stress. The assignment of the stress as mentioned earlier in this chapter, in SA according to the syllable weight and syllable position, and in English according to the strong syllable.

Syllable structure in SA is of three types; light syllable (CV), heavy syllable (CVC) and super-heavy syllable (CVVC or CVCC). The placement of stress in SA, in words of two and three syllables falls;

- on ultimate syllable of two-syllable words if the syllable is super-heavy as in /ru'dʒaal/ (رجال) 'men'.
- on the penultimate syllable (next to the last) of disyllabic words (two-syllables) as in SA words, /kaatib/ (كاتب) 'a writer', /raadʒil/ (راجل) 'a man'.

- on the penultimate (second from last) of three syllable words as in /ki-'taa-bu/ ‘his book’.
- on the antepenultimate (third from left) as in, /'ka-li-maat/, /ka-'li-maa-ti/.

On the other hand, English language has two types of stresses; fixed-stress and free-stress. Fixed-stress is always applied to simple words and free-stress is always applied to complex words. The assignment of the stress in English is governed by strong syllable (syllables which vowel sounds other than schwa, /ə/, /i/ and /u/.

SA word stress is non-phonemic, i.e.; different stress within a word does not change the meaning of the word. While on the other hand English word stress unlike those in MSA and SA, different stress within a word changes the meaning of the word. Suffixes in English and as well as MSA and SA have affection on the stress shifting from one syllable to another.

2.4.2 Connected speech

Sounds in connected speech may get reduction, elision, assimilation or even epenthesis. These connected speech features support the regularity of English and Arabic rhythm and help to preserve its stress-timed rhythm that means English and Arabic are stress-timed rhythm.

2.4.2.1 Vowel reduction

Vowel reduction exists in English and Arabic languages but in different process. English has only one process of vowel reduction in connected speech that is the reduction of vowel sounds in function words, such as pronouns, prepositions, conjunctions, etc. The words in English, nouns, verbs, adjectives and adverbs are not characterized by vowel reduction while the rest of the words in English and what are so called function words are characterized by vowel reduction in certain circumstances. In English, the vowel sound in function words is reduced in all position except in the sentence below adopted from Roach (2004);

- at the end of a sentence *‘chips are what I’m fond* **of***’* / ʧɪps ə wɒt aɪ fɒnd ɒv/

- when a vowel in a function word being contrasted with another function word '**from** *him not* **to** *him*', /frɒm ɪm nɒt tu: ɪm/.
- when a function word is given stress for the purpose of emphasis '*you* **must** *do it*', /ju mʌst du ɪt/.
- and a function word is being cited, or quoted '*you shouldn't put* **"and"** *at the end of the sentence*' /ju ʃudn̩t put ænd ət ðɪ end əv ə sentəns/

On the other hand Arabic language has two processes, one occurs in proclitic words (function words) as in and the other in lexical words. as in the following cases ;

- in verbal sentences ; /jaʕuud/ becomes /lam jaʕud ʔila ʔalbe:ti/ (لم يعد الى البيت).
- in command words as in; /si:r/ becomes /sir ʔila ʔal ʔamam/
- in proclitic words (function words) as in; /jaa/ (يا المتكلم), the vowel sound in this word is reduced to /a/ as in; /ja saami/; The prepositions /fii/ and /ʔilaa/, the vowels here are reduced in /i/ and /a/ in context as in; /ʔila ʔalbe:t/ (الى البيت) and /fillbe:ti / (فى البيت), respectively.

SA-speakers used to reduce vowel sound only in the second type. For the first type tend to accented without vowel reduction as in; /maa χaaf/ (ما خاف), /maa raadʒiʕ/ (ما راجع), /guum/ (قووم) 'for MSA /qum/ (قم), /naam/'for MSA /num/ (نم).

2.4.2.2 Elision

English and Arabic speakers tend to elide some sounds under certain circumstances that cause vowel or consonant elision.

Elision in English occurs in certain cases that cause vowel and consonant elision. Vowel in English mainly occurs in two cases and in both cases; the schwa /ə/ is the subject matter of deletion.

- loss of the weak vowel /ə/ after stops aspirated /p^h, t^h, k^h/ as in; ‘potato’ /p^hteitəu/ , ‘tomato /t^hmeitəu/, ‘canary’ /k^hneəri/.
- loss of weak vowel after syllabic consonants /n, l, r/ as in; ‘tonight’ /tn̩ait/, ‘police’ /pl̩i:s/, ‘correct’ /kr̩ekt/.

while consonants elision occur in English where there is cluster for example the word ‘hands’ /hændz/, it’s very difficult to pronounce /-ndz/ because they are mostly articulated by the same place of articulation so /-d- / is deleted from the cluster thus we have /hænz/. Consonants deletion takes place if the consonants are articulated by the same or near the point of articulation for instance the word ‘uncles’/ʌnklz/ in this word no deletion takes place that why because the four consonants are from different point of articulation, so here the movement eases the tongue movement.

In contrast the most elided sounds in Arabic are the glottal stop /ʔ / ‘alif’ and /l/ ‘laam’, what is so called ‘definite article’. /ʔ/ is always dropped if the preceding sound is a part of functional morphemes as in; /fi ʔalbeit/ becomes /filbeit/ (فى البيت), /waʔinkasar/ becomes /wankasar/ (و انكسر).

Arabic has two type processes of elision; one is associated with the internal part of word, and is so called regular elision, and the other one does not follow morphological rule, irregular elision Ateeq (1991). Study the examples below.

Regular elision:

- /w/ is elided as in /waʕada/ (وعد) ‘he promised’ becomes /jaʕadu/ (يعد) ‘he promises’.
- /jaqrirna/ (يقررن) becomes /jaqirn/ (يقرن) ‘they (feminine) confess’.

Irregular elision:

- /n/ is elided in /munz/ becomes /muz/ (منذ) ‘since’, / inna/ becomes /in/ (إن) ‘that’.
- /f/ is elided in /sawfaʔafʕalu kazaða/ becomes /sawʔafʕalu kazaða/, (سوف افعل كذا) ‘I’ll do so’.
- The vowel sound /i/ is elided when occurs at final position as in the word /ʔalwadi/ becomes /ʔalwad/ in /…. bilwad/.

SA speakers tend to elide the vowel sounds /i, u/ as is illustrated by Hamid (1984) earlier in this chapter.

- /i/ is elided in such cases; /kitaab/ becomes /ktaab/ in /katabu ktaab/ ‘they wrote a book’, / ʃirib/ becomes / ʃrib gahwa/ ‘he drank coffee’.
- /u/ is elided in such cases; /ʃu ʁul ʔaħmad/ becomes /ʃuʁl/ in /ʃuʁl ʔaħmad/ ‘Ahmed’s work’, /kutaar/ becomes /ktaar/ in /karaasi ktaar/ ‘many chairs’.

Now it’s clear that Arabic language is rich in the process of elision (alikhfa) than English language. Elision of English consonants based on cluster and Arabic has no much cluster as in English, especially, at initial and final positions, the limit of consonants at onset is three consonants while in Arabic only one consonant and the limit of consonants at coda is four consonants while in Arabic is two consonants. Thus, we can understand from the examples above that the elision in English occurs mostly where there are three consonants, but in Arabic consonants elision happens only in a few consonant started with the glottal stop /ʔa/ and what is so called ‘*hamza*’.

Elision of vowel sounds is differ than that in English which has only deletion of weak vowel before syllabic consonants and after stops /p, t, k/ and mostly the what is so called ‘the schwa is elided’. SA also is very rich in vowel sounds elision /i, u/, as shown in the example above, and differ than that in English and as well as MSA.

2.4.2.3 Assimilation.

Assimilation is common in connected wherein a sound becomes more like a neighboring sound. Assimilation varies in extent according to speaking rate and style; it's more likely to be found in rapid, casual speech and less likely in slow careful speech. Assimilation is defined to have two types, i.e.; partial assimilation and complete assimilation.

The most clear and observable assimilation in English and Arabic is that assimilation of place. In English language assimilation occurs according to certain environment, where two neighboring sounds of two words or within a word meet together at words boundaries or within a word. The examples below show the possible occurrence of English sounds in terms of assimilation;

Assimilation of place

- Alveolars /t, d, n/ become bilabials before /p, b, m/ as in; 'meat pie' /mi:p pai/, 'good boy' /gub bɔɪ/
- Aveolars /t, d, n/ become velar before /k,g, ŋ/
- alveolars become dental before / θ, ð/
- alveolars /s, z/ become palatal before / ʃ , j/
- Dentals / θ/ become alveolar before /s/

Assimilation of manner occurs if the first word ends with /n/ or /t/ and the second word begins with / ð/, here the fricative sound becomes fricative nasal /n/ and fricative plosive /t/ respectively.

Assimilation of voicing is found in limited ways, it is found across word boundaries, if the first word ends voiceless and the second word begins with

voiced and they are differ only in voicing, thus the final consonant of the first word will be according to the voicing of the second word consonant initial.

The process of assimilation in Arabic language and as well as in SA, is differ as that in English language. Assimilation in Arabic language is called '*al-idhgaam*' and is defined as the fusion of two adjacent segments by complete assimilation of the first one by the second to produce geminate. In Arabic language assimilation takes place between two sounds one is quiescent (has no *al-fathah, al-kassrah and al-dhamah)* and the other is moveable. Arabic language has partial and complete assimilations just as in English language. The most common assimilation occurs with the definite article /ʔal/ '*alif* and *laam*', here /l/ gets assimilated to the sound at initial position of the attached word and begins with one of the so called '*the sun* letters' /t, tˀ, d, dˀ, θ, ð, ðˀ, s, sˀ, z, ʃ, ŋ, l, r, n/.

Assimilation in SA follows the same process as in Arabic language. In addition SA assimilation occurs in the following cases;

- Alveolar stop /d/ is palatalized if a word starts with /dʒ/ or /ʃ/ as /baʕad dʒa/ 'after he came', and becomes fricative if it preceded by / s, z, sˀ/ in; / wad saalim/ 'Saalim's son', / baʕad zaman/ 'after long time', / baʕad sˀalla/ 'after he prayed', / baʕad ʃinu/ 'after what'.
- /t/ becomes emphatic if preceded by emphatics, as in /mintˀazˀrak/ 'I'm waiting for you'.
- alveolar nasal/n/ becomes palatalized before /j/ and lateralized before /l/ as in; /man jaraa/ becomes /maj jaraa/ 'who sees', /laa jaχaaf/ becomes /mil laa jaχaaf/ 'who does not afraid' (من لا يخاف) respectively.

- alveolar nasal /n/ becomes palatal nasal /ɲ/ and velarized /ŋ/ as in; /sindʒa/ becomes /siɲdʒa/ (سنجه) 'A Sudanese twon', /manga/ becomes /maŋga/ 'mango'.
- /l/ becomes trill /r/ before /l/ as in /katil ragaba/ becomes / katir ragaba/ 'he is a killer'.

2.4.2.4 Epenthesis.

Epenthesis in phonetics and phonology is the insertion of an additional sound in a word or between two words. Epenthesis English occurs in order to break up a sequence of two vowels. For examples the use of English indefinite articles '*a*' and '*an*' before nouns, '*a*' is used before a consonant sound while '*an*' is used before a vowel sound as in; as in, '*an apple*' /ə**n** ʌpl/, in this example the consonant sound /n/ is inserted to break a sequence of two vowel sounds, i.e.; /ə/ and /ʌ/. Similarly, the sound /r/, what is so called linking -r-, also is inserted when a next word begins with a vowel sound and /r/ occurs in syllable-final position. For example the word '*four*' /fɔ:/ when immediately followed by '*eggs*', here the sound /r/ is inserted 'fɔ:r egz/.

In SA epenthesis is used to break up clusters in a word at onset or at coda. Accordingly, we can have two types of epenthesis, i.e.; the insertion of a vowel sound to the right of -VCC sequence, and the insertion of a vowel to the left of VCC sequences. Thus SA-speakers tend to insert vowel mostly all Arabic words that have cluster as in the MSA word /kalb/ becomes /kalib/. Epenthesis in SA is to break up cluster while in English is due to a combination of two vowel sounds at word boundaries as in the examples above. So, the ways of inserting a sound in both languages may create some difficulties in pronunciation among SNSA and vice versa.

2. 5 Summary of the chapter

This chapter has represented the different theories of mother tongue interference in learning second language. The necessary literature has been collected from different sources in order to make a comparison between the sound systems of the two languages, and to make a clear cut of the expecting difficulties. The comparison has been between the English and SA languages, in order to find similarities and differences and to find the extent of mother tongue interference when a SA speaker wants to learn English language. The comparison that has been made between the two languages revealed that there are many differences between English and SA sound systems.

2.6 Related Previous Studies

First and before we presenting review of some related previous studies, in the area of English pronunciation difficulty among Sudanese learners of English as FL, we should notice that the area of pronunciation has not given much concern by researchers as it has been given to other areas such as; writing, grammar, etc. Previous studies are very important in scientific research, because they give some lights on the some problems that were already discussed earlier in the past and tackling the same issue of your concern. Thus; the aim of these studies is to give some light on the contribution of researchers on the difficulty of English pronunciation among Sudanese learners of English as FL.

2.6.1 Study no. 1 – Ali, E. (2011)

Taj, investigates, in his study, the problem of speech intelligibility problems of Sudanese learners of English. The aim of his study is to investigate the nature of linguistic factors behind speech production errors of English spoken by Sudanese learners of English as FL. The study tries to give some evidence related to the

problem of speech intelligibility among Sudanese in terms of production and listening intelligibility.

In order to achieve his assumptions, he collected data in different ways including; perception test, production test and a written questionnaire to be assigned to three groups of participants as, the subject of the study. The participants, descent from different linguistic environments (Sudanese university learners of EFL as test group participate in all experiments as listener and/or speakers of English, native speakers of RP English, as model group, are involved in all experiments as listener /speaker and the last group of subjects participants as listener group only and this include participant of American an Dutch). He used recording for the participants on a laptop computer using Adobe Audition, participants were asked to read a list of words which include all the target sounds those word were embodied in sentence carrier. The construction of intelligibility test was based on the Modified Rhyme Test; other procedures like Praat software and Linear Discriminant Analysis were used for acoustic analysis of speech sounds.

After the analysis and description of the collected data, the study came out with strong evidence that Sudanese EFL learners have experienced intelligibility problems while producing or listening to native speakers of RP English and also came out that English vowel sounds are the most difficult area for Sudanese EFL learners in comparison to English consonants. Sudanese EFL learners, in this study, substitute consonants such as; /p, v, θ, ð/ with /b, f, s, z/ respectively.

2.6.2 Study no. 2 – Hassan, E. (2014)

This study investigates the problem of English pronunciation among Sudanese learners of English as FL and whose first language is Sudanese spoken Arabic. The study aims on finding the problematic sounds which face them and factors that

cause English pronunciation problems. The researcher spent many days with students at SUST by involving with them in conversation of different interested topic in English. He noticed that the students have problems in English pronunciation of some of English sounds especially that do not exist in Sudanese Spoken Arabic such as /p, v, θ, ð/ plus that students have some problems in vowel sounds.

In order to prove his claim, he collected the necessary data from two participants by means of study test and a structural questionnaire. 50 students were chosen as the original population of this study to do recording for study test and 30 teachers of English to respond to a structural questionnaire about the exact mispronounced sounds and the reason behind the pronunciation problems.

The study, after the data were collected through study test for students and a structural questionnaire for teachers, proved that there are some problematic sounds which cause pronunciation errors. The cause behind pronunciation errors as stated by the researcher is the lack of proper attention towards teaching pronunciation and the lack of motivation among the students towards teaching pronunciation.

Study recommended that teachers should correct the pronunciation errors and teach students how to pronounce these sounds correctly.

2.6.3 Study no. 3 – Ahmed, Z. (2017)

In this study the researcher investigated the problem of pronunciation encountered by Higher Secondary school students. He claims that the Sudanese students at Higher Secondary schools have difficulty in English pronunciation. The study is attempted to deal the problem of English pronunciation among Higher Scondary schools at Shikan locality in Northern Kordofan state, in order to find the most

suitable solutions. The study also aims in finding the reason behind English pronunciation problems and what is the exact problem facing those students.

The researcher followed descriptive analytical statistic method in this study because it's suitable in such cases. He used two tools in collecting data i.e.; questionnaire for teachers and recording-test for students, as the study sample of this study. The samples are selected randomly of about (35) students and (50) teachers from Higher Secondary schools and mostly from Shikan locality, North Kordofan state.

After collecting the necessary data, researcher used two method, descriptive analytical method and factor analysis method. The former one was used to show the directions of the sample size of analytical study to show the difficulties that face EFL learners in learning pronunciation. The later one was used to discuss the hypotheses and support the research questions.

The researcher finds out that most of the students face many problems in English pronunciation on the areas of stress and intonation which are considered as the main problem of learning English pronunciation, in addition to the mother tongue interference. He recommended some suggestions according to his results and findings such as; qualified teachers to teach English pronunciation, a need for English teachers (natives) to teach pronunciation and English pronunciation should be taught in all aspects of language.

2.6.4 Study no. 4 – Alnoor, S. (2017)

The study aims to investigate the probable reasons behind pronunciation problem among Sudanese students. The study also aims to investigate whether the differences between English and Arabic languages cause problems in pronunciation for students and to investigate the inadequacy of the English

syllabus at university concerning the number of phonology courses and the differences between English and Arabic sound systems. She assumes that the differences between English and Arabic languages in consonants and vowels besides the inadequate phonology courses are probable causes behind the difficulty of pronunciation.

The samples of this study is consist of (50) students majoring in English from Khartoum University, College of Arts, and (20) teachers from the same university. She used two tools in collecting the necessary data, i.e.; oral-test for students and a questionnaire to teachers. The oral test composed of selected words including the target sounds and the questionnaire for the concerned teachers.

The collected data are analyzed statistically and descriptively, in order to see the exact problem behind the English pronunciation problems. Accordingly, the findings and the results show that; the students have significant problem with some English sounds. Whereas the findings of this study disclosed an additional reason that is the inadequacy of phonology component regarding students first language and the number of phonology courses. The researcher has come out with some recommendation according to the findings and the results such as; Raising students' awareness of the differences between Arabic and English in consonants and vowels by teaching and learning the sound systems of both languages, integrating listening in phonology learning and using language labs or the available technological resources, updating phonology courses and strategies of learning pronunciation, and updating methods of assessing pronunciation.

The studies above investigated the difficulties of English pronunciation among students in the area of speech sounds and slight touches to stress. In any comparison between two languages, the comparisons should be between the target

language and the real native language of the learners, i.e.; the language of daily conversations and mainly and only the standard language. Another things that is questionable, about it Sudanese Arabic or any other tribe language? In this sense, this study first, tackles different aspects of English pronunciation, such connected speech (assimilation, weak forms and elision). Second the comparison was made up between English language and Sudanese Arabic dialect specifically, the sub-dialect of Khartoum Arabic.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter explains the method of the study that has been carried out during the test. However the researcher in this chapter will illustrate the tool of data collection that used for collecting the data and information needed for this study were tape recording. This will include the study population, sample of the study, the procedures used in illustrating the test and reliability and validity of the test. The collected data were later analyzed from the recording of the participants.

3.1 Method of the study

The researcher used two major methods surveys in this study: descriptive and analytical. A descriptive method is used to describe what exist at the present. The main characteristic of this method is that the researcher has no any control over the variables. He is only concern about reporting what has happened or what is happening. On the other hand, analytical method attempt to describe and explain why certain situation exist, by using facts or information already available, and analyze these to make a critical evaluation of the material gathered.

3.2 Procedures of Data Collection

It is known that the tool of any study is the instrument which any researcher uses for collecting the required data for the study. There are many types of tools used in the field of scientific research. Any scientific research, in order to find causes and effects, requires gathering relevant data from different available sources, such as books, journals, thesis, and gathered information from the case-study to be described and analyzed to reach a complete understanding about the study. In this

research, the researcher used study test as the only tool to collect data from the sample. The study test attempted to investigate English pronunciation difficulty among teaching staff at some universities. The study test which was designed by the researcher consists of 45 phrases and sentences focusing on the area of English pronunciation that is expected to create difficulty when SNSA pronounce English. The 45 phrases/sentences explicit difficulty of English pronunciation on the areas of English alveolar consonants, (SLs of English substitute /t/,/ d /, /s/, and /z/ with Arabic emphatic sounds /t$^{?}$/, /d$^{?}$/, /s$^{?}$/, and /z$^{?}$/), SLs of English have difficulties in pronouncing English consonants cluster, SLs of English tend to pronounce the English vowel letters 'o' as / ɔ:/ instead /əʊ/ and /e/ instead of /ə/ and /ɒ/ or vice versa, and English diphthongs /ei / replaced by /e/ or /e:/ and SLs of English face difficulty in English connected speech such as; assimilation, weak forms and elision. These four areas represent the questions and the hypothesis of the study. The collected data of the study test will be analyzed to satisfy the questions and the hypothesis of the study.

3.3 Population and Sampling

The sample of the study consists of 30 teaching staff ,as a case study, both including both sexes, and have been chosen randomly from five universities that is Sudan University of Science & Technology, University of Bahri, Omdurman Islamic University, University of Khartoum and Al-ahfad University for Women. All the samples of this study have been engaged in teaching English language at their universities. The sample of the study's qualifications, 13 Ph.D and 17 MA holders with average of experience between 3 to 20 years of teaching English at tertiary level. The researcher asked the 30 participants to read the 45 phrases/ sentences aloud and before involve in reading he asked them to have a look to the phrases / sentences to prepare themselves.

3.4 Procedures

The researcher used audio-recording to collect the study data, by using such an instrument or electronic device in such a type of work may save the researcher from having to make frantic notes and risk missing important information. In addition, audio recording is many projects including linguistics. In linguistics where the speech itself is the subject of analysis many works have been investigated by using audio recorder. Thus, the researcher used one of the Sony electronic audio-recoding productions i.e.; Sony audio recording – ICD-BX140, with capacity of memory 43hrs and 20mins, allows the features of backward a forward, noise filtering.

As it was mentioned earlier in this chapter the sample of this study were 30 participants who are native speakers of Arabic. The study test took place after all the necessary preparation were done, each of the participants read the whole 45 phrases/ sentences aloud, while at the same time of recording the researcher was holding the recording device few centimeter from the participant's mouth. Before the researcher started to listen to the recordings, he had already prepared necessary drafts needed to see the correct and incorrect pronunciations of the study test. The researcher first, made transcription to all the 45 phrases / sentences from the site https://tophonetics.com/ , this site lack to other features of transcription such as connected speech (assimilation, weak forms and elision). To fulfill these missing features the researcher applied these features according to the phonological rules of English language. Second, the researcher prepared a table consisted of two axes one was for the numbers of the participants, vertically arranged as; p1, p2, ……p30, and second one for the values of correct and incorrect pronunciations of the target sounds, horizontally. After all this was done, then the researcher started to listen carefully by repeating the target sounds several times using the of feature of backward, this feature helped the researcher to recognize whether the target sound is correctly or incorrectly pronounced. In addition to this and to make the study authentic the researcher put the draft of the 45 phrases/sentences transcription in front of him while listening to the recordings. After he completed the task of listening and reported the data and the information needed for the

analysis, then he calculated the figures using the percentage; that means the figures were calculated and computed to see the percentage of correct and incorrect of the target sounds. The collected data and information were analyzed descriptively and statistically.

3.5 Reliability and Validity of the Test

3.5.1Apparent reliability of the test

In order to check the apparent reliability and validation of the test according to the formulation and explanation, the researcher showed the test to five of Ph.D. holders as referees who are specialized in the same area of the study and work in different universities. In this matter some of the referees made some valuable suggestions and others agreed were agreed that the test is suitable to the study. The researcher took seriously the suggestions and corrections of the referees and has applied to the test. The table (3-1) below shows, the referees' names, academic ranks and institutions.

Table (3-1): The test's referees and their academic rank and institutions

No.	Name	academic rank	Institution
1.	Dr. Mahmoud Ali Ahmed	Associate professor	Sudan University of Science and Technology
2.	Dr. Abbas Mokhtar	Asst. professor	Sudan University of Science and Technology
3.	Dr. Mountasir Hassan Mubark	Asst. professor	Sudan University of Science and Technology

4.	Dr. Ahmed Mukhtar	Associate professor	Omdurman Islamic University
5.	Dr. Ishraqaa	Associate professor	Al-Neelien University

Source: The researcher from applied study, 2018.

3.5.2 Statistical Reliability and Validity:

It is meant by the reliability of any test, to obtain the same results if the same measurement is used more than one time under the same conditions. In addition the reliability means when a certain test was applied on a number of individuals and the marks of every one were counted, then the test applied to the same group another time and the same marks were obtained, then we can describe this test as reliable. In addition reliability is defined as the degree of accuracy of the data that the test requires. Here are some of the most used methods for calculating the reliability:

1. Split-half by using Spearman-Brown equation.
2. Alpha-Cronnach coefficient.
3. Test and re-test method.
4. Equivalent images method.
5. Guttman equation.

Validity on the other hand, is also a measurement used to identify the validity degree among the respondents according to their answers on certain criterion. The validity is counted by a number of methods; one of them is the validity by using the square root of the (reliability coefficient). The value of the reliability and the

validity lies in the range between (0-1). The validity of the test is that the tool should be measure the exact aim, which it has been designed for.

The researcher calculated the validity statistically using the following equation:

$$\text{Validity} = \sqrt{\text{Reliability}}$$

The researcher calculated the reliability coefficient for the measurement, which was used in the test, using (Split-half) method. This method stands on the principle of dividing the answers of the sample individuals into two parts, i.e.; items of the odd numbers e.g. (1, 3. 5,..). Then Pearson correlation coefficient between the parts is calculated. Finally, the (reliability coefficient) was calculated according to Spearman-Brown Equation as the following:

$$\text{Reliability Coefficient} = \frac{2 \times r}{1 + r}$$

r = Pearson correlation coefficient

To calculate the validity and reliability of the test from the above equation, the test was distributed to the respondents. In addition, depending on the answers of the pre-test sample, the above Spearman-Brown was used to calculate the reliability coefficient using the Split-half method, the table below shows the results:

Table (3-2): the statistical reliability and validity of the pre-test sample is about 10 of the study test.

	Reliability	Validity
correct	0.80	0.89
In correct	0.87	0.93
Overall	0.92	0.96

Source: The researcher from applied study

We note from the results in the table above, that the overall Reliability and Validity coefficients for the questionnaire are greater than (50%), and some of them are nearest to one. This indicates to the high validity and reliability of the answers, so, the study test is valid and reliable.

CHAPTER FOUR

DATA ANALYSIS RESULTS

AND DISCUSSION

4.0 Introduction

This chapter presents the analysis of gathered data collected from the research test via tape-recordings of the case study. The researcher wants to assure that SNSA experienced difficulty in English pronunciation which is considered as the most difficult area. In order to achieve this, the researcher has already designed the required test in such cases and then asked the participants to read aloud the items of the test by means of tape recording. In this chapter the researcher is going to analyze the recoded data in details concerning the subject area accompany with discussion of the results.

4.1Test Analysis

As it had been mentioned earlier in chapter three, a test was given to the participants (teaching staff) as main tool of this study. The main purpose was to investigate deeply the difficulty of English pronunciation among teaching staff as a case study of the research. Fortunately, the participants showed much concern about the study and helped the researcher to accomplish this study.

The researcher divided the test items into four groups according to the questions and hypotheses of the research and then subdivided the first one into four groups and the fourth one into three groups to make the analysis simple and understood.

So the tables and charts below show the data analysis and discussion of the results as follows:

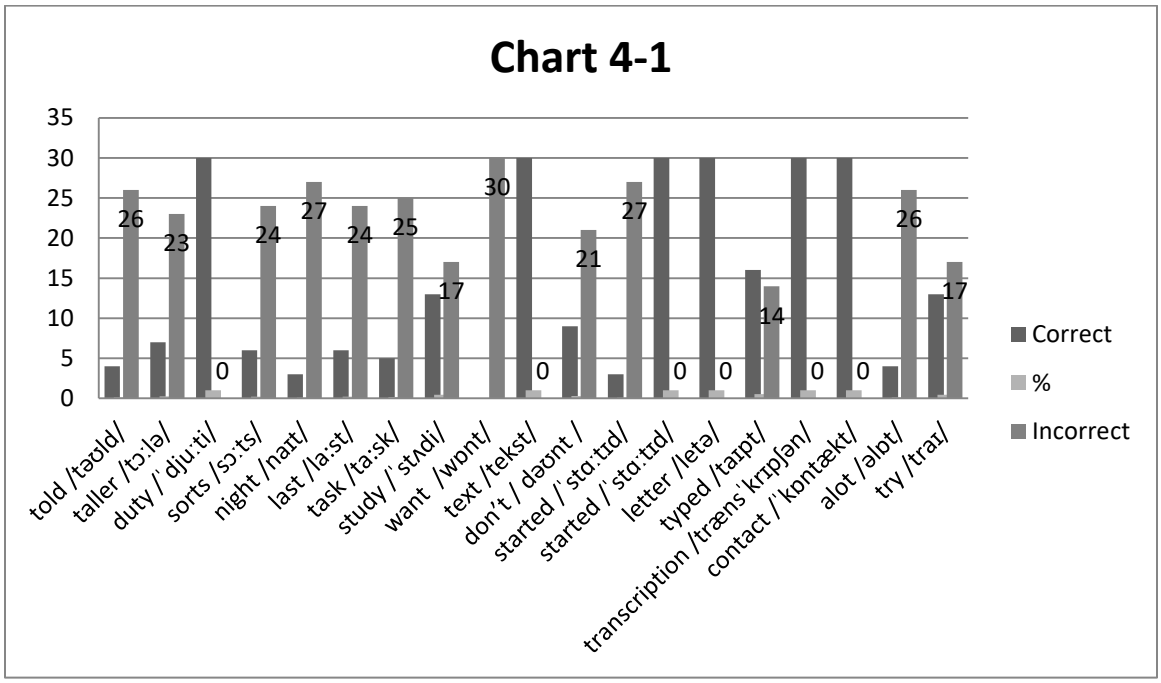
4.2 Data Analysis

1. Investigating the first hypothesis: SLs of English substitute English alveolar / t /,/ d /,/ s /, and / z / with Arabic emphatic sounds /tˀ/, /dˀ/, / sˀ/, and / zˀ/.

Table (4-1): The frequency distributions of /t/ pronunciation

Sentence No.	target words/sounds	Correct	%	Incorrect	%
1.	**t**old /təʊld/	04	13%	26	87%
1.	**t**aller /tɔːlə/	07	23%	23	77%
2.	du**t**y /ˈdjuːti/	30	100%	00	00%
3.	sor**t**s /sɔːts/	06	20%	24	80%
4.	nigh**t** /naɪt/	03	10%	27	90%
5.	las**t** /laːst/	06	20%	24	80%
5.	**t**ask /taːsk/	05	17%	25	83%
10.	s**t**udy /ˈstʌdi/	13	43%	17	57%
11.	wan**t** /wɒnt/	00	00%	30	100%
11.	**t**ext /tekst/	30	100%	00	00%
12.	don’**t** / dəʊnt /	09	30%	21	70%
14.	s**t**arted /ˈstɑːtɪd/	03	10%	27	90%
14.	star**t**ed /ˈstɑːtɪd/	30	100%	00	00%
18.	le**tt**er /letə/	30	100%	00	00%

18.	**t**yped /taɪpt/	16	53%	14	47%
20.	**t**ranscription /træns'krɪpʃən/	30	100%	00	00%
22.	con**t**ac**t** /'kɒntækt/	30	100%	00	00%
25.	alo**t** /əlɒt/	04	13%	26	87%
41.	**t**ry /traɪ/	13	43%	17	57%



The above table and chart (4-1) display the percentages of correct and incorrect pronunciation of English alveolar sound /t/ in different contexts. It's clear that from the table above, most of the participants have difficulty in pronouncing English alveolar /t/, in other words most of the participants replace English alveolar sound /t/ with SA alveolar emphatic /t$^{?}$/. This process of replacing is due to some vowel sounds that precede or come after /t/ in such words as; told , taller, sorts, night , last, task, study, wont, don't, started (/t/ in first syllable), typed a lot and try. The

observable vowel sounds in this process are /əʊ/ as in “told and don’t”, /ʌ/ as in ‘study’ /ɔː/ as in ‘taller and sorts’, /aɪ/ as in ‘night, typed and try’, /ɑː/ as in ‘last, task, and started’, / ɒ/ as in ‘wont and a lot’.

The word ‘wont’ has the highest frequency of errors 30 participants (100%), while the lowest frequency is of 14 participants (47%) goes to the word ‘typed’. The other frequencies of errors that is out of 30 participants are; ‘night and started’ 27 (90), ‘told’ and ‘a lot’ 26 (87%), ‘task’ 25 (83%), ‘sorts’ and ‘last’ 24 (80%), ‘taller’ 23 (77%), “don’t” 21 (70%) and ‘study’ and ‘try’ 17 (57).

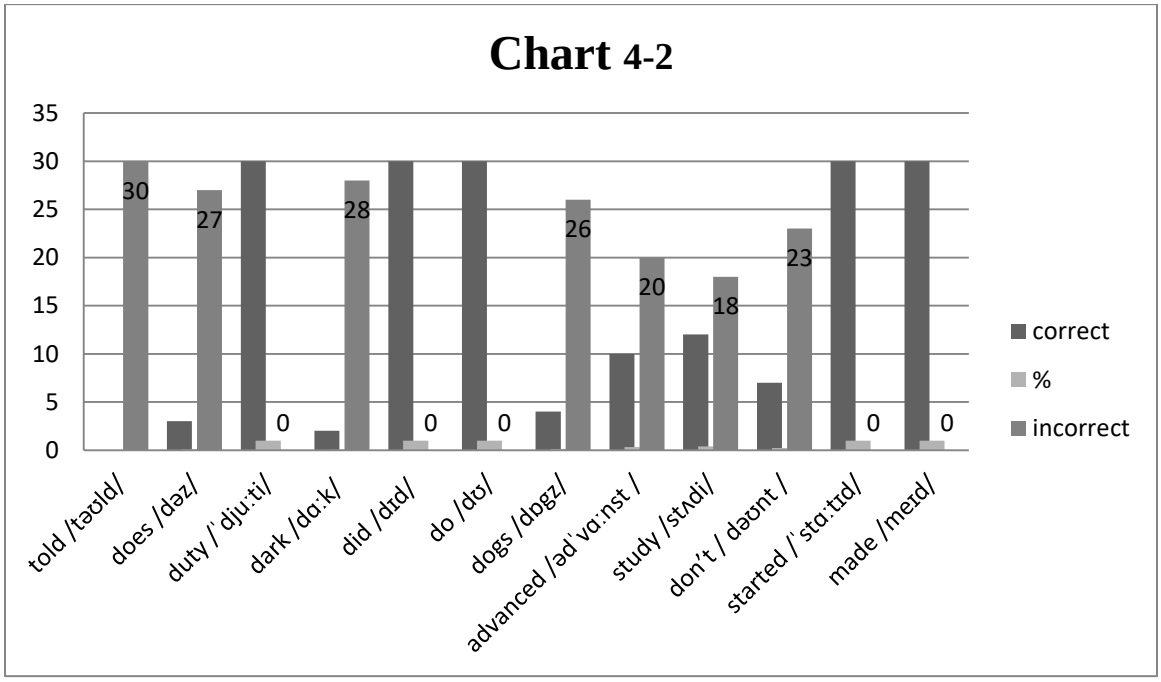
On the other hand, the frequencies of accuracy pronouncing English alveolar /t/show that the highest frequency is (100%) of almost the 30 participants. This includes the words; ‘duty’, ‘text’, ‘letter’, ‘transcription’, and ‘contact’.

The overall calculated value of the median for participants’ correct pronunciation of the target sound above is 9 (30%) while it is 21 (70%) for participants’ incorrect pronunciation.

Table (4-2): The frequency distributions of /d/ pronunciation

Sentence No.	target word/sound	correct	%	incorrect	%
1.	tol**d** /təʊld/	00	00%	30	100%
2.	**d**oes /dəz/	03	10%	27	90%
2.	**d**uty /ˈdjuːti/	30	100%	00	00%
4.	**d**ark /dɑːk/	02	07%	28	93%
4.	**did** /dɪd/	30	100%	00	00%

5.	**d**o /dʊ/	30	100%	00	00%
8.	**d**ogs /dɒgz/	04	13%	26	87%
9.	a**d**vanced /ədˈvɑːnst /	10	33%	20	67%
10.	stu**d**y /stʌdi/	12	40%	18	60%
12.	**d**on't / dəʊnt /	07	23%	23	77%
14.	start**ed** /ˈstɑːtɪd/	30	100%	00	00%
25.	ma**d**e /meɪd/	30	100%	00	00%



The table and the chart (4-2), show the participants' correct and incorrect pronunciation of English alveolar /d/ in different contexts. As seen from the table above that most of the participants have difficulty in pronouncing English alveolar /d/, and they replace this sound instead by SA emphatic alveolar /dˀ/ in some

contexts. It's observable that there are some specific vowels which precede or come after causes this such as; /əʊ/ as in "told and don't", /ʌ / as in 'does and study' (note that participant pronounce does with strong form /ʌ/ and not weak form /ə/), /ɑː/ as in 'dark and advanced', /ɒ/ as in 'dogs'.

The highest frequencies of the participants' error as shown in the table as read that the word 'told' takes almost the 30 participants (100%). The other frequencies of participants' errors are includes the words; 'dark' 28 (93%), 'does' 27 (90%), 'dogs' 26 (87%), 'don't 23 (77%), 'advanced' 20 (67%), and 'study' (60%).

The table and the chart also display the frequencies of accuracy pronouncing English alveolar /t/ show that the highest frequency is (100%) of almost the 30 participants. This includes words such as; 'duty', 'did', do and 'made.

It is observable the replacement takes place wherever one of these vowels /ʌ , ɔː, əʊ, ɑː, ɒ/ takes place before or after the target consonant..

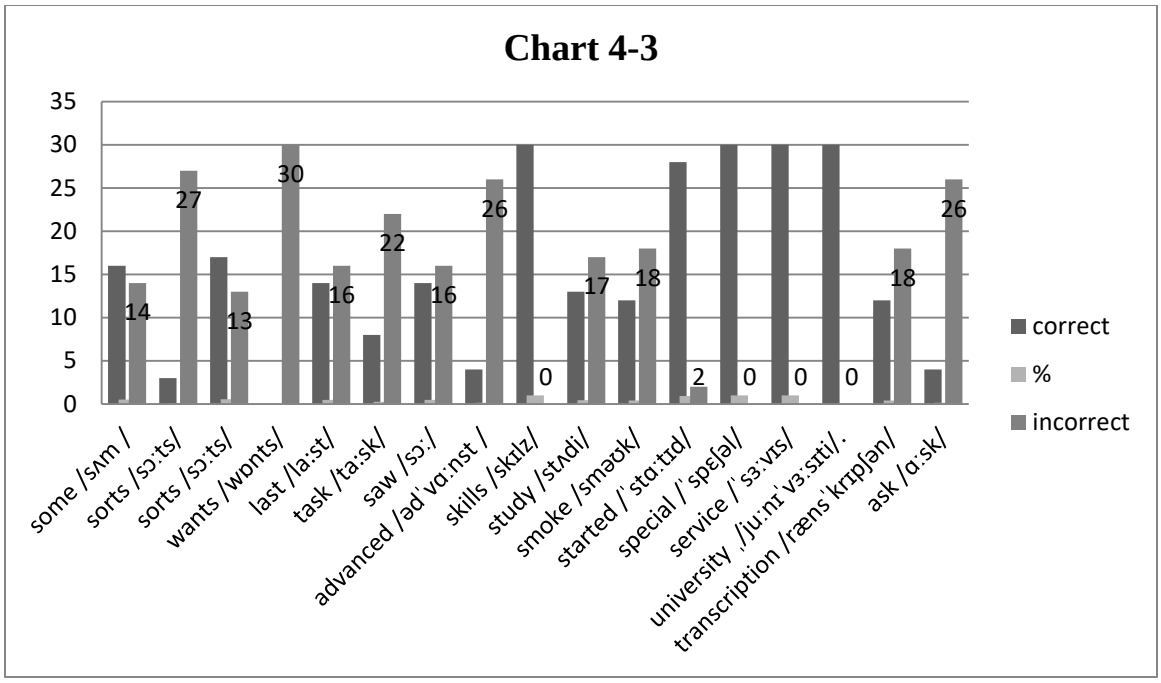
The overall calculated value of the median for participants' correct pronunciation of the target sound above is 11 (37%) while it is 19 (63%) for participants' incorrect pronunciation.

Table (4-3): The frequency distributions of /s/ pronunciation

Hypothesis (1) Alveolar / s/ substitute to alveolar emphatics /s$^{?}$/.

Sentence No.	target word/sound	correct	%	incorrect	%
3.	**s**ome /**s**ʌm /	16	53%	14	47%
3.	**s**orts /sɔːts/	03	10%	27	90%

3.	**s**ort**s** /sɔːts/	17	57%	13	43%
4.	want**s** /wɒnt**s**/	00	00%	30	100%
5.	la**s**t /laːst/	14	47%	16	53%
5.	ta**s**k /taːsk/	08	27%	22	73%
7.	**s**aw /sɔː/	14	47%	16	53%
9.	advan**c**ed /ədˈvɑːnst /	04	13%	26	87%
9.	**s**kills /skɪlz/	30	100%	00	00%
10.	**s**tudy /stʌdi/	13	43%	17	57%
12.	**s**moke /sməʊk/	12	40%	18	60%
14.	**s**tarted /ˈstɑːtɪd/	28	93%	02	07%
15.	**s**pecial /ˈspɛʃəl/	30	100%	00	00%
15.	**s**ervi**c**e /ˈsɜːvɪs/	30	100%	00	00%
17.	univer**s**ity ˌ/juːnɪˈvɜːsɪti/.	30	%	00	00%
20.	tran**s**cription /rænsˈkrɪpʃən/	12	40%	18	60%
41.	a**s**k /ɑːsk/	04	13%	26	87%



The table and the chart above (4-3) reflect the participants' correct and in correct pronunciation of English alveolar /s/in different contexts. As seen from the table The English alveolar /s/ is replaced by SA emphatic alveolar in different contexts according to the participants' pronunciation.

The highest frequency of the participants' error in pronouncing the English sound /s/ in the word 'wants' is 30 (100%) as shown in the table and the chart. The other frequencies of participants' error of the same sound in such words as; 'sorts' 27 (90%), 'advanced' 26 (87%), 'ask' 26 (87%), 'study' (57%), 'last' 16 (53%), 'some' 14 (47%), and sort**s** 13 (43%). Thus the process of replacing English alveolar /s/ is due to some vowels

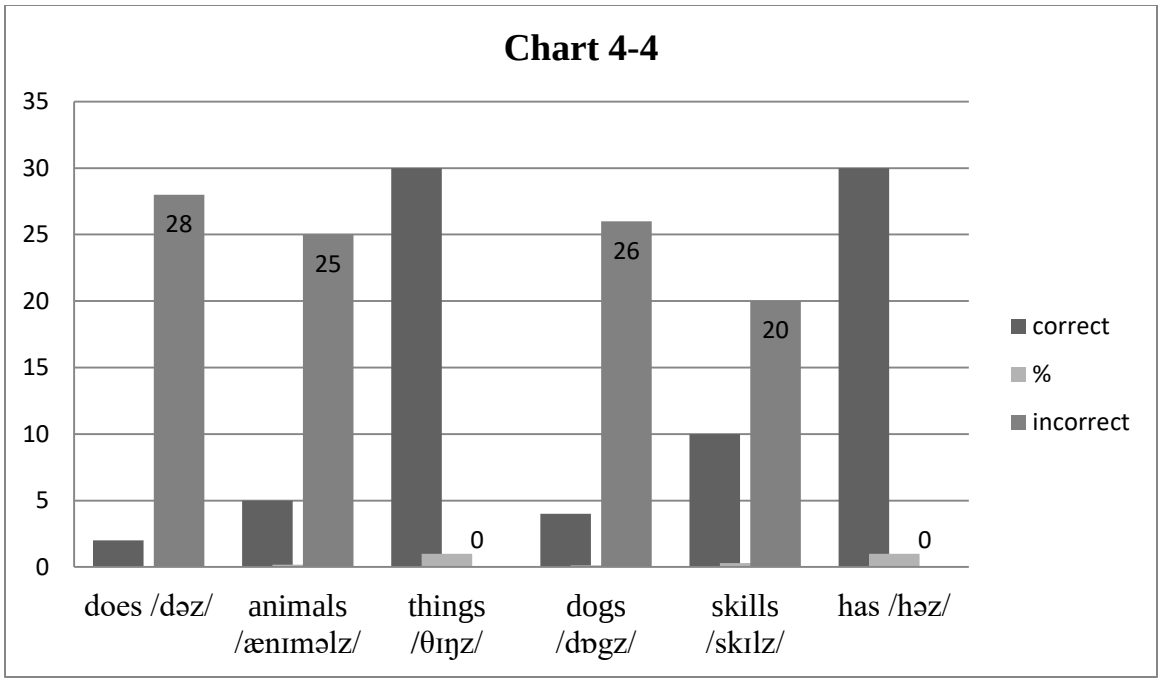
On the other hand the table and the chart display the accuracy of participants, which shows that the participants are confined to English alveolar sound /s/ in some contexts as in words such as; 'skills', 'services', and 'university' 30 (100%), and started 28 (90%).

Know it is clear that /s/ according to the words in the table above that English alveolar /s/ gets SA emphatic alveolar /sˁ/ wherever one of these vowels /ʌ , ɔ:, əʊ, ɑ:, ɒ/ takes place before or after it.

The overall calculated value of the median for the participants' correct pronunciation of the target sound is 14 (47%) while it is 16 (53%) for participants' incorrect pronunciation.

Table (4-4): The frequency distributions of /z/ pronunciation

Sentence No.	target word/sound	correct	%	incorrect	%
2.	doe**s** /dəz/	02	07%	28	93%
3.	animal**s** /ænɪməlz/	05	17%	25	83%
5.	thing**s** /θɪŋz/	30	100%	00	00%
8.	dog**s** /dɒgz/	04	13%	26	87%
9.	skill**s** /skɪlz/	10	30%	20	70%
14.	ha**s** /həz/	30	100%	00	00%
35.	boy**s**	30	100%	00	00%



The table and the chart (4-4), show the frequency of participants' accuracy and errors in pronouncing English alveolar /z/ in different contexts. The frequencies of participants' errors based on replacing English alveolar /z/ into SA emphatic alveolar /z$^{\text{ʔ}}$/ in different contexts. As seen from the table, it appears that the frequencies of error of the words 'does', 'animals', 'dogs' and 'skills' are; 28 (93%), 25 (83%), 26 (87%) and 20 (70%), respectively.

On the other hand, the table and the chart above show that the participants' accuracy in pronouncing English alveolar /z/ as in such words; 'things', 'has', and 'boys' 30 (100%).

This sound /z/ gets emphatic as the same as the above sounds i.e.; /t, d, s/ wherever one of the vowels /ʌ , ɔ:, əʊ, ɑ:, ɒ/ takes place before or after it.

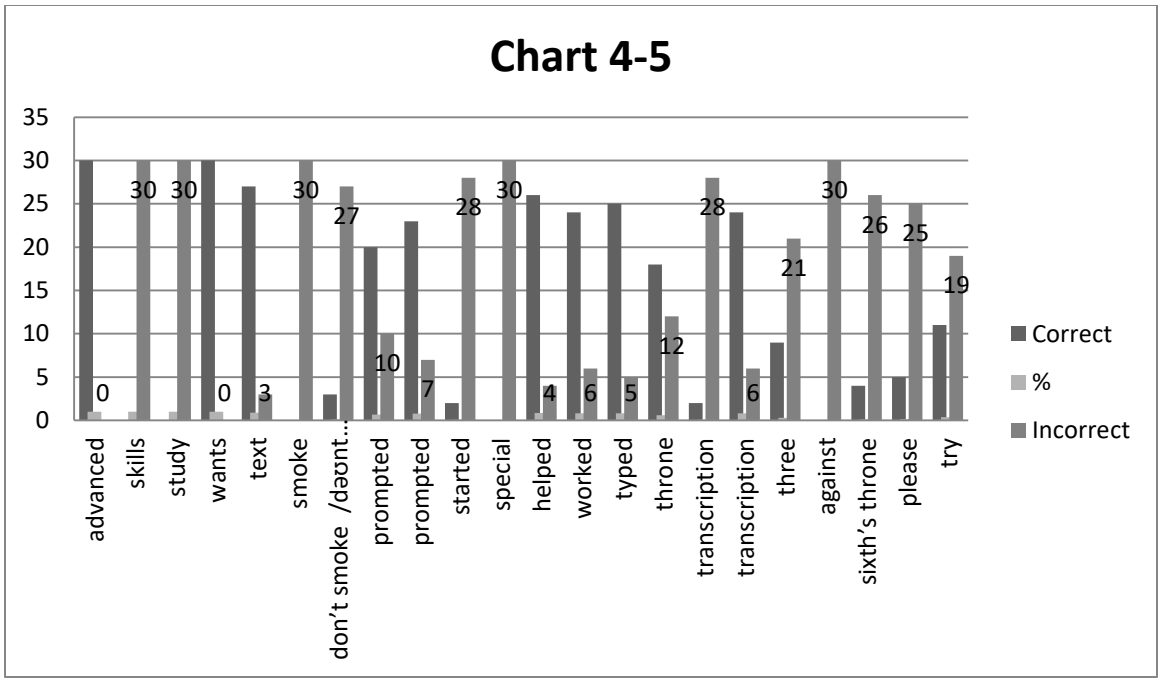
The overall calculated value of the median for participants' correct pronunciation of the target sound is 10 (33%) while it is 20 (67%) for participants' incorrect pronunciation.

2. Investigating the second hypothesis: SLs of English have difficulties in pronouncing English consonants cluster.

Table (4-5): The frequency distributions of clusters pronunciation

Sentence No.	Target word/sound	Correct	%	Incorrect	%
9.	adva**nced**	30	100%	00	00%
9.	**sk**ills	00	00%	30	100%
10.	**st**udy	00	00%	30	100%
6.	wa**nts**	30	100%	00	00%
11.	te**xt**	27	90%	03	10%
12.	**sm**oke	00	00%	30	100%
12.	do**n't sm**oke /dəʊnt sməʊk/	03	10%	27	90%
13.	pro**mpt**ed	20	67%	10	33%
13.	**pr**ompted	23	77%	07	23%
14.	**st**arted	02	07%	28	93%
15.	**sp**ecial	00	00%	30	100%
16.	he**lped**	26	87%	04	13%
17.	wor**ked**	24	80%	06	20%

18.	ty**ped**	25	83%	05	17%
19.	**thr**one	18	60%	12	40%
20.	tra**nscr**iption	02	07%	28	93%
20.	**tr**anscription	24	80%	06	20%
23.	**thr**ee	09	30%	21	70%
28.	agai**nst**	00	00%	30	100%
38.	si**xth's thr**one	04	13%	26	87%
39.	**pl**ease	05	17%	25	83%
41.	**tr**y	11	37%	19	63%



The table and the chart (4-5) show the frequencies of accuracy and incorrect pronunciation of 30 participants while pronouncing English consonants cluster. As seen from the table and the chart we can find that the consonants cluster occur at initial, medial, and final positions. Consonant clusters at initial position consist of maximum 3 consonants, this covers words that begins with pre-initial /s/ plus a consonant or two consonants such as; 'skills', 'study', 'smoke', 'started' and 'special'. These words have the typical participants' frequency of errors 30 (100%), except the word 'started' has 28 (93). Also it can be seen from the table and the chart above, words have two consonants at initial position such as; 'prompted', 'throne', 'transcription' 'three', 'please' and 'try' with participants' frequency of errors; 7 (23%), 12 (40%), 6 (20%), 21(70%), 25 (83%) and 19 (63%), respectively.

Consonants clusters at medial position includes the words as seen from the table such as; 'don't smoke', 'prompted', 'transcription', and sixth's throne' with frequency of errors 30 (100%) , 10 (33%), 28 (93%) and 26 (87%), respectively.

The table also displays another type of consonants cluster at the final position. As seen from the table the participants show accuracy in pronouncing this type of consonant cluster in words such as advanced', 'wants', 'helped', 'worked' and typed but fail to show accuracy in the word 'against' with frequency of error 30 (100%).

The cause of participants' difficulty in pronouncing English cluster is that SA has consonants cluster at initial or final positions so clusters are broken up by inserting vowel sound /i/.While in final position SA cluster occurs un-strictly they can be broken up by an epenthetic vowel under certain conditions that is according to style.

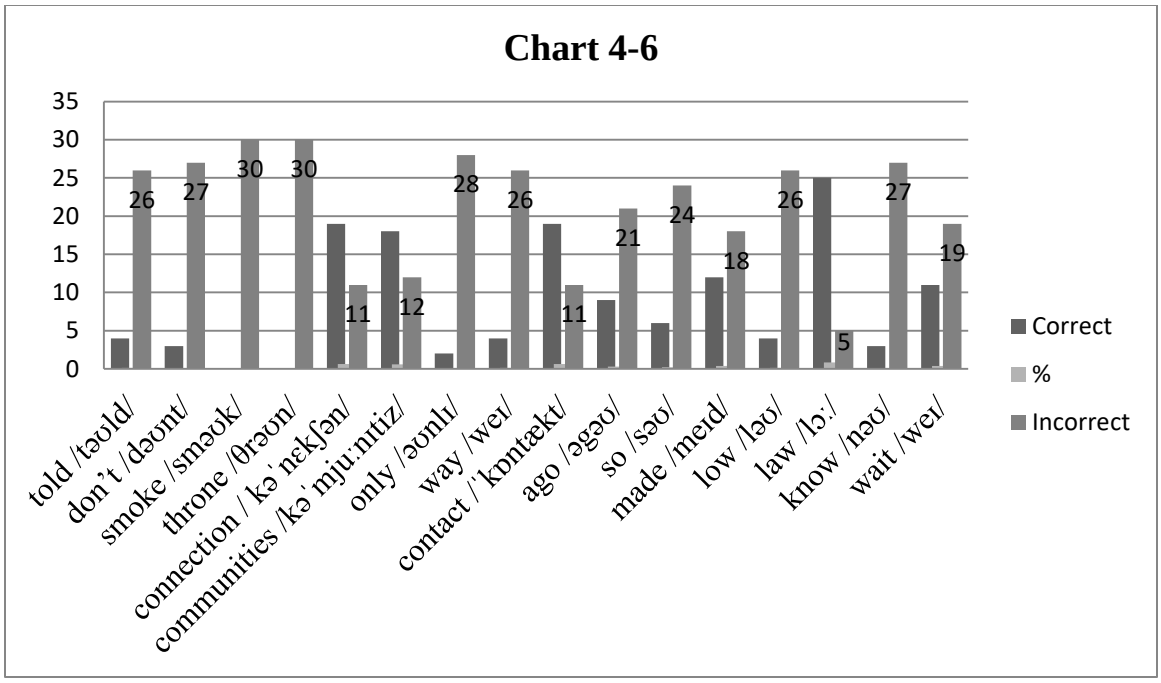
The overall calculated value of the median for participants' correct pronunciation of the target sound above is 10 (33%) while it is 20 (67%) for participants' incorrect pronunciation.

3. Investigating the third hypothesis: SLs of English tend to pronounce the English vowel letters 'o' as / ɔː/ instead /əʊ/ and /e/ instead of /ə/ and /ɒ/ or vice versa, and English diphthongs /ei / replaced by /e/ or /e:/ in some contexts.

Table (4-6): The frequency distributions of vowels pronunciation

Sentence No.	target word/sound	Correct	%	Incorrect	%
1.	t**o**ld /təʊld/	04	13%	26	87%
12.	don't /dəʊnt/	03	10%	27	90%
12.	smoke /sməʊk/	00	00%	30	100%

19.	throne /θrəʊn/	00	00%	30	100%
21.	connection / kəˈnɛkʃən/	19	63%	11	37%
21.	communities /kəˈmjuːnɪtiz/	18	60%	12	40%
22.	only /əʊnlɪ/	02	07%	28	93%
22.	way /weɪ/	04	13%	26	87%
22.	contact /ˈkɒntækt/	19	63%	11	37%
23.	ago /əgəʊ/	09	30%	21	70%
24.	so /səʊ/	06	20%	24	80%
25.	made /meɪd/	12	40%	18	60%
27.	low /ləʊ/	04	13%	26	87%
28.	law /lɔː/	25	83%	05	17%
30.	know /nəʊ/	03	10%	27	90%
40.	wait /weɪ/	11	37%	19	63%



The table and the chart (4-6) show the frequency distributions of correct and incorrect pronunciation of some of the English vowel sounds that pronounced by SA participants. As seen from the table and the chart we can say that the two words 'smoke' and 'throne' have the highest frequency of errors 30 (100%), and the other words frequencies are; 'told' and 'low' 26 (87%), "don't" and 'know' 27(90%) , 'only' 28 (93), 'ago' 21 (70) and 'so' 24 (80). It appears also, that the words with their frequencies of error such as; 'connection' /kəˈnɛkʃən/ connection' and 'contact'/kɒntækt/ 11 (37%) and 'communities'/kəˈmjuːnɪtiz/ 12 (40%) share same English vowel letter 'o' with the previous words above.

The table and the chart show that there is another English diphthong /eɪ / in some words such as; 'way'/ weɪ /, 'made'/meɪd / and 'wait'/weɪt/. The frequency of errors of these vowels that produced by the participants are; 26 (87%), 18 (60%) and 19 (63%), respectively.

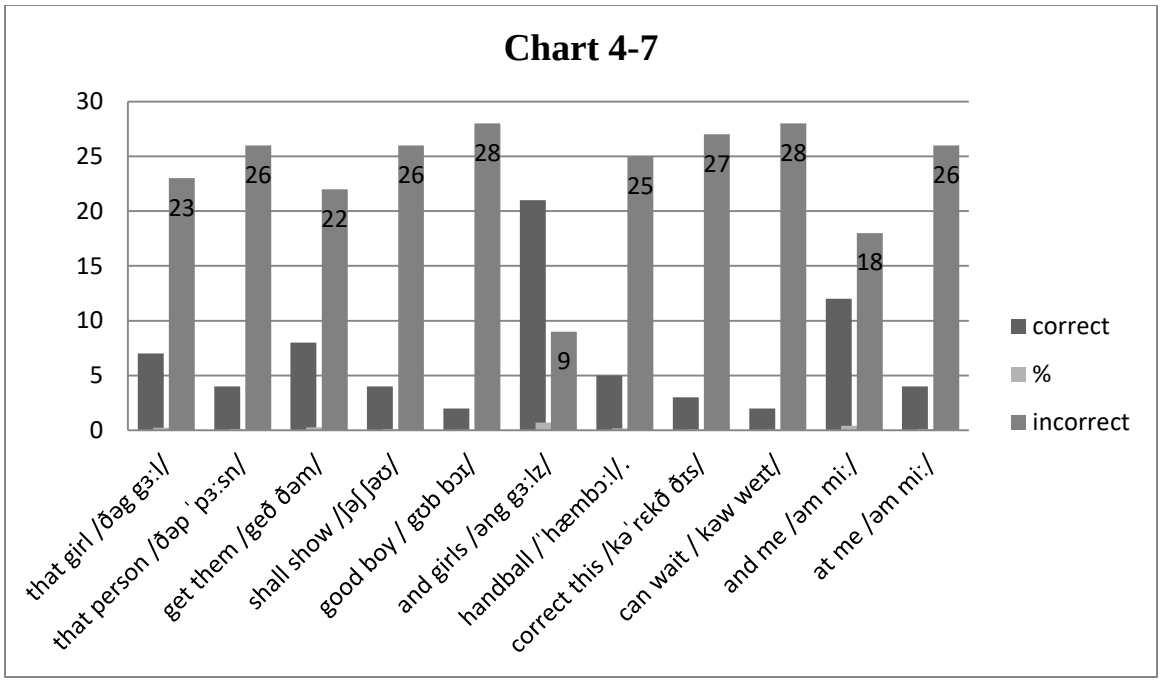
So, the participants' difficulty in pronouncing these vowel sounds is due to the influence of mother tongue because SA lacks to these diphthong /eɪ/ and /əʊ/.

The overall calculated value of the median for participants' accuracy of English vowel sounds is 5 (17%) while it is 25 (53%) for participants' incorrect pronunciation.

4. Investigating the fourth hypothesis: SLs of English face difficulty in English connected speech such as; assimilation, weak forms and elision.

Table (4-7): The frequency distributions of assimilation pronunciation.

Sentence No.	target word/sound	correct	%	incorrect	%
31.	tha**t g**irl /ðəg gɜːl/	07	23%	23	77%
32.	tha**t p**erson /ðəp ˈpɜːsn/	04	13%	26	87%
33	ge**t th**em /geð ðəm/	08	27%	22	73%
34.	sha**ll sh**ow /ʃəʃ ʃəʊ/	04	13%	26	87%
35.	goo**d b**oy / gʊb bɔɪ/	02	07%	28	93%
36.	an**d g**irls /əng gɜːlz/	21	70%	09	30%
37.	ha**nd**b**b**all /ˈhæmbɔːl/.	05	17%	25	83%
39.	correc**t this** /kəˈrɛkð ðɪs/	03	10%	27	90%
40.	ca**n w**ait / kəw weɪt/	02	07%	28	93%
42.	an**d m**e /əm miː/	12	40%	18	60%
44.	a**t m**e /əm miː/	04	13%	26	87%



The table and the chart (4-7) display the frequencies of accuracy and error of 30 participants in accordance of English assimilation pronounced by the participants. The table shows that the two phrases ‘good boy’ and ‘… can wait’ have the highest frequency of participants’ errors is, 27 (93%) and the lowest frequency is 09 (30) to the phrase ‘… and girls’. The phrases that have high frequencies of errors are; ‘correct this’, 27 (90%); ‘that person’, ‘shall show’ and ‘at me’, 26 (87%); ‘handball’, 25 (83%); ‘that girl’, 23 (77%); and ‘and me’, 18 (60%).

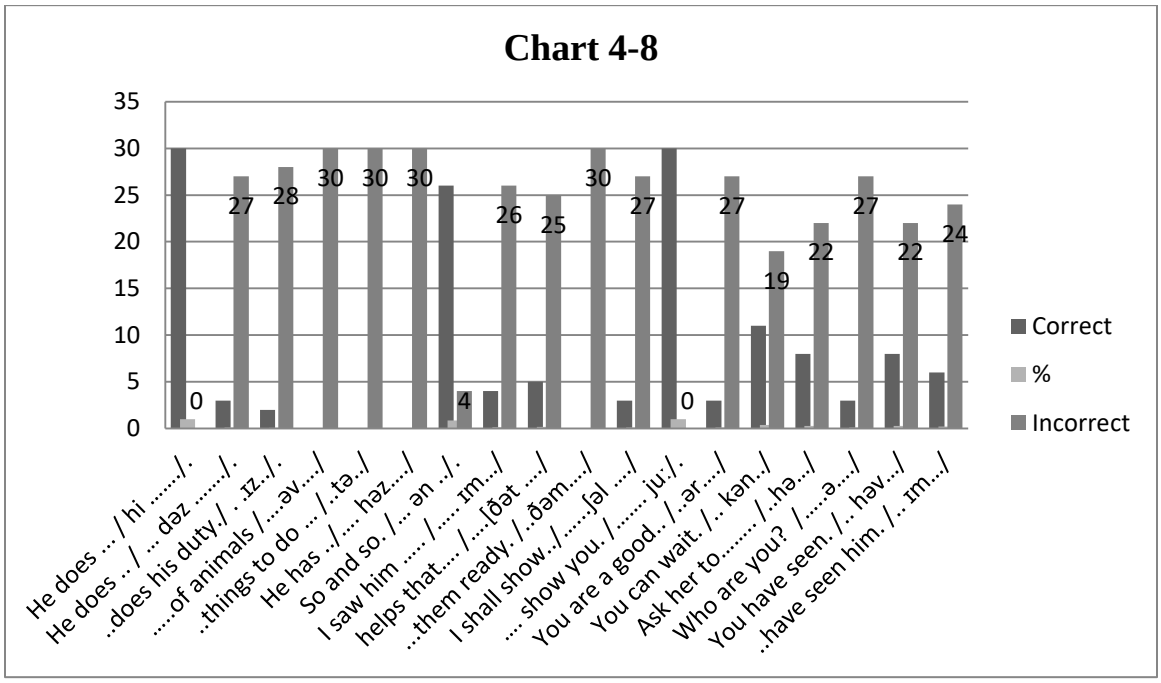
The reason behind the participants’ difficulty pronouncing English assimilation is that English and Arabic differ in their way of assimilating sounds, in English the assimilated sounds are changed to another sound differs from them, whereas in Arabic are overlapped with each other to have one sound similar to the second.

The overall calculated value of the median for participants’ accuracy of English assimilation is 04 (13%) while it is 26 (87%) for participants’ incorrect pronunciation.

Table (4-8): The frequency distributions of weak forms pronunciation

Sentence No.	target word/sound	Correct	%	Incorrect	%
2.	**He** does ... / hi ……./.	30	100%	00	00%
2.	He **does** .. / … dəz ……./.	03	10%	27	90%
2	..does **his** duty./ . .ɪz../.	02	07%	28	93%
3.	…..**of** animals /….əv…./	00	00%	30	100%
5.	..things **to** do … /..tə../	00	00%	30	100%
14.	He **has** ../…. həz…./	00	00%	30	100%
24.	So **and** so. /… ən ../.	26	87%	04	13%
29.	I saw **him** ….. /….. ɪm…/	04	13%	26	87%
32.	helps **that**…. /….ðət …./	05	17%	25	83%
33.	...**them** ready. /..ðəm…./	00	00%	30	100%
34.	I **shall** show../…...ʃəl …./	03	10%	27	90%
34.	…. show **you**. /……. juː/.	30	100%	00	00%
35.	You **are** a good.. /..ər…./	03	10%	27	90%
40.	You **can** wait. /.. kən../	11	37%	19	63%
41.	Ask **her** to…….. /..hə…/	08	27%	22	63%
43.	Who **are** you? /…..ə…./	03	10%	27	90%

45.	You **<u>have</u>** seen. /.. həv…/	08	27%	22	73%
45.	..have seen **<u>him</u>**. /.. ɪm…/	06	20%	24	80%



The table and the chart (4-8) show the frequency of accuracy and errors of 30 participants about the pronunciation of weak and strong forms what is so called functional morphemes. As seen from the table above we can say that the participants have difficulty in pronouncing functional morphemes in a state of weak forms. The table above shows that the participants' pronunciation of English weak forms is unconfined with that in English specifically when weak form needed, instead of strong form. As seen from the table that there are six functional morphemes namely, 'of'/əv/, 'to'/tə/, 'them'/ðəm/ , that participants fail to pronounce them in their weak forms with frequency of errors 30(100%).

The other functional morphemes also have high frequencies of error such as; 'his'/ɪz/, 28 (93%); 'does' /dəz/ 'are' /ər/, 'are'/ə/, and 'shall', 27 (90); 'him' 26

(87%); ‘that’, 25 (83%); ‘him’, 24 (80%) ‘have’, 22 (73%); ‘can’ and ‘her’, 19 (63%), while ‘and’ in the phrase ‘ so and so’ has the lowest frequency of error that is, 4 (13%) and accuracy of 26 (87%).

The participants’ frequency of accuracy is (100%), when the participants pronounce a functional morpheme in positions at the beginning or the end of the phrases such words as ‘he’ and ‘you’.

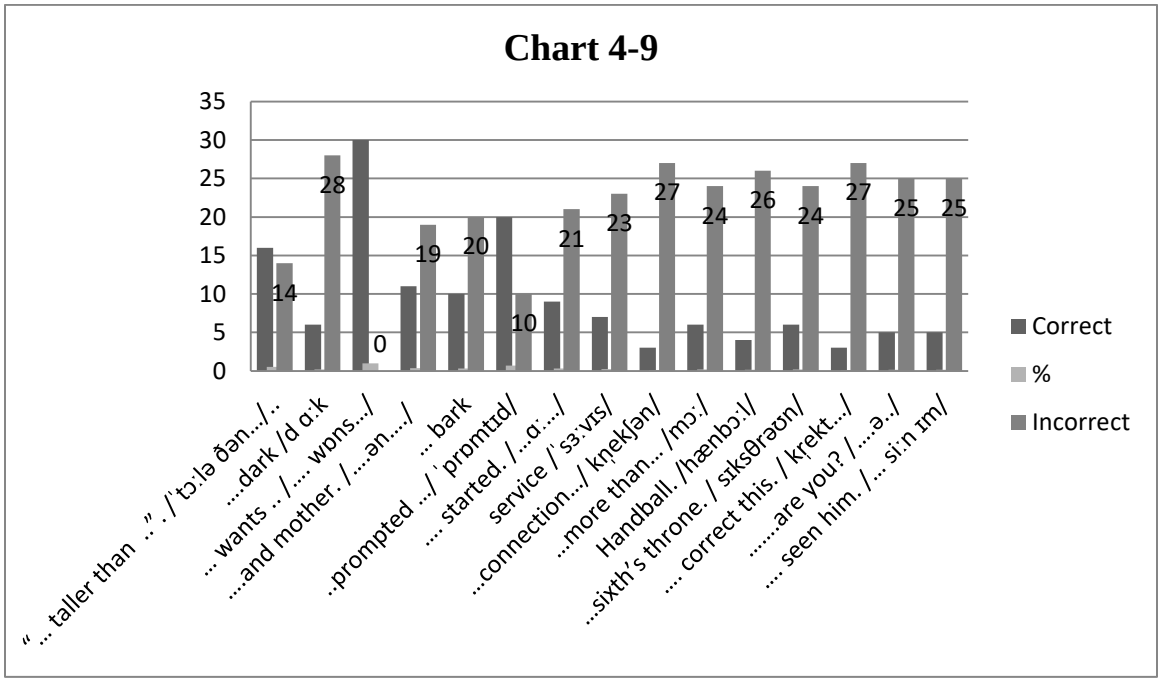
English language speakers use to reduce the vowel sound of the functional words only while Arabic language reduces vowel sound of some functional morphemes that ends in long vowel sounds and lexical morphemes.

The overall calculated value of the median for participants’ accuracy of English weak form is 3.5 (12%) while it is 26.5 (88%) for participants’ incorrect pronunciation.

Table (4-9): The frequency distributions of Elision

Sentence No.	Target words/ sounds	Correct	%	Incorrect	%
1.	“… tall**er** than ..”. /ˈtɔːlə ðən…/..	16	53%	14	47%
3.	….d**ar**k /d ɑːk	06	20%	24	80%
6.	… wa**nts** .. /…. wɒns…/	30	100%	00	00%
6.	….a**nd** mother. /….ən…./	11	37%	19	63%
8.	… b**ar**k	10	33%	20	77%
13.	..prom**p**ted …/ ˈprɒmtɪd/	20	67%	10	33%
14.	…. st**ar**ted. /…ɑː…/	09	30%	21	70%
15.	s**er**vice /ˈsɜːvɪs/	07	23%	23	77%

21.	…connection…/ kn̩ekʃən/	03	10%	27	90%
26.	…m**ore** than… /mɔː/	06	20%	24	80%
37.	Ha**ndb**all. /hænbɔːl/	04	13%	26	87%
38.	…s**ixth's thr**one. / sɪksθrəʊn/	06	20%	24	80%
39.	…. **corr**ect this. / kr̩ekt…/	03	10%	27	90%
43.	…….**are** you? /….ə../	05	17%	25	83%
45.	…. seen **h**im. /… siːn ɪm/	05	17%	25	83%



The table and the chart (4-9) above show the participants' frequency of errors and accuracy of English consonant elision. The word 'wants' shows the participants' highest accuracy of 30 (100%), while the participants' highest frequency is the word 'correct' 27 (90%). As seen from the table that the other words varies

according the participants error of English consonant elision such words as; ‘handball’ 26 (87%), ‘are’ and ‘him’ 25 (83), ‘dark’ and ‘more’ 24 (80), ‘service’ 23 (77%), ‘started’ 21 (70%), ‘bark’ 20 (67%), ‘and’ 19 (63%), ‘taller’ 14 (47%) and ‘prompted’ 10 (33%).

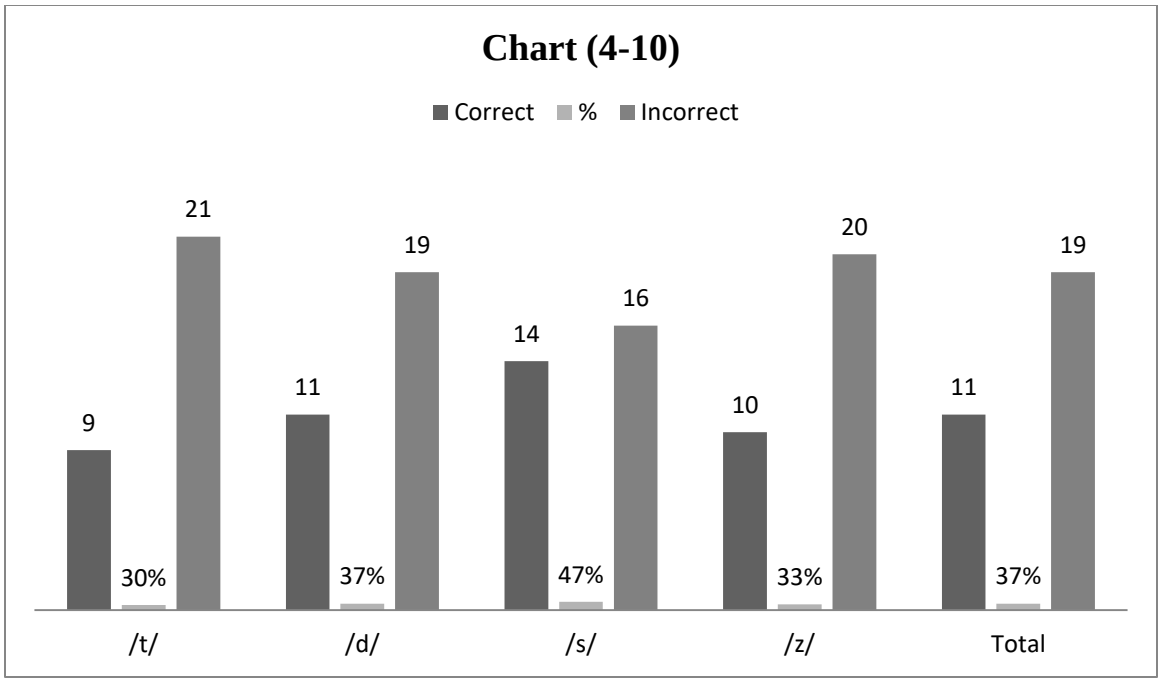
Unlike the above examples of English consonants clusters, the most elided sounds are the glottal stop sound /ʔ/ and /l/ or ‘alif’ and ‘laam’. The purpose of elision is different than the purpose of Arabic. For example; the present form of the verb derived from the past form the first consonant /w/ is elided as in this two examples words; /waʕada/ (وعد) becomes / yaʕidu/ and /was^{ʔ}afa/ (وصف) becomes / yas^{ʔ}ifu/. While in English elision there is consonants cluster.

The overall value of median of the participants’ accuracy and frequency of error of English consonant elision are; 06 (20%) and 24 (80%), respectively.

4.3 Results and Discussion

Table (4-10): Verification of Hypothesis (1)

Value	Correct	%	Incorrect	%
/t/	09	30%	21	70%
/d/	11	37%	19	63%
/s/	14	47%	16	53%
/z/	10	33%	20	67%
Total	**(44/4) 11**	**37%**	**(76/4) 19**	**63%**

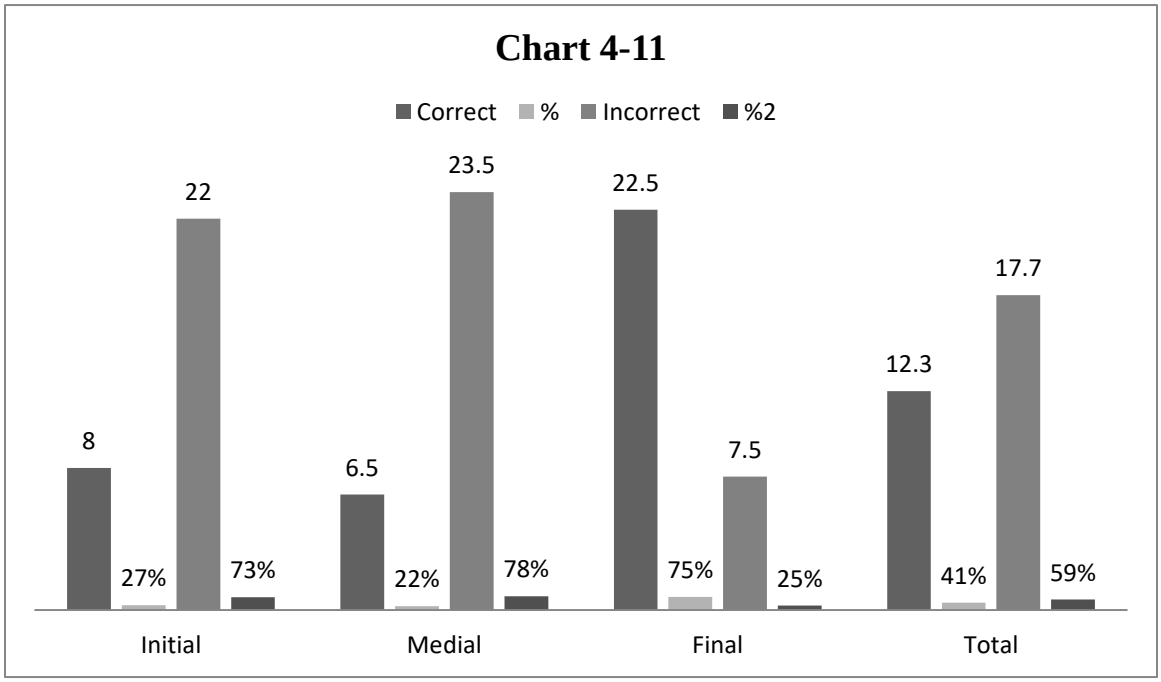


The data in the table and the chart (4-10), show that the value of median of the four English alveolar sounds /t, d, s, z/ that pronounced by the participants. It appears that the participants find difficulty in pronouncing English consonant alveolar /t, d, s, z/ and replaced them with SA emphatic alveolar /t^{ʔ}, d^{ʔ}, s^{ʔ}, z^{ʔ}/, respectively. The cause of this problem is mostly, when one the vowels /ʌ, ʊə, ɑ:, ɒ, ɔ:/ comes after or precedes the target sounds. As seen from the table and the chart above that the lowest percentage of the participants' error is (53%) and highest one is (77%) of the two sounds /s/ and /t/ respectively, while the other two sounds /d/ and /z/ have the percentages of the participants' error are (63%) and (67). The table and the chart also show that the percentages of the participants' accuracy of the target sounds /t, d, s, z/ are; (23%), (37%), (47%) and (33%), respectively.

Thus, according to the results above of hypothesis (1) (**SLs of English substitute English alveolar / t /,/ d /,/ s /, and / z / with Arabic emphatic sounds /t^{ʔ}/, /d^{ʔ}/, / s^{ʔ}/, and / z^{ʔ}/)** is confirmed**.**

Table (4-11): Verification of Hypothesis (2)

Value	Correct	%	Incorrect	%
Initial	08	27%	22	73%
Medial	6.5	22%	23.5	78%
Final	22.5	75%	7.5	25%
Total	**(37/3) 12.3**	**41%**	**(53/3) 17.7**	**59%**



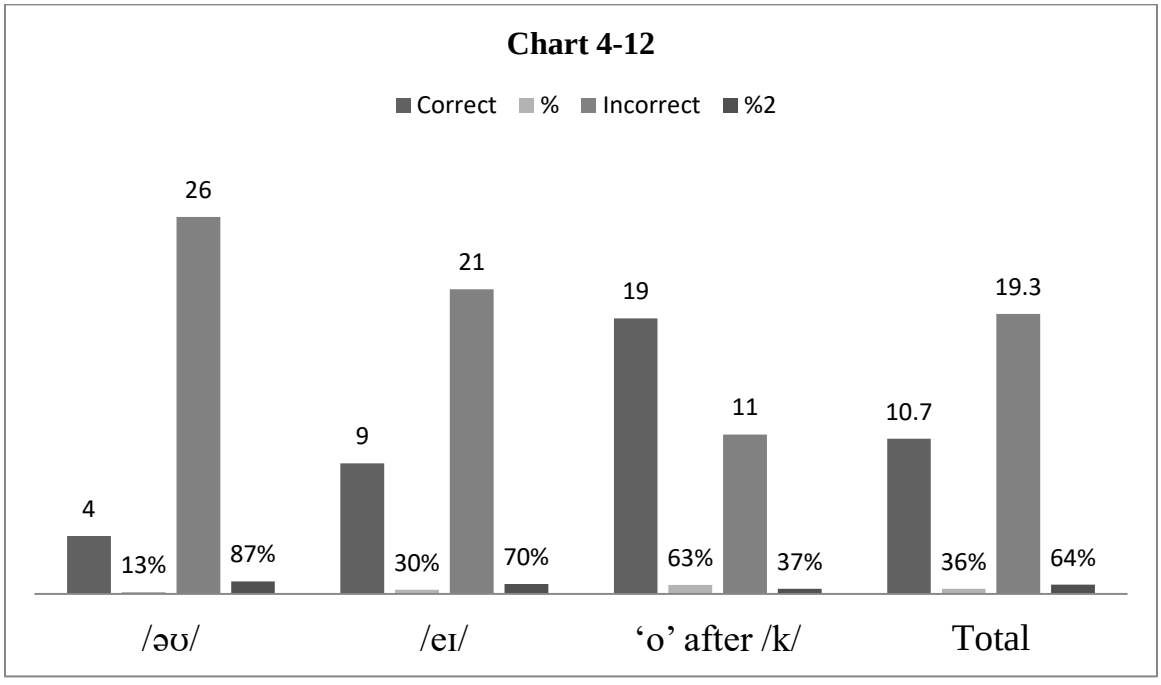
The table and the chart (4-11) represent the value of median of the participants' accuracy and errors when pronouncing English consonsnts cluster at initial, medial or final postions. Thus, the participants' accuracy as shown in the table is at initial show accuracy of (27%) at initial position, (22%) at medial position and (75%) at final position. This shows that the participants have difficulty when pronouncing English consonants cluster at medial and final positions with percentages of (78%) and (73%) respectively. Cosonants cluster at initial position is of two types, one is consist of pre-intial /s/ and one or two consonants and this type the participants tend to insert the vowel sound /i/ to break clusters and this is why because SA has no any consonants cluster at initial position. The other one is unlike the above one, is consist of two consonant without pre-intial /s/, in this type also the participants

use to insert /i/ (see table (4-5). The percentage of the participants'error at final position is (25%) which is the lowest one among initial and medial consonants cluster. The highest percentage of accuracy shown in the table and the chart is (75%) this tell us that the participants have no difficulty in pronouncing final consonants clusters.

So, according to the results above of the second hypothesis **(SLs of English have difficulties in pronouncing English consonants cluster)** is partially confirmed that means, the participants have difficulty in pronouncing consonants cluster at initial final positions only and not at final**.**

Table (4-12) Verification of Hypothesis (3)

Value	Correct	%	Incorrect	%
/əʊ/	04	13%	26	87%
/eɪ/	09	30%	21	70%
'o' after /k/	19	63%	11	37%
Total	**(32/3) 10.7**	**36%**	**(58/3) 19.3**	**64%**



The table and the chart (4-12) show the value of median of the participants' difficulty of pronouncing the English diphthong /əʊ/ (87%) is the highest percentage pronounced by the participants in some contexts. In This matter, the participants tend to replace this diphthongs by long vowel /ɔː/, where the vowel letter 'o' is one of the elements of a word, for examples; the vowel sounds in in the words; 'told' /təʊld/, "don't" /dəʊnt/ 'smoke' /sməʊk/ 'only' /əʊnlɪ/ 'so' /səʊ/ 'low' /ləʊ/ 'know' /nəʊ/, becomes /ɔː/.

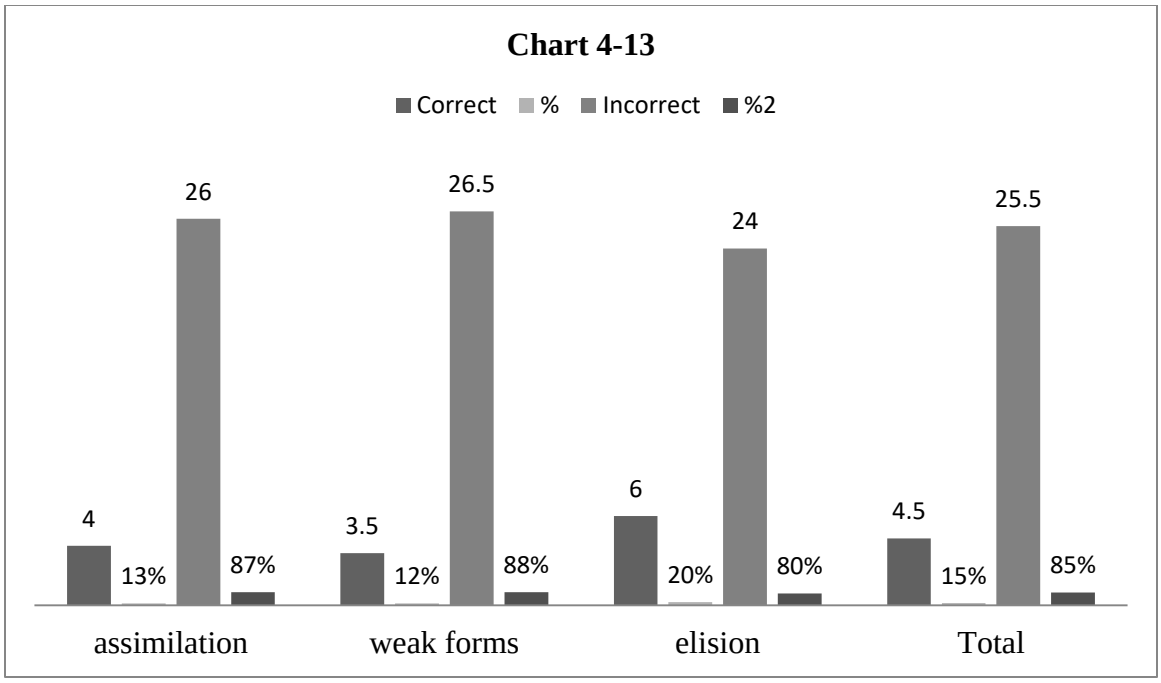
Another case related to the vowel letter 'o' is that where it is one of the spelling of a word, and is either pronounced as /ə/ or /ɒ/ in some contexts in words such as 'connection' / kəˈnɛkʃən/, 'communities' /kəmju:nɪtiz, and 'contact' /kɒntækt/. In the matter the participants' percentages of accuracy as shown in the table and chart (4-12) are 19 (63%) to the words 'connection' and 'contact' and 18 (60%) to the word 'communities'. The participants used to replace the vowel sound /ə/ with /ɒ/ and vice versa.

Besides the above two cases there is another case that the participants tend to replace the English diphthong /eɪ/ with short vowel /e/ or long SA vowel sound /e:/ in words such as 'way' /weɪ/, 'made'/meɪd/ and 'wait' /weɪt/ which are pronounced by the participants incorrectly. As read from the table and the chart above the participants' accuracy is 9 (30%) whilst participants' error is 11 (70%).

So, according to the value of median of the third hypothesis (**SLs of English tend to pronounce the English vowel letters 'o' as / ɔː/ instead /əʊ/ and /e/ instead of /ə/ and /ɒ/ or vice versa, and English diphthongs /ei / replaced by /e/ or /e:/**, is confirmed.

Table 4-13 Verification of Hypothesis (4)

Value	**Correct**	**%**	**Incorrect**	**%**
assimilation	04	13%	26	87%
weak forms	3.5	12%	26.5	88%
elision	06	20%	24	80%
Total	**(13.5/3) 4.5**	**15%**	**(76.5/3) 25.5**	**85%**



The table and the chart (4-13) display the value of median of the participants' accuracy and error in pronouncing English connected speech such as; assimilation, weak forms and elision. As seen from the table and the chart above that the percentages the participants' accuracy in, assimilation is (13%), weak forms is (12%) and elision (20%) while the percentages of the participants' error are; (87%), (88%) and (80%). This shows that the participants have much difficulty in pronouncing English connected speech with total value of median (85%) of participants' error against (15%) of the participants' accuracy.

So, according to the results of the value of median of the fourth hypothesis (**SLs of English face difficulty in English connected speech such as; assimilation, weak forms and elision** is confirmed.

CHAPTER FIVE

MAIN FINDINGS, CONCLUSION, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER STUDIES

5.0 Introduction

In this chapter the researcher is going to restates the research questions and hypotheses based on the research methodology and the question results and verification the research hypotheses of the collected data. This chapter also includes some suggestions for further reading in order to discover other difficulty of English pronunciation among SNSA.

5.1 Finding & conclusion

The results obtained from the analysis and discussion of the tables confirmed the research questions and hypotheses and also confined with some studies have been conducted in the difficulty of English pronunciation among SLs of English. Thus the researcher here will restate the research four hypotheses based on the results of each hypothesis, in order give a conclusion.

Accordingly, the first hypothesis stated that, SLs of English pronounce English alveolar sounds /t, d, s, z/ as SA emphatics /$t^{?}$, $d^{?}$, $s^{?}$, $z^{?}$/ in some contexts. It's clear from the results obtained that this process happen when one of these sounds is preceded or followed by some specific vowel sound such as /ʌ, ʊə, ɑ:, ɒ, ɔ:/, the percentage of error will be high, but when preceded or followed by the other vowel sounds such as /i, e,…. / will be null. For example, the English consonant /t/ in the two words from tables (4-1) 'told' and 'letter', here the /t/ is pronounced differently by the participants, in the former one pronounced emphatically / $t^{?}$/,

while in the later one pronounced as /t/ the participants' accuracy is (100%) while the other accuracy is (13%). Similarly in the pronunciation of /d, s, z/ as seen from the tables (4-2, 4-3, and 4-4) where preceded or followed by English vowel sounds /ʌ, ʊə, ɑ:, ɒ, ɔ:/ are pronounced emphatically /d^{ʔ}, s^{ʔ}, z^{ʔ}/ but where preceded or followed by the other vowel sounds /i, e, .../ or followed by a consonant are pronounced correctly. In all the target sounds above, as seen from the tables in chapter four, shown that the participants tend to replace English alveolar sounds /t, d, s, z/ with SA alveolar emphatics /t^{ʔ}, d^{ʔ}, s^{ʔ}, z^{ʔ}/. This as seen from the table (4-10) which represented the overall value of median of this hypothesis, i.e.; (63%), a result of calculating the four value of median divided to 4 (70% + 63% + 53%+67% / 4 = 63%). Accordingly we can find that (63%) of the participants have difficulty when pronouncing English alveolar consonants /t, d, s, z/ wherever preceded or followed by the vowel sounds /ʌ, ʊə, ɑ:, ɒ, ɔ:/ and been replaced with SA emphatic /t^{ʔ}, d^{ʔ}, s^{ʔ}, z^{ʔ}/.

The researcher in the second assumed that SLs of English have difficulty in pronouncing English consonants cluster, based on that SA do not allow consonants clusters at initial, medial and final position. As seen from the table (4-2) we can say that the participants experience difficulty especially at initial and medial position as shown in table (4-11), in this table it is clear that English clusters at initial and medial positions and have percentages of error (73%) and (78%) respectively. These two, are considered the most problematic areas experienced by SLs of English, in which SLs used to break clusters by inserting the vowel sound /i/. Unlike clusters at initial and medial, clusters at final position shows accuracy of (75%), especially with clusters that have inflectional morpheme. Therefore, that we can say that the participants have serious problem when pronouncing English

clusters at initial and medial positions, but they don't difficulty in pronouncing English clusters at final position.

The results as shown in the table (4-12) in chapter four, displayed the target vowel sounds that analyzed in order to see the correct and incorrect pronunciation of some English vowel sounds. The researcher assumed that SLs of English used to pronounced /e:, e , ɔ: / instead of the diphthongs ones /eɪ, əʊ/ respectively, and also /ə/ instead of /ɒ/ and vice versa of the vowel letter 'o'. As shown from the table the first part from this hypothesis, which the participants fail to pronounce the two English diphthongs /eɪ/and /əʊ/ so instead, they replaced with /e, e:/ and /ɔ:/ respectively. These two sounds as seen from the table (4-12) in the previous chapter showed high percentages of the participants' error of about (70%) and (87%). This is due to mother tongue interference because these two diphthong sounds are not exist in the sound system of SA, while the replaced sounds /e or e:/ and /ɔ:/ have existence in SA. On the other hands the participants' accuracy of the second part of the hypothesis is (63%) against (37%) of the participants' error. The cause of this is that the participants are in confusion, this is due to the spelling especially the 'o' letters wherever comes after the letter 'c' which represent the sound /k/. Traditionally this English letter 'o' sounded as /ə/ and sometimes as /ɒ/ at first syllable.

The fourth hypothesis is restated as; that SLs of English experience difficulty in pronouncing English connected speech, the researcher in this matter has chosen three areas in connected speech namely; assimilation, weak forms, and elision. The researcher assumed that SLs of English have difficulty in pronouncing these three areas of English pronunciation. The table (4-13) in the previous chapter shown that, this area is considered one of the most difficult areas in English pronunciation to SLs of English. The percentages shown in the table are according to the value of

median are; assimilation (87%), weak forms (88%) and elision (80%). This high percentages show that the participants have experienced much difficulty in these areas of English connected speech. The cause of difficulty is due to mother tongue interference, that means there are differences between the uses of connected speech in the languages systems. Assimilation in the two languages differ in their way of assimilating sounds, in English the assimilated sounds are changed to another sound differs from them whereas in Arabic are overlapped with each other to have one sound similar to the second. In weak forms the two languages reduce the length of vowel sounds but in different processes, in English most of the reduced vowel sounds take place in inflectional morphemes, whereas in Arabic the most reduced sounds take place in verbs and some words like /fii/(فى), /maa/(ما), /jaa/ (يا المتكلم). The last phase in connected speech is elision, in this process also the two languages differ in the way of eliding sounds, in English the most elided sounds are that in consonants clusters i.e; sounds articulated by the same or near articulators, another feature of elision is that the deleting of the sound /r/ in medial position when preceded by a vowel sound and followed by a consonant. This process makes it difficult to SNSA in which the process in Arabic is different, that Arabic speakers have to pronounce /r/ at all positions. So the most elided sounds are the glottal sound /ʔ/ 'alif' and /l/ 'laam'.

5.2 Conclusions

In conclusion we can say that SNSA (teaching staff) have difficulty in English pronunciation due to mother tongue interference. Referring to the results of the study test in chapter four, we find that the results support the five hypotheses because the results of the study test show that SNSA (teaching staff as case study) experience difficulty in English pronunciation. The results were confined with the theories of previous works on second language learning, such as; Avery & Ehrlich

(1992), Swan & Smith (1987), Weinreich (1953), Whitman (1970), Bloomfield (1933), Fries (1945) and Lado (1957). The results also are confined with other previous studies in some areas of this study such as difficulty in pronouncing consonant and vowel sounds, clusters; Alnoor (2017), Ali (2011), Hassan (2014) and Ahmed (2017).

5.3 Summary of the Study

Since the objective of this research is to investigate the difficulty of English pronunciation among SNSA, and find the main causes and effects behind this difficulty. So at the beginning of this research the researcher assumed that the difficulty of English pronunciation among SNSA learners of English is due to the differences between English and SA languages, in other words is because of mother tongue interference. The differences between the two languages and basing on the different theories of mother tongue interference on learning second language led the researcher to observe SNSA when pronouncing English as foreign language specifically those who teach English as foreign language. So, in order to see to what extent do SNSA have difficulty in the pronunciation of English, the researcher assumed some areas that teaching staff, as sample of the study, may experience some difficulty, so he assumes four hypotheses. In order to confirm or not to confirm the hypotheses and answer the questions mentioned in 'Chapter one', the researcher have to choose a suitable research tool to reach the study objective. So, the researcher has chosen 'study test' as the only tool to be used in collecting the necessary data in such cases, by means of audio recording. The study later was analyzed and the obtained figures of the two values, 'correct' and 'incorrect', were statistically calculated and computed. The obtain data were compared during the analysis with the help of the literature of the English and SA sound systems in order to see the causes and effects of difficulty in pronouncing

English. Finally after the data were investigated and analyzed find that teaching staff experienced difficulty in pronouncing English language. Therefore, based on the results as seen from the tables in the previous chapter of the four hypotheses, we can say that the findings of the research support the hypothesis that mother tongue interference, inconsistency, spelling and sound system /differences between L1 and L2 affect pronunciation and lead the learners of other languages to mispronunciation.

5.4 Recommendations

The following are suggested based on the results and findings of the study;

- Teaching staff should pay more attention of their pronunciation by trying to produce English speech sounds correctly in class rooms and try to avoid mother tongue interference.
- Teaching staff are advised to check up the correct pronunciation of words in dictionaries before taking the lecture, especially words with vowels that do not exist in mother tongue.
- One of the most important thing in difficulty of English pronunciation as general is the lack of the target language environment, so the teaching staff practice English only in the class rooms. In this respect they are advised to listen to English native speakers via listening to news, watching movies and so on, to improve their intelligibility for practicing pronunciation.
- Teaching staff pay more attention to the speech production especially in connected speech, so they are advised to apply the rules of English phonology and do practice on it.
- Teaching staff have much knowledge of phonetic and phonological problems, in this sense they should do continuously updated.

- Difficulty in pronunciation is a natural phenomenon, in this sense the advice is that not be much worried of incorrect pronunciation but you have to decrease the interference of your mother tongue, this can be avoided with practicing the correct pronunciation as much as you can.
- Future researchers should pay more attention on the difficulty of English pronunciation, especially the aspects of connected speech.

5.5 Suggestions for Further Studies

- This study has touched some difficult areas in the pronunciation of English among SNSA.
- This study requires some further studies to be conducted to cover the missing areas in this matter.
- In some previous studies I observed that there is some studies focus only on the area of speech sounds such as; the difficulty of pronouncing consonant and vowel sounds, further studies should be comprehensively investigated and conducted to cover the other areas of English pronunciation of such areas in connected speech. This enables researchers to have much knowledge and awareness of these difficulties.
- These difficulties are mostly due to mother tongue interference, whereas, researchers should make a comparison between the mother tongue on one hand and the learned or foreign language on the other hand. In this matter the comparison should be conducted between the speakers' true native language (the language that used in daily communication) and the target language.
- One more suggestion for further studies, researchers should conduct comprehensive investigations on various studies of their own languages (dialects), on different fields of linguistics.