# ARMY POLYTECHNIC SCHOOL

## DEPARTMENT OF LANGUAGES
## APPLIED LINGUISTICS IN ENGLISH PROGRAM
## DISTANCE LEARNING EDUCATION

¨A STUDY OF THE AMERICAN ENGLISH VOWEL SYSTEM AND THE DIFFICULTIES OF AUDITORY DISCRIMINATION FOR THE SPANISH – SPEAKING STUDENTS ATTENDING TO THE COURSE OF MECHANICS AT SECAP DURING THE SCHOOL YEAR 2008 – 2009. ¨

AUTHOR:

Pablo Javier Martínez Ruales

A dissertation submitted in partial fulfillment of requirement for the degree of Bachelor in Applied Linguistics in the Department of Languages of the Army Polytechnic School

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DIRECTOR:        Dra. María Teresa Llumiquinga
CO - DIRECTOR:     Lcda. Olga Cárdenas

## MARCH - 2009

QUITO - ECUADOR

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# CERTIFICATE

We Dra. María Teresa Llumiquinga, Director and Lcda. Olga Cárdenas, Co – Director, duly certify that the Thesis under the title: ¨A STUDY OF THE AMERICAN ENGLISH VOWEL SYSTEM AND THE DIFFICULTIES OF AUDITORY DISCRIMINATION FOR THE SPANISH – SPEAKING STUDENTS ATTENDING TO THE COURSE OF MECHANICS AT SECAP DURING THE SCHOOL YEAR 2008 – 2009. ¨ by Mr. Pablo Javier Martínez Ruales, who has finished his studies in Linguistics to be applied in the English Language at distance modality in Army Polytechnic School, after being studied and verified in all its chapters; the dissertation is authorized in front of the correspondent University authorities.

| | |
|---|---|
| Dra. María Teresa Llumiquinga | Lcda. Olga Cárdenas |
| **DIRECTOR** | **CO - DIRECTOR** |

# <u>ACKNOWLEDGEMENTS</u>

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Now that I am also a teacher, I understand and appreciate all the hard work that they did for me in order to make me a better person and helped me to be the teacher I strive to be.

But specially, I should thank my Thesis Advisors Professors Dra. María Teresa LLumiquinga and Lcda. Olga Cárdenas for their hard work and time invested in being advisors for this document and have provided invaluable input and assistance throughout my thesis research. I hope that their dedication and whole - hearted help be rewarded with happiness and health for many years to come. I should declare that this Thesis Project would not be possible if their guidance was not there.

Many, many thanks.

Pablo Javier Martínez Ruales

_____
Signature

# **DEDICATION**

I want to thank Jehovah God for the opportunity of having life and strength and I would like to dedicate this Thesis to my family; Laura, Vicente, Marco y Bertha, as well as to my close friends.

Without their continued love and support, my Project would not have been possible.

<div align="right">

Pablo Javier Martínez Ruales

</div>

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# <u>SUMMARY</u>

English has been referred to as a ¨ Global Language ¨.

When I was a child I had some friends that were taking English Courses and I could see that they were not improving too much. My question was: Why was it too hard?

Now, I am an adult and the same friends are still struggling with English and even if they can understand written English, they can hardly recognize Spoken English Words. Sometimes, at High School some of my English teachers had different pronunciation patterns for the same word. That led to confusion to everyone in the classroom and sometimes I called my Native English speakers friends to ask them about how to pronounce a word. I knew that English Vowels Sounds were totally different. After studying them at Army Polytechnic School in my Linguistics career I chose my Thesis Project Theme as: ¨A study of the American English Vowel System and the difficulties of Auditory Discrimination for Students¨.

It is a quasi – experiment that took place at: ¨SECAP¨ applying a Pre and Post – Test in order to obtain reliable information in systematic and ordered way according to the research objectives.

The information obtained determined the students' needs for English Vowel Sounds learning because the Experimental Group obtained a high range of improvement in their ability to Discriminate Sounds but the Control Group did not have any positive results.

The Statistical process that I used was to calculate the Standard Deviation of the samples, then combine both variables of the sample and finally determine the Students T test.

Now, the question that I had for several years is answered. The reason that people does not feel confident with their pronunciation is because our system of vowels is different than English. For that reason, if we try to give meaning to our words we need to learn new and complex positions for our articulators and organs of the speech.

This is the purpose of the following Thesis Project.

# INTRODUCTION

Learning a second language can be exciting and productive, or painful and useless. One's efforts can end in the acquisition of a native – like fluency or a stumble repertory or sentences soon forgotten.

The difference often lies in how one goes about learning the new language and how a teacher goes about teaching it.

To be successful a student does not need an special inborn talent; learners and teachers simply need to do it right.

The most important thing of this Research Project is to find out how to develop correctly spoken abilities and it is organized in the following parts:

PART ONE        Describes the problem identification of the research: main problem, variables, objectives and justification, showing how important is to have good pronunciation.

PART TWO        Includes the ¨ Theoretical Framework ¨ with relation to the researched subject, also some concepts involved in this research as: Organs of the Speech, Vowel Production, Vowels Length, which are part of dependent – independent variables and relation between both. Besides, hypothesis systems that will let establish real outcomes of this research.

PART THREEE  Examines the ¨ methodology ¨ that was applied to develop the proposed investigation, it means its type and design, and how was data obtained from the population sample, showing the procedure and the analysis.

PART FOUR      Is focused in explaining, testing and exposing the data collection, through a descriptive statistics, by means of the respective percentages, standard deviation, variances, students' t – test and reason t analysis.

PART FIVE      Sets a proposal and summarizes the methodology that should be applied in order to be successful in learning Pronunciation and acquiring Auditory Discrimination abilities.

Finally, I presented the bibliography used for this research, some annexes and a glossary with the terms used in the whole project.

# PART ONE

# IDENTIFICATION OF

# THE PROBLEM

# PART ONE:

## 1.1. Identification of the problem.

During my observation and experience dealing with students at ¨SECAP¨ I have noticed a low level of ¨Pronunciation¨ and ¨Sound Discrimination¨.

I suppose that it is a standard fact all over the country because it is hard to find someone who is satisfied with his or her English pronunciation and sound discrimination abilities. The cause of this common phenomenon can be attributed to a wrong methodology used by teacher instructing English, the lack of appropriate teaching/learning techniques. But the most important fact is the inexistence of an audiovisual equipment to improve teaching/learning English as a foreign language.

Sometimes, teachers do not feel the necessity to implement a correct pronunciation program because even they are not able to produce correct English Sounds, maybe because they have not had the opportunity to learn from American instructors. This is something serious because one of the early steps in much modern language instruction is to teach the learner to discriminate sounds phonetically same as phonemically (separate sounds in the target language). For example: a teacher working with the important English distinction between /i/ (as in: tea, see, me, etc) and /I/ (as in: hill, bill, thin, etc).
People who think that this is not important would never be able to distinguish simple words such as: (BOSS) and (BUS) or (CAT) and (CUT).

I think it is important because without the ability to produce these simple sounds a learner will realize that he/she is not able to communicate almost anything in the foreign language. This leads to frustration and, as a result, he/she will not feel confident to speak English.

In fact, there are learners who do not realize how important is to acquire enough knowledge about the American English Vowels System. Of course, English Vowels have at least 12 different sounds, and many teachers and students in my province do not have the ability to distinguish them. Or even worse, they have no idea about the sounds differences and then they have a lot of problems in LISTENING and SPEAKING English. If teachers start instructing how to pronounce each vowel correctly in schools and high-schools, students and teachers will acquire the ability to understand Spoken English and then speak this foreign language.

Right now it is hard to find a project that explains step by step the way sounds are made. That is the reason that I would like to use my theme:

¨A study of the American English vowels system and its difficulties of Auditory Discrimination for the thirty Spanish – speaking students attending to the course of Mechanics at SECAP during the school year, 2008 – 2009.¨

## 1.2.    PROBLEM SETTING

## 1.2.1.    MAIN PROBLEM

The research is going to take place at ¨SECAP¨  Riobamba Canton, Province of Chimborazo. Two groups of fifteen students each will be investigated. The question we would like to answer is ¨ ¿What are the difficulties of Auditory Discrimination in the American English vowels system for the thirty students attending to the course of Mechanics at SECAP during the school year 2008-2009?

## 1.2.2. SECONDARY PROBLEMS:

- What level of previous ability of pronunciation do students have?
- What is the incidence of learning the American English Vowel System in students' comprehension?
- Is it really possible acquire discriminative abilities by learning through the Audio – Lingual method how the English Vowel System Works?

## 1.3. VARIABLE WORKING OUT

Independent and dependent variables related to knowledge and level of production of English Vowels System of the thirty students attending to SECAP are detailed below:

## INDEPENDENT VARIABLE

Teaching American English Vowel System

## DEPENDENT VARIABLE

Difficulties in Auditory Discrimination

| VARIABLE | CONCEPTUAL DEFINITION | DIMENSIONS | SUBDIMENSIONS |
|---|---|---|---|
| INDEPENDENT Teaching the American English Vowel System | English vowels are determined by changes in position of the lips, tongue and palate. These changes can be very slight and difficult to detect. The proper way to teach vowels is by using the vowel chart that attempts to map the positions of the tongue and jaw in articulating vowels. | 1. Articulators | 1.1 Pharynx 1.2 Soft Palate or Velum 1.3 Hard Palate 1.4 Alveolar Ridge 1.5 Tongue 1.5.1 Tip 1.5.2 Blade 1.5.3 Front 1.5.4 Back 1.5.5 Root 1.6 Teeth 1.6.1 Upper teeth 1.6.2 Lower teeth 1.7 Lips |
| | | 2. Tongue Position | 2.1 Vertical Position 2.1.1 High 2.1.2 Mid 2.1.3 Low 2.2 Horizontal Position 2.2.1 Front 2.2.2 Central 2..2.3 Back |
| | | 3. Sound Length | 3.1 Short Vowels 3.2 Long Vowels |
| DEPENDENT Students Performance (Difficulties in Auditory Discrimination) | Students understanding of English Vowels System determine their ability to produce 12 different sounds. We can not produce what we can not understand. This principle is real | | 1.1 Three different ¨A¨ sounds: 1.1.1 ¨A¨ as in /bad/ 1.1.2 ¨A¨ as in /dawn/ 1.1.3 ¨A¨ as in /star/ 1.2 Three different ¨E¨ sounds: 1.2.1 ¨E¨ as in |

| | | | /beet/ |
|---|---|---|---|
| and fundamental especially at the time when we want to communicate ideas and feelings orally.<br><br>We have to improve student's performance in producing sounds and their difficulties. | | 1. LISTENING (Understanding) | 1.2.2 ¨E¨ as in /rest/<br>1.2.3 ¨E¨ as in /they/<br><br>1.3 One sound of ¨I¨<br>1.3.1 ¨I¨ as in /fill/<br><br>1.4 Three different sounds for ¨O¨<br>1.4.1 ¨O¨ as in /phone/<br>1.4.2 ¨O¨ as in /cook/<br>1.4.3 ¨O¨ as in /boot/<br><br>1.5 One sound for ¨U¨<br>1.5.1 ¨U¨ as in /hug/<br><br>1.6 One neutral sound as in /banana/ |
| | | 2. PRODUCTION (Pronunciation) | 2.1 Articulation<br>2.1.2 Correct Tongue Position<br>2.1.3 Correct Jaws Position<br>2.1.4 Correct Lips Shape<br><br>2.2 Sound Length<br>2.2.1 Correct Pronunciation of Short Vowels<br>2.2.2 Correct Pronunciation of Long Vowels |

## 1.4. OBJECTIVES

### 1.4.1. General

- To demonstrate that the knowledge of English Vowels System affects directly and positively to the production and understanding of the Language
- To establish the abilities and difficulties of understanding and production of the English vowels system for the thirty students attending to the course of Mechanic during the school year 2008-2009; after and before teaching them.

### 1.4.2. Specific

- To carry out a Pre-test for students in order to understand the initial level of knowledge about the English Vowels system.
- After having students analyzing the Material presented, I would like to develop a final evaluation test (post-test), in order to establish the actual level of the student's knowledge.
- To use the information obtained to determine if teaching the American English Vowels system affects positively to the improvement in the production and sound discrimination in students.

## 1.5. JUSTIFICATION

English has been considered an important Language around the world. That is the reason that millions has been exposed to English at least once in their lives.

On the other hand, hundreds of students do not feel that they can use this language even after having months of preparation in Schools and High-schools. One of the reasons is that they feel that their pronunciation vary in relation to Native Speakers. This thought is correct. Vowels vary from one language to another, so, if we are not familiarized with these changes we could never pronounce in a correct way. Without a correct pronunciation of single words, we could not be able to construct sentences nor communicate feelings.

Correct pronunciation means saying individual words correctly. This involves:

1) Using the right sounds to vocalize words (consonants and vowels),

2) Stressing the right syllable(s) and,

3) In many languages, giving proper attention to diacritics.

Proper pronunciation adds to the dignity of the message we give. It allows a listener's attention to be focused on the message we say rather than on any mistakes in pronunciation.

It has been said that in our province, many people is looking for better Methodologies of Teaching. One of the most important reasons is that students do not feel comfortable about their Speaking and Understanding language Skills, acquired in high school level. The necessity of communicate ideas orally is very important, but it is also important to understand instructions correctly. This can be applied if we had a boss who is foreign or if we were working in a foreign country. That's the main reason of my research and my goal is to help students to develop better understanding and production skills in English.

# PART TWO

# THEORETICAL FRAMEWORK

# PART TWO:

## 2. THEORETICAL FRAMEWORK

## 2.1 Theoretical and Conceptual Focus

No one set of rules of pronunciation applies to all languages. Many languages are written in alphabetic letters. In addition to the Latin alphabet, there are such alphabets as Arabic, Cyrillic, Greek, and Hebrew. Instead of an alphabet, written Chinese uses characters that may be made up of a number of elements. These characters usually stand for a word or part of a word.

In alphabetic languages, proper pronunciation requires using the right sound for each letter or combination of letters. When such a language follows consistent rules, as is true of Greek, Spanish, and Zulu, the task is not so difficult. However, foreign influences on a language may result in pronunciations that reflect the origin of the words. As a result, a specific letter or group of letters may be pronounced in more than one way or, at times, may not be pronounced at all. You may need to memorize the exceptions and then use them often in your speech. Failure to give adequate attention to this aspect of a language can result in conveying wrong ideas.

General review of common words helps to make proper pronunciation relatively easy. However, if the pattern[1] is not consistent, the problem is more difficult. Dealing with it successfully requires much memorization.

With regard to pronunciation, there are some pitfalls to avoid. Being overly precise can give the impression of affectation, even snobbishness. The same can be said of pronunciation that is no longer in general use. The only effect will be to draw attention to the speaker. On the other hand, it is good to avoid the opposite extreme of using slovenly speech and pronunciation.

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[1] Benefit from Ministry School edited by Watchtower Society of Pennsylvania, (New York 2001), pg 89-92.

Acceptable pronunciation of the words of a language may differ from one country to another, even from one part of a country to another part of the same country. A person from another country may speak the local language with a distinctive accent.

Dictionaries may list more than one acceptable pronunciation for a word. Especially if a person's opportunity for secular education was very limited or if the language he now speaks is not his native tongue, he will benefit greatly by listening carefully to those who speak the local language well and then patterning his pronunciation after theirs.

In everyday speech it is usually best to employ words with which you are well acquainted. Ordinarily, pronunciation will not be a problem in general conversation. However, when you read aloud, you may encounter some words that you do not use in daily speech.

The following script comes from ¨Dimitrios Thanasoulas¨ where he sees the importance of teaching pronunciation and its difficulties. He says:

¨Indisputably, teaching pronunciation is one of the most complicated yet significant aspects of EFL / ESL teaching. That is why it has been looked upon as the "Cinderella" of language teaching (Kelly, 1969; Dalton, 1997). What should be drawn to our attention is that, in the process of communication, pronunciation (of both segmental and supra-segmental (prosodic) elements) is of paramount importance, since successful communication cannot take place without correct pronunciation (Celce-Murcia, Brinton & Goodwin, 1996)-poorly pronounced segments and supra-segments may have the result of disorienting the listener and inhibiting comprehension. Of course, the notion of "correctness" with regard to pronunciation is not tantamount to adherence to "native speaker" norms or Received Pronunciation (RP) rules.

At any rate, ¨ pronunciation has an important social value ¨ (Gelvanovsky, 2002), which means that it should be related to prestige. There have been numerous studies involving speakers of various English accents in order to find out what values are generally associated with Received Pronunciation. According to the findings, those values were the same as the values usually perceived as indispensable for socio-economic success: intelligence[2], professional competence, persuasiveness, diligence, social privilege, and so on.

**Is pronunciation teachable?**

There are some researchers (Suter, 1976; Purcell and Suter, 1980, et al.) who have cast doubt on the importance of pronunciation in EFL teaching. According to them, pronunciation practice in class has little, if any, effect on learners' pronunciation skills. In other words, 'the attainment of accurate pronunciation in a second language is a matter substantially beyond the control of educators'. Pennington (1989), though, believed that teachers with formal training in pronunciation and teaching supra-segmentals can make a difference. Between these opposing views, Stern (1992: 112) says:

*'There is no convincing empirical evidence that could help us sort out the various positions on the merits of pronunciation training'.*

Here, it might be helpful to think of various aspects of pronunciation along a teachability-learnability scale. For example, the attitudinal function of intonation might better be learnt without teacher intervention.

To sum up, teaching pronunciation is of paramount importance in foreign language learning. To ensure effective pronunciation teaching, there are certain factors that should be considered: biological, personal, socio-cultural, pedagogic, mother tongue influence, and setting realistic goals. Nevertheless, pronunciation teaching should not only focus on segmental features, i.e., teaching specific sounds or nuances of sounds, but also on supra-segmental or prosodic features, i.e., stress, rhythm, pitch, and intonation, which greatly contribute to communication.

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[2] (Hudson, 1980; Dalton & Seidlhofer, 1994).

Of course, all this cannot be achieved unless teachers follow certain principles of effective pronunciation teaching: learning to describe pronunciation, creating a non-threatening atmosphere, and teaching pronunciation step by step.

## 2.2. STRUCTURE

**CHAPTER ONE**

**CHAPTER TWO**

**CHAPTER THREE**

# CHAPTER ONE

## A STUDY OF THE ENGLISH VOWELS SYSTEM

When we try to understand a new language, the first thing we normally do is to compare our sounds to the new language sounds. That is a common mistake because in most languages sounds are different.

¨ English speakers pronouncing words in other languages often have to struggle to produce the sounds required, or to detect important differences in the way words sound. From the phonological point of view, it is important to know, for example, that English has 20 distinctive vowel sounds, and that the vowel sounds in 'bed' and 'bad' distinguish English words; another important kind of fact is that in English, vowels can begin, end or come in the middle of syllables. They are overwhelmingly the class of sound that is most often the one essential element in a syllable for English. ¨[3]

That expression is totally true because normal movement of our mouth can vary depending on the language we are trying to speak.

It is important to remember that Phonetics can give us an idea of how describe, copy and understand different sounds, especially in vowels.

Mr. Fritzell in 1969 made a diagram that is very famous and we can differentiate there how not just the tongue takes an important role in pronunciation but all the organs of speech including some slight details of movement during pronunciation.

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[3] http://www.sml.hw.ac.uk/lanje1/Phon1/EnglishVowels1.htm

We can take a look at this diagram here:
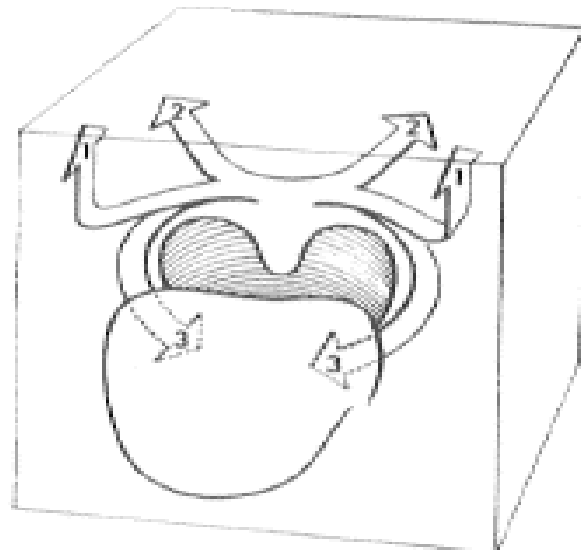


Fritzell (1969)

Of course the idea of Cardinal Vowels is much simpler and easy to understand. The chart that is presented below shows how four of the most commons sounds for English vowels can be represented in terms of Close – Open and Front – Back. That is just a way to express the tongue position while we are saying any sound.

# Articulators

Not only tongue height is an important part of articulation, as we considered in the explanation before it is also lip-rounding. Now we have to include some main degrees of rounding: rounded, spread and neutral, though it possible for rounded and spread to be modified, and considered 'slightly' or 'fully' rounded, etc.

We can feel now how articulation affects vowel length.
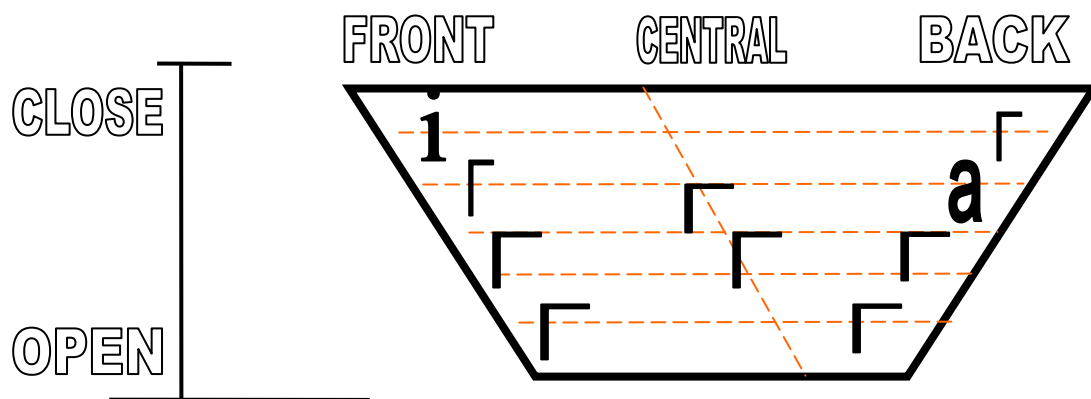
**Mouth shape in general:** contributed by tongue, lips and jaw, jaw and tongue articulations creating degrees of front/backness and open/closeness (mediated by half-open and half-close positions) and having concomitant degrees of lip spreading or roundness.

**Lips:** degrees of rounded, spread and neutral

**Jaw:** jaw movement is not normally part of the systematic description, but we can see that a clear articulation of the front series and to a rather lesser extent of the back series for English will involve a progressive opening and closing of the jaw.

(The technical justification for putting all this down to mouth shape and not just to 'tongue position' is that the distinctive sounds of vowels depend on the way the cross-sectional area of the tract changes as you move further away from the vocal cords.)

# Most important organs of the Speech for Vowel Pronunciation

| | |
|---|---|
| 1 | LIPS: When pronunciation is taking place, our lips can make a big difference because a slight movement of them can change the vowel sound, make it deeper or softer. |
| 2 | ALVEOLAR RIDGE: Technically it is the convex part of the mouth that is located just near and behind the teeth. This part can be taken as a reference for the ¨Vowel Chart¨ and can be used in several situations for articulating come consonants. |
| 3 | BACK OF THE TONGUE:  In order to locate the back of the tongue we may consider that it is on the opposite part of the soft palate. Its movement is extremely important for ¨Back Vowels¨. |
| 4 | BLADE OF THE TONGUE: Is located in the opposite part of the teeth ridge and it is close to the tip. Sometimes it aims (but do not touches it) when pronouncing some combinations of sounds that include vowels. |
| 5 | EPIGLOTTIS: Technically the epiglottis is suspended over the windpipe when swallowing and it can make a concave shape and hold the sound for some short vowels. |
| 6 | FRONT OF THE TONGUE: In order to locate the front of the tongue we must locate the part opposite to the hard palate and take it as a reference. it gives the external shape (flat, fat, extended, contracted) for pronunciation patterns in vowels. |
| 7 | HARD PALATE: The shape of the hard palate is concave and it is located at the roof of the mouth |
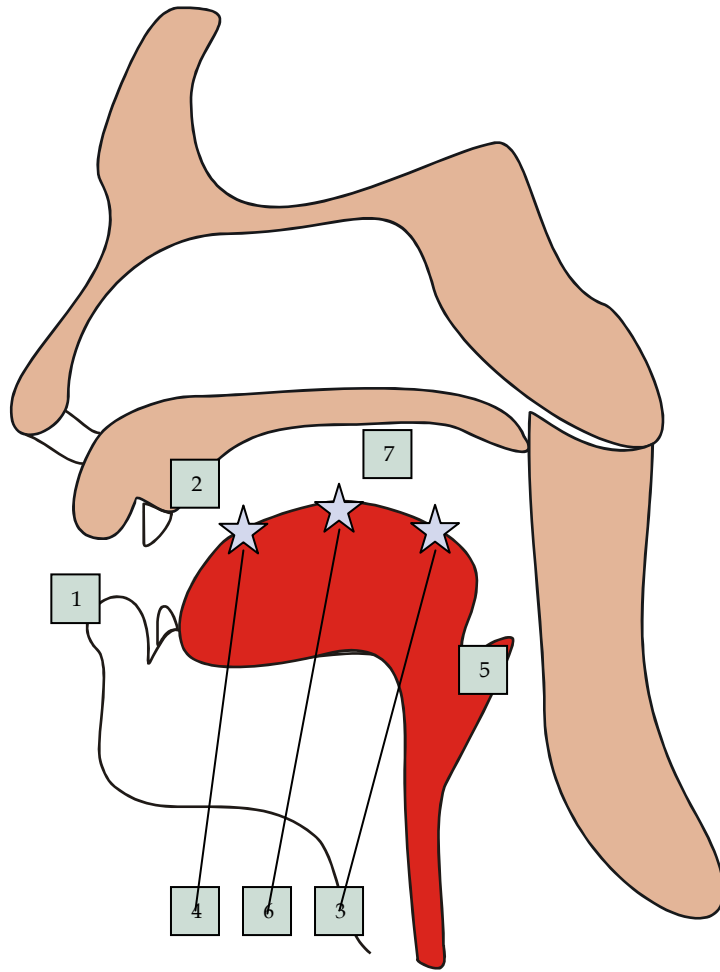
**PHARYNX**
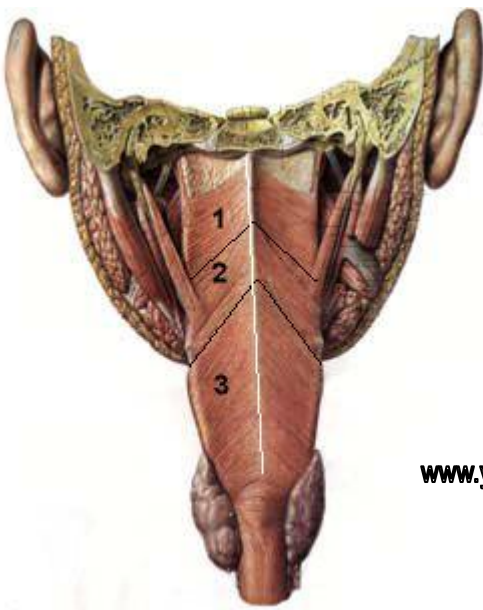
We can clearly see in the picture three parts to the pharynx, which makes up the cavity that many simply call the throat.

The image above shows the back of the head, if the back portion of the neck, including the spine, were removed, revealing the pharynx.

This muscular tube connects the nose and mouth to the larynx and the oesophagus. It is divided into three groups of muscles:

1. Superior,

2. Middle and

3. Inferior Constrictors.

In the back, the muscles join a mid-line or raphe (shown in the image above as an exaggerated white line) , in the front they join the following structures:

The main definition of pharynx is a fibro-muscular tube which extends from the base of the skull to the lower border of the cricoid cartilage (at which point it becomes the esophagus). Portions of the pharynx lie posterior to the nasal cavity (nasal pharynx), oral cavity (oral pharynx) and larynx (laryngeal pharynx).

Of course, the shape of our lips and the position of our tongue will make a big difference in the resonance of the pharynx.

## LARYNX

The LARYNX is an apparatus made up of cartilage, ligaments, muscles, and mucous membrane, which guards the entrance to the lower respiratory passages (trachea, bronchi, and lungs) and houses the vocal cords. Now, we have to consider how movement of the Larynx affects the tension of the Vocal Cords.

1. MOVEMENT AFFECTING THE TENSION OF THE VOCAL CORDS. Since the vocal cords are attached to the arytenoid cartilages posteriorly and the thyroid cartilage anteriorly, regulation of vocal cord tension (and therefore pitch of the voice) is accomplished primarily by pivoting the thyroid cartilage forward or backward at the cricothyroid.

2. MOVEMENTS WHICH INCREASE OR DECREASE THE SIZE OF THE OPENING BETWEEN THE VOCAL CORDS (ABDUCTION OR ADDUCTION OF THE VOCAL CORDS). This action is best appreciated by imagining the larynx viewed from above. It has two actions[4]

I. That the vocal cords on each side are covered with a mucous membrane, so that when they are abducted, relatively little air can pass either between them or around them.

2. The bases of the two arytenoid cartilages are L-shaped. The medial process of each is called the vocal process, and the vocal cords attach to it.
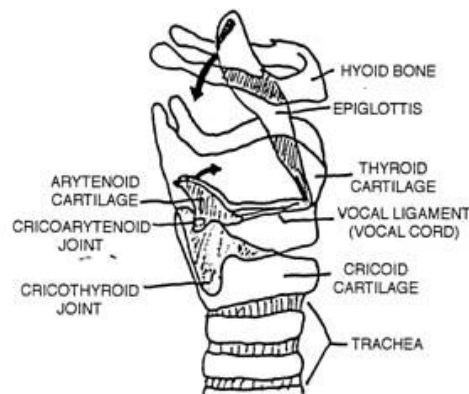


Schematic drawing of the larynx as seen from above showing the thyroid cartilage, the arytenoid cartilages, and the vocal cords.    From Basmajian, Grant's Method of Anatomy, p. 532.

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[4] http://www.emory.edu/ANATOMY/AnatomyManual/pharynx.html

# HARD AND SOFT PALATE

The Hard and Soft Palate, commonly called the roof of the mouth are important to articulation. The hard palate in front is made of bone, while the soft palate in back is made of muscles. At the back of the soft palate is the uvula, which is a tiny "punching bag" of flesh.
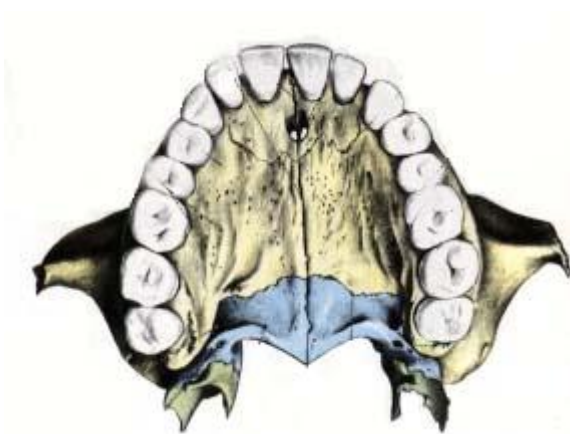
**THE HARD PALATE** The hard palate holds the roots of the upper teeth, and the alveolar ridge is an essential part of clear articulation. You can feel this ridge just behind the upper front teeth. On the image above, the alveolar ridge is in front of the hole or foramen located behind the upper teeth. The first image, at the top of this page, shows the *rugae,* transverse ridges or wrinkles, which may help with tongue-palate articulation. There is also a midline raphe (a ridge or groove - it varies a lot). Some people have a *torus* or bulge on their hard palate. It seems to make no difference in speech.

The hard palate is a thin horizontal bony plate of the skull, located in the roof of the mouth. It spans the arch formed by the upper teeth. It is formed by the palatine process of the maxilla and horizontal plate of palatine bone. It forms a partition between the nasal passages and the mouth. This partition is continued deeper into the mouth by a fleshy extension called the soft palate.

## SOFT PALATE

The soft palate (or velum, or muscular palate)[5] is the soft tissue constituting the back of the roof of the mouth. The soft palate is distinguished from the hard palate at the front of the mouth in that it does not contain bone. The soft palate is made up of a series of muscles that allow it to press down, as part of swallowing, and to rise up creating space for yawns and bright open sound. These muscles, especially the tensor palati, can also clear the eustacean, or auditory, tubes - creating the ear popping familiar in plane rides.

The tensor and levator palati form a "sling", lifting the soft palate up and backwards, closing off the entrance to the nasal cavaties above by coming into contact with the pharyngeal wall. This is essential to articulating the difference between a vowel sound, where the voiced sound flows through the oral cavity and a nasal vowel and consonant, where the voiced sound flows through the nasal cavity. This often happens so quickly on sounds like "on, on, on" or "no, no" that we cannot feel the action of the soft palate.

The following images, from Fritzell (1969), show clearly how each of the muscles of the soft palate works.



---
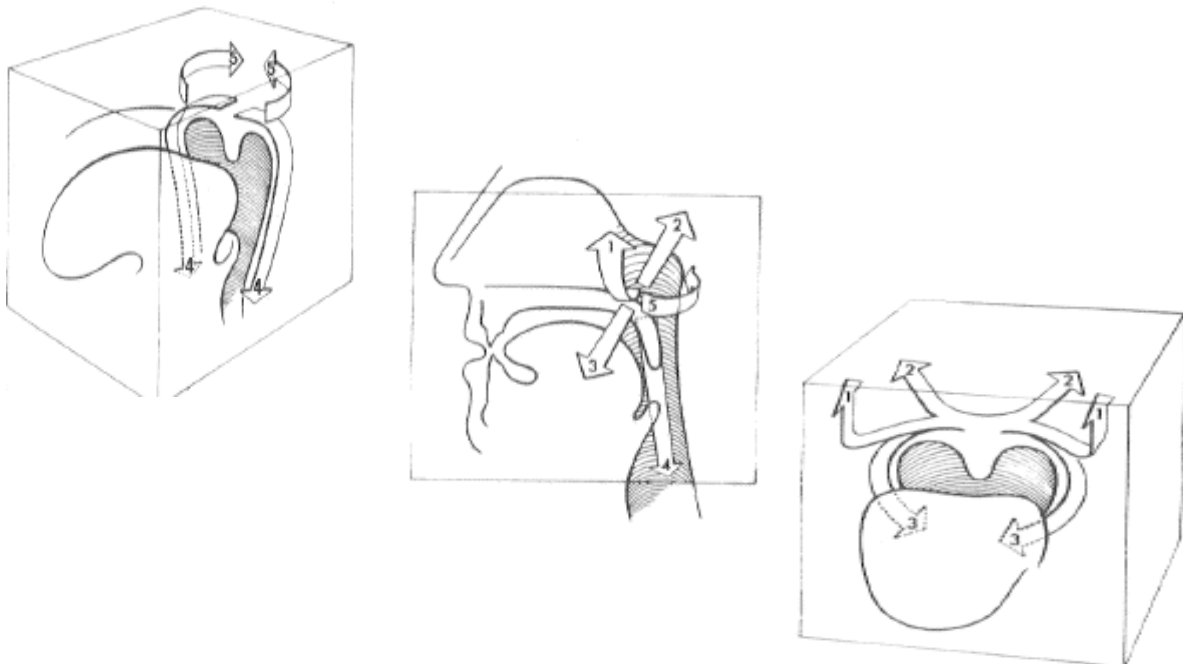
[5] Definitions taken from: http://en.wikipedia.org/wiki/Soft_palate

## THE JAW

The Jaw bone or *Mandible*, viewed here from the front, hangs off the skull suspended by a sling formed of muscles attached to the *ramus* of each side of the bone.

From the side, one can see the shape of the ramus a bit more clearly (this is the inside of the right half of the mandible). Muscles here allow the contraction of the mandible

## TONGUE

The tongue is the most important articulator of speech.. Speech requires a very different approach. For the sound to resonate effectively, the less tongue root tension (i.e. tension in the *extrinsic* muscles of the tongue), the better. For speech you want to relax the tongue up and forward, the opposite of swallowing. The quick movements of the tongue, necessary for rapid delivery of tongue twisters for example, require very delicate control of the action of the tongue. This control is often best regulated in concert with the ear, listening to the sounds created by the voice when the tongue is in one position over another. Sensitivity is the key to learning to appreciate the range of capabilities the tongue possesses.

- Tip, front edge, blade, middle, back of tongue
- Median fibrous septum
- Eight muscles of the tongue, divided into intrinsic & extrinsic muscles

The tongue blade is the most important part in Vowels pronunciation; it is the part of the top of the tongue right behind the tongue tip. The following characterization by Ladefoged and Maddieson (1996) will be good enough for our purposes: "When the tongue is at rest in a closed mouth, the tongue blade is the part of the tongue that lies directly under the alveolar ridge."

## VOWEL LENGTH

| SHORT AND LONG VOWELS | | | | |
|---------|---------|---------|---------|---------|
| Short A | Short E | Short I | Short O | Short U |
| Long A | Long E | Long I | Long O | Long U |

Length is a characteristic that vowels have in English and it is very common for native speakers to know how they work. Not necessarily knowing about phonetics and phonology. The chart that we present above summarizes what is the foundation of the principle of length.

Most Spanish speaking people is not sure when to use a Short or a Long vowel. In general the following explanation gives a clear idea on how to use these two different sounds.

## SHORT VOWELS

Say the short sound of the vowel when the vocal is in a syllable by itself

## LONG VOWELS

When there are two vowels in a syllable, one says only the long sound of the first vowel in the syllable.

Phonetically, the main impression we have according to the idea if it is length in pure vowels owes to the amount of muscular tension applied in order to maintain the particular vowel articulation, and for English we have two principal vowel series distinguished in this way as we see in the chart above.

We consider long vowels at the main sound that they have, it should have a little bit of tension on the cheeks and tongue. Normally those sounds are the same for Spanish.

On the other hand, short vowels do not give any tension to any muscle of the mouth nor organs of the speech. They are totally different from Spanish.

Now we want to develop a chart to show some practical examples of each one.

| SHORT AND LONG VOWELS | | | | |
|---|---|---|---|---|
| Short A | Short E | Short I | Short O | Short U |
| Cat | Rest | It | Boss | Put |
| Sat | End | Pin | All | Bug |
| Bat | Fell | Sit | Cough | Pull |
| Man | Tell | Bit | Caught | Run |
| Pan | Bell | Fill | Hot | Sun |
| Long A | Long E | Long I | Long O | Long U |
| Game | Tea | Try | Phone | Too |
| They | See | Bye | Hole | Do |
| Bake | Me | Cry | Go | Sue |
| Take | Feel | Tie | Rote | True |
| Rain | Bean | Fry | Tote | Cute |

## DIPHTHONGS

Diphthongs are phonetically complex, consisting of movements or 'glides' from one vowel position to another, although they are frequently 'reduced', in other words, the full vowel positions of their two elements are not always fully realised.

Quite often in normal speech, the second element can be considerably modified and in extreme cases may be completely elided; in other cases an intermediate pure vowel may be substituted for the diphthong as a whole.

Phoneticians recognise trip - thongs, single phonemes consisting of glides with three elements, but these are not discussed here, and while

## SPANISH KEY WORDS

|  | Short A<br><br>**Cat**<br>**Sat** | Short E<br><br>**Rest**<br>**End** | Short I<br><br>**It**<br>**Pin** | Short O<br><br>**Boss**<br>**All** | Short U<br><br>**Put**<br>**Bug** |
|---|---|---|---|---|---|
| SPANISH KEY WORD | **-**<br>**-** | **ELEFANTE**<br>**SENTARSE** | **-**<br>**-** | **-**<br>**-** | **-**<br>**-** |

|  | Long A<br><br>**Game**<br>**They** | Long E<br><br>**Tea**<br>**See** | Long I<br><br>**Try**<br>**Bye** | Long O<br><br>**Phone**<br>**Hole** | Long U<br><br>**Too**<br>**Do** |
|---|---|---|---|---|---|
| SPANISH KEY WORD | **LEY**<br>**SEIS** | **SI**<br>**ALLÍ** | **AIRE**<br>**BAILAR** | **¨ Dipht (ou)** | **LUNA**<br>**TÚ** |

# CHAPTER TWO

Vowels Sounds differences between English and Spanish

Spanish has only five vowels that can be combined but they still keep their original sounds. They are always short and pure.
A basic chart can be divided into open and close but in English it is totally different. When we talk about length in vowels we are talking about important characteristic that can help a person differentiate between sounds.

Something we should never forget is that Phonetics and Phonology gives some specific details that can help us in this matter.
Nevertheless, we will explain next, deeply characteristics in order to understand how we can hear and pronounce them.

Now, we are going to consider some of the most important characteristics for Vowel Production. In each part we will divide the Chart into a diagram using an arrow to show the Vowel Position and its relationship to the front or the back of the mouth, as well as how high and low it is located.

The following list will be discussed briefly at the top of each chart:

> Articulation
> Correct Tongue Position
> Correct Jaws Position
> Correct Lips Shape
> Sound Length
> Correct Pronunciation of Short Vowels
> Correct Pronunciation of Long Vowels

# Three different ¨A¨ sounds:
## ¨A¨ as in /bad/

| | |
|---|---|
| **LIPS FEATURES:** | Must be open and extended to their sides as if they were smiling. |
| **JAW CHARACTERISTICS:** | It is open more than for ¨ E ¨ but less than for ¨ a ¨ as in father |
| **TONGUE POSITION:** | Remains flat and in the bottom of the mouth |
| **SPECIAL FEATURES:** | The trick is not to move the tongue while pronouncing the sound. |

DIAGRAM
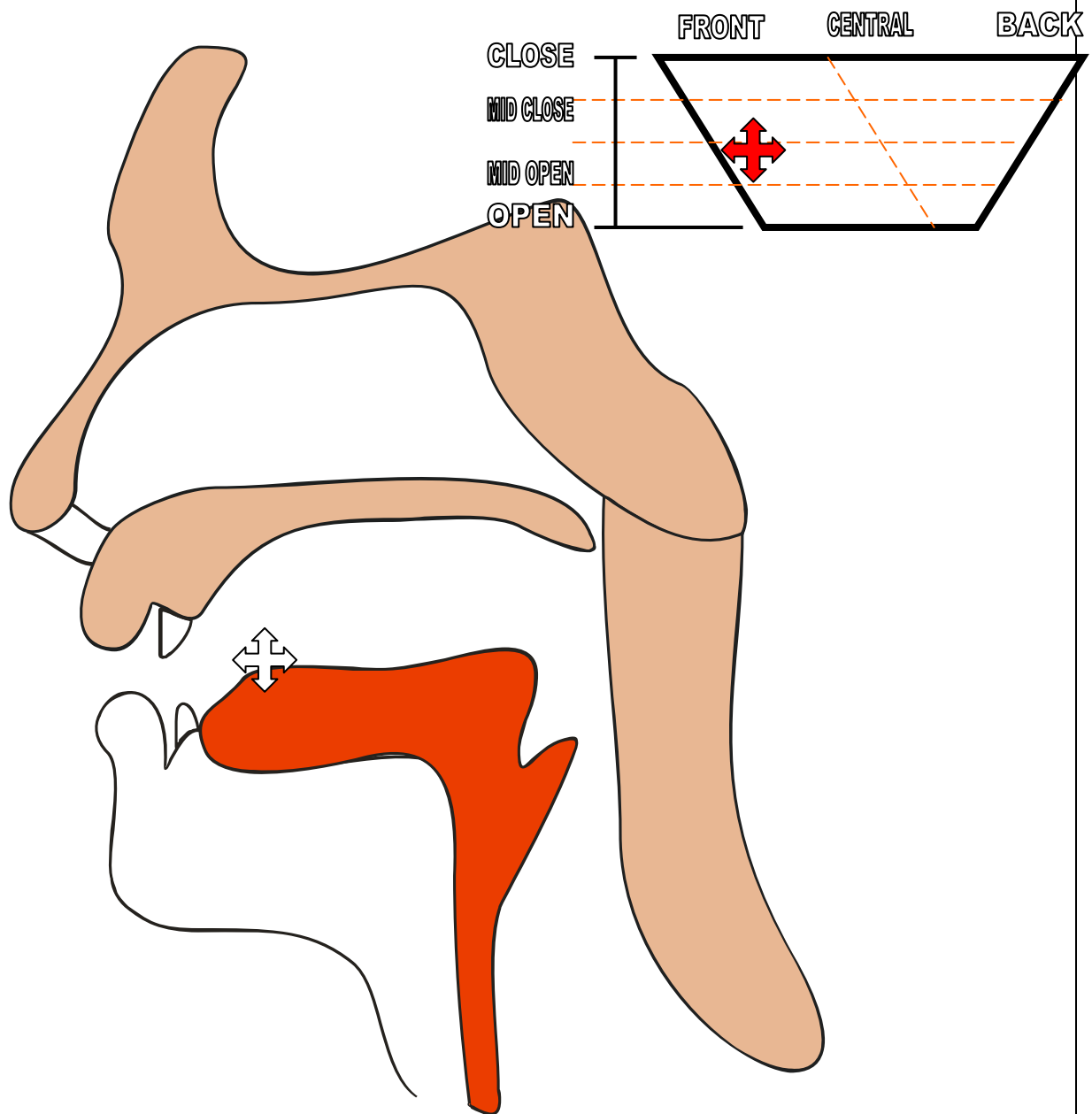
## ¨A¨ as in /dawn/

| LIPS FEATURES: | There must be tension and they must be rounded |
|---|---|
| JAW CHARACTERISTICS: | It is wide open |
| TONGUE POSITION: | It is originally in the middle of the mouth and then it goes back. |
| SPECIAL FEATURES: | While the mouth is open the movement of the tongue makes a deep sound. |

DIAGRAM
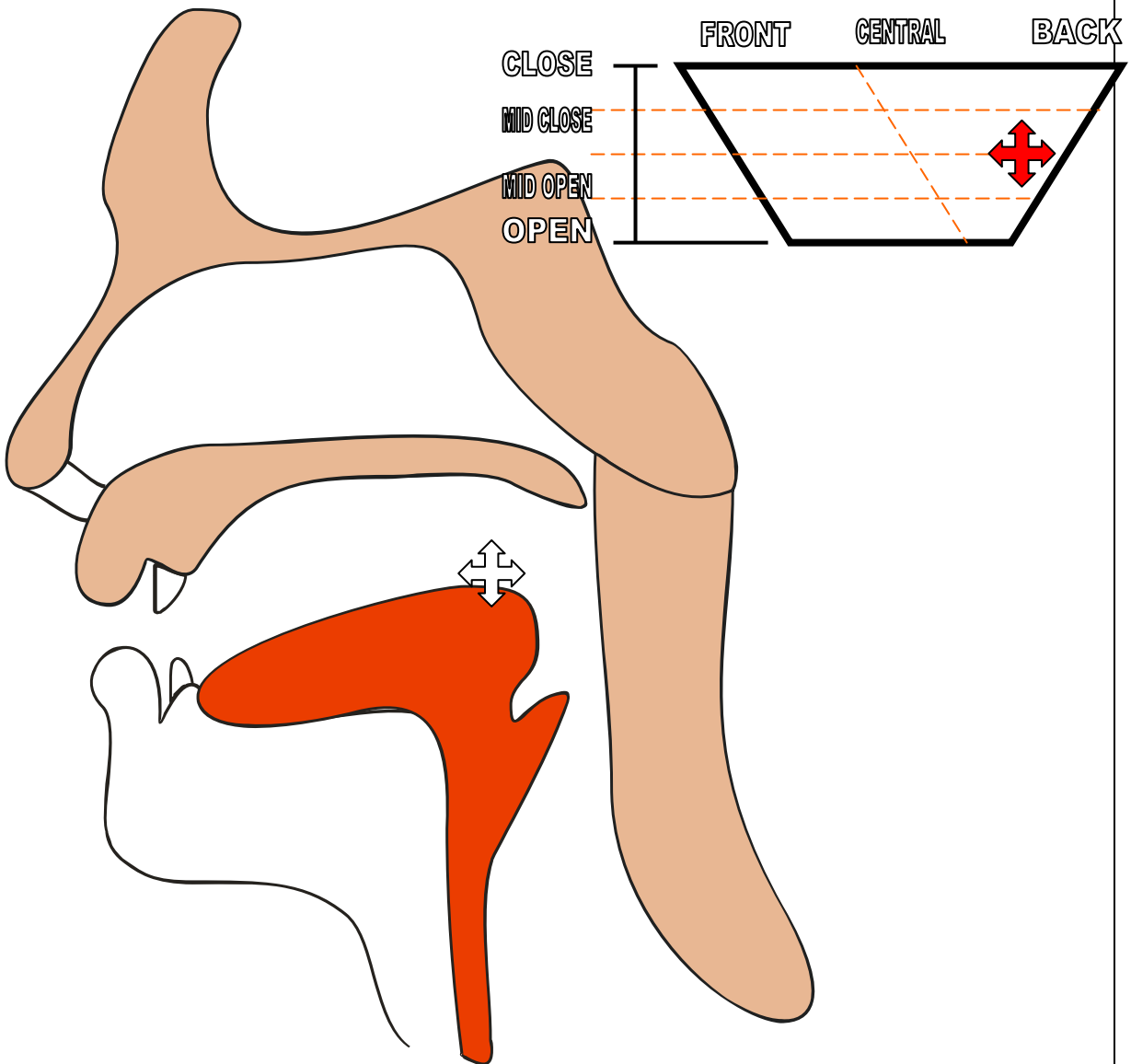
## ¨A¨ as in /star/

| LIPS FEATURES: | Because of the jay movement they are also separated |
| --- | --- |
| JAW CHARACTERISTICS: | Is totally separate, even more than for ¨a¨ as in cat |
| TONGUE POSITION: | Is resting at the bottom of the mouth in the front part and gives the idea of the Spanish ¨ a ¨ |
| SPECIAL FEATURES: | Relaxing the muscles of the mouth would be a good idea to produce this sound and not confuse it with the back vowel that is parallel at it. |

DIAGRAM
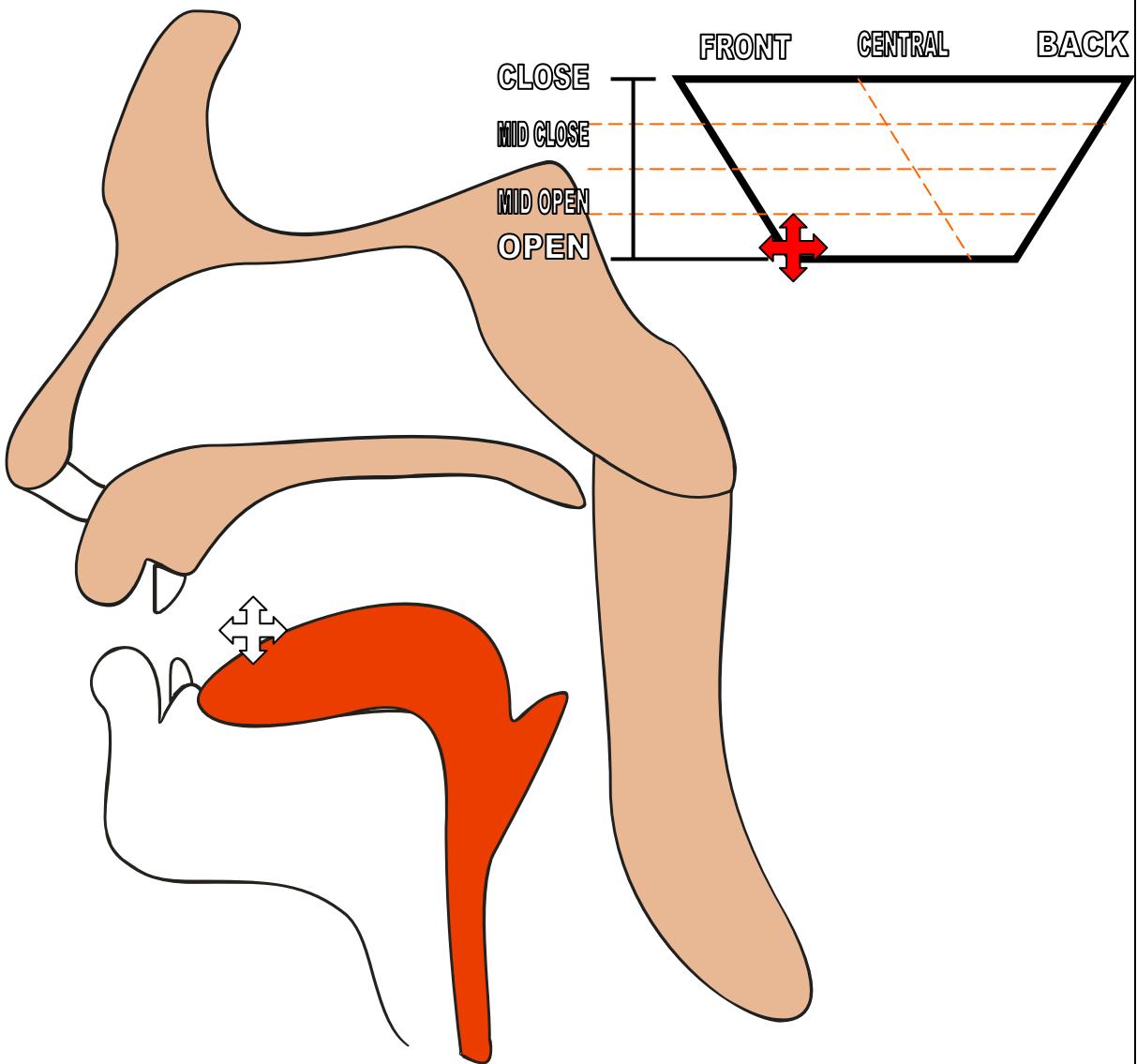
# Three different ¨E¨ sounds:
## ¨E¨ as in /beet/

| LIPS FEATURES: | Are producing a big smile, which gives them tension on the cheeks. |
|---|---|
| JAW CHARACTERISTICS: | Is totally closed and helps the tongue to acquire the right position to produce the sound |
| TONGUE POSITION: | The blade of the tongue is raised and almost touching the roof of the mouth called technically ¨hard palate¨ |
| SPECIAL FEATURES: | We already have that sound in Spanish to pronounce our unique letter ¨ i ¨ |

DIAGRAM
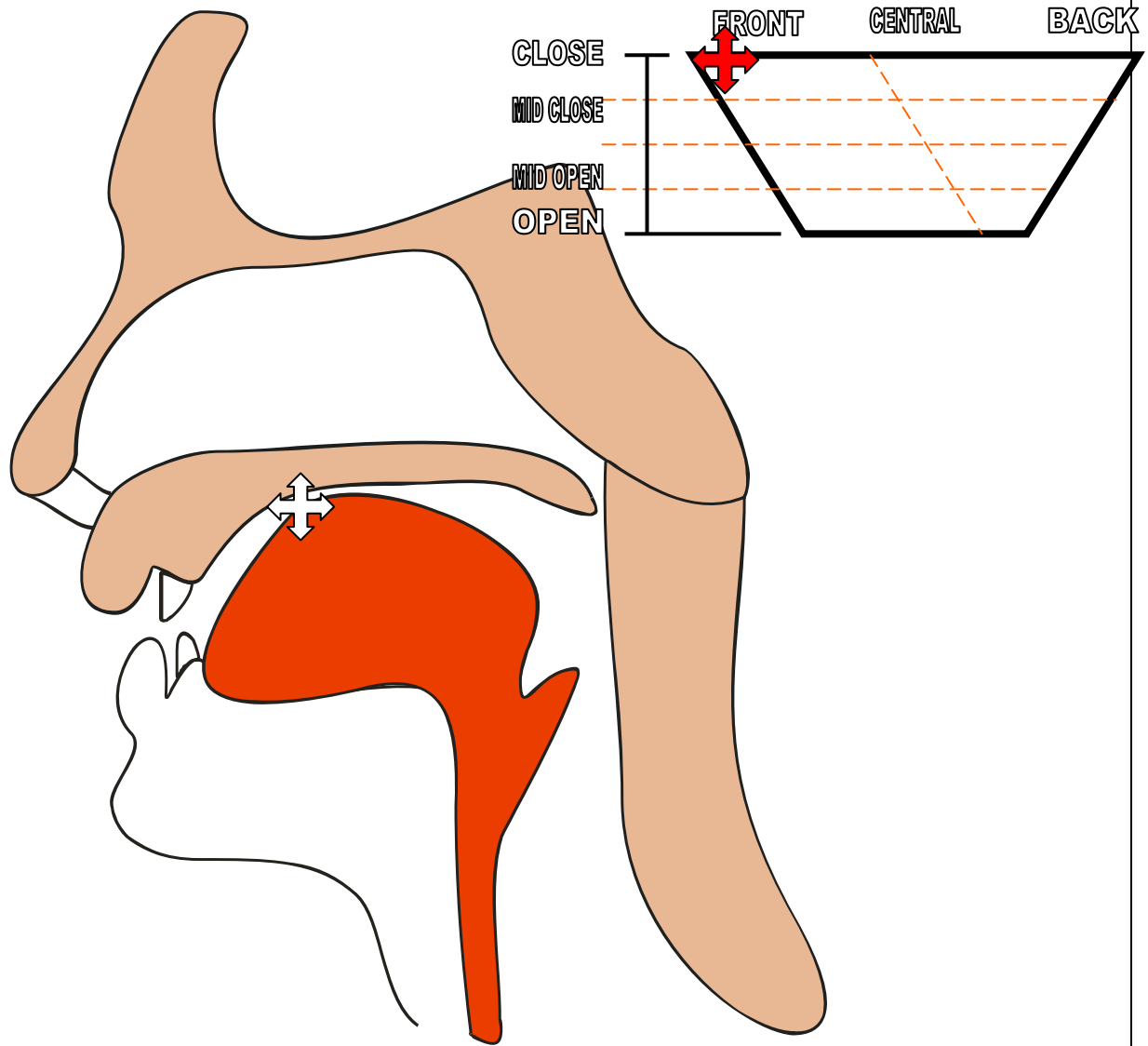
## ¨E¨ as in /rest/

| LIPS FEATURES: | Are not rounded, and do not move while producing the sound. |
|---|---|
| JAW CHARACTERISTICS: | It is at the middle position that means it is closer than ¨ a¨ as in cat but using the glottal part of the mouth to make the sound. |
| TONGUE POSITION: | Totally relaxed and does not move at all during the process of producing the sound. |
| SPECIAL FEATURES: | This letter does not require any muscle tension or any movement of the tongue. If we do that, the result would be the sound of ¨ei¨ in Spanish |

DIAGRAM
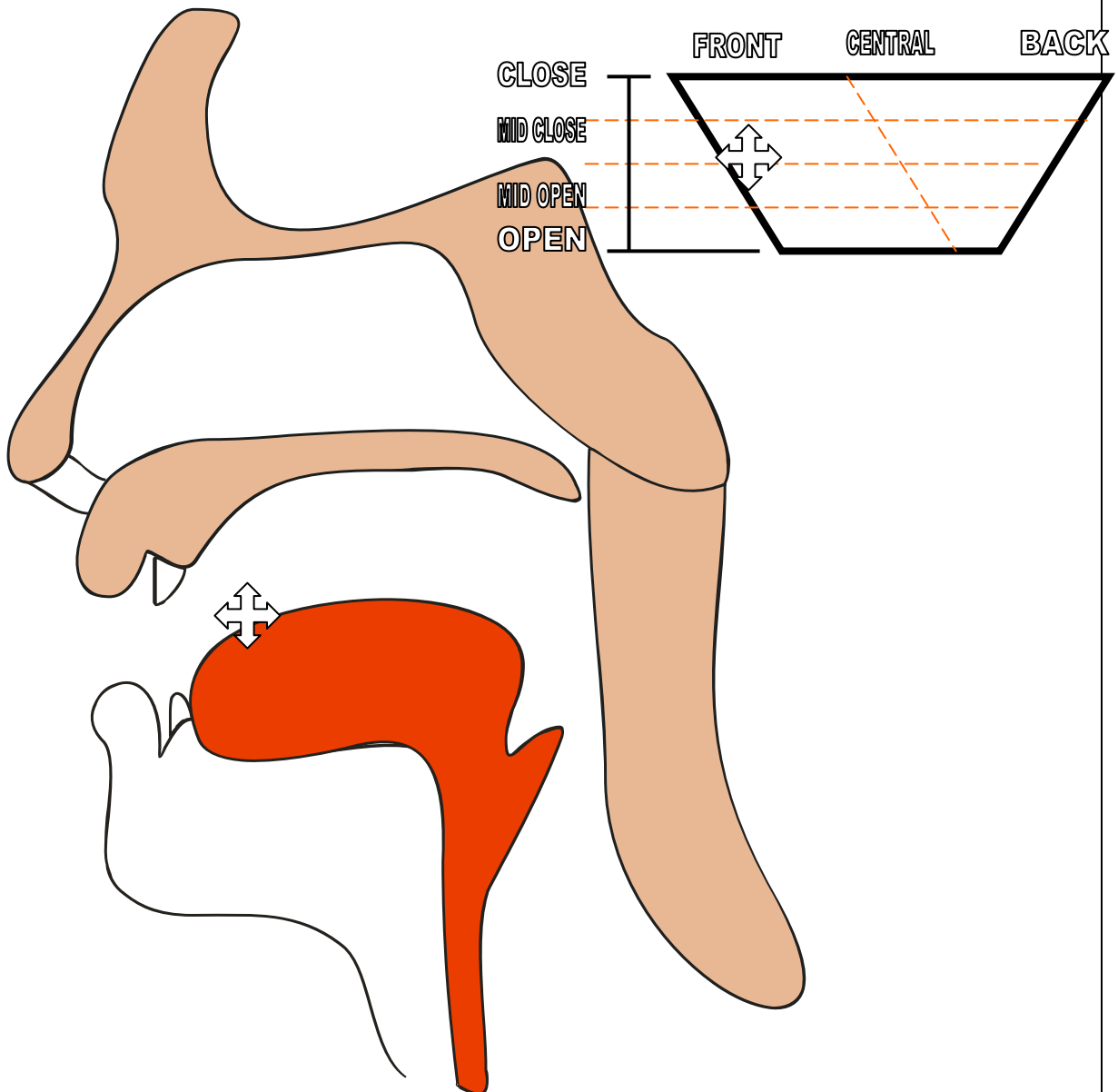
# ¨E¨ as in /they/

| | |
|---|---|
| **LIPS FEATURES:** | The shape of the lips is almost the same as the previous letter but they move and close while pronouncing the sound. |
| **JAW CHARACTERISTICS:** | Because it is considered a ¨diphthong¨ the movement of the jaw goes from a mid open position to a closer position. |
| **TONGUE POSITION:** | For the first part it is located in the middle of the mouth and for the second part it is raised and without any tension it is located near to the roof of the mouth called technically ¨ hard palate ¨ |
| **SPECIAL FEATURES:** | The sound is almost the same as our diphthong in Spanish but the only difference is that the last sound is not that close to the roof of the mouth. |

DIAGRAM
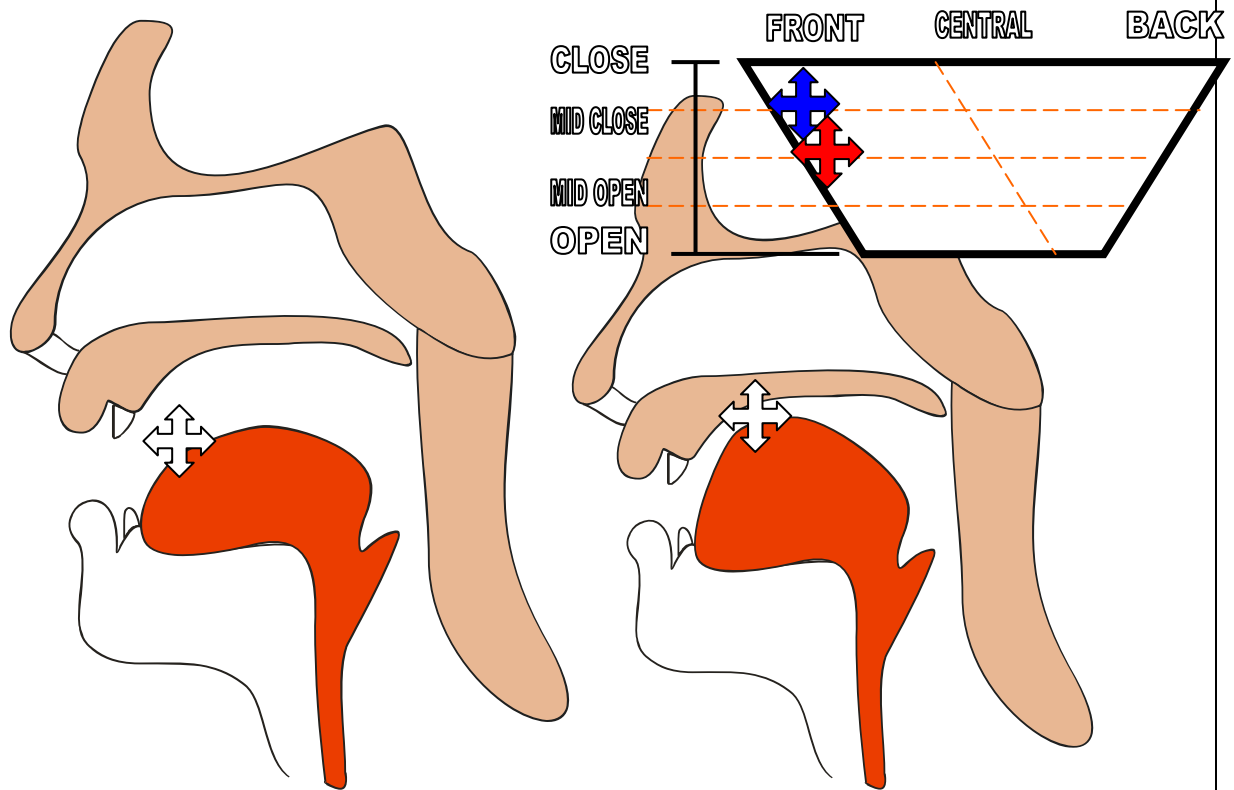
# One sound of ¨I¨
## ¨I¨ as in /fill/

| LIPS FEATURES: | Lips are not in a big smile position but they are relaxed and not too much separated |
|---|---|
| JAW CHARACTERISTICS: | It is lower than its long vowel counterpart |
| TONGUE POSITION: | It is raised but it is not touching any part of the palate. |
| SPECIAL FEATURES: | The external shape of the mouth is not showing any tension, and that it is important to differentiate the long and short vowel for ¨ I ¨ |

DIAGRAM
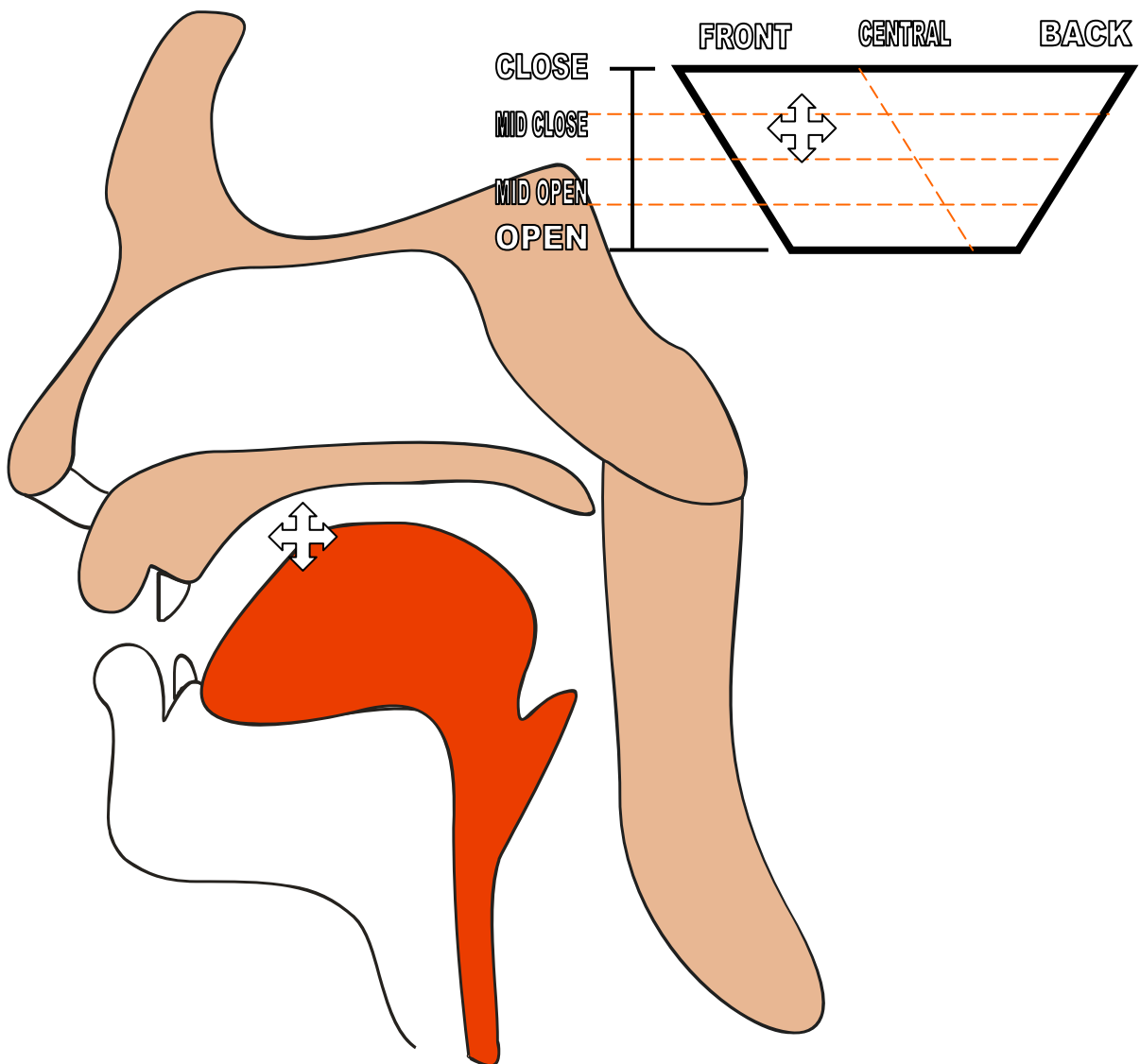
# Three different sounds for ¨O¨
## ¨O¨ as in /phone/

| | |
|---|---|
| **LIPS FEATURES:** | There are two stages for the lips. On the first stage the lips are rounded and protruded towards the front. On the second stage the purpose is to take them back to a relaxed position. In some accents the light movement of the lips during the production of the sound is enough. |
| **JAW CHARACTERISTICS:** | It is raised and then it lowers the distance between the two jaws. |
| **TONGUE POSITION:** | Starts at the midlevel of the mouth and then goes up into the hard palate. |
| **SPECIAL FEATURES:** | The sound is almost natural for a Spanish Speaker and it belongs to our diphthong ¨OU ¨ sound that we normally produce. |

DIAGRAM
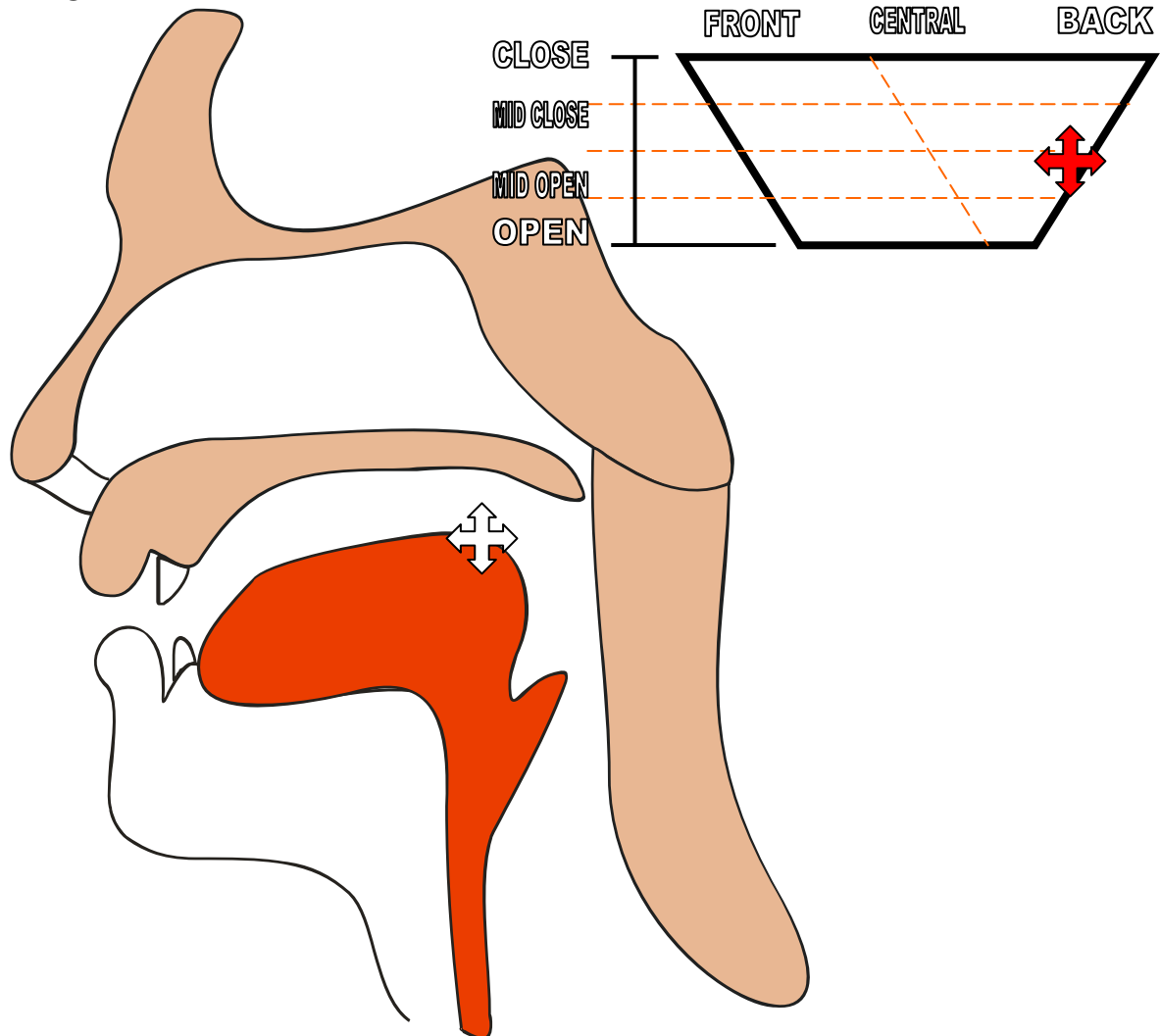
# ¨O¨ as in /cook/

| | |
|---|---|
| **LIPS FEATURES:** | Totally relaxed and not too much separated |
| **JAW CHARACTERISTICS:** | It is open but only in a basic and slight way, just for giving the sound the opportunity to go out. |
| **TONGUE POSITION:** | It remains without movement in a high position but not touching the roof of the mouth. |
| **SPECIAL FEATURES:** | Sometimes we can protrude our lips a little bit but not giving nor feeling stress in our cheeks. |
| DIAGRAM | |
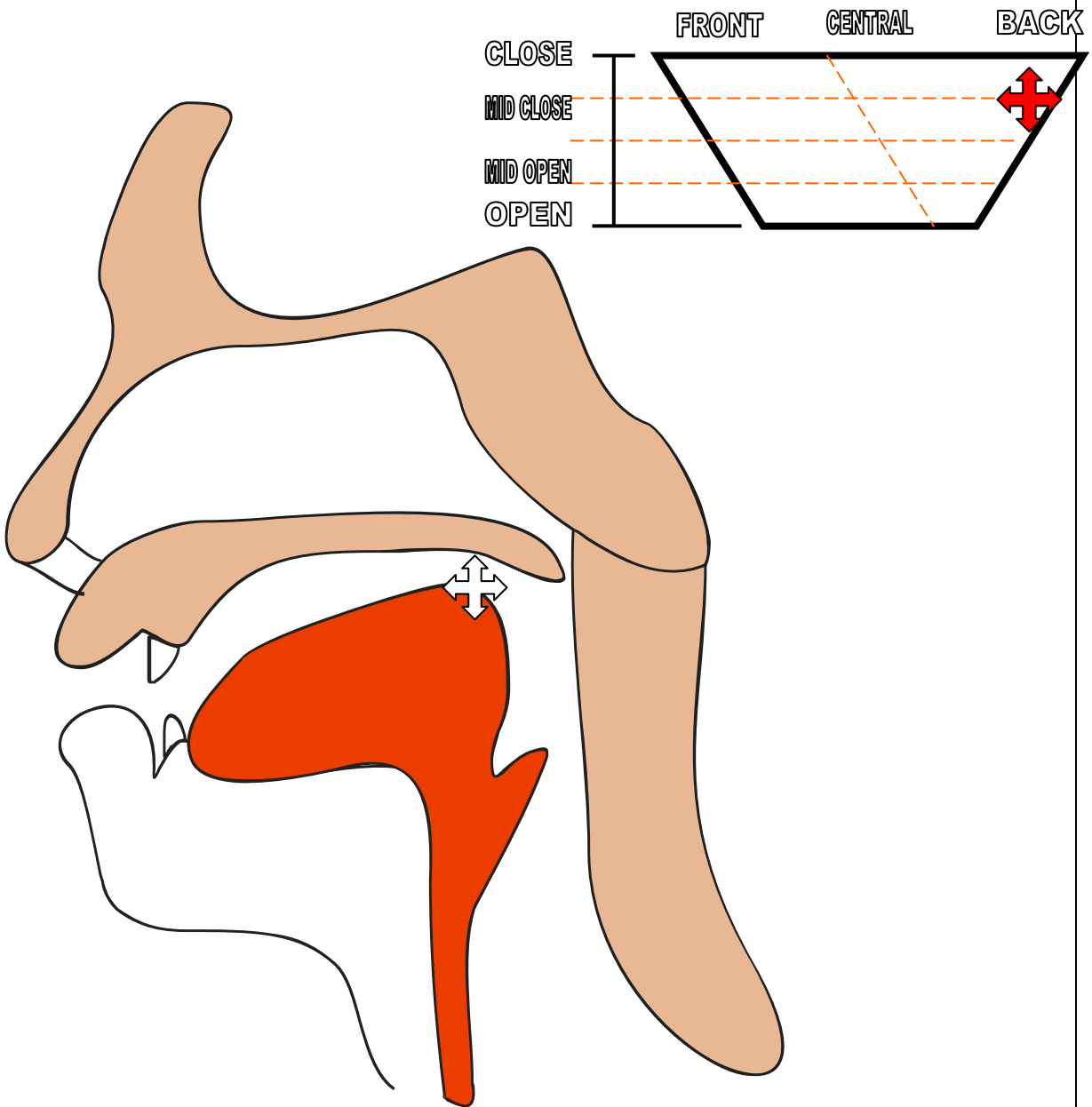
## ¨O¨ as in /boot/

| | |
|---|---|
| **LIPS FEATURES:** | Need some tension as when we say the letter ¨ u ¨ in Spanish. It is also considered a long sound. |
| **JAW CHARACTERISTICS:** | It is closed, it means that the jaw remains raised because our tongue is attached to the bottom of our mouth, for that reason we need to keep it as close as the hard palate as possible. |
| **TONGUE POSITION:** | As we just said, it should be raised and almost touching the back part of the hard palate. |
| **SPECIAL FEATURES:** | The lips shape and jaw position should give tension to the muscles of the cheeks, and we must feel vibration while pronouncing that sound. |

DIAGRAM
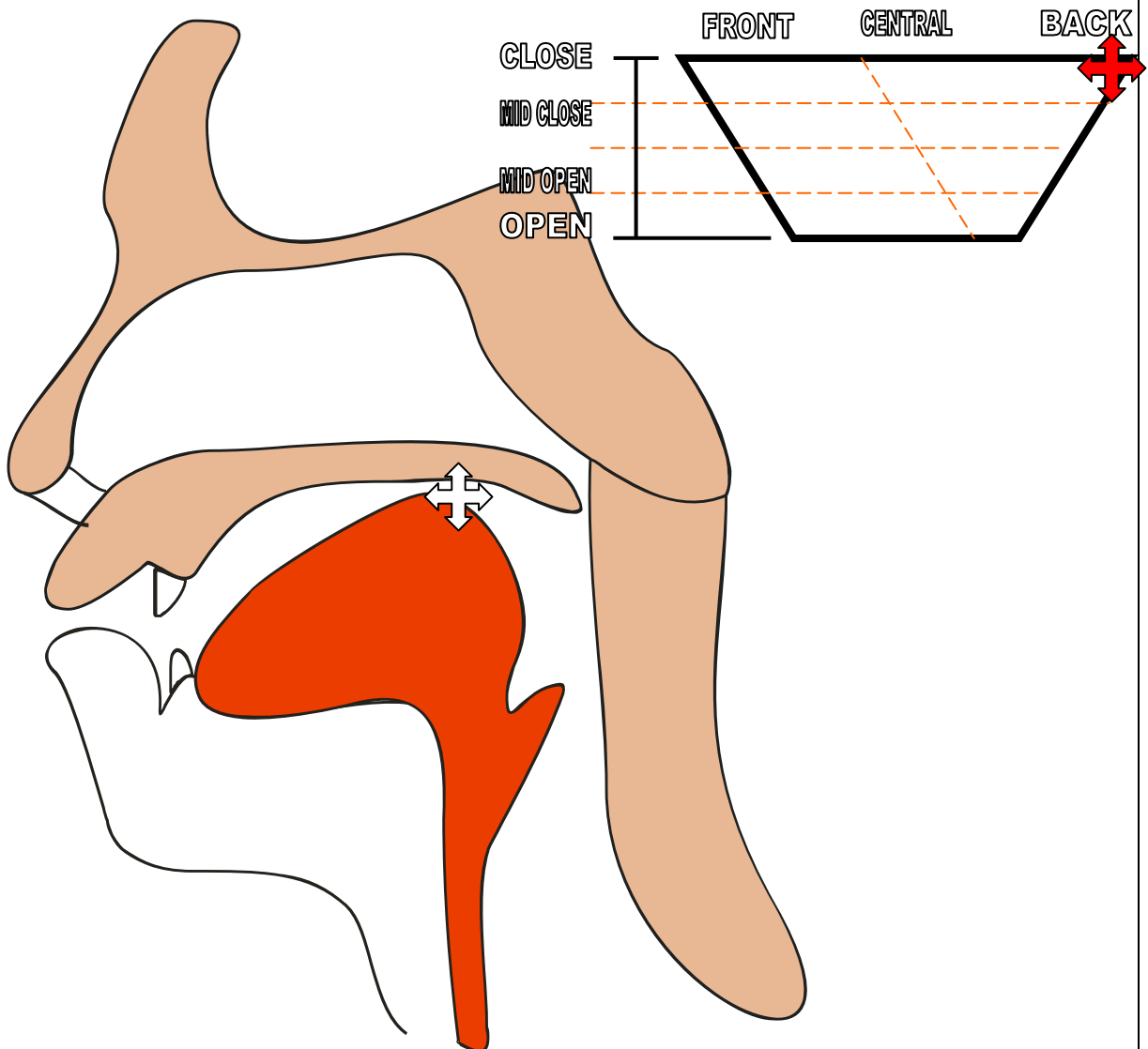
# One sound for ¨U¨
## ¨U¨ as in /hug/ (In some accents, it sounds the same as a Neutral Sound)

| LIPS FEATURES: | Are totally relaxed and does not give any movement at the vowel |
|---|---|
| JAW CHARACTERISTICS: | It is slightly open, technically said as between mid open and mid close. |
| TONGUE POSITION: | Follows the jaw position and is resting at the bottom of the mouth |
| SPECIAL FEATURES: | Feeling a slight tension on the cheeks or tongue can produce misunderstanding with the rest of the vowels already seen. |
| DIAGRAM | |
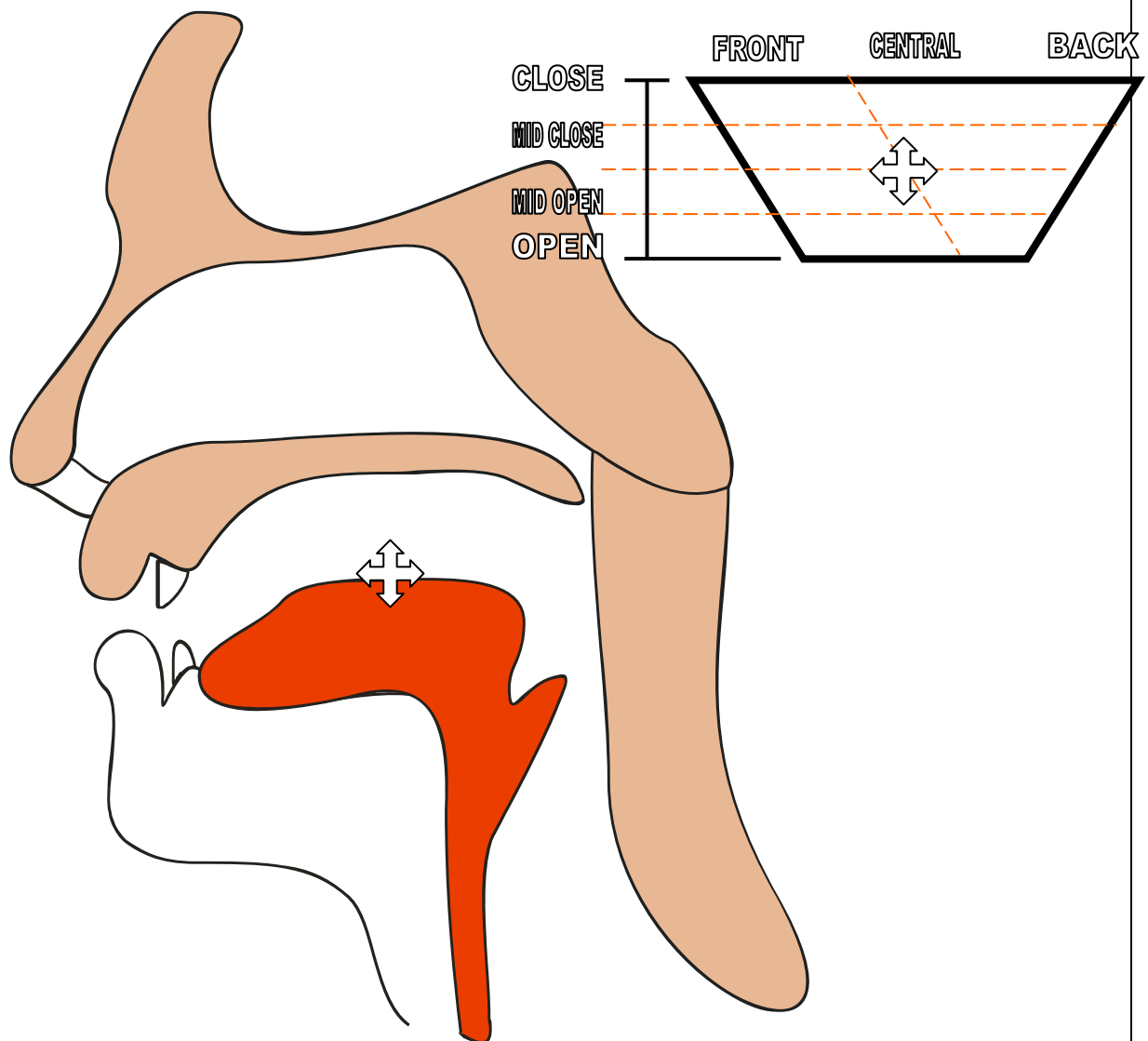
# CHAPTER THREE

## Student Sound Vowels System understanding and difficulties

Some people have the ability to ¨play by ear¨. It is an expression that means that without anything written, they can easily play an instrument.

Well, sounds made with our vocal cords are the most difficult instrument to play. For that reason, some people will have a natural ability to produce different sounds just by hearing them. But that fact does not apply to everyone, and that is why some people face difficulties while trying to learn English.

How we learn to talk has intrigued scholars for centuries. Remarkably, young children who are barely able to walk and feed themselves learn to speak without even knowing the rules of grammar and without any special tutoring! Writes linguist Ronald A. Langacker: "[The child] masters . . . a linguistic system. He does this on the basis of indirect and fragmentary evidence, and at an age when he is not yet capable of logical, analytical thought."

Most scientists thus believe that the ability to learn a language—not the specific language—is inborn, an ability that unfolds during a child's early years.

At first, though, a child's brain is too immature to master speech development. This, of course, does not stop a baby from trying. Indeed, some researchers believe that a tiny baby's babbling is a part of speech development, a rehearsal of sorts for his later enunciating of words. As the baby struggles with vocalization, his brain is also rapidly preparing itself for speech. Though a child's body develops relatively slowly in his preteen years, his brain reaches 90 percent of its adult weight by age five. (It reaches its full adult weight by about age 12.) That means that the first five years of life are a critical learning period, particularly the first two.

During that time, billions of nerve cells in the brain's cortex grow and branch, forming a densely interconnected web. Between 15 and 24 months of age, a dramatic spurt in brain-cell growth occurs. Now the brain is ready to handle the learning of language. Thus, it is critical that a child be exposed to language during these early years.[6]

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[6] Watchtower Library ¨Awake/ The Miracle of Language¨

The reason for most people to get confused with new sounds is because maybe they were never exposed to them.

It is interesting that some students that speak Quichua, for example, can communicate in both languages naturally and when we ask them how they learned it, the only possible answer is exposure to the language.

## POSSIBLE PRONUNCIATION PROBLEMS FOR THE SPANISH SPEAKER

Tension in the mouth can make a big difference for pronouncing short and long vowels in English. On the other hand, the blade of the tongue takes an essential role in how back high or low must be pronounced the vowel.
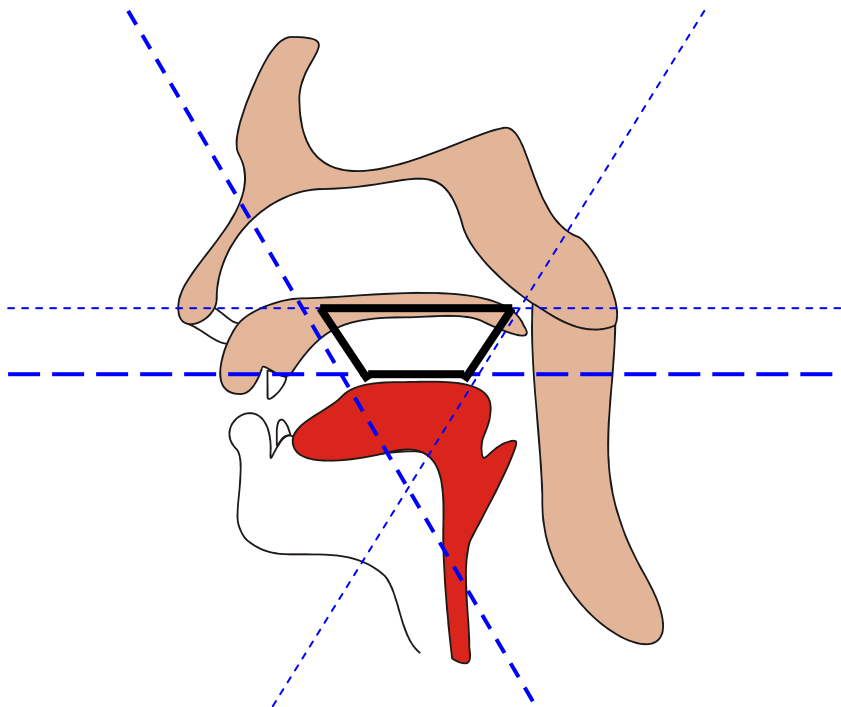


In our illustration, we can clearly see how a little bit of tension in our mouths can increase or decrease the height of the tongue, that would clearly change the sound of the vowel and for instance, the meaning of the word.

Spanish speakers normally tend to confuse English Vowels Sound because they relate them, or at least try to compare them, with Spanish Vowels. That is a big mistake because the vowel chart shows that at least 10 vowels sounds are produced by a slight movement of the tongue body.

## TECHNIQUES OF TEACHING VOWEL'S PRONUNCIATION

There are two important techniques for teaching vowel Pronunciation. In my experience after this investigation, some of the foreigners that helped me told me that the easiest way to teach this is by ¨ Vowel Length ¨ rather than using a Vowel Chart or Phonetic transcription.
Here are some suggestions given by the Department of Education Training and Youth Affairs (DETYA)

¨ There are many ways of teaching pronunciation, and many different opinions as to which ways are the best or most effective. However there has been to date relatively little serious comparative research on what really works in helping learners of a second language with pronunciation. This is an area which needs considerable improvement.
Nevertheless, there are a few things which are becoming well established as key factors in effective pronunciation tuition.

Pronunciation teaching works better if the focus is on larger chunks of speech, such as words, phrases and sentences, than if the focus is on individual sounds and syllables. This does not mean that individual sounds and syllables should never be referred to; it simply means that the general focus should be on the larger units.

Pronunciation lessons work best if they involve the students in actually speaking, rather than in just learning facts or rules of pronunciation. Many students of course feel more comfortable learning the rules of the language, because it is less threatening than actually speaking. However, the transfer of explicit knowledge of rules into pronunciation practice is very limited. Teachers need to pronunciation classes.

Learning pronunciation requires an enormous amount of practice, especially at early stages. It is not unreasonable for learners to repeat a particular phrase or sentence twenty or fifty times before being really comfortable with it. Unfortunately, 'drilling' has been out of favor in language classes for some time, due to association with several bad aspects of the behaviorist method of teaching. Indeed some forms of drilling are at best a waste of time, and can even be a hindrance to learning. However, drilling of real, useful phrases which can actually be used outside the classroom is highly advantageous.

Pronunciation teaching requires thorough preparation through work on the perception of English sounds and contrasts, and the formation of concepts of English phonology.¨

But what I have learned here is that the combinations of both techniques are useful to give the students the opportunity to differentiate English Vowels Sounds and to do it even themselves using a dictionary and reading the Phonetic transcription.

## WAYS TO IMPROVE SOUNDS PRODUCTION AND UNDERSTANDING

Mothers play an important role in a child's speech development. A sensitive mother recognizes her baby's signals and will talk with her baby often, long before it understands what she says. Nevertheless, the groundwork for speech is being laid. Soon the child responds to the mother's words with words of its own. Researcher M. I. Lisina says: "It is clear that children's speech emerges mainly as a means of interaction with surrounding people." So fathers, siblings, grandparents, and friends can also share in the child's speech development by means of conversation, storytelling, and reading.

Swedish psychologist C. I. Sandström further observed that children who did best linguistically "had on average much better contact with adults. The families usually had breakfast together, and the children were allowed to take part in the conversation."

Conversely, youngsters with poor language ability "usually had breakfast alone" and "did not take part very much in the conversation at supper." Family togetherness at mealtimes thus encourages language development.[7]

Taking your child with you on outings also provides you fine opportunities to develop his speech by explaining things to him in simple terms. Together, look into the mouth of a flower, watch a caterpillar eat a leaf, or a spider spin its web. Use your child's natural inquisitiveness to expand his language. Talk about the animals you see at the zoo, the shells and pebbles along the pathways you walk, and the varieties of food you enjoy. True, all of this takes time and patience, but the results are so worth while!

Fortunately, the potential to enlarge the quantity and improve the quality of language is not limited to our youthful years. Each day, we can further perfect our ability to communicate by learning new words and practicing good grammar. In this way, we take part in the continuing miracle of language, and rarely are we at a loss for words.

Though the idea of what a phoneme is relatively simple for native speakers of English to understand, actually transcribing stretches of speech in phonemic symbols can be extremely difficult for them. How much more difficult will it be then for learners of ESL!

Certainly it is useful to introduce the phoneme symbols gradually to beginners, and to use them to highlight particular pronunciation issues. For example, the vowel symbols will be useful to you in distinguishing the vowels of 'bet, bat, but' and helping learners conceptualize these appropriately. But never let a learner's (or even a teacher's!) uncertainty about the symbols as such interfere with a lesson.

A technique that can often work well as an adjunct to using IPA symbols is called 'respelling'. Some people are against this, but I have done, and published, a number of studies which show that most people can use information from respelling far more effectively than IPA to help their pronunciation.

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[7] Society of New York ¨ Torre de Vigía¨ Brooklyn New York ¨ / *Helping Children Develop Their Language Skills*

Respelling is simply the use of the ordinary spelling rules of English to 're-spell' part of a word in a way that shows its pronunciation more clearly. For example if a learner is having trouble with station you would write 'sh' above the word, near the 'ti'. Or if a learner is having trouble with the pronunciation of Australia you would write 'stray' above the relevant syllable to clarify that the vowel should not be as in 'stra'. It is usually sufficient to just respell one part of a word, but sometimes it can be useful to respell one or more words in their entirety, so as to show the relationship between their pronunciations more clearly. It is true that this can also be done with phonemic transcription. The advantage of respelling is that it is much more direct for the learner, and requires far less mental processing.

The energy that is saved in not having to interpret the phonemic symbols can be used for learning to say the words! [8]

In our country, we have at our hands a lot of information in Compact Disks, computer Software and books that can help us to develop and increase our ¨ Exposure¨ to American English accent, but normally people would think that it is not that easy or comfortable to do it. In that situation, maybe we can encourage children not to watch television just in Spanish but also include at least one show presented in English. It would be just the first step to give them the opportunity to develop their skills.

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[8] Department of Education Training and Youth Affairs (DETYA)

## 2.3. HYPOTHESIS SYSTEM

### 2.3.1. Null Hypothesis

Teaching the American Vowels Sound System to the thirty Spanish –speaking students attending to SECAP during the school year 2008 – 2009 will not affect the results in their abilities of Auditory Discrimination of English Vowel Sounds.

### 2.3.2. Alternative Hypothesis

Teaching the American Vowels Sound System to the thirty Spanish –speaking students attending to SECAP during the school year 2008 – 2009 will have a positive effect in their abilities of Auditory Discrimination in English Vowel Sounds.

# PART THREE

# METHODOLOGICAL DESIGN

# PART THREE

## 3. METHODOLOGICAL DESIGN

### 3.1. Research type and design

This is going to be a basic research because after setting the real problem I would like to propose real solutions and recommendations that can be used to improve the production and Understanding of the Vowels System.

The research method that will be used here is a Quasi-Experiment. The word "quasi" means as if or almost, so a quasi-experiment means almost a true experiment. There are many varieties of quasi-experimental research designs, and there is generally little loss of status or prestige in doing a quasi-experiment instead of a true experiment, some characteristics are:

Matching instead of randomization is used. Time series analysis is involved.

One of the intended purposes for doing quasi-experimental research is to make a descriptive and basic research applied to a Field Study with a sufficient number of different events to control for various threats to validity and reliability. In its simplest form it requires a pretest and posttest for a treated and comparison group.

In a quasi-experimental design we can make a comparison in a Group Pres-test and Post-test design.

The experimental group will be that will be taken a course using the Material that I will create about the Vowels Sounds. On the other hand, the Control Group will just take a few hours of course about the subject without any deep analysis of American English Vowels System.

The hope is that the design will generate stable, reliable findings and tell us something about the effects of the application of Vowels System itself. Almost all quasi-experiments are somewhat creative or unusual in what they attribute the cause of something to, and this is the case because we aren't using a true experiment where we manipulate some independent variable in order to assess causality. Instead, at best, we have a statistical baseline and some interventions.

## 3.2. SIZE AND SAMPLE

The research will be made on volunteers for both quantitative research and developing hypotheses for future research. In SECAP there are two groups of students that are taking a long course of Mechanic. Both groups have exactly the same level of English. In the past they seldom were in contact with English and English pronunciation. There are fifteen students in each class:

| N.- | EXPERIMENTAL GROUP |
|-----|--------------------|
| 1 | Barreno Jairo |
| 2 | Cajilema José Luis |
| 3 | Cargua Angel |
| 4 | Chuto Hernán |
| 5 | Colcha Miguel |
| 6 | Colcha Santiago |
| 7 | Fierro Diego |
| 8 | Gadvay Rodrigo |
| 9 | Guamán Jamil |
| 10 | Izurieta Jhony |
| 11 | Orozco Jhonny |
| 12 | Sandoval Darwin |
| 13 | Santander Jonathan |
| 14 | Tapia Cristian |
| 15 | Zuña Jaime |

| N.- | CONTROL GROUP |
|---|---|
| 1 | Argos David |
| 2 | Cortéz Milton |
| 3 | Cruz Paúl |
| 4 | Erazo Cristian |
| 5 | Gavilanes Julio |
| 6 | Jarrín José |
| 7 | Lema Fabián |
| 8 | Ortiz Germán |
| 9 | Paltán José |
| 10 | Paucar Marco |
| 11 | Shucad Andrés |
| 12 | Silva Cristian |
| 13 | Simbaña Oscar |
| 14 | Toaza Alex |
| 15 | Vimos Carlos |

## 3.3. FIELD WORK

The field work will take place in the Mechanic classroom at SECAP which is located in Riobamba, during the 2008 school year where we will administer pre and post - tests to all the thirty students receiving classes of the mentioned subjects.

## 3.4. Instruments for data collection

There will be two TESTS for gathering all the necessary information that will help the posterior analysis and conclusions:

- ❖ A pre-test at the beginning of the research project.
- ❖ A post-test at after the application of the new methodology

## 3.5. Processing and analysis

Data will be analyzed by using descriptive statistics. The mean, median, standard deviation as well as the central tendency and dispersion will be to compare results and support the hypotheses before mentioned.

# PART FOUR

# TESTING THE

# HYPOTHESIS

# PART FOUR

## 4.    TESTING THE HYPOTHESIS

## 4.1    Graphical Exposition of results

Using the Sound Discrimination Test (showed below) and important pronunciation rating parameters, we have measured the ability that thirty students have for understanding and production of English Vowels Sounds.

| N.- | EXPERIMENTAL GROUP | PRE-TEST | | | ORAL TEST | TOTAL | Post-TEST | | | ORAL TEST | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Barreno Jairo | 5 | 1 | 7 | 2 | 15 | 10 | 5 | 32 | 4 | 51 |
| 2 | Cajilema José Luis | 5 | 0 | 7 | 2 | 14 | 7 | 5 | 25 | 6 | 43 |
| 3 | Cargua Angel | 3 | 1 | 13 | 2 | 19 | 6 | 5 | 31 | 6 | 48 |
| 4 | Chuto Hernán | 5 | 2 | 17 | 2 | 26 | 8 | 4 | 32 | 8 | 52 |
| 5 | Colcha Miguel | 6 | 3 | 8 | 2 | 19 | 10 | 4 | 32 | 4 | 50 |
| 6 | Colcha Santiago | 1 | 2 | 9 | 2 | 14 | 9 | 4 | 29 | 6 | 48 |
| 7 | Fierro Diego | 4 | 2 | 19 | 2 | 27 | 6 | 3 | 22 | 6 | 37 |
| 8 | Gadvay Rodrigo | 6 | 2 | 7 | 2 | 17 | 7 | 5 | 33 | 6 | 51 |
| 9 | Guamán Jamil | 3 | 3 | 11 | 2 | 19 | 3 | 4 | 32 | 2 | 41 |
| 10 | Izurieta Jhony | 6 | 1 | 12 | 2 | 21 | 9 | 5 | 33 | 4 | 51 |
| 11 | Orozco Jhonny | 5 | 4 | 13 | 2 | 24 | 7 | 4 | 26 | 8 | 45 |
| 12 | Sandoval Darwin | 6 | 2 | 14 | 2 | 24 | 9 | 4 | 26 | 6 | 45 |
| 13 | Santander Jonathan | 3 | 1 | 8 | 2 | 14 | 10 | 5 | 32 | 4 | 51 |
| 14 | Tapia Cristian | 5 | 2 | 13 | 2 | 22 | 8 | 3 | 30 | 8 | 49 |
| 15 | Zuña Jaime | 4 | 2 | 12 | 2 | 20 | 9 | 3 | 34 | 2 | 48 |
| | | | | | | **295** | | | | | **710** |

| N.- | CONTROL GROUP | PRE-TEST | | | ORAL TEST | TOTAL | Post-TEST | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Argos David | 4 | 0 | 11 | 2 | 17 | 6 | 1 | 15 | 2 | 24 |
| 2 | Cortéz Milton | 5 | 1 | 9 | 2 | 17 | 5 | 2 | 13 | 2 | 22 |
| 3 | Cruz Paúl | 3 | 1 | 13 | 2 | 19 | 3 | 2 | 13 | 2 | 20 |
| 4 | Erazo Cristian | 4 | 3 | 13 | 2 | 22 | 6 | 2 | 19 | 2 | 29 |
| 5 | Gavilanes Julio | 7 | 0 | 11 | 2 | 20 | 4 | 1 | 8 | 2 | 15 |
| 6 | Jarrín José | 6 | 3 | 15 | 2 | 26 | 4 | 1 | 13 | 2 | 20 |
| 7 | Lema Fabián | 6 | 1 | 16 | 2 | 25 | 5 | 3 | 11 | 2 | 21 |
| 8 | Ortiz Germán | 2 | 3 | 10 | 2 | 17 | 5 | 2 | 12 | 2 | 21 |
| 9 | Paltán José | 4 | 0 | 10 | 2 | 16 | 3 | 2 | 12 | 2 | 19 |
| 10 | Paucar Marco | 8 | 1 | 10 | 2 | 21 | 4 | 2 | 9 | 2 | 17 |
| 11 | Shucad Andrés | 4 | 3 | 9 | 2 | 18 | 4 | 1 | 13 | 2 | 20 |
| 12 | Silva Cristian | 8 | 0 | 14 | 2 | 24 | 3 | 0 | 11 | 2 | 16 |
| 13 | Simbaña Oscar | 3 | 2 | 11 | 2 | 18 | 5 | 1 | 10 | 2 | 18 |
| 14 | Toaza Alex | 6 | 3 | 5 | 2 | 16 | 7 | 2 | 13 | 2 | 24 |
| 15 | Vimos Carlos | 5 | 2 | 14 | 2 | 23 | 4 | 1 | 15 | 2 | 22 |
| | | | | | | **299** | | | | | **308** |

| | Experimental Group Pre - Test | | | | | Control Group Pre - Test | | |
|---|---|---|---|---|---|---|---|---|
| N. | Score | Mean | $(s-m)^2$ | | N. | Score | Mean | $(s-m)^2$ |
| 1 | 15 | 19,67 | 21,78 | | 1 | 17 | 19,93 | 8,60 |
| 2 | 14 | 19,67 | 32,11 | | 2 | 17 | 19,93 | 8,60 |
| 3 | 19 | 19,67 | 0,44 | | 3 | 19 | 19,93 | 0,87 |
| 4 | 26 | 19,67 | 40,11 | | 4 | 22 | 19,93 | 4,27 |
| 5 | 19 | 19,67 | 0,44 | | 5 | 20 | 19,93 | 0,00 |
| 6 | 14 | 19,67 | 32,11 | | 6 | 26 | 19,93 | 36,80 |
| 7 | 27 | 19,67 | 53,78 | | 7 | 25 | 19,93 | 25,67 |
| 8 | 17 | 19,67 | 7,11 | | 8 | 17 | 19,93 | 8,60 |
| 9 | 19 | 19,67 | 0,44 | | 9 | 16 | 19,93 | 15,47 |
| 10 | 21 | 19,67 | 1,78 | | 10 | 21 | 19,93 | 1,14 |
| 11 | 24 | 19,67 | 18,78 | | 11 | 18 | 19,93 | 3,74 |
| 12 | 24 | 19,67 | 18,78 | | 12 | 24 | 19,93 | 16,54 |
| 13 | 14 | 19,67 | 32,11 | | 13 | 18 | 19,93 | 3,74 |
| 14 | 22 | 19,67 | 5,44 | | 14 | 16 | 19,93 | 15,47 |
| 15 | 20 | 19,67 | 0,11 | | 15 | 23 | 19,93 | 9,40 |
| Σ | 295 | | 265,33 | | Σ | 299 | | 158,93 |

$$\text{Variance} = \frac{(s-m)^2}{\#\ Scores - 1}$$

$$\text{Variance} = \frac{265.33}{(15-1)}$$

Variance = 18,95
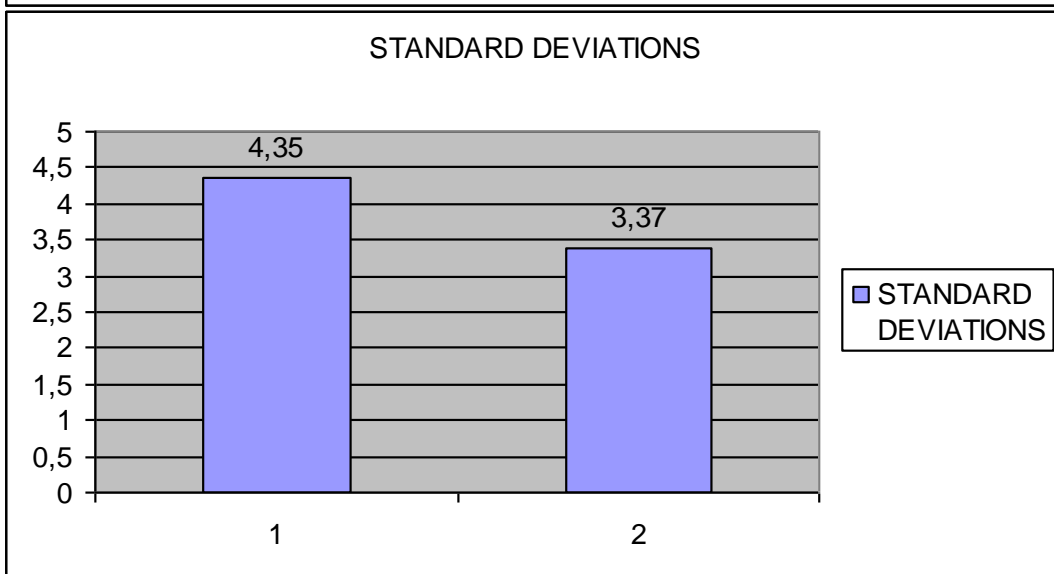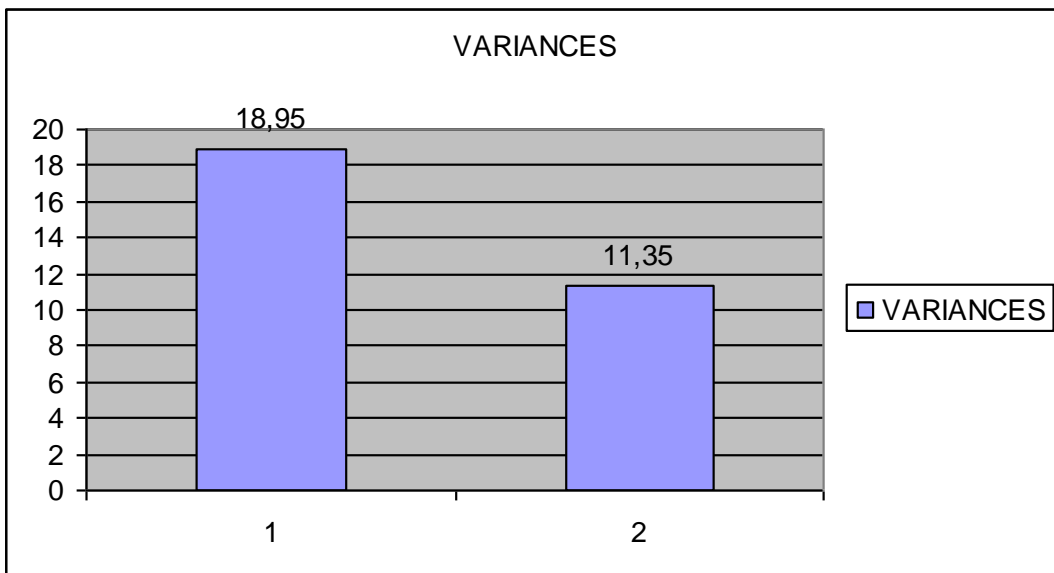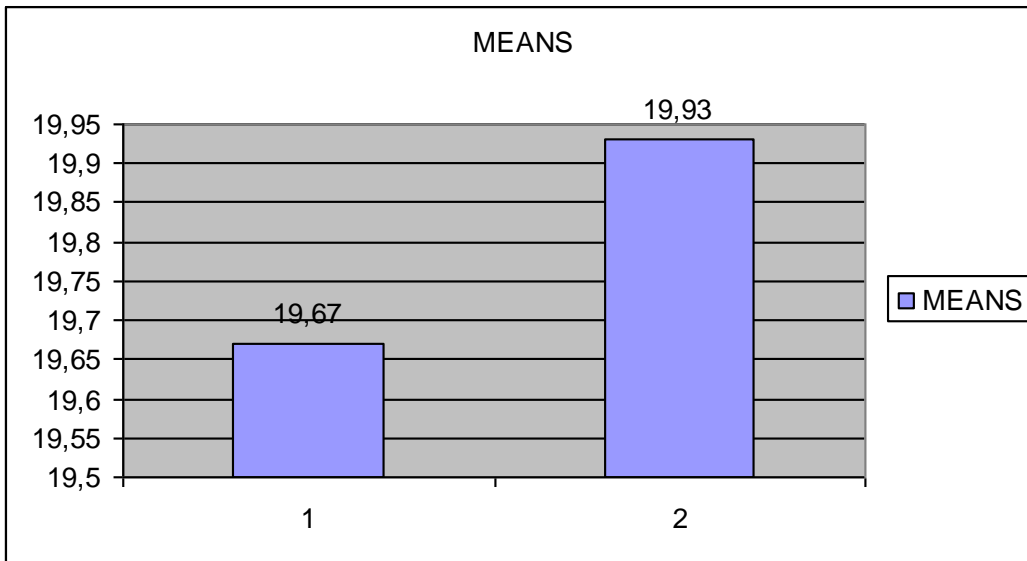
$$\text{Variance} = \frac{(s-m)^2}{\#\ Scores - 1}$$

$$\text{Variance} = \frac{158,93}{(15-1)}$$

Variance = 11,35

Standard D =    √ **18.95**          Standard D =    √ **11.35**
Standard D =    | 4,35 |             Standard D =    | 3,37 |



MEANS

19,93

19,67

| MEANS |



VARIANCES

18,95

11,35

| VARIANCES |



STANDARD DEVIATIONS

4,35

3,37

| STANDARD DEVIATIONS |

| N. | Score | Mean | $(s-m)^2$ | N. | Score | Mean | $(s-m)^2$ |
|---|---|---|---|---|---|---|---|
| 1 | 51 | 47,33 | 13,44 | 1 | 24 | 20,53 | 12,02 |
| 2 | 43 | 47,33 | 18,78 | 2 | 22 | 20,53 | 2,15 |
| 3 | 48 | 47,33 | 0,44 | 3 | 20 | 20,53 | 0,28 |
| 4 | 52 | 47,33 | 21,78 | 4 | 29 | 20,53 | 71,68 |
| 5 | 50 | 47,33 | 7,11 | 5 | 15 | 20,53 | 30,62 |
| 6 | 48 | 47,33 | 0,44 | 6 | 20 | 20,53 | 0,28 |
| 7 | 37 | 47,33 | 106,78 | 7 | 21 | 20,53 | 0,22 |
| 8 | 51 | 47,33 | 13,44 | 8 | 21 | 20,53 | 0,22 |
| 9 | 41 | 47,33 | 40,11 | 9 | 19 | 20,53 | 2,35 |
| 10 | 51 | 47,33 | 13,44 | 10 | 17 | 20,53 | 12,48 |
| 11 | 45 | 47,33 | 5,44 | 11 | 20 | 20,53 | 0,28 |
| 12 | 45 | 47,33 | 5,44 | 12 | 16 | 20,53 | 20,55 |
| 13 | 51 | 47,33 | 13,44 | 13 | 18 | 20,53 | 6,42 |
| 14 | 49 | 47,33 | 2,78 | 14 | 24 | 20,53 | 12,02 |
| 15 | 48 | 47,33 | 0,44 | 15 | 22 | 20,53 | 2,15 |
| Σ | 710 | | 263,33 | Σ | 308 | | 173,73 |

$$\text{Variance} = \frac{(s-m)^2}{\# \text{ Scores - 1}} \qquad\qquad \text{Variance} = \frac{(s-m)^2}{\# \text{ Scores - 1}}$$

$$\text{Variance} = \frac{263.33}{(15-1)} \qquad\qquad \text{Variance} = \frac{173.73}{(15-1)}$$

$$\text{Variance} = 18,81 \qquad\qquad \text{Variance} = 12,41$$
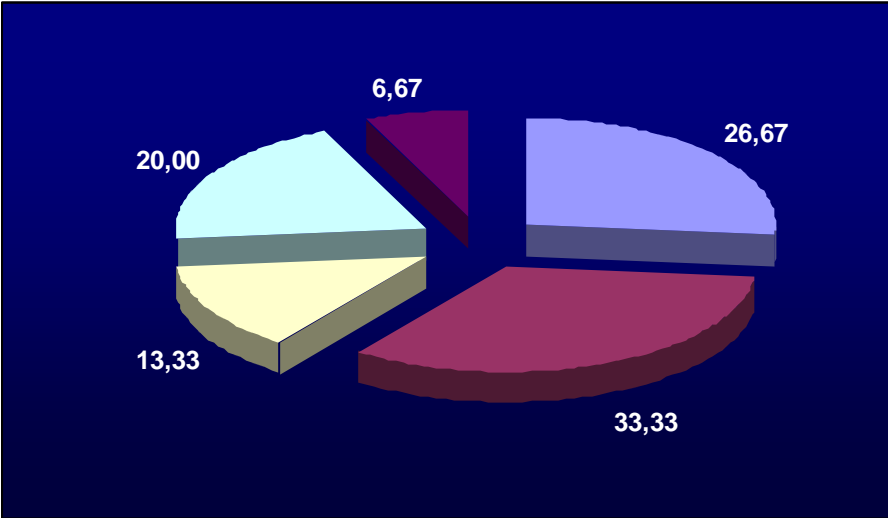
Standard D = $\sqrt{18.81}$        Standard D = $\sqrt{12.41}$

Standard D = 4,34        Standard D = 3,52



MEANS

VARIANCES



STANDARD DEVIATIONS
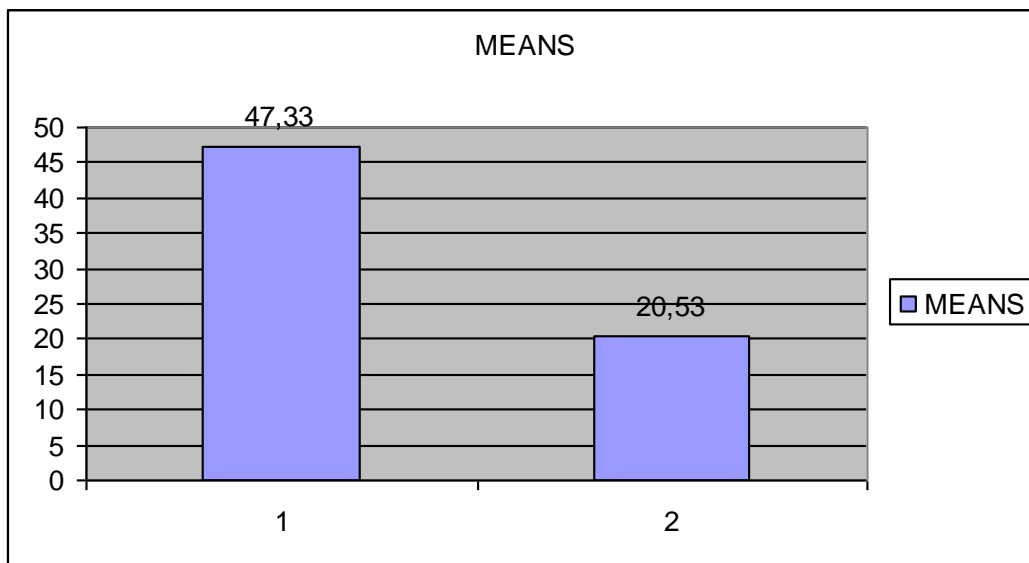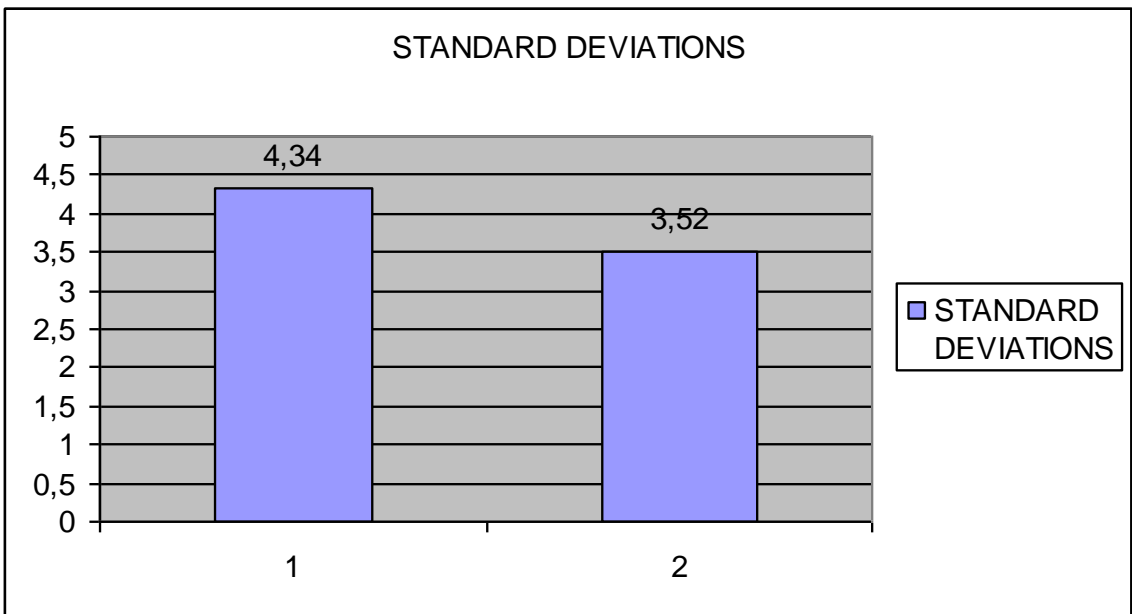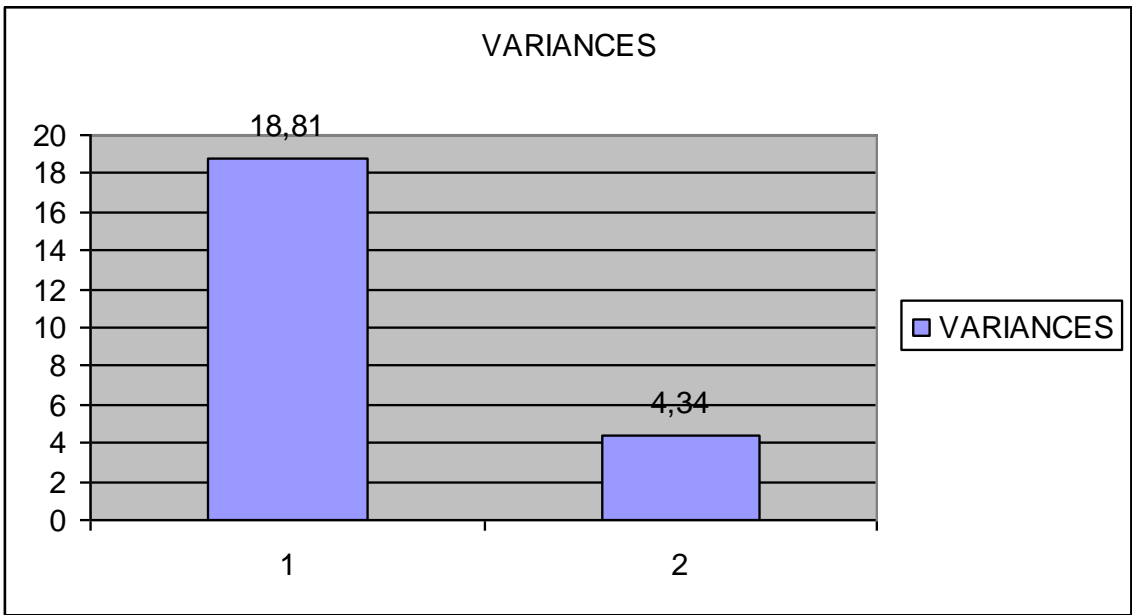
## 4.2   ANALYSIS OF THE RESULTS

| EXPERIMENTAL GROUP PRE - TEST TABLE 01 | SCORES AND PERCENTAGES FOR QUESTION # 1. Applied for Sound Discrimination Test |
|---|---|
| Words that were used:<br><br>1. bad    bad<br>2. least  list<br>3. clock  clock<br>4. seat   sit<br>5. band   band<br>6. heat   hit<br>7. feet   fit<br>8. flap   flop<br>9. desk   desk<br>10. lift   lift | (see table and chart below) |

| STUDENTS | SCORE 0/10 | PERCENTAGE | TEST PERFORMANCE |
|---|---|---|---|
| 4 | 6 | 26.67% | Some students were able to discriminate sounds in the first stage of the test, but only a 26.67% of them had 6 correct answers. It means that it was challenging to perform correctly the task. |
| 5 | 5 | 33.33% | |
| 2 | 4 | 13.33% | |
| 3 | 3 | 20% | |
| 1 | 1 | 6.67% | |
| **15** | | 100% | |

| EXPERIMENTAL GROUP PRE - TEST TABLE 02 | SCORES AND PERCENTAGES FOR QUESTION # 2. Applied for Sound Discrimination Test |
|---|---|

Students hear the following list of words and they draw a picture about each one of them:

BOSS
CUT
CORE
FOX
PAN

| STUDENTS | SCORE 0/5 | PERCENTAGE | TEST PERFORMANCE |
|---|---|---|---|
| 1 | 4 | 6,67% | Because of the lack of knowledge that students had at the beginning of the course, they were not able to discriminate sound of the words that were unknown for them. Only 6.67% of them had 4 correct answers |
| 2 | 3 | 13,33% | |
| 7 | 2 | 46,67% | |
| 4 | 1 | 26,67% | |
| 1 | 0 | 6,67% | |
| **15** | | 100% | |

| EXPERIMENTAL GROUP PRE - TEST TABLE 03 | SCORES AND PERCENTAGES FOR QUESTION # 3 Applied for Sound Discrimination Test |
|---|---|

The following list was read to the students in a different order that the students can differentiate and discriminate the spoken English.

1. END — AND
2. LEAVE — LIVE
3. FOOL — FULL
4. SIT — SET
5. BEAN — BIN
6. COP — CUP
7. COST — COAST
8. COT — CUT
9. DEAL — DILL
10. DECK — DUCK
11. DUG — DOG
12. EAT — IT
13. FEET — FIT
14. FELL — FILL
15. FUND — FOND
16. FUR — FAR
17. HAD — HEAD
18. HEAT — HIT
19. HULL — HALL
20. HUT — HOT
21. KNOW — NOW
22. LEAST — LIST
23. LUCK — LOCK
24. NEAT — KNIT
25. NUT — NOT
26. POOL — PULL
27. PUP — POP
28. SLEEP — SLIP
29. BLUE — BLOOD
30. WRIST — REST
31. BLUE — BLOOD
32. HARD — HEARD
33. HOB — HUB
34. DEEP — DIP
35. MET — MAT

| STUDENTS | SCORE 0/35 | PERCENTAGE | TEST PERFORMANCE |
|---|---|---|---|
| 1 | 19 | 6,67% | |
| 1 | 17 | 6,67% | The average is 12 correct answers and unfortunately only 6,67% of the students had 19 right answers. That means that hearing the English Vowels Sounds for the first time was something challenging and extremely difficult for them. |
| 1 | 14 | 6,67% | |
| 3 | 13 | 20% | |
| 2 | 12 | 13,33% | |
| 1 | 11 | 6,67% | |
| 1 | 9 | 6,67% | |
| 2 | 8 | 13,33% | |
| 3 | 7 | 20% | |
| **15** | | | |

| EXPERIMENTAL GROUP POST - TEST TABLE 04 | SCORES AND PERCENTAGES FOR QUESTION # 1. Applied for Sound Discrimination Test |
|---|---|

| STUDENTS | SCORE 0/10 | PERCENTAGE | TEST PERFORMANCE |
|---|---|---|---|
| 3 | 10 | 20% | The percentage of 26,67% of the students of the Experimental group with 9 correct answers shows that their Understanding of Vowel Sounds has increased almost a 100% compared with the 5 correct answers that 33,33% students had in the Pre-test |
| 4 | 9 | 26,67% | |
| 2 | 8 | 13,33% | |
| 3 | 7 | 20,00% | |
| 2 | 6 | 13,33% | |
| 1 | 3 | 6,67% | |
| **15** | | | |

Words that were used:

11. bad     bad
12. least    list
13. clock    clock
14. seat     sit
15. band     band
16. heat     hit
17. feet     fit
18. flap     flop
19. desk     desk
20. lift     lift

| EXPERIMENTAL GROUP POST - TEST TABLE 05 | SCORES AND PERCENTAGES FOR QUESTION # 2. Applied for Sound Discrimination Test |
|---|---|

Students hear the following list of words and they draw a picture about each one of them:

BOSS
CUT
CORE
FOX
PAN

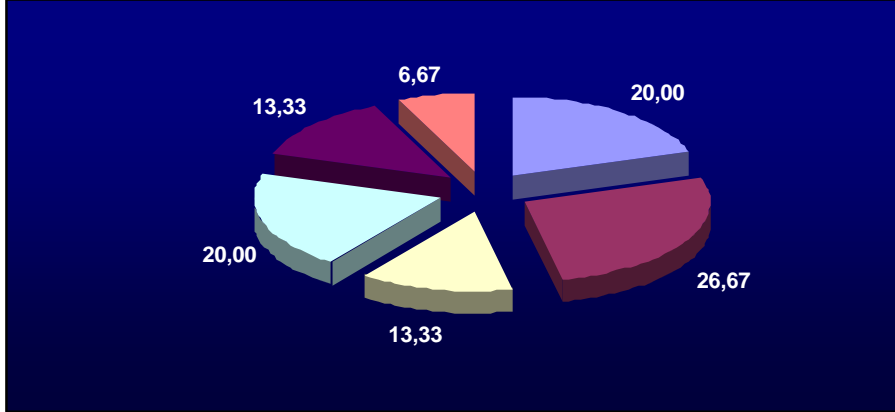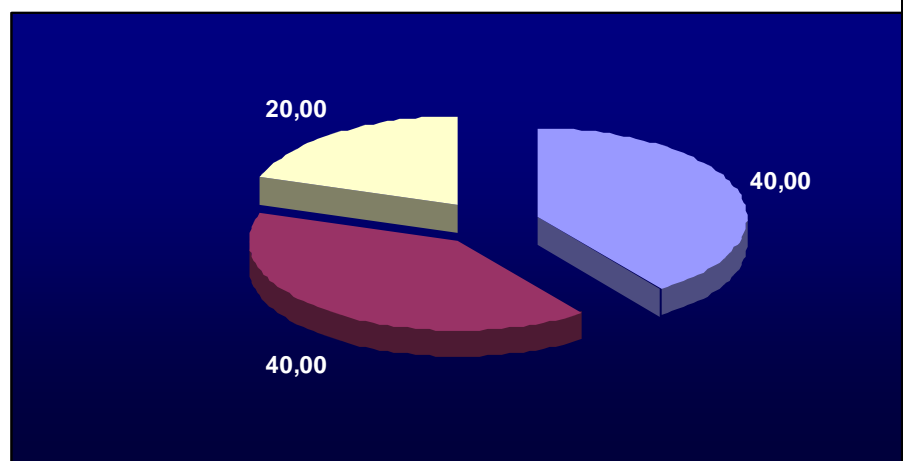| STUDENTS | SCORE 0/5 | PERCENTAGE | TEST PERFORMANCE |
|---|---|---|---|
| | | | After knowing the words and being familiarized with them, 40% of the students of the Experimental Group had 5 and 4 correct answers that shows how important is to teach students vocabulary giving emphasis to Vowel Sounds |
| 6 | 5 | 40% | |
| 6 | 4 | 40% | |
| 3 | 3 | 20% | |
| **15** | | | |



20,00

40,00

40,00

| EXPERIMENTAL GROUP POST - TEST TABLE 06 | SCORES AND PERCENTAGES FOR QUESTION # 3 Applied for Sound Discrimination Test |
|---|---|

The following list was read to the students in a different order that the students can differentiate and discriminate the spoken English.

1. END         AND
2. LEAVE       LIVE
3. FOOL        FULL
4. SIT         SET
5. BEAN        BIN
6. COP         CUP
7. COST        COAST
8. COT         CUT
9. DEAL        DILL
10. DECK       DUCK
11. DUG        DOG
12. EAT        IT
13. FEET       FIT
14. FELL       FILL
15. FUND       FOND
16. FUR        FAR
17. HAD        HEAD
18. HEAT       HIT
19. HULL       HALL
20. HUT        HOT
21. KNOW       NOW
22. LEAST      LIST
23. LUCK       LOCK
24. NEAT       KNIT
25. NUT        NOT
26. POOL       PULL
27. PUP        POP
28. SLEEP      SLIP
29. BLUE       BLOOD
30. WRIST       REST
31. BLUE       BLOOD
32. HARD       HEARD
33. HOB        HUB
34. DEEP       DIP
35. MET        MAT

| STUDENTS | SCORE 0/35 | PERCENTAGE | TEST PERFORMANCE |
|---|---|---|---|
| 1 | 34 | 6,67% | The results show how studetns improved their Listening comprehension because almosl everyone got an average of 29 correct answers and 33,33% of the students had 32 correct answers. If we comparte this result with the Pre- test something interesting is that nobody had at least 20 correct answers |
| 2 | 33 | 13,33% | |
| 5 | 32 | 33,33% | |
| 1 | 31 | 6,67% | |
| 1 | 30 | 6,67% | |
| 1 | 29 | 6,67% | |
| 2 | 26 | 13,33% | |
| 1 | 25 | 6,67% | |
| 1 | 22 | 6,67% | |
| **15** | | | |

**CONTROL GROUP PRE AND POST TEST COMPARISON          TABLE 07**
**SCORES AND PERCENTAGES FOR QUESTION # 1, 2 AND 3  Applied for Sound Discrimination Pre and Post - test**

| N.- | CONTROL GROUP | PRE-TEST | | | Post-TEST | | |
|---|---|---|---|---|---|---|---|
| | | Q1 | Q2 | Q3 | Q1 | Q2 | Q3 |
| 1 | Argos David | 4 | 0 | 11 | 6 | 1 | 15 |
| 2 | Cortéz Milton | 5 | 1 | 9 | 5 | 2 | 13 |
| 3 | Cruz Paúl | 3 | 1 | 13 | 3 | 2 | 13 |
| 4 | Erazo Cristian | 4 | 3 | 13 | 6 | 2 | 19 |
| 5 | Gavilanes Julio | 7 | 0 | 11 | 4 | 1 | 8 |
| 6 | Jarrín José | 6 | 3 | 15 | 4 | 1 | 13 |
| 7 | Lema Fabián | 6 | 1 | 16 | 5 | 3 | 11 |
| 8 | Ortiz Germán | 2 | 3 | 10 | 5 | 2 | 12 |
| 9 | Paltán José | 4 | 0 | 10 | 3 | 2 | 12 |
| 10 | Paucar Marco | 8 | 1 | 10 | 4 | 2 | 9 |
| 11 | Shucad Andrés | 4 | 3 | 9 | 4 | 1 | 13 |
| 12 | Silva Cristian | 8 | 0 | 14 | 3 | 0 | 11 |
| 13 | Simbaña Oscar | 3 | 2 | 11 | 5 | 1 | 10 |
| 14 | Toaza Alex | 6 | 3 | 5 | 7 | 2 | 13 |
| 15 | Vimos Carlos | 5 | 2 | 14 | 4 | 1 | 15 |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| —— Q1 Pre-Test | 4 | 5 | 3 | 4 | 7 | 6 | 6 | 2 | 4 | 8 | 4 | 8 | 3 | 6 | 5 |
| —— Q2 Pre-Test | 0 | 1 | 1 | 3 | 0 | 3 | 1 | 3 | 0 | 1 | 3 | 0 | 2 | 3 | 2 |
| —— Q3 Pre-Test | 11 | 9 | 13 | 13 | 11 | 15 | 16 | 10 | 10 | 10 | 9 | 14 | 11 | 5 | 14 |
| —— Q1 Post-Test | 6 | 5 | 3 | 6 | 4 | 4 | 5 | 5 | 3 | 4 | 4 | 3 | 5 | 7 | 4 |
| —— Q2 Post-Test | 1 | 2 | 2 | 2 | 1 | 1 | 3 | 2 | 2 | 2 | 1 | 0 | 1 | 2 | 1 |
| —— Q3 Post-Test | 15 | 13 | 13 | 19 | 8 | 13 | 11 | 12 | 12 | 9 | 13 | 11 | 10 | 13 | 15 |

| COMPARISON BETWEEN EXPERIMENTAL AND CONTROL GROUP FOR PRE AND POST ORAL TEST TABLE 08 | SCORES AND PERCENTAGES FOR BOTH ORAL TESTS |
|---|---|
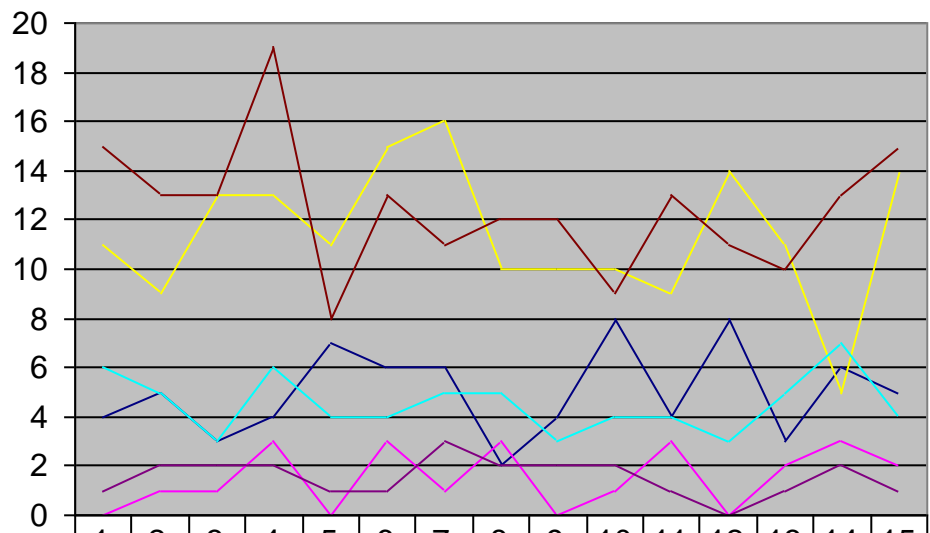
Both groups of fifteen students each read a list of words. Scores were given under the following specifications:

| STUDENTS | SCORE 0/10 | PERCENTAGE | TEST PERFORMANCE |
|---|---|---|---|
| 3 | 8 | 20% | The majority of the students of the Experimental group increased three times their abilities comparing their initial performance in Oral English Vowels Production |
| 6 | 6 | 40% | |
| 4 | 4 | 26,67% | |
| 2 | 2 | 13,33% | |
| **15** | | | |

The student has a few traces of foreign accent. (10 marks)

The student is always intelligible, though one is conscious of a definite accent. (8 marks)

His pronunciation problems necessitate concentrated listening and occasionally lead to misunderstanding. (6 marks)

Students are very hard to understand because of pronunciation problems. In this case they must frequently be asked to repeat.
(4 marks)

Their pronunciation problems so severe as to make speech virtually unintelligible.
(2 marks)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| —— Serie1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| —— Serie2 | 4 | 6 | 6 | 8 | 4 | 6 | 6 | 6 | 2 | 4 | 8 | 6 | 4 | 8 | 2 |

—— Serie1 —— Serie2

This is the list of words that the students read (including the three of the Pre-test):

Bean – Bin
Cop – Cup
Feet – Fit
Fool – Full
Met - Mat
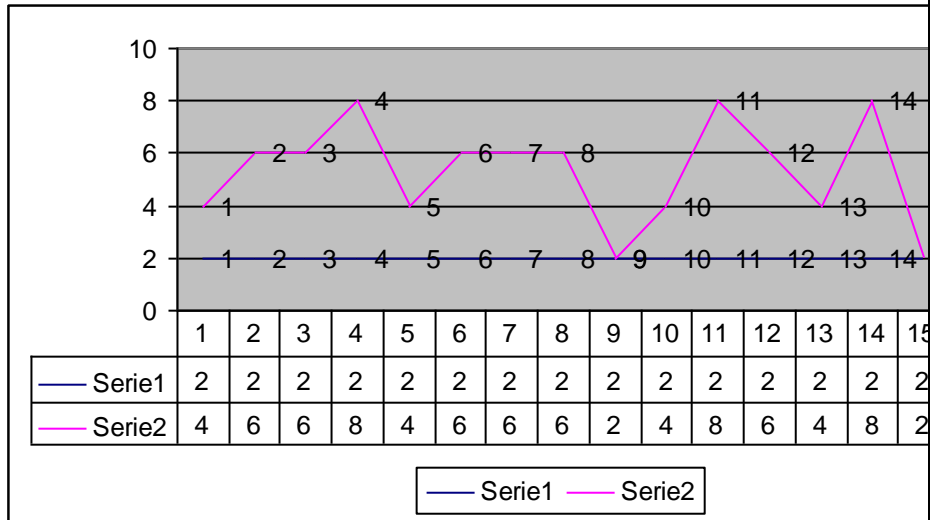
# DEGREES FREEDOM

In statistics, the phrase degrees of freedom is used to describe the number of values in the final calculation of a statistic that are free to vary.[1]

Estimates of statistical parameters can be based upon different amounts of information or data. The number of independent pieces of information that go into the estimate of a parameter is called the degrees of freedom (df). In general, the degrees of freedom of an estimate is equal to the number of independent scores that go into the estimate minus the number of parameters estimated as intermediate steps in the estimation of the parameter itself[9]

$gdl = n_1+n_2-2$
$gdl = 15+15-2$
$gdl = 28$
DEGREES OF FREEDOM = 28

## STANDARD ERROR OF THE DIFFERENCE INTO TWO MEANS

$$Sx_1 - x_2 = \sqrt{\frac{\sum(s-m)_1{}^2 + \sum(s-m)_2{}^2}{n_1 + n_2 - 2} \left(\frac{1}{n} + \frac{1}{n}\right)}$$

$Sx_1-x_2 = 1.4422$

## REASON T

REASON T= $\dfrac{47.33 - 20.53}{1.4422}$

REASON T= 18.582

---

[9] www.wikipedia.org

# TABLE STUDENTS' T

| n / a | 0,90 | 0,80 | 0,10 | *0,05* | 0,02 | 0,01 |
|-------|------|------|------|--------|------|------|
| 1 | 0,1584 | 0,3249 | 6,3137 | 12,7062 | 31,821 | 63,6569 |
| 2 | 0,1421 | 0,2887 | 2,920 | 4,3027 | 6,9645 | 9,9250 |
| 3 | 0,1366 | 0,2767 | 2,3534 | 3,1828 | 4,5407 | 5,8408 |
| 4 | 0,1338 | 0,2707 | 2,1318 | 2,7765 | 3,7469 | 4,6041 |
| 5 | 0,1322 | 0,2672 | 2,0150 | 2,5706 | 3,3649 | 4,0321 |
| 6 | 0,1311 | 0,2648 | 1,9432 | 2,4469 | 3,1427 | 3,7074 |
| 7 | 0,1303 | 0,2632 | 1,8946 | 2,3646 | 2,9979 | 3,4995 |
| 8 | 0,1297 | 0,2619 | 1,8795 | 2,3060 | 2,8965 | 3,3554 |
| 9 | 0,1293 | 0,2610 | 1,8331 | 2,2622 | 2,8214 | 3,2498 |
| 10 | 0,1289 | 0,2602 | 1,8125 | 2,2281 | 2,7638 | 3,1693 |
| 11 | 0,1286 | 0,2596 | 1,7959 | 2,2010 | 2,7181 | 3,1058 |
| 12 | 0,1283 | 0,2590 | 1,7823 | 2,1788 | 2,6810 | 3,0545 |
| 13 | 0,1281 | 0,2586 | 1,7709 | 2,1604 | 2,6503 | 3,0123 |
| 14 | 0,1280 | 0,2582 | 1,7613 | 2,1448 | 2,6245 | 2,9768 |
| 15 | 0,1278 | 0,2579 | 1,7531 | 2,1315 | 2,6025 | 2,9467 |
| 16 | 0,1277 | 0,2576 | 1,7459 | 2,1199 | 2,5835 | 2,9208 |
| 17 | 0,1276 | 0,2573 | 1,7396 | 2,1098 | 2,5669 | 2,8982 |
| 18 | 0,1274 | 0,2571 | 1,7341 | 2,1009 | 2,5524 | 2,8784 |
| 19 | 0,1274 | 0,2569 | 1,7291 | 2,0930 | 2,5395 | 2,8609 |
| 20 | 0,1273 | 0,2567 | 1,7247 | 2,0860 | 2,5280 | 2,8453 |
| 21 | 0,1272 | 0,2566 | 1,7207 | 2,0796 | 2,5176 | 2,8314 |
| 22 | 0,1271 | 0,2564 | 1,7171 | 2,0733 | 2,5083 | 2,8188 |
| 23 | 0,1271 | 0,2563 | 1,7139 | 2,0687 | 2,4999 | 2,8073 |
| 24 | 0,1270 | 0,2562 | 1,7109 | 2,0639 | 2,4922 | 2,7970 |
| 25 | 0,1269 | 0,2561 | 1,7081 | 2,0595 | 2,4851 | 2,7874 |
| 26 | 0,1269 | 0,2560 | 1,7056 | 2,0555 | 2,4786 | 2,7787 |
| 27 | 0,1268 | 0,2559 | 1,7033 | 2,0518 | 2,4727 | 2,7707 |
| **28** | 0,1268 | 0,2558 | 1,7011 | **2,0486** | 2,4671 | 2,7633 |
| 29 | 0,1268 | 0,2557 | 1,6991 | 2,0452 | 2,4620 | 2,7564 |
| 30 | 0,1267 | 0,2556 | 1,6973 | 2,0423 | 2,4573 | 2,7500 |
| 40 | 0,1265 | 0,2550 | 1,6839 | 2,0211 | 2,4233 | 2,7045 |
| 80 | 0,1261 | 0,2542 | 1,6641 | 1,9901 | 2,3739 | 2,6387 |
| 120 | 0,1259 | 0,2539 | 1,6576 | 1,9799 | 2,3578 | 2,6174 |

# GENERAL CONCLUSION

In probability theory and statistics, the variance of a random variable, probability distribution, or sample is one measure of statistical dispersion, averaging the squared distance of its possible values from the expected value (mean). Whereas the mean is a way to describe the location of a distribution, the variance is a way to capture its scale or degree of being spread out. The unit of variance is the square of the unit of the original variable. The positive square root of the variance, called the standard deviation, has the same units as the original variable and can be easier to interpret for this reason. A t-test is any statistical hypothesis test in which the test statistic has a Student's t distribution if the null hypothesis is true. It is applied when the population is assumed to be normally distributed but the sample sizes are small enough that the statistic on which inference is based is not normally distributed because it relies on an uncertain estimate of standard deviation rather than on a precisely known value.10

In our example The Student's t (degree of freedom 28 and probability 0.05 used in Education)
The calculated REASON T (18.58) is > than 2.048, the null hypothesis is rejected and Teaching the American Vowels Sound System to the thirty Spanish –speaking students attending to SECAP during the school year 2008 – 2009 will have a positive effect in their abilities of understanding and producing English words.

## 4.3   CONCLUSIONS

➢      The incidence of teaching the English Vowels System has a positive influence in the level of student's performance.

➢      Students who did not receive instruction in English Vowel system had the same mistakes in the Pre and Post – Test. It includes lack of confidence in communicating words orally because they are afraid of pronouncing them incorrectly.

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[10] www.wikipedia.org

- ➢     After the Pre and Post – test we discover that the majority of the Experimental Group got a 91.4% of effectiveness in the Sound Discrimination Test. That means that ¨ Exposure ¨ to the langue proper sounds can help students to Understand Spoken English.

## 4.4   RECOMMENDATIONS

- ➢     Every single Educational Institute should give emphasis to proper pronunciation and teachers should be aware of the importance of the English Vowels System. They must be sure to pronounce correctly them to help students recognize English Sounds and avoid bad pronunciation habits.

- ➢     Rather than starting teaching grammar rules: morphology, syntax or semantics, the very first step should be help students understand the difference between our vowel system and American English vowel system.

- ➢     It is important take in account the students' motivation for learning, many of them learn just to pass a course or to get a score. Teachers should help them understand that by making mistakes they can improve their oral production and comprehension.

- ➢     It is recommended that SECAP should provide students materials such as CDs, tapes, videos, computer software and specially a laboratory where they can increase their exposure to English pronunciation using technology in the case that the teacher does not manage the English Vowels System.

- ➢     It is important for students that teachers apply new and modern methodologies for teaching pronunciation such as the Audio – Lingual method.

# PART FIVE


# THE PROPOSAL

# PART FIVE

## 5. PROPOSAL

## 5.1.  INTRODUCTION

A high percentage of students show lack of confidence while pronouncing English words, especially at SECAP where we can clearly see that the problem comes from their previous Institutions where they attended earlier (their previous Schools and High-Schools).

A considerable backward appears here where  teachers give a lot of attention to grammar but almost nothing to solve the problem of pronunciation and understanding the spoken English is done.

Some of the students said that they had received two hours of class everyday for several years, even from Elementary School. Though, it must have been inadequate methodology used by teachers, lack of materials, laboratories but the emphasis in basic sounds production was very poor.

For the aforesaid, I propose to apply a two month period of Vowel System Teaching at SECAP by dividing the group of thirty students into two groups of fifteen students each. One of them will be called ¨ Experimental Group ¨ where I will be applying my Proposal that is sustained on the Theoretical Framework and for over two months they will learn about the American English Vowel System and how understanding their slight sound differences affect positively the auditory discrimination of English Vowels.

On the other hand, the denominated ¨ Control Group ¨ will not receive any instruction about that subject and they will just learn basic grammar patterns about Mechanics, that is: some vocabulary and basic verb tenses.

Students and teachers recognize that their lack of knowledge does not allow them to develop speaking and listening Language Skills. As noted, if they do not learn the foundation of the English Vowel System they will never improve their abilities and will never be able to communicate ideas in a foreign language.

As a result of this evident fact, we want to express the following proposal. This will be applied to listening and speaking language skills but using the Constructivism Didactic Model in combination with the Audio – Lingual Method.

## 5.2    GENERAL OBJECTIVE

To teach the American English Vowel System to the students attending at the Course of Mechanics at SECAP in order to improve their Auditory Discrimination and to show in perspective how students can improve their abilities in English understanding and production.

## 5.3    SPECIFIC OBJECTIVE

> ➢    At the beginning of the course, both groups will take a written and oral Pre – Test to show their initial ability to discriminate sounds.
> ➢    The ¨ Experimental Group ¨ will receive two hours of class everyday from Monday to Friday for two months, with topics related specifically to American English Vowel Sounds. At the same time the ¨ Control Group ¨ will not have any instruction about that subject but they will just learn about basic grammar patterns.
> ➢    At the end of the course, both groups will take a final test called ¨ Post - Test ¨ that will be used to compare statistically how learning the American English Vowel System affects positively the student's ability to understand and discriminate English sounds.

## 5.4  CONSTRUCTIVISM DIDACTIC MODEL

Constructivism[11] is a philosophy of learning where, reflecting on our own experiences, we construct our understanding of the world. It impacts learning in at least three different ways:

Constructivism is founded on the idea that we reflect our experiences while constructing our own understanding of the world. It is basically a theory -- based on observation and scientific study -- about how people learn. It says that people construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences.

When we find something new, we have to reconcile it with our previous ideas and experience, maybe changing what we believe, or maybe discarding the new information as irrelevant. In any case, we are active creators of our own knowledge. To do this, we must ask questions, explore, and assess what we know In general, constructivism as a description of human cognition is often associated with pedagogic approaches that promote learning by doing.

## EPISTEMOLOGICAL BASE OF CONSTRUCTIVISM

Jean Piaget articulated Constructivism by using mechanisms through which knowledge is internalized by learners. He suggested that through processes of accommodation and assimilation, individuals construct new knowledge from their experiences.

On the other hand, accommodation can be understood as the mechanism by which failure leads to learning: when we act on the expectation that the world operates in one way and it violates our expectations, we often fail, but by accommodating this new experience and reframing our model of the way the world works, we learn from the experience of failure, or others' failure.

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[11] www.enwikipedia.org

Constructivist teachers encourage students to constantly assess how the activity is helping them gain understanding. By questioning themselves and their strategies, students in the constructivist classroom ideally become "expert learners." This fact gives them ever-broadening tools to keep learning. Learning how to learn, we can acquire an important note of constructivism itself. Because it analyzes how learning should and must happen so that learners can construct knowledge.

## PSYCHOLOGICAL BASE OF CONSTRUCTIVISM

In the classroom, the constructivist view of learning can consist of different teaching practices. In the most general sense, those are active techniques about experiments, real-world problem solving, etc.

In order to increase knowledge and to reflect it on what people are doing and how their understanding is changing, teachers make sure they understand their students' pre-existing conceptions, and guides the activity to address them and then build on them.

Of course, constructivism transforms or changes the student from a passive recipient [12]of information to an active participant in the learning process. Always guided by the teacher, students construct their knowledge actively rather than just mechanically getting knowledge from the teacher or the textbook.

In addition, Constructivism holds that teaching is not a simple transfer of information from the mind of the instructor to the mind of the learner; rather, each person forms his or her own constructions from what is seen or heard or experienced.

That is why two persons can listen to the same information and draw different conclusions. For persons to learn effectively, they must deal with the information themselves.

## 5.5   THE AUDIO LINGUAL METHOD

In general, the Audio – Lingual Method drills students in the use of grammatical sentence patterns.

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[12] www.forums.org

One of the principles of this method includes the use of minimal pairs of words that have one phonological element that is different.

Example:

Bat – Bet

/bæt/ - /bɛt/

In the above case, the vowel sound of both words is the different phonological element.

¨ The greatest challenge of foreign language teaching is getting students to overcome the habits of their native language. A comparison between the native and target language will tell the teacher in what areas her students will probably experience difficulty.¨ [13]

Practicing minimal pairs can help students localize the minimum differences in pronunciation between one word and another.

It also helps students practice the smallest elements of common muted vowel sounds which are common to English vowel production. The following lesson provides an outline with a handout minimal pairs sheet.

The aim of this method is to improve recognition and pronunciation skills of single words

**GENERAL METHOD OUTLINE**

Write examples of minimal pairs on the board. If students have learned the International Phonetic Alphabet (IPA), it is a good idea to employ the phonetic transcriptions of the words on the board.

- Demonstrate the correct pronunciation of the minimal pairs written on the board.

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[13] (**Diane Larsen – Freeman. 2000.** *Techniques and Principles in Language Teaching.* .Great Clarendon Street - Oxford)

- Elicit students to give examples of other words which use the same changing phonemes.

  *Example: bat - bet (written on board) student: "cat - kept"* It is a good idea to accept more than one phonological difference as long as the target phoneme has been reproduced.
- Distribute minimal pair sheet.
- For lower levels: Reproduce the minimal pairs in chorus by first giving the example and then having students repeat together.
- For upper levels: Have students work in pairs taking turns reproducing the minimal pairs.
- Repeat as many times as necessary.
- Have students use the minimal pair sheet as a model to produce another, similar, minimal pair sheet.
- Extend activity into a game, by having students distribute their minimal pair sheets to other pairs. *Added activity: If students are proficient in the IPA, have students transcribe the minimal pairs as a means of strengthening their knowledge of the IPA.*[14]

## 5.6. INTERNATIONAL PHONETIC ALPHABET (IPA)[15]

## ORIGIN

The IPA was first published in 1888 by the Association Phonétique Internationale (International Phonetic Association), a group of French language teachers founded by Paul Passy. The aim of the organisation was to devise a system for transcribing the sounds of speech which was independent of any particular language and applicable to all languages.

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[14] ©2009 About.com, a part of The New York Times Company.

[15] **By Peter Roach ¨English Phonetics and Phonology¨ Cambridge University Press**

A phonetic script for English created in 1847 by Isaac Pitman and Henry Ellis was used as a model for the IPA.

**Uses**

- The IPA is used in dictionaries to indicate the pronunciation of words.

- The IPA has often been used as a basis for creating new writing systems for previously unwritten languages.

- The IPA is used in some foreign language text books and phrase books to transcribe the sounds of languages which are written with non-latin alphabets. It is also used by non-native speakers of English when learning to speak English.

# ASCII TRANSLITERATIONS, IPA INFLUENCE ON OTHER PHONETIC ALPHABETS[16]

¨Since the IPA uses symbols that are outside the ASCII character set, several systems have been developed that map the IPA symbols to ASCII characters. Notable systems include Kirshenbaum, SAMPA, and X-SAMPA. The usage of mapping systems in on-line text has to some extent been adopted in the context input methods, allowing convenient keying of IPA characters that would be otherwise unavailable on standard keyboard layouts.¨

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[16] www.enwikipedia.org

# THE INTERNATIONAL PHONETIC ALPHABET (revised to 1993, corrected 1996)
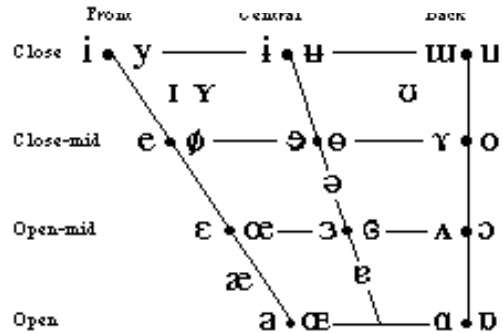
## CONSONANTS (PULMONIC)

| | Bilabial | Labiodental | Dental | Alveolar | Postalveolar | Retroflex | Palatal | Velar | Uvular | Pharyngeal | Glottal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Plosive | p  b | | | t  d | | ʈ  ɖ | c  ɟ | k  g | q  ɢ | | ʔ |
| Nasal | m | ɱ | | n | | ɳ | ɲ | ŋ | N | | |
| Trill | ʙ | | | r | | | | | R | | |
| Tap or Flap | | | | ɾ | | ɽ | | | | | |
| Fricative | ɸ  β | f  v | θ  ð | s  z | ʃ  ʒ | ʂ  ʐ | ç  ʝ | x  ɣ | χ  ʁ | ħ  ʕ | h  ɦ |
| Lateral fricative | | | | ɬ  ɮ | | | | | | | |
| Approximant | | ʋ | | ɹ | | ɻ | j | ɰ | | | |
| Lateral approximant | | | | l | | ɭ | ʎ | | | | |

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shad...

## CONSONANTS (NON-PULMONIC)

| Clicks | | Voiced implosives | | Ejectives | |
|---|---|---|---|---|---|
| ʘ | Bilabial | ɓ | Bilabial | ' | Examples |
| ǀ | Dental | ɗ | Dental/alveolar | p' | Bilabial |
| ǃ | (Post)alveolar | ʄ | Palatal | t' | Dental/alveolar |
| ǂ | Palatoalveolar | ɠ | Velar | k' | Velar |
| ǁ | Alveolar lateral | ʛ | Uvular | s' | Alveolar fricative |

## OTHER SYMBOLS

| | | | |
|---|---|---|---|
| ʍ | Voiceless labial-velar fricative | ɕ  ʑ | Alveolo-palatal fricatives |
| w | Voiced labial-velar approximant | ɺ | Alveolar lateral flap |
| ɥ | Voiced labial-palatal approximant | ɧ | Simultaneous ʃ and x |
| ʜ | Voiceless epiglottal fricative | | Affricates and double articulations can be represented by two symbols joined by a tie bar if necessary |
| ʢ | Voiced epiglottal fricative | | |
| ʡ | Epiglottal plosive | | |

## VOWELS



Where symbols appear in pairs, the one to the right represents a rounded vowel.

SUMARY BY PETER LADEFOGET
www.ipachart.com

# ARMY POLITECHNIC SCHOOL
# APPLIED LINGUISTICS PROGRAM IN ENGLISH

1. **SUBJECT:** ENGLISH
2. **DIDACTIC UNIT:** Vowels Sounds
3. **OBJECTIVES:** To teach students the difference between long and short Vowels
4. **THEME:** Long Vowels sounds
5. **METHODOLOGY:** Audio – Lingual Method
6. **COURSE:** MECHANIC
7. **TIME:** 2 HOURS
8. **DATE:** 2008-12-17

| CONTENTS | ACTIVITIES | RESOURCES | EVALUATION |
|---|---|---|---|
| COGNITIVE Basic difference between the long and short vowels.<br><br><br><br><br>¨ A ¨ as in cat<br>¨ E¨ as in me<br>¨ O ¨ as in too | PRE-REQUISITES (5')<br>Showing them pictures of the vocabulary that will be acquired<br><br>IDEA ORGANIZERS (20')<br><br>According to the first activity, draw a simple picture with some detail. Then make enough copies for all but one student in the class. Have one student volunteers to come to the board and draw. (This student is the one who will not see the drawing) The remaining students dictate a description of the drawing (and how to draw it) while the volunteer draws.<br><br>The students must use ONLY words that contain a long vowel sound to describe or analyze the picture.<br><br><br><br>THE CONSTRUCTION OF KNOWLEDGE AND EXPERIENCE (40') | POSTERS AND PICTURES<br><br><br>BOARD SHEETS OF PAPER | It is very important that student get familiar with the vocabulary using their listening skills. (55')<br><br>There will be a sheet of paper for all the students where they must come in front of the class and read a list of words that will be measured under the following parameters:<br><br>The student has a few traces of foreign accent. (10 marks)<br><br>The student is always intelligible, though one is conscious of a definite accent. (8 marks)<br><br>His pronunciation problems necessitate concentrated listening and occasionally lead to misunderstanding. (6 marks) |

| | | | |
|---|---|---|---|
| | Words that will be read with the help of an American Native speaker: | | Students are very hard to understand because of pronunciation problems. In this case they must frequently be asked to repeat. (4 marks) |
| | AND | BIT | |
| | BAD | CHICKS | Their pronunciation problems so severe as to make speech virtually unintelligible. (2 marks) |
| | DECK | BLOOD | |
| | DEN | CUP | This is the list of words that the students read (including the three of the Pre-test): |
| | DESK | BOAT | |
| | END | COAST | Bean – Bin<br>Cop – Cup<br>Feet – Fit<br>Fool – Full<br>Met - Mat |
| | FELL | COLT | |
| | HEAD | CORE | |
| | MEN | GRAMMAR | |
| | BLUE | MEASURE | |
| | BLUE | MIRROR | |
| | CLUE | NATURE | |
| | DO | SILVER | |
| | TAIL | SURPRISE | |
| | APRIL | WEATHER | |
| | BREAK | BAKER | |
| | TASTE | DEED | |
| | THEY | DEEP | |
| | WEIGH | EAT | |

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## INTERNET SOURCES

Watchtower library, www.watchtower.org

http://www.developingteachers.com/articles_tchtraining//pron3_dimitrios.htm

http://www.umanitoba.ca/faculties/arts/linguistics/russell/138/sec1/vowels.htm

http://en.wikipedia.org/wiki/Vowel

http://www.phonetics.ucla.edu/vowels/chapter3/bbcenglish.html

http://www.fonetiks.org/engsou2am.html

http://www.yorku.ca/earmstro/journey/articulation.html#jaw

http://www.sml.hw.ac.uk/lanje1/Phon1/EnglishVowels1.htm

# GLOSSARY

**Accents:** They are pronounced differently by people from different geographical places, from different social classes, of different ages and different educational backgrounds.

**Back vowels:** Vowels in which the body of the tongue is in the back part of the mouth. English example: /u/.

**Dialect:** A variety of a language which is different from others not jus in pronunciation but also in such matters as vocabulary, grammar, and word order.

**Front vowels:** Vowels in which the body of the tongue is in the front part of the mouth. English example: /i/.

**Glide:** (manner of articulation). A sound characterized by a smooth, rapid transition between two different vowels sounds. Also called semivowels. There are two Arabic examples: /w/ and /y/.

**High Vowels:** Vowels in which the body of the tongue is raised. English examples: /i/ and /u/.

**Low Vowels:** Vowels in which the body of the tongue is lowered. English example: /u/.

**Nasal:** (manner of articulation): A sound produced by air flow going through the nose. English examples: /m/ and /n/.

**Pharyngeal:** (point of articulation): A sound produced by retracting the base of the tongue and constricting the pharynx.

**Voiced:** A sound produced by vibrating the vocal cords. English examples: /m/, /v/, and /z/.

**Voiceless:**     A sound produced without vibrating the vocal cords. English examples:  /k/, /h/, and /th/.

# ANNEX

Words that were used for the Sound Discrimination Test part 1

21. bad     bad
22. least    list
23. clock    clock
24. seat     sit
25. band     band
26. heat     hit
27. feet     fit
28. flap     flop
29. desk     desk
30. lift     lift

SECOND PART In order to realize if the students were able to differentiate these pairs of words at the beginning I taught them the vocabulary of the following five words.

2.     BUS          BOSS
       CAT          CUT
       CORE         CAR
       FAX          FOX
       PAN          PEN

Then, I took the words for the second part of the test:

Boss
Cut
Core
Fox
Pan

The third stage was longer, but also the most important part of the test.
The following list was read to the students in a different order so that the students
can differentiate and discriminate the spoken English.

| | | |
|---|---|---|
| 1. END | AND |
| 2. LEAVE | LIVE |
| 3. FOOL | FULL |
| 4. SIT | SET |
| 5. BEAN | BIN |
| 6. COP | CUP |
| 7. COST | COAST |
| 8. COT | CUT |
| 9. DEAL | DILL |
| 10. DECK | DUCK |
| 11. DUG | DOG |
| 12. EAT | IT |
| 13. FEET | FIT |
| 14. FELL | FILL |
| 15. FUND | FOND |
| 16. FUR | FAR |
| 17. HAD | HEAD |
| 18. HEAT | HIT |
| 19. HULL | HALL |
| 20. HUT | HOT |
| 21. KNOW | NOW |
| 22. LEAST | LIST |
| 23. LUCK | LOCK |
| 24. NEAT | KNIT |
| 25. NUT | NOT |
| 26. POOL | PULL |
| 27. PUP | POP |
| 28. SLEEP | SLIP |
| 29. BLUE | BLOOD |
| 30. WRIST | REST |
| 31. BLUE | BLOOD |
| 32. HARD | HEARD |
| 33. HOB | HUB |
| 34. DEEP | DIP |
| 35. MET | MAT |

# SOUND DISCRIMINATION TEST
# ANSWERING SHEET

NAME: _____

DATE: _____

COURSE: _____

| # | A | B | C | | # | A | B | C | | # | A | B | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ● | B | ● | | 16 | ● | ● | C | | 31 | A | ● | ● |
| 2 | A | ● | ● | | 17 | A | ● | ● | | 32 | ● | B | ● |
| 3 | ● | ● | C | | 18 | ● | ● | C | | 33 | ● | B | ● |
| 4 | ● | ● | C | | 19 | A | ● | ● | | 34 | ● | ● | C |
| 5 | A | ● | ● | | 20 | A | ● | ● | | 35 | ● | ● | C |
| 6 | A | ● | ● | | 21 | A | ● | ● | | | | | |
| 7 | ● | B | ● | | 22 | ● | B | ● | | | | | |
| 8 | A | ● | ● | | 23 | A | ● | ● | | | | | |
| 9 | ● | B | ● | | 24 | ● | ● | C | | | | | |
| 10 | A | ● | ● | | 25 | ● | B | ● | | | | | |
| 11 | ● | ● | C | | 26 | ● | ● | C | | | | | |
| 12 | ● | B | ● | | 27 | ● | ● | C | | | | | |
| 13 | ● | B | ● | | 28 | A | ● | ● | | | | | |
| 14 | ● | B | ● | | 29 | ● | B | ● | | | | | |
| 15 | ● | ● | C | | 30 | ● | ● | C | | | | | |