

## Assess the level of achievement

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### ABSTRACT

This work, in fact, is an English language teaching study (henceforth, ELT) which may provide the inspiration for much –needed research on issues such as testing students' level of achievement in articulatory phonetics at the university level. It attempts to answer two questions: 1)What is college students' level of achievement in articulatory phonetics? 2- Are there any statistical significant differences in the achievement of college students in articulatory phonetics between the production and recognition testing techniques? This research falls into three sections: Section one indicates the problem, the aims, the hypotheses, the procedures, the limits and the value of the study. Section two provides a general overview of the articulatory aspect of phonetics. Finally,section three presents a description of the methodologies used in the current study ,and discusses the results obtained as well as the conclusions.

### Section one

#### Introduction

#### 1. 1The Problem of the Study

Generally speaking, “The teaching of any subject matter is usually based on analysis of the nature of the subject itself and the application of the teaching and learning.” (Richards et.al,2001:1).In this respect,it is worth noting that recent findings from pedagogical studies have shown that college students of English do face a problem in Phonetics in general at the recognition and the production levels. These findings, in fact, are the source of motivation for this study to shed some light on testing students' level of achievement in articulatory phonetics in particular.

#### 1.2 The Aims of the Study

To start with, defining objectives is a crucial stage in any operation”(Hodge,2001:174),accordingly, this investigation aims at raising the following questions:

1-What is college students' level of achievement in articulatory phonetics?

2- Are there any statistical significant differences in the achievement of college students in articulatory phonetics between the production and recognition testing techniques?

### **1.3 The Hypotheses of the Study**

It is hypothesized that:

- 1- College students do not have a satisfactory level of achievement in articulatory phonetics.
- 2- There are no statistical significant differences in the achievement of college students in articulatory phonetics between the production and recognition testing techniques?

### **1.4 The Procedures of the Study**

The following procedures are adopted:

- 1- presenting the problem, aims, hypotheses, procedures, limits and value of the current work.
- 2-providing a theoretical background on the articulatory aspect of phonetics.
- 3-dicussing the practical aspect of this study i.e.,test preparation, administration and implementation.
- 4-finding out the results and drawing out the conclusions.

### **1.5 The Limits of the Study**

In terms of practical implementation, the current study is limited to:

- 1- (100) first year university students who are studying for the BA degree in English language and literature for the academic year 2008-2009.
- 2-students are randomly selected as the subjects of the current paper in which repeaters of the same year are all excluded since their data are considered invalid.
- 3-the material of this study, in fact, is based on the prescribed textbook taught to the sample of this study i.e.,” Better English Pronunciation" (1988) by J.D O’Connor, and it is limited to cover the second chapter of the book i.e., 'How speech organs work'.

### **1.6 The value of this study**

This study gives a significant overview on testing articulatory phonetics. So it is hoped that it will be valuable for those interested in phonetics and also all those involved in the educational process at the university level .

## Section Two

### Articulatory Phonetics

#### 2.1 The Physiological Aspect of Phonetics: Speech Mechanisms

To start with, it is worth saying that "Speech sounds are produced by moving different bodies of air"(Ladefoged,2006: 133). And man is capable of producing a variety of speech sounds by altering the movements of the various speech organs (Singh and Singh ,1979:2).Gimson (1976:6) argues that "Man possesses ,...,the ability to produce sounds by using certain of his body's mechanisms, when he speaks he makes use of organs whose primary physiological function is unconnected with vocal communication, namely those situated in the respiratory tract".

Accordingly, it must be said that in order to learn how the speech sounds are made there is a need to study the workings of the various organs of speech.

#### 2.2 Articulatory Phonetics: Definition

In its broadest sense, the term articulatory phonetics is defined globally by a number of phoneticians: Roach (2002:6) defines articulatory phonetics as "The branch of phonetics that studies articulators and their actions".Another definition comes from Singh and Singh (1979:2) who point out that it is "the branch of phonetics that deals with the functions of the organs of speech. It includes an investigation of the structure of the various speech mechanisms and the part they play in producing the various speech sounds."Finally, Jones (1976:5) however, stresses that "To get an understanding of the nature of speech and the means by which it is produced, it is necessary in the first place to have a rough idea of the structure and the functions of the various parts of the 'organs of speech'.

#### 2.3 The Articulators (Speech Organs)

The term 'articulators' is looked at from a physiological- phonetic view as shown below:

"The concept of the articulator is a very important one in phonetics. Most of the

movements relevant to speech take place in the mouth and throat are,...., and the parts of the

mouth and throat area that we move when speaking are called articulators." (Roach,2002:6).

It might seem reasonable to refer to Jones (2003:235) who mentions that "The vocal organs are often referred to as the "articulators" and these include the tongue, the lips, the hard palate, the soft palate, the teeth, the pharynx and the larynx."

### **2.3.1 Types of Articulators**

Broadly speaking, there are two types of articulators:

#### **A) Active Articulators:**

In this regard, Roach (2002:6) defines active articulators as "Those which can be moved into contact with other articulators such as the tongue".

##### **2.3.1.1 The Tongue**

Among other phoneticians, O'connor(1988:17)mentions that "The tongue is the most important of the organs of speech because it has the greatest variety of movement .Moreover, it could be divided into four parts i.e., tongue tip, tongue blade, tongue front and tongue back(ibid.:18). And it is composed almost entirely of muscle tissue, and the muscles can achieve extraordinary control over the shape and movement of the tongue.(Roach,2000:81).

##### **2.3.1.2 The vocal Cords**

The vocal cords are "two small bands of elastic tissue... lying opposite each other across the air passage"(O'connor, 1988:13),in his turn, Gimson (1976:9)refers to the fact that "The action of the vocal cords which is most characteristically a function of speech consists in their role as a vibrator set in motion by lung air -the production of voice, or phonation". While Kreidler (2003:23) stresses that "Air which leaves the larynx goes through the pharynx and then out through the nasal cavity or the oral cavity or both at the same time".

##### **2.3.1.3The Glottis**

Phonetically, the glottis Is the opening between the vocal folds.(Ibid.:35).

##### **2.3.1.4 The Lips**

Wells et.al (1980:31) discusses the fact that the lips play a very significant role in the production of speech sounds. Lips, in fact, can take different positions when producing vowels i.e., they can be rounded, unrounded or flat.(Ibid.)

#### **B) Passive Articulators**

Passive articulators "are fixed in place such as the teeth ,the hard palate and the alveolar ridge(Ibid.)

### **2.3.2The Larynx**

A matter of fact, the larynx is one of the major components of speech producing equipment and has a number of different functions. It is located in the throat and its main biological function is to act as a valve that can stop air trying or escaping from the lungs. There is complex set of muscles inside the larynx that can open and close the vocal folds and as well as changing their length and tension". (Roach, 2002:44).

### **2.3.2.1 The Pharynx**

In phonetic terms, the pharynx is the tube which connects the larynx to the oral cavity, and it is usually classed as an articulator.(Ibid.:56).

### **2.3.2.2 The Palate**

As is known the palate "forms the roof of the mouth and separates the mouth cavity from the nose or( nasal cavity)" (O'connor,1988: 15). The palate, in fact, comprises The alveolar ridge which is "The hard, bony ridge behind the teeth"(Carr,2006:4),the hard palate "The hard ,bony part of the roof of the mouth. Most of the roof of the mouth consists of hard palate, which has bone beneath the skin", and the soft palate "The soft part at the back of the roof of the mouth". In this respect it is worth saying that "Towards the back of the mouth the layer of bone comes to an end but the layer of soft tissue continues for some distance, ending, eventually in a loose appendage ...this dangling object is the uvula ,but the layer of soft to which it is attached is called the soft palate (it is also sometimes named the velum) (Ibid.:71).

### **2.3.2.3 The Teeth**

Needless to say, the teeth are either upper teeth or lower teeth, and located immediately behind the lips. In fact, they play some important roles in the production of speech sounds. (Roach,2000:9).

## **Section Three**

### **The Methodologies**

#### **3.1 Population of the Study**

Methodologically speaking, "Students' population is a significant factor which can seriously affect the success of the teaching- learning process" (Dubin: 2002: 31).The population of the present study covers specifically, first year students (morning classes)in the department of English /College of Languages/ University of Baghdad for the academic year 2008-2009.

#### **3.2 The Sample of the Study**

The sample involved in the present study, which represents 97 % of the whole population, is distributed into two groups: those who participate in the pilot study which constitute 20 students, and those who participate in the final implementation of the test which constitute 80 students.

### 3.3 Sampling of Material

It is generally believed that "Learning consists of acquiring a body of knowledge"(Richards, 2005:34).In fact, selection of the material to be tested is considered to be the most essential step for planning the test. In this respect, the material that is tested in this research paper is (articulatory phonetics) that is presented in the second chapter of the prescribed textbook taught to the sample of the study i.e., "Better English Pronunciation" (1988) by J.D O'Connor.

### 3.4 Test Construction

Methodologically, it is worth noting that "the true power of tests is in the pedagogical benefits they offer in the form of feed back leading to more effective learning and teaching" (Norton ,2004:89).However, it is important to say that satisfactory measurement requires not only an accurate measuring instrument but a clear notion of what is to be measured (Obanya, 2006 :5).

Basically, the main procedure adopted in the current study is to construct an achievement test in order to achieve the aims of the study. Technically, the test consists of two different types of testing techniques both deal with the same data i.e., articulatory phonetics as shown in table(1):

**Table (1)**

<b>Description of the Test</b>		
<b>Types of Tests</b>	<b>Testing Techniques</b>	<b>Items</b>
Production	Draw figures	4
Recognition	Fill in the Blanks	4

As a matter of fact, all the testing techniques used in the current study are familiar to the university teachers of pronunciation as well as students of English, and they are all used nowadays in testing articulatory phonetics at the university level in Iraq.

#### 3.4.1 Test Validity

To compute test validity, the researcher adopts face validity as an instrument to obtain the validity of the test .Harmer (2001: 392) states that "A test is valid if it tests what it is supposed to test". In this respect, the test of the current study is examined by a committee of jury members who are specialists in : English Phonetics and Phonology, Methodology and Linguistics. The

agreement among the opinions of the committee members concerning the validity of the test is 100%.i.e., they all agree that items of the test are valid for the present study.

### **3.4.2 Pilot Study and Item Analysis**

To find out the item discriminating power and item difficulty level of each item of the test and to estimate the time needed to answer the test and determine the reliability coefficient of the whole test, a pilot study is run on the test in the first week of December2008.

For the purpose of conducting the pilot study, twenty male and female students are randomly assigned to be the testees in which all are studying for the BA degree at the first stage, Dept. of English/ College of Languages at Baghdad University. However, the average time needed to answer all the items of the test is 50 minutes. Results of applying the Item Difficulty power formula DP. and the Item Difficulty level formula DL. to the test items show that the DP of the test items ranges between 0,40-0,75 so it is considered acceptable (Gronlund, 1976:211) .And the optimum rate of the DL of all items ranges between 55.% – 60% it is also considered acceptable (Bloom, 1971:181). Moreover, the pilot study shows that the test is clear and understandable for all of the testees.

### **3.4.3 Reliability of the Test Items**

For the sake of computing reliability of the test items which is the “degree of consistency and precision with which the test measures what it purports to measure.” (Collins,1969 :24).The score –rescore method is used to compute the reliability of the test items in which the researcher herself and a professor in English phonetics and phonology have corrected a number of the test papers that are chosen randomly and their correction style and marking levels are compared statistically.

### **3.5 Final Administration of the Test**

To achieve the aims of this study and gain truly statistical, phonetic, linguistic and methodological results, the test is applied in its final version to a sample of eighty first year students who are studying at the dept. of English/ College of Languages at Baghdad University. The test taking, however, lasts for (50) minutes and the students face no considerable difficulty in taking the test items. From an academic point of view, all the instruction needed during the test application are given by the researcher herself, the test takes place in a pure academic environment in which the testees sit in four halls designed for lecturing however, students who take part A of the test have sat in the first two halls while students who take part B of the test have sat in the second two halls .It is worth stating also that test taking is implemented inside the university building i.e., the classrooms and no external variables have any effect on the students' performance by any means.

### **3.6 The Scoring Scheme**

with respect to the testing techniques used in this study these of 'draw figures', and 'fill in the blanks' the testees answers are scored according to a specific statistical scoring key in which all the elements of scoring have been taken into consideration i.e., the drawing of the articulators, the identification of the articulators and the spelling .as seen in table (2).

**Table (2)**

**Scoring Scheme**

<b>Techniques</b>	<b>Questions</b>	<b>Element</b>	<b>Marks</b>
Production	Draw a figure	Drawing	20
		Identification of the articulators	40
		Spelling	40
Recognition	Fill in the Blanks	Identification of the articulators	50
		Spelling	50

### **3.7 Achieving the Aims and Verifying the Hypotheses of the Study**

The aims of the current paper are achieved by implementing the methodologies of this study and the results reveal that college students have a medium level of achievement in articulatory phonetics in both types of testing technique. And the statistical evidence of this study indicates that there is no statistically significant difference of students' level of achievement in articulatory phonetics between the two types of testing techniques i.e., 'draw a figure' and 'fill in the blanks'. Accordingly, the first null hypothesis used previously is rejected and the alternative one which states that " College students have a satisfactory level of achievement in articulatory phonetics." is accepted. While the second null hypothesis is definitely accepted.

### **3.8 Results**

The conclusions of this study are summed up in the following points:



1-Most of the students that are acted as -subjects of this study show no difficulty in taking the test items.

2-The testees' level of achievement in articulatory phonetics is satisfactory at both the recognition and production testing techniques.

3-Testees' performance does not show statistical significant differences from one testing technique to another between the two types of testing techniques used in the current study and this, from the researcher's view point, leads to the fact that the type of testing techniques is not a significant factor that may have an impact on students' achievement in articulatory phonetics .In fact, students' well preparation for the test taking is the most significant factor that affects their level of achievement.

4-College students at the university level do face a real problem in their spelling skill, and this may have a great effect on their academic performance. In this respect, it is significant to point out that students' level of accuracy when taking part **B** of the test is weak i.e., they ,surprisingly, misspell most of the phonetic terms when identifying the articulators on the drawn figures although they are all found in the test sheets.

5-Students' performance in the 'draw figures' testing technique is statistically satisfactory in spite of the fact that some students may have a deficiency in their drawings.

6- Students' level of mastery in the identification of the places of the various organs of speech is good in both the production and the recognition testing techniques.

### **3.9 Conclusions**

It is generally believed that “Pronunciation can be considered as an overlooked area of language teaching.(Scrivener,2000:284).However, “One obvious reason why learners make errors is the difficulty they experience in accessing second language”(Ellis,2003:51) .Accordingly, it is worth mentioning that the sample of the current study English as a foreign language and most of the errors they made are clearly caused because of the difficulty they are facing in their mastery of English language. Technically, this study uses the error analysis scheme to deal with errors made by the chosen sample .In this respect ,error analysis is basically considered as “a procedure used by both researchers and teachers .It involves collecting samples of language learners, identifying the errors in the sample ,describing these errors ,classifying them according to their hypothesized causes and evaluating their seriousness.

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### Appendix

**Subject: Phonetics**

**The Test**

**First year**

**Part-A-**

Q: Draw figures that represent the following:

1- the sound-producing system.

2- the vocal tract.

3- The palate.

4- the parts of the tongue.

**The Test**

**Part-B-**

Q: Fill in the blanks with the name of the articulator numbered in the figures below:

the mouth(oral) cavity the upper teeth, the larynx

the palate the lower teeth, the pharynx

the nasal cavity the upper lip the vocal folds

the tongue the lower lip the alveolar ridge

the tip the hard palate the soft palate

the blade the glottis the lungs

the back nose trills