

## **Vowel Reduction In Weak Forms As Recognized By Iraqi EFL Learners At The University Level : A Perceptual Study**

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### **Abstract**

The present study investigates the ability of Iraqi EFL learners at the university level in recognizing vowel reduction in weak forms . It consists of two parts : The theoretical part and the practical part . The problem of the current research shows that Iraqi learners of English just like the other foreign learners of English face the problem of interference of their Arabic sounds with those of English . Othman (1977 : 35) states that “ a problem of vowels may chiefly be considered as a result of the absence of their counterparts in Arabic or that Arabic ones are partially similar to those in English ” . This study is conducted to show the problems faced by Iraqi learners in recognizing the reduced vowels in connected speech . It investigates the English reduced vowels that are most problematic for Iraqi learners to recognize .

This research aims at achieving the following objectives :

- 1- Examining the ability of the subjects in recognizing English vowel reduction .
- 2- Showing whether gender or the sex factor has any influence on the subjects' performance .
- 3- Presenting recommendations based on the final results to overcome those difficulties encountered by the learners .

The study is based on the following hypotheses :

- 1- Iraqi EFL learners at the university level can easily recognize English reduced vowels .
- 2- Iraqi EFL female learners can recognize English reduced vowels better than the male subjects .

The current study is limited to the investigation of Iraqi EFL learners' ability in recognizing vowel reduction in connected speech . The representative sample was chosen from second year students at the Department of English , College of Education for Humanities , Basra University of the academic year 2013-2014 . Those learners had already taken a full year course in English phonetics in their first academic year during which they had studied vowel reduction .

## **1. The theoretical part**

### **1.1.Vowel Shortening**

#### **1.1.1. Definitions**

Carr (1993 :158 ) defines vowel shortening as the process in which a vowel is shortened . In general a vowel is shortened before a voiceless consonant that it is either word finally or before a voiced consonant . Kager et al (1999: 58) define vowel shortening as a process in which a long vowel in a potentially occurring

CVVC syllable shortens as CVC . Vowel shortening is defined by Jones ( 2006 :xi ) as “ a reduction in the measured acoustic duration of a vowel when a consonant or unstressed syllable is added to its neighbor ” .

### 1.1.2. Cases of vowel shortenening

#### 1.1.2.1. Vowel shortening according to voiceless consonants

Long vowels are / i: , a: , ɔ: , ɜ:, u: / while the short vowels are / ɪ , e , æ , ʌ , ə , ʊ / . Long vowels can be shortened vowels according to the nature of sounds which surround them ( Ward , 1972 : 162) . This means that the length of vowels is determined by the following sounds (Algeo and Butcher ,2013 :88) . Jones (1957:234-235) mentions several cases for vowel shortening in English . The first case is that long vowels become shorter when followed by a voiceless consonant than when final or followed by a voiced consonant . Before a voiced consonant , voicing does not stop while before a voiceless consonant , the voicing has to stop ( Anyanwa , 2008: 110) . For example , the vowel /i:/ is shorter in ‘ seat ’ / si:t / than in ‘ sea ’ / si:/ or in ‘ seed ’ / si:d / . The long vowels in the words ‘ staff ’ / stɑ:f / , ‘ sort ’ / sɔ:t / , and ‘ use ’ ( noun ) / ju:s / are shorter than those in ‘ star ’ / stɑ:/ , ‘ saw ’ / sɔ:/ , , and ‘ use ’ (verb) / ju:z / .

The second case is that long vowels are also shortened when they occur before nasal consonants / m , n , ŋ / or before /l/ followed by a voiceless consonant . For example , the vowel / ɜ: / in learnt / lɜ:nt/ is shorter than that in learn / lɜ:n / or that in learns / lɜ:nz / . The / ɔ: / in fault / fɔ:lt / is shorter than in fall / fɔ:l / or that in falls / fɔ:lz / . Another case for vowel shortening is that when long vowels in stressed syllables are shortened when an unstressed syllable immediately follows in the same word . For example , the vowel /i:/ in ‘ leader ’ / ' li:də/ is shorter than /i:/ in ‘ lead ’ / 'li:d / . The / ɔ:/ in drawing

/'drɔ:ɪŋ / , causes /' kɔ:zɪz/ are shorter than those in 'draw ' /'drɔ: / , cause /'kɔ:z/. The /u:/ in 'immunity' /ɪ'mju:nɪtɪ / is shorter than that in 'immune' /ɪ'mju:n/ .

The fourth case is that long vowels become shorter in unstressed syllables than in stressed syllables . For example , / ɔ: / in audacious /ɔ:ˈdeɪʃəs / and / ɑ: / in carnation / kɑ:ˈneɪʃn / are shorter than the same vowels in August /' ɔ:gəst / , scarlet /'skɑ:ɪt / . The last case is that the English short vowels /ɪ , e , æ , ʊ , ʌ , ə , ʊ / also have variations of length . Short vowels are shorter when they come before voiceless consonants than before voiced consonants . For example , the vowel of 'mat' / mæt / is shorter than of mad /mæd / ( Hualde , 2005: 14) . Sanders (2003 :98) gives several examples on this type of shortening :

bit	/ bɪt /	bid	/ bɪd /
kilt	/ kɪlt /	killed	/ kɪld /
since	/ sɪns/	sins	/ sɪnz /
sent	/ sent /	send	/ send/
bet	/ bet /	bed	/ bed /
let	/ let /	led	/led/
bat	/ bæɪt /	bad	/ bæd /
bus	/ bʌs /	bun	/ bʌn /
lock	/ lɒk /	log	/ lɒg /
beat	/ bi:t /	bead	/bi:d /
heart	/ ha:t /	hard	/ ha:d /
search	/ sɜ:tʃ /	surge	/sɜ:dʒ /

### 1.1.2.2. Vowel Reduction In Weak Forms

Some English words often have two pronunciations which are 'strong' and 'weak' forms. In most cases, the weak forms contain / ə / ; whereas the strong form contains other vowels. Whether the word is pronounced in the strong or the weak form depends on the kind of the sentence in which it occurs ( Jones , 1969:51) . The strong forms are used in the stressed or emphasized position ; while the weak forms are used in the unstressed positions ( Ward ,1972:182) .

Jones ( 1957:126) states that a weak form of the word is distinguished from a strong form by a difference in vowels , or by the absence of vowels , or by the difference in the length of vowels . Skandera and Burleigh ( 2005:71-72) define a strong form as a pronunciation variant of a given word which contains a strong vowel , and from which no sounds have been reduced . Strong forms can occur in both prominent and non-prominent positions ,i.e. they can be stressed or unstressed ; whereas a weak form is a pronunciation variant which contains a weak vowel or a form in which one or more sounds have been reduced . Weak forms can occur only in non-prominent positions ,i.e. they are always unstressed.

There are several ways to distinguish between strong and weak syllables . We can say that strong syllables are stressed while weak syllables are unstressed . A strong syllable contains a full vowel ; whereas a weak syllable contains a reduced vowel . Weak syllables are short and less loud than strong syllables . As was mentioned previously , The most frequently occurring vowel in weak syllables is / ə / ( Kingstone and Beckman , 1990: 480 ). The following table shows the spelling and the pronunciation of / ə /

Table ( 1.1) The spelling of schwa : ( Kingstone and Beckman , 1990: 480)

Spelt with	Words	Strong Forms	Weak Forms
‘ a ’	att <u>end</u> barr <u>ack</u> s char <u>acter</u>	----- /bæræk <u>s</u> / /kæræk <u>tə</u> /	/ə <u>t</u> end/ / bærək <u>s</u> / /kærək <u>tə</u> /
‘ ar ’	partic <u>ular</u>  mola <u>r</u>	/pɑ:tɪkjələ/  / məʊl <u>ɑ:</u> /	/ pətɪkjələ/  / məʊl <u>ə</u> /
‘ ate ’	intim <u>ate</u> desol <u>ate</u> accur <u>ate</u> priv <u>ate</u>	/ɪntɪm <u>ei</u> t/ /desə <u>le</u> t/ /ækjə <u>re</u> t/ -----	/ɪntɪm <u>ə</u> t/ /desə <u>l</u> ət/ /ækjər <u>ə</u> t/ / 'praɪv <u>ə</u> /
‘ o ’	tomor <u>row</u> carro <u>t</u> pot <u>ato</u>	/tɒmɒr <u>əʊ</u> / /kær <u>ɒ</u> t/ -----	/təmɒr <u>əʊ</u> / / kær <u>ə</u> t/ / pə'teɪ.təʊ /
‘ or ’	for <u>get</u> ambassa <u>do</u> r oppo <u>rtu</u> nity	/fɔ:ɡ <u>e</u> t/ /æmbæsəd <u>ɔ:</u> / /ɒpɔ:tju:nɪtɪ /	/fəɡ <u>e</u> t/ /æmbæsəd <u>ə</u> / / ɒpətju:nɪtɪ/
‘ e ’	settlem <u>en</u> t postm <u>en</u> viole <u>t</u>	/setlm <u>en</u> t/ /pəʊstm <u>en</u> / /vaɪə <u>l</u> et/	/setlm <u>ən</u> t/ /pəʊstm <u>ən</u> / /vaɪəl <u>ə</u> t/
‘ er ’	per <u>h</u> aps super <u>m</u> an strong <u>er</u>	/pɜ:h <u>æ</u> ps/ /su:pɜ:m <u>æ</u> n/ /strɒŋɡ <u>ɜ:</u> /	/pəh <u>æ</u> ps/ /su:pəm <u>æ</u> n/ /strɒŋɡ <u>ə</u> /
‘ u ’	autum <u>n</u> but suppo <u>r</u> t	----- / bʌ <u>t</u> / /sʌp <u>ɔ:</u> t/	/ 'ɔ:.təm / / b <u>ə</u> t/ /səp <u>ɔ:</u> t/

A reduction is defined by Skandera and Burleigh ( 2005 :79 ) as a feature of connected speech . So , we can define a vowel reduction as a process in which unstressed vowels are reduced to schwa / ə / . For example , the word ‘ personal ’ /'pɜ:sə nəl/ has two reduced vowels in its unstressed syllables and both of them are schwas . But in the word ‘ personality ’ /'pɜ:sə'nælɪtɪ / , the stressed syllable has a non-reduced vowel .( Carr , 1993:146)

Chomsky and Halle ( 1968: 110 ) refer to the fact that lax vowels are reduced to /ə/ in English when they are unstressed . words in connected speech appear in a reduced form for two reasons : the first reason is that speakers economize on effort , i.e. they avoid difficult sound sequences , and the second is that there are certain word classes such as prepositions , pronouns , and conjunctions that are very rarely stressed and they appear in a weak form (Stockwell and Mullany , 2010:235) .

Roach (2009:89) explains that “ almost all the words which have both a strong and a weak form belong to a category that may be called function words , words that do not have a dictionary meaning in the way that we normally expect nouns , verbs , adjectives , and adverbs ”. These function words such as auxiliary verbs , articles , pronouns , prepositions , conjunctions which are more frequently pronounced in their weak forms . Strong forms usually occur in the following cases .

1- In isolation

e.g. **Who?** /hu:/ . This case is opposed to /hʊ/ in this sentence **I wonder who did it** .

2- When being quoted

e.g. **I said “of” not “off”** /ɒv/ . This case is opposed to this sentence **He is a friend of mine** /əv/ .

3- At the end of a phrase or a sentence , as in **what are you looking at ?** /æt/ . It is opposed to **I am looking at the wall** /ə t/

4- In the first of two consecutive auxiliary verbs without a full verb .

e.g. **I would have** /wʊd/. It is opposed to **I would have liked it** . /wəd/.

5- In co-ordinations

e.g. He travels to and from London alot . /tu:/ , /frɒm/. It is opposed to He travels to London. /tə/. While ' from' and ' to ' have their weak forms as in these sentences He travels from London /frəm/. He travels to London. /tə/

6- In contrasts

e.g. I have a message from Zeki not for Zeki. /frɒm/ , /fɔ:/

It is opposed to I have a message from Zeki . /frəm/

I have a message for Zeki . /fər/

7- When used to emphasize a particular aspect of the message for whatever reason , e.g. London is the place to be in . /ði:/ . It is opposed to London is the place where I met my friend . /ðə/ (Roach ,2009 :89-91)

There are six groups of words that can undergo a vowel reduction :

1-Auxiliary verbs

Full Forms	Reduced Forms
1- ' can ' The full form : /kæn / Example : Oh , yes , I 'can' . / kæn/	' can ' The reduced form : / kən / Example : Wherever <u>can</u> it be ? / kən /
2- ' could ' The full form : / kʊd/ Example : I 'could' , you know , if I wanted to . / kʊd/	' could ' The reduced form : / kəd Example : We <u>could</u> come tomorrow . /kəd/
3- ' will ' The full form : /wɪl / Example : 'Will' you run quickly ? / wɪl/	' will ' The reduced form : /əl/ Example : What <u>will</u> you do ? / əl/
4- ' would ' The full form : /wʊd/ Example : He said he 'would' . / wʊd/	- ' would ' The reduced form : /wəd/ Example : <u>Would</u> you hear me ? / wəd/
5- ' shall ' The full form : /ʃæl/ Example : They 'shall' not pass . / ʃæl/	' shall ' The reduced form : / ʃəl/ Example : <u>Shall</u> I do it ? / ʃəl /



6- ' should '	- ' should '
The full form : /ʃʊd /	The reduced form : /ʃəd/
Example : That 'should be enough , but I wonder if it really . /ʃʊd/	Example : We should prefer not to /ʃəd/
7- ' must '	' must '
The full form : / mʌst/	The reduced form : /məs/
Example : Indeed you 'must . / mʌst/	(before consonants)
	Example : I must go soon . / məs/
	-/məst/ ( before vowels )
	Example : I must answer that later.
	/ məst/
8- ' is '	' Is '
The full form : /ɪz /	The reduced form : /z/
Example : Yes , it ' is /ɪz/	Example : Pat is going to school . /z/
9- ' are '	' are '
The full form : /ɑ:/ ( before consonants)	The reduced form : /ə/ (before consonants )
Example : We aren't late , 'are we ?	Example : When are they coming ? / ə/
/ɑ:/	-/ər/ (before vowels)
-/ɑ:r/ ( before vowels )	Example :Our friends are away . / ər/
Example : Oh , yes , they 'are old . /ɑ:r/	
10- ' was '	' was '
The full form : /wɒz/	The reduced form : /wəz/
Example : Murdered ? I'm sure he 'was	Example : One was enough . / wəz/
/ wɒz/	
11- ' were '	' were '
The full form : /wɜ:/ (before consonants)	The reduced form : /wə/ ( before consonants )
Example : Oh , yes , indeed you 'were .	Example : The students were late.
/ wɜ:/	/ wə/.
-/w ɜ:/ ( before vowels )	-/ wər/ before vowels
Example : They 'were worse at looking .	Example : We were all there .
/ w ɜ:/	/ wər/
12 - ' has '	' has '
The full form : /hæz/	The reduced form : /əz/ (not initially )
Example : Yes , she 'has . / hæz/	Example : She has gone . / əz/

	-/həz/ ( initially ) Example : <u>Has</u> he come ? / həz/ .
13- ' have ' The full form : /hæv/ Example : Here . 'Have an apple . / hæv/	' have ' The reduced form : /əv / ( not initially ) Example : What <u>have</u> you done? . / əv/ -/həv/ ( initially ) Example : Have they been <u>lost</u> ? / həv/
14- ' had ' The full form : /hæd/ Example : I just 'had to do it . / hæd/	' had ' The reduced form : /əd/ (not initially ) Example : The man <u>had</u> left . / əd/ -/həd/ (initially) Example : <u>Had</u> they left ? / həd/
15- ' do ' The full form : /du:/ Example : How 'do you do? /du:/	' do ' The reduced form : /də/ (before consonants) Example : Where <u>do</u> they go to ? /də/ -/du/ ( before vowels ) Example : So <u>do</u> all of us . /du/
16- ' does ' The full form : /dʌz/ Example : He 'does say funny things . /dʌz/	' does ' The reduced form : /dəz/ Example : When <u>does</u> it arrive ? / dəz/

There are other three auxiliaries like may , might , and ought which do not have reduced forms ( Kreidler ,1989:226)

## 2-Pronouns

Full Forms	Reduced Forms
1- ' he ' The full form : /hi:/ (initially ) Example : ' <u>He</u> ? He' ll never do it. /hi:/  -/i:/ ( not initially ) Example : But he said 'he would .	'he' The reduced form : /hɪ/ (initially ) Example : He told me a story. / hɪ / -/ɪ/ ( not initially ) Example : What did <u>he</u> say ?
2- ' she ' The full form : /ʃi:/ Example : Is not ' <u>she</u> ? /ʃi:/	'she' The reduced form : /ʃɪ/ Example : Why <u>did</u> she read? / ʃɪ /

<p>3- ' we The full form : /wi:/ Example : 'We are the cleverest ones here . /wi:/</p>	<p>' we ' The reduced form : /wɪ/ Example : This is where <u>we</u> came from ? / wɪ/</p>
<p>4- 'you ' The full form : /ju:/ Example : Oh , it's 'you again./ ju:/</p>	<p>'you ' The reduced form : /jʊ / Example : I wish <u>you</u>'d keep quiet? / jʊ/</p>
<p>5- ' him ' The full form : /hɪm/ Example : Do not write to ' <u>him</u> , write to her . / hɪm/</p>	<p>' him ' The reduced form : /ɪm/ Example : I gave <u>him</u> six pence . / ɪm/</p>
<p>6- ' her ' The full form : /hɜ:/ ( initially ) = before consonants Example : ' <u>Her</u> father , not mine -/hɜ:r/ (initially ) before vowels Example : ' <u>Her</u> uncle , not mine. /hɜ:r/.</p>	<p>' her ' The reduced form : /ə/ ( not initially ) Example : Give it to <u>her</u> at once . -/hə/ ( initially ) Example : <u>Her</u> brother helps me .</p>
<p>7- ' them ' The full form : / ðem / Example : He gave it to ' <u>them</u> not to us . / ðem /</p>	<p>' them ' The reduced form : / ðəm/ Example : Read <u>them</u> . / ðəm/</p>
<p>8- ' us ' The full form : / ʌs/ Example : They hate you not ' <u>us</u> . / ʌs/</p>	<p>' us ' The reduced form : /əs / Example : They took <u>us</u> home . /əs /</p>
<p>9- ' your ' The full form : /jɔ:/ ( before consonants ) Example : It's ' <u>your</u> fault , not Tom's / jɔ:/ -/ jɔ:r/ ( before vowels ) Example : It's ' <u>your</u> orange-juice , not Tom's .</p>	<p>- ' your ' The reduced form : /jə/ ( before consonants ) Example : Make up <u>your</u> mind . /jə/ - / jər/ ( before vowels ) Example : <u>Your</u> idea is interesting one . / jər/ .</p>
<p>10- His</p>	<p>His</p>

<p>The full form : /hɪz/ ( before noun )  Example : That's <u>his</u> , don't take it. /hɪz/</p>	<p>The reduced form : /ɪz/ ( not initially )  Example : What's <u>his</u> job ? / ɪz/</p>
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### 3- Prepositions

Full Forms	Reduced Forms
<p>1- ' at '</p> <p>The full form : / æt/</p> <p>Example : I threw it to her , not ' <u>at</u> her /æ t/</p>	<p>' at '</p> <p>The reduced form /æt/</p> <p>Example : Be at the station <u>at</u> ten . / æ t/</p>
<p>2- ' for '</p> <p>The full form / fɔː/ ( before consonants )</p> <p>Example : Who are those letters ' <u>for</u>? / fɔː/</p> <p>- / fɔːr/ ( before vowels )</p> <p>Example : Thanks ' <u>for</u> asking . / fɔːr/</p>	<p>' for '</p> <p>The reduced form / fə / ( before consonants .</p> <p>Example : They sent <u>for</u> a doctor . / fə/ .</p> <p>-/ fər/ ( before vowels )</p> <p>Example : Shall we go <u>for</u> a walk ? . /fər/</p>
<p>3- ' from '</p> <p>The full form : / frɒm/</p> <p>Example : Where do bananas come ' <u>from</u> ? / frɒm/.</p>	<p>' from '</p> <p>The reduced form : / frəm</p> <p>Example : He is <u>from</u> Iraq . / frəm/</p>
<p>4- ' of '</p> <p>The full form : /ɒv/</p> <p>Example : What's it made ' <u>of</u> ? / ɒv/</p>	<p>' of '</p> <p>The reduced form : /əv/</p> <p>Example : As a matter <u>of</u> fact . / əv/</p>
<p>5- ' to '</p> <p>The full form : /tuː/</p> <p>Example : What are you getting up ' <u>to</u> ? / tuː/</p>	<p>' to '</p> <p>The reduced form : /tə/ ( before consonants )</p> <p>Example : They went <u>to</u> the zoo. / tə/</p> <p>-/tʊ/ ( before vowels )</p> <p>Example: I want <u>to</u> ask you . / tʊ/</p>

#### 4-Determiners like the , a , an , and some

	Reduced Forms
1- ' the ' The full form : /ði:/ Example : That's ' <u>the</u> tool for such work . /ði:/	' the ' The reduced form : / ðə/ ( before consonant ) Example : Paint <u>the</u> wall ./ ðə/. -/ði / (before vowels ) Example : <u>The</u> other end / ðɪ/
2- ' a ' ' an '	' a ' The reduced form : / ə / (before consonants ) Example : Read <u>a</u> book . / ə/ ' an ' : / ən/ ( before vowels ) -eat <u>an</u> apple / ən/

#### 5-Conjunctions

Full Forms	Reduced Forms
1- ' and ' The full form : /ænd/ Example : I said ' <u>and</u> not end . / ænd/	' and ' The reduced form : /ənd/ Example : in <u>and</u> out / ənd/ -/nd/ Example : He sat <u>and</u> ate . /nd/ -/n/ ( after t , d , s , z , ʃ ) Example : bread <u>and</u> butter . /n/
2- ' but ' The full form : /bʌt/ Example : ' <u>But</u> for you I should be dead . /bʌt/	' but ' The reduced form : /bət/ Example : It is good <u>but</u> expensive .
3- ' as ' The full form : /æz/ Example : That's what it was sold ' <u>as</u> . / æz/	' as ' The reduced form : /əz/ Example : As far <u>as</u> I know . / əz/
4- ' That ' The full form : /ðæt/ Example : I would not trust ' <u>that</u> fellow . / ðæt/	' That ' The reduced form : /ðət/ -The price is the thing <u>that</u> annoys me./ ðət/.
5- ' than ' The full form : /ðæn/	' than ' The reduced form : / ðən/

Example : What is it worse' <u>than</u> ? / ðæn/	Example : Ali is better <u>than</u> Ahmed . / ðæn/
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## 6- Other words

1- Some The full form : / sʌm/ Example : I don't want ' <u>some</u> money , I want a lot . / sʌm/	Some The reduced form : /səm / Example : Have <u>some</u> bread .
2- There The full form : / ðeə / Example : Oh , ' <u>there</u> you are / ðeə /	There The reduced form : /ðə/ ( before vowels ) Example : <u>There</u> was a strange look in his eyes . -/ðər/ ( before vowels ) Example : <u>There</u> are many places to visit . / ðər/

## 2. The Practical Part

To achieve the objectives of the study , a test was undertaken as an attempt to investigate the ability of non-native speakers studying English at the university level in recognizing vowel reduction in English . It is based on the analysis of the subject's answers in the test .

### 2.1. Selection Of Stimuli

The experiment was made in the form of a test . It consists of twelve sentences that contain weak forms . Vowel reduction cannot be shown in single words , so the researcher selected a number of sentences that contain weak forms because weak forms have reduced vowels . All the stimulus items were taken from well-known references . Mainly ,they were taken from Roach ( 2009 :170-171) , O'Connor (1780 :48) , Jones (1969 : 51) , and Jones ( 1957 : 126) .

### 2.2. CD-Tape Recording

The recorded words were spoken by English native speakers namely : peter Roach (2009: 170-189) and J.D. O'Connor (1980 :35-37) . The total time allotted for the production of each sentence was 6 seconds . This period of time was quite sufficient to allow the subjects listen to the test words produced and then recognize the shortened vowels . This classic music was used to make the subjects feel relaxed and comfortable .

### **2.3. The Subjects**

Twenty- two males and one hundred and twenty- eight females acted as subjects in the test .They were chosen randomly from second stage students of the academic year (2013-2014) of the English Department , college of Education for Humanities , University of Basra . They were all native Iraqi Arabic speakers and all had passed a full year course in English Phonetics and phonology during the first year of their university education . Moreover ,they had studied vowel reduction in their first year . They reported no history of hearing defects .Most of the second stage learners of the academic year 2013-2014 took part in responding to the test . This was done for the purpose of providing as large as possible a sample of Iraqi learners , keeping in mind the conditions of time and the facilities available when the test was made .

### **2.4. The Answer Sheet**

The 150 subjects were supplied with response sheets . In each sheet , there were twelve word pairs .The sentences were numbered from 1 up to 12 in the cassette . For example , no.1 in the answer sheet corresponds to the first test sentence , and no.2 in the answer sheet corresponds to the second test sentence in the cassette and so on and so forth . Within the test sentences , there are a number of weak forms and the subjects had to identify all of the weak forms which have the reduced

vowels . They were informed to listen to the sentences and then recognize the reduced vowels .

## **2.5. Procedures**

In order to obtain satisfactory and reliable results , the following steps are followed :

- 1-Conducting one test which aims at exploring the subjects' ability in recognizing vowel reduction .
- 3- A list of twelve items is presented .
- 4- Providing the subjects with tape recorded materials pronounced by English native speakers phoneticians .
- 5- Supplying written materials and asking the subjects to recognize the reduced vowels .
- 6- The test is conducted in a quiet room in the laboratory .
- 7- The test is performed in six sessions .

## **2.6. Statistical Test Used**

In order to investigate whether the results are significant or not , the mean , and the t-test were used to compare the scores of the learners . The data of analysis were viewed by Statistical Package for Social Sciences (SPSS) .

## **2.7. Analysis of Data**

### **2.7.1. The Subjects' Performance**

It consists of twelve sentences . The subjects are required to recognize the reduced vowels. The analysis shows the perceptual differences in the recognition of vowel



shortening through sentences as performed by 75 subjects . According to Jalabi (2005:70 ) , the researcher can take 27% from high scores and 27% from low scores of the subjects . This percentage can reduce the effort of the researcher . Thus , the total number of the subjects that is used to analyze is 75 subjects .

#### **2.7.1.1. Sentence Number One ( We can wait for the bus )**

Sixty - five subjects have correctly recognized the reduced vowel /ɪ/ which is in the word ( we) , and the reduced vowel /ə/ which is in the words (can) , (for) , and (the) . The mean of their achievement is 1.866 and the calculated t-value for this sentence is 9.279 which is higher than the tabulated t-value which is 1.96 . Thus , the difference is statistically significant .

#### **2.7.1.2. Sentence Number Two ( How do the lights work ? )**

The subjects' performance in recognizing the reduced vowel /ʊ/ which is in the word (do) , and the reduced vowel /ə/ which is in the word (the) is well because 65 subjects have identified the correct answer whereas 10 subjects could not identify the reduced vowels correctly . The mean of their performance is 1.866 and the calculated t-value is 9.279 . The difference tends to be significant because the calculated t-value is higher than the tabulated t-value which is 1.96

#### **2.7.1.3. Sentence Number Three ( There are some new books I must read )**

The subjects' performance in recognizing the reduced vowel /ə/ in the words ( there) , (are) , (some) , and (must) is very good because 50 subjects have recognized the correct answer . The mean of their performance is 1.666. The calculated t-value which

reads 3.041 is higher than the tabulated t-value which is 1.96 . This means that the difference is statistically significant .

#### **2.7.1.4. Sentence Number Four ( She took her aunt for a drive )**

Sixty - four subjects have recognized the reduced vowel / **i** / in the word (she) , and the reduced vowel / **e** / which is in the words ( her ) , (for ) ,and (a) . This means that 11 subjects could not recognize the reduced vowels correctly . The subjects ' performance in this pair is good because most of them have chosen the correct answer . The mean of their performance is 1.853 . The difference is statistically significant . The calculated t-value which is 8.592 is higher than the tabulated t-value .

#### **2.7.1.5. Sentence Number Five ( The basket was full of things to eat )**

Sixty - one subjects have recognized the reduced vowel / **e** / in the words (the) , (was) , (of ) ,and the reduced vowel/ **u** / which is in the word (to) . Fourteen students could not recognize reduced vowels correctly . The mean is 1.826 and the calculated t-value is 7.424 . The difference tends to be significant because the calculated t-value is higher than the tabulated t- value .

#### **2.7.1.6. Sentence Number Six ( Why should a man earn more than a woman ?)**

Sixty six subjects have recognized the reduced vowel / **e** / in the words ( should ) , (a) , ( than ) , and ( a ) whereas 9 could not recognize the reduced vowels correctly . The subjects proved to be good in dealing with this sentence . The mean of their performance is 1.880 . The calculated t-value for this sentence hence it is 10.059 is higher than the tabulated t- value which is 1.96 and the difference is significant .

#### **2.7.1.7. Sentence Number Seven ( You ought to have your own car )**

Sixty - four subjects have recognized the reduced vowel /ʊ/ in the word ( you ) , and the reduced vowel /ə/ which is in the words ( to ) , and (your ) . The subjects performed well in this sentence because the mean is (1.853 ) . Table (4.13 ) shows that the calculated t-value is 8.592 which is higher than the tabulated t- value which is 1.96 .This means that the difference is statistically significant because the calculated value is higher than the table value .

#### **2.7.1.8. Sentence Number Eight ( He wants to come and see us at home )**

Fifty - eight subjects have recognized the reduced vowel /ɪ/ in the words (he ) , and the reduced vowel /ə/ which is in the words (to ) , (and ) , (us) , and (at ) . The mean of their performance is 1.786 . The difference is found to be statistically significant at significant level (0.05) since the calculated t-value which reads 6.020 is higher than the tabulated t-value .

#### **2.7.1.9. Sentence Number Nine ( Have you taken them from that box ?)**

The subjects' performance in recognizing the reduced vowel /ʊ/ in the words (you ) , and the reduced vowel /ə/ which is in the words (them ) , and (from ) . is good because 62 subjects have recognized the correct answer and 13 subjects could not recognized the correct answer . The mean of their performance is 1.893 and the calculated t-value is 10.961 . The difference tends to be significant because the calculated t-value is higher than the tabulated t-value which is 1.96 .

#### **2.7.1.10. Sentence Number Ten ( It's true that he was late , but his car could have broken down )**

Fifty - three subjects have recognized the reduced vowel /ɪ/ in the words (he) and (his ) , and the reduced form /ə/ which is in the words ( was) , (but ) , (could ) ,

(that ) and (have ) . This means that 22 subjects could not recognize the shortened vowel correctly .The subjects' achievement in this sentence were satisfactory . The mean of their performance is 1.706 . The difference is found to be statistically significant since the calculated t-value which reads 3.905 is higher than the tabulated t-value .

#### 2.7.1.11. Sentence Number Eleven ( I shall take as much as I want )

Fifty - eight subjects have recognized the reduced vowel / ə / in the words (shall ) , (as ) and (as ) . The mean of their achievement is 1.773 and the calculated t-value for this sentence is 5.616 which is higher than the tabulated t-value . Thus , the difference is statistically significant .

#### 2.7.1.12. Sentence Number Twelve ( Why am I too late to see him today ? )

Concerning sentence number twelve, the subjects' performance was satisfactory . The mean of their performance is 1.893 because of the high number of subjects i.e. (66) who have correctly recognized the reduced vowel / ə / which is in the word ( am) and ( to) and the reduced vowel / I / which is in the word ( him ) . The achievement is found to be statistically significant because the calculated t-value , 10.961 i.e. it is higher than the tabulated t-value .

Table ( 2.1 ) : Means , Std Deviation and T-value of sentences

No.	Mean	Std Deviation	T-Value		Significance
			Calculated t-value	Tabulated T-Value	
1	1.866	0.342	9.279	1.96	Sig.

2	1.866	0.342	9.279	1.96	Sig.
3	1.666	0.474	3.041	1.96	Sig.
4	1.853	0.356	8.592	1.96	Sig.
5	1.826	0.381	7.424	1.96	Sig.
6	1.880	0.327	10.059	1.96	Sig.
7	1.853	0.356	8.592	1.96	Sig.
8	1.786	0.412	6.020	1.96	Sig.
9	1.893	0.310	10.961	1.96	Sig.
10	1.706	0.458	3.905	1.96	Sig.
11	1.773	0.421	5.616	1.96	Sig.
12	1.893	0.310	10.961	1.96	Sig.

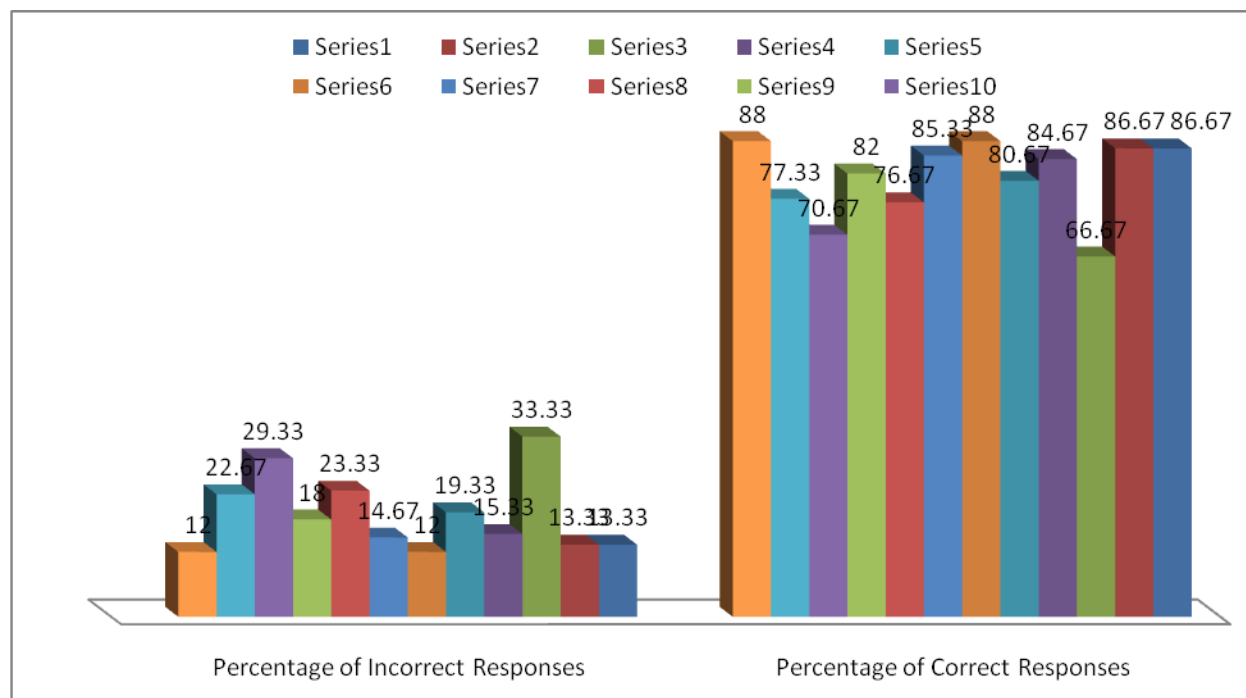


Figure (2.1) : Histogram of Subjects' Achievement in Connected Speech (sentences)

From the tables above , we can say that the number of correct responses in recognizing the shortened long vowels is higher than the number of correct responses in recognizing the shortened short vowels . However the recognition difference of recognizing the shortened long vowels is statistically significant because the mean and the calculated t-value for recognizing the shortened long vowels are higher than the mean and the calculated t-value for recognizing the shortened short vowels in all pairs .

## 2.8. Testing Performance Difference Between the Males and the Females

Our aim in this section is to find out whether there are any differences between the males and the females in performance .The males' and the females' achievement in recognizing vowel reduction in connected speech are shown in the following subsections . According to Jalabi ( 2005: 55) , we can equate the

number of males and females in order to get the perfect results regarding gender performance .So , we have chosen 22 males and 22 females randomly . The present researcher has used the number ( 1 ) to refer to females and number ( 2 ) to refer to males .The tabulated t-value at the level of significance (0.05) with 44 as the degree of freedom is 2.06

### 2.8.1. Males' and Females' Performance

The performance of the males and the females is presented in the following table

Table (2.2) : Males and females' Performance

No.	Gender	Number of Correct Responses	Number of Incorrect Responses
١	١	٢٠	٢
	٢	22	0
٢	١	٢١	١
	2	2٢	٠
٣	١	22	٠
	٢	٢٠	٢
٤	١	٢١	١
	٢	١٨	٤
٥	١	١٤	٨
	٢	٢٠	٢

٦	١	٢٢	٠
	٢	٢١	١
٧	١	٢٢	٠
	٢	٢٢	٠
٨	١	٢٠	2
	٢	٢٠	2
٩	١	٢٠	٢
	٢	18	٤
١٠	١	١٨	٤
	٢	٢٠	2
١١	١	٢٢	٠
	٢	٢٠	٢
١٢	١	٢١	١
	٢	٢٢	٠

The following table shows the statistical results :

Table ( 2.3 ) : Means , Std Deviation and T-value of gender differences according to sentences



No.	Gender	Mean	Std Deviation	T-Value		Significance
				Calculated t-value	Tabulated T-Value	
١	1	0.91	0.294	-1.449	2.06	Non.
	2	1.00	0.000	-1.449	2.06	
2	١	0.95	0.213	-1.000	2.06	Non.
	٢	1.00	0.000	-1.000	2.06	
3	1	1.00	0.000	0.446	2.06	Non.
	2	0.91	0.294	0.455	2.06	
4	1	0.95	0.213	-1.000	2.06	Non.
	2	1.00	0.000	-1.000	2.06	
5	1	0.64	0.492	-2.230	2.06	Non.
	2	0.91	0.294	-2.230	2.06	
6	1	1.00	0.00	1.000	2.06	Non.
	2	0.95	0.213	1.000	2.06	
7	1	1.00	0.000	0.000	2.06	Non.
	2	1.00	0.000	0.000	2.06	
8	١	0.91	0.294	0.866	2.06	Non.
	٢	0.91	0.294	0.866	2.06	
9	1	0.91	0.294	0.000	2.06	Non.
	2	0.82	0.294	0.000	2.06	

10	1	0.82	0.395	0.000	2.06	Non.
	2	0.82	0.395	0.000	2.06	
11	1	1.00	0.000	1.449	2.06	Non.
	2	0.91	0.294	1.449	2.06	
12	1	0.95	0.213	0.507	2.06	Non.
	2	0.91	0.294	0.507	2.06	

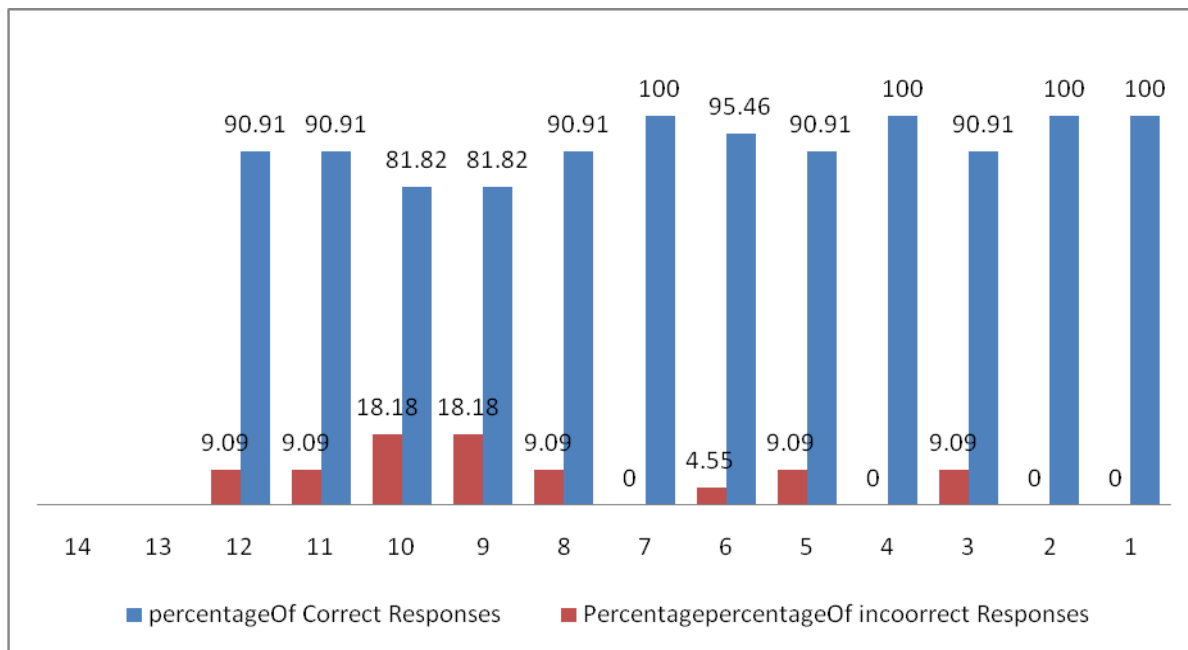


Figure (2.2) : Histogram of The Males ' Achievement

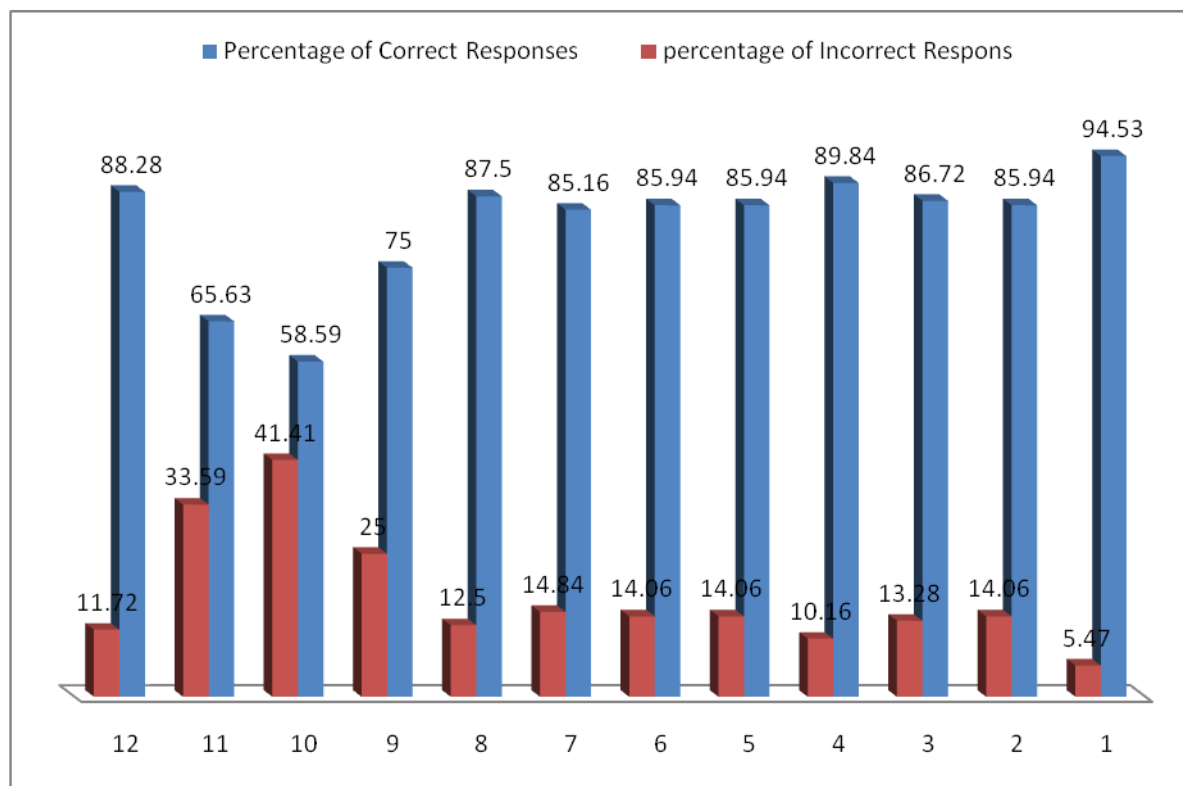


Figure (2.3) : Histogram of The Females' Achievement

## 2.9. Discussion of Results

According to the second part of the test which examines the recognition of vowel shortening in connected speech , there are two main reasons or interpretations for vowel shortening in this context . The first reason is stress and the second is rhythm . Since vowel reduction is a process in which unstressed vowels are reduced to / ə / , / ɪ / and / ʊ / , so we can say that vowel shortening in connected speech occurs only in unstressed syllables or in what is called weak forms . Words in connected speech appear in reduced forms for two reasons : The first is that speakers economize an effect , i.e. they avoid difficult sound sequences and second there are certain word classes such as prepositions , pronouns , conjunctions , articles and auxiliary verbs that occur in connected speech in weak forms ( Stockwel and Mullany , 2010 : 235) .

The second reason for vowel shortening in connected speech is rhythm . One requirement for rhythm is vowel reduction because vowel reduction reduces the number of the syllables in the sentences and this makes the sentence economized . Rhythm involves some noticeable event happening at regular intervals of time . The foot which is the unit of rhythm begins with a stressed syllable and includes all the following unstressed syllables up to the following stressed syllable . ( Roach, 2009 : 107 )

According to the first sentence ( we can wait for the bus ) , the subjects have no problem in identifying the reduced vowel /ɪ/ in the word ( we ) , and the reduced vowel /ə/ in the words ( can ) , ( for ) , and ( the ) because vowel shortening in connected speech occurs in unstressed syllables and the words ( we ) , ( can ) , ( for ) , and ( the ) are unstressed functional / grammatical words or weak forms . This sentence has three feet :

1	2	3
We can	' wait for the	' bus

As for the second sentence ( How do the lights work ? ) , the subjects also show no problems in recognizing the reduced vowel /ə/ which is in the words ( do ) , and ( the ) because the words ( do ) and ( the ) are unstressed syllables and unstressed syllables tend to have a reduced vowels . This sentence has three feet :

1	2	3
' How do the	' lights	' work

As for the reduced vowel /ə/ in the words ( there ) , (are) , (some) , and (must ) in the sentence (There are some new books I must read ) , the subjects did not find a difficulty in identifying the reduced vowels because these words are unstressed syllables so they undergo vowel shortening . This sentence has four feet :

1	2	3	4
'There are some	'new	'books I must	' read

Concerning the fourth sentence (she took her aunt for a drive ) , the subjects have no problem in identifying the reduced vowel /ɪ/ which is in the word (she ) , and the reduced vowel /ə/ in the weak forms ( her ) , (for ) ,and (a) because vowel shortening in connected speech occurs in unstressed syllables . This sentence contains three feet :

1	2	3
She	'took her	'aunt for a
		'drive

As for the reduced vowel /ə/ in the words (the ) , (was) , (of ) ,and the reduced vowel/ ʊ / which is in the word (to ) in the sentence (There are some new books I must read ) , the subjects did not find a difficulty in recognizing them reduced vowels because (the ) , (was) , (of ) , and (to ) are unstressed syllables so they undergo vowel shortening . This sentence has four feet .

1	2	3	4
The	'basket was	'full of	'things to
			'eat

As for the following sentence (why should a man earn more than a woman) , the subjects also show no problems in recognizing the reduced vowel / ə / in the words ( should ) , ( a ) , ( than ) , and ( a ) . The words (should) , ( a ) , (than ) , and (a) are unstressed syllables and unstressed syllables tend to have reduced vowels .This sentence has five feet :

1	2	3	4	5
'Why should a		'man		'earn
'more than a		'woman		

Regarding the sentence (you ought to have your own car) , the subjects also show no problems in identifying the reduced vowel / ʊ / in the word ( you ) , and the reduced vowel / ə / which is in the words ( to ) , and (your) . The words (you) (to) and (your) are unstressed syllables and weak forms which tend to have reduced vowels .This sentence has four feet :

1	2	3	4
You		'ought to	
'have your		'own	
'car			

As for the reduced vowel / ɪ / which is in the words (he) , and the reduced vowel / ə / in the words (to) , (and) , (us) , and (at) . in the sentence (He wants to come and see us at home) , the subjects did not find a difficulty in identifying the reduced vowels because these words are unstressed syllables so they undergo vowel shortening . This sentence has four feet :

1

2

3

4

He | ' wants to | ' come and | ' see us at | ' home

As for the sentence (Have you taken them from that box?) , the subjects also show no problems in recognizing the reduced vowel /ʊ/ in the word (you) , and the reduced vowel /ə/ which is in the words (them) , and (from) . The words (you) , (them) and, (from) are unstressed syllables and unstressed syllables tend to have reduced vowels .This sentence has three feet :

1

2

3

'Have you | ' taken them from | ' that box

Concerning the sentence ( It's true that he was late , but his car could have broken down .) , the subjects also show no problems in recognizing the reduced vowel /ɪ/ in the words (he) and (his) , and the reduced vowel /ə/ which is in the words ( was) , (but) , (could) , (that) and (have) . The words (he) , (his) , (was) , (but) , (could) , (that) , and (have) are weak forms which are unstressed syllables and unstressed syllables tend to have reduced vowels .This sentence has five feet :

1

2

3

4

5

It's | ' true that he was | ' late but his | ' car could have | ' broke | ' down

As for the sentence ( I shall take as much as I want ) , the subjects have no problem in recognizing the reduced vowel/ ə / in the words (shall ) , (as ) and (as ) .The words (shall ) , (as ) , and (as ) are unstressed or weak forms . This sentence have three feet :

1	2	3
I shall	'take as	'much as I   'want

As for the second sentence (Why I am too late to see him today ) , the subjects also show no problems in recognizing the reduced vowel/ ə / in the words ( am) and ( to) and the reduced vowel / ɪ / in the word ( him ) . The words (am) , (to), and (him) are unstressed syllables and unstressed syllables tend to have reduced vowels .This sentence has five feet :

1	2	3	4	5
'Why I am	'too	'late to	'see him to	' day

According to the above analysis , most of subjects have recognize vowel shortening .This means that the first hypothesis is accepted . The third hypothesis is not validated because there are non significant differences between males and females , because the means of the two gender types are identical. The calculated t-value for the entire test for females is 0.443 , and for males is 0.552 which is lower than the table t-value , that is 2.06 .



### 3. Conclusion

The major conclusions that can be drawn from the present investigation are the following :

1-It is quite evident that Iraqi EFL learners were competent enough in recognizing vowel reduction .

2- Since vowel reduction is one case of vowel shortening and it cannot occur in single words , it was presented in a number of sentences . And since stress is an important feature for distinguishing the strong forms from their weak counterparts i.e. strong forms are stressed whereas weak forms are not stressed , so weak forms contain the reduced vowels which most of the subjects were able to recognize .

3- The data presented here provide a strong confirmation for the first hypotheses because the statistical means and differences are significant .

4- The data that are related to the second hypothesis ( gender differences ) provide a weak confirmation because the statistical analysis is non significant

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