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وزارة التّعليم العالي والبحث العلمي
المركز الجامعيّ مغنيّة
معهد الآداب واللّغات
المجلس العلمي

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رئيس المجلس العلمي

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سُلّم هذا المستخرج للمعني بناء على طلبه، لاستعماله في حدود ما يسمح به القانون.

الجمهورية الجزائرية الديمقراطية الشعبية
People's Democratic Republic of Algeria
وزارة التعليم العالي والبحث العلمي
Ministry of Higher Education & Scientific Research
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Maghnia University Centre
معهد الآداب و اللغات
Institute of Letters and Languages
قسم اللغة الانجليزية
Department of English Language

Introducing Phonetics for first year Students of English

A Pedagogical Handout Prepared by
Dr Nisrine SAHNOUNE
Maître de Conférences "B"

Academic Year
- 2023/2024 –

List of Tables

Table 3.1: Three Criteria of Consonant Sounds 44

Table 3.2: Place and Manner of Articulation of the English Consonant Sounds 45

Table 3.3: Description of Short and Long Vowel Sounds 55

Table 3.4: Description of Diphthongs 58

Table 3.5: Description of Triphthongs 59


List of Figures

Figure 1.1: Speech Sounds Articulation 13

Figure 1.2: Waveform of Speech Sounds 14

Figure 1.3: Auditory System 14

Figure 1.4: International Phonetic Alphabets 16

Figure 1.5: Diacritics 17

Figure 1.6: Vowels 17

Figure 2.1: The Stages of Speech Production 20

Figure 2.2: The Respiratory Mechanism (Roach 2009, 25) 21

Figure 2.3: Pressure and Suction Varieties of /f/ 21

Figure 2.4: The Laryngeal Mechanism (Roach 2009: 25) 22

Figure 2.5: The Actions of the Vocal Folds (Roach, 2009) 23

Figure 2.6: The Oro-nasal System (Roach 2009: 25) 24

Figure 2.7: Vocal Cords Drawn Wide Apart 25

Figure 2.8: Vocal Cords Held Loosely Together 26

Figure 2.9: Vocal Cords Held Tightly Together 26

Figure 2.10: Velic Closure and Velar Closure 29

Figure 2.11: State of the Soft Palate 29

Figure 2.12: The Anatomy of the Tongue "Roach; 2009" 31

Figure 2.13: The Movable Organs 32

Figure 2.14: Organs of Speech 33

Figure 3.1: The Shapes of the Lips for Vowels Sounds 52

Figure 3.2: English Vowel Chart 53

Figure 3.3: English Long and Short Vowels Chart 54

Figure 3.4: The Tree of Diphthongs (Roach: 2009: 27) 55
Figure 3.5: Gliding Movements of the Centring Diphthongs (Roach: 2009) 56
Figure 3.6: The Gliding Movements of the Closing Diphthongs (Roach: 2009) 57
Figure 3.7: Gliding Movement of the Triphthongs 58
Figure 4.1: Dark 'l' [ɬ] 64
Figure 4.2: Clear 'l' [l] 64

Table of contents

List of Tables i
List of Figures ii
Table of Contents iv
Introduction 1
Introducing Phonetics 4
Course Information 4
Phonetics Course Handout 1& 2 Semesters Repartition 5
Module Description and Syllabus 7
Module Description 7
Assessment 7
Assignment Descriptions 8
Homework: 8
Syllabus of Semester 1&2 9
Semester 1&2 Introducing Phonetics 10
Unit one: Introduction to Phonetics 11
Learning Objectives 11
1. Introduction 11
2. Definition of Phonetics 12
3. Branches of Phonetics 13
3.1 Articulatory Phonetics: 13
3.2 Acoustic Phonetics: 14
3.3 Auditory Phonetics: 14
4. Sound System and Spelling 15
5. International Phonetic Alphabet 15
6. Summary 17
7. Practice 18
Unit Two: The Organs of Speech 20
Learning Objectives 20
1. Introduction 20
2. The Respiratory System 21

3. The Phonatory System 22
3.1 The Larynx 25
3.2 Vocal Cords Drawn Wide Apart 25
3.3 Vocal Cords Held Loosely Together 26
3.4 Vocal Cords Held Tightly Together 26
3.5 The State of the Glottis 27
4. The Articulatory System 27
4.1 The Pharynx: 28
4.2 The Lips 28
4.3 The Teeth 28
4.4 The Alveolar Ridge 28
4.5 The Hard Palate 28
4.6 The Soft Palate or Velum 29
4.7 The Uvula 30
4.8 The Tongue 30
5. Active and Passive Articulators 31
6. Summary 33
7. Practice 34
Unit three: The Description and Classification of Speech Sounds 36
Learning Objectives 36
1. Introduction 36
2. Differences between Vowels and Consonants 37
Section1: The Description and Classification of Consonants 39
Learning Objectives 39
1. Introduction 39
2. Place of Articulation 40
3. Manner of Articulation 40
4. Voicing 44
5. Summary 45
6. Practice 45
Section Two: The Description and Classification of Vowels 50

Learning Objectives 50
1. Introduction 50
2. Description of Vowels Quality 50
3. Classifications of Vowels 52
Unit Four: Introduction to Transcription 62
Learning Objective 62
1. Introduction to Transcription 62
2. Broad Transcription 62
3. Narrow Transcription 63
4. Phonemic vs Phonetic Transcription 63
5. Phonemes, Allophones and Minimal Pairs 64
5.1. Phonemes 64
5.2. Allophones 65
5.3 Minimal pairs: 65
6. Summary 65
7. Practice 65
Conclusion 68
Bibliography 69
2nd Semester Assessment for Final Project 71
Exemplars of Official Exams 73

Bibliography

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List of Tables

Table 3.1: Three Criteria of Consonant Sounds 44

Table 3.2: Place and Manner of Articulation of the English Consonant Sounds 45

Table 3.3: Description of Short and Long Vowel Sounds 55

Table 3.4: Description of Diphthongs 58

Table 3.5: Description of Triphthongs 59

List of Figures

Figure 1.1: Speech Sounds Articulation 13
Figure 1.2: Waveform of Speech Sounds 14
Figure 1.3: Auditory System 14
Figure 1.4: International Phonetic Alphabets 16
Figure 1.5: Diacritics 17
Figure 1.6: Vowels 17
Figure 2.1: The Stages of Speech Production 20
Figure 2.2: The Respiratory Mechanism (Roach 2009, 25) 21
Figure 2.3: Pressure and Suction Varieties of /f/ 21
Figure 2.4: The Laryngeal Mechanism (Roach 2009: 25) 22
Figure 2.5: The Actions of the Vocal Folds (Roach, 2009) 23
Figure 2.6: The Oro-nasal System (Roach 2009: 25) 24
Figure 2.7: Vocal Cords Drawn Wide Apart 25
Figure 2.8: Vocal Cords Held Loosely Together 26
Figure 2.9: Vocal Cords Held Tightly Together 26
Figure 2.10: Velic Closure and Velar Closure 29
Figure 2.11: State of the Soft Palate 29
Figure 2.12: The Anatomy of the Tongue “Roach; 2009” 31
Figure 2.13: The Movable Organs 32
Figure 2.14: Organs of Speech 33
Figure 3.1: The Shapes of the Lips for Vowels Sounds 52
Figure 3.2: English Vowel Chart 53
Figure 3.3: English Long and Short Vowels Chart 54

Figure 3.4: The Tree of Diphthongs (Roach: 2009: 27).....55
Figure 3.5: Gliding Movements of the Centring Diphthongs (Roach: 2009) 56
Figure 3.6: The Gliding Movements of the Closing Diphthongs (Roach: 2009).....57
Figure 3.7: Gliding Movement of the Triphthongs 58
Figure 4.1: Dark ‘l’ [ɬ] 64
Figure 4.2: Clear ‘l’ [l] 64

Table of contents

List of Tables i
List of Figures ii
Table of Contents iv
Introduction 1
Introducing Phonetics 4
Course Information 4
Phonetics Course Handout 1& 2 Semesters Repartition 5
Module Description and Syllabus 7
Module Description 7
Assessment 7
Assignment Descriptions 8
Homework: 8
Syllabus of Semester 1&2 9
Semester 1&2 Introducing Phonetics 10
Unit one: Introduction to Phonetics 11
Learning Objectives 11
1. Introduction 11
2. Definition of Phonetics 12
3. Branches of Phonetics 13
3.1 Articulatory Phonetics: 13
3.2 Acoustic Phonetics: 14
3.3 Auditory Phonetics: 14
4. Sound System and Spelling 15
5. International Phonetic Alphabet 15
6. Summary 17
7. Practice 18
Unit Two: The Organs of Speech 20
Learning Objectives 20
1. Introduction 20
2. The Respiratory System 21

3. The Phonatory System 22
3.1 The Larynx.....25
3.2 Vocal Cords Drawn Wide Apart.....25
3.3 Vocal Cords Held Loosely Together 26
3.4 Vocal Cords Held Tightly Together 26
3.5 The State of the Glottis 27
4. The Articulatory System 27
4.1 The Pharynx:.....28
4.2 The Lips 28
4.3 The Teeth 28
4.4 The Alveolar Ridge.....28
4.5 The Hard Palate 28
4.6 The Soft Palate or Velum 29
4.7 The Uvula 30
4.8 The Tongue 30
5. Active and Passive Articulators 31
6. Summary 33
7. Practice 34
Unit three: The Description and Classification of Speech Sounds 36
Learning Objectives 36
1. Introduction 36
2. Differences between Vowels and Consonants 37
Section1: The Description and Classification of Consonants 39
Learning Objectives 39
1. Introduction.....39
2. Place of Articulation 40
3. Manner of Articulation 40
4. Voicing.....44
5. Summary 45
6. Practice.....45
Section Two: The Description and Classification of Vowels 50

Learning Objectives 50
1. Introduction 50
2. Description of Vowels Quality 50
3. Classifications of Vowels 52
Unit Four: Introduction to Transcription 62
Learning Objective 62
1. Introduction to Transcription 62
2. Broad Transcription 62
3. Narrow Transcription 63
4. Phonemic vs Phonetic Transcription 63
5. Phonemes, Allophones and Minimal Pairs 64
5.1. Phonemes 64
5.2. Allophones 65
5.3 Minimal pairs: 65
6. Summary 65
7. Practice 65
Conclusion 68
Bibliography 69
2nd Semester Assessment for Final Project 71
Exemplars of Official Exams 73

Introduction

Phonetics, at the license level, is going to revolve around the students' ability to attain a proficient pronunciation which serves as a benchmark for their language mastery. However, many students fail to master to the point of native-like phonetics competence. This is partly because of the physiological constraints that make the pronunciation of the English language sound different from that of speakers' native language and partly due to the lack of appropriate training in phonetics courses. In phonetics, learning objectives can be divided into three subcategories: description of speech sounds or perception goals (knowledge), how to produce speech sounds or production (skills), and attitudes toward variations of speech sounds or larger-scale categories of variation (attitudes).

Phonetics is a systematic view of all the sounds found in human languages. The focus of phonetics is not confined to the sounds themselves but also to the way these sounds are articulated, perceived and practised in conversation by the speaker. Therefore, it is an essential study for exposure to the English language by studying different aspects of speech sounds. It is important to discuss how our students speak and use their voices in classrooms. To re-establish the role of phonetics in language teaching, we need to build new practices based on recent advances in phonetic knowledge. In phonetics, students should familiarise themselves with the fundamental properties of speech sounds to enhance their comprehension of spoken languages.

Many linguists agree that "Correct pronunciation is very important in learning English as a foreign language," which suggests the need for more fundamental, varied and efficient techniques used in the class to enhance this procedure. Teaching phonetics to (EFL) students can be challenging. Since EFL students' interest in learning the pronunciation of English sounds is generally low, it makes them less motivated to learn the sounds. Additionally, it is often difficult for these students to link the sounds of the English language with their corresponding written symbols. In the classroom, students should be given maximum practice to speak, whenever there is scope (rather than only listening to their

teachers' speech). Students should also learn strategies to speed up and to be effective listeners and speakers. They should learn how to read in a meaningful, useful and quick manner.

The primary objective of this document is to provide students with foundational insights into the sound system of the English language, empowering them to proficiently articulate English phonetic sounds. Furthermore, gradually incorporating lectures, beginning with foundational concepts and progressing to more complex ones, will ultimately equip students to communicate effectively in both spoken and written forms, comprehend proficiently in listening and reading. Thus, the lectures aspire to empower students with the requisite knowledge and abilities to proficiently engage in EFL pronunciation across all language skills and functions. In summary, this document aims to assist students in achieving the following overarching goals:

- Students will be able to understand the principles and develop skills behind the IPA's design and its usefulness in phonetic transcribing speech for both narrow (phonetic) and broad (phonemic) transcription.
- Students will be able to develop pronunciation through the study of the organs of speech, the manner and place of articulation. They will be able to apply some rules of positioning the mouth correctly so that the sounds are produced in a more understandable way.
- Students will be able to gain new sound acquisitions through practical exposure by using modern technological auditory means to conduct basic phonetic experiments and analyses to investigate questions about speech sounds which can give information about different English accents.
- Students will gain the capacity to examine speech sounds comprehensively, encompassing their production, perceptual traits, and the characteristics of consonants and vowels sounds, including both physiological aspects and the properties of the vocal tract.

- Students will be able to articulate new English sounds, intonate their English speech and grasp the rhythm of the language fluently and naturally.

As this handout is designed for L1 students and is accessible to those with basic knowledge of speech sounds, we aim to ensure that the definitions and explanations offered are both accurate and simplified and presented in a meaningful way, so they can serve as a useful aid to assist English learners in enhancing their communication skills.

Introducing Phonetics

Course Information

Semesters 1&2

Level: License 1

Type of Teaching Unit	
Fundamental	//////////////
Methodological	
Discovery	
Transversal	

Unit	22 Weeks	TD	Coefficient	Credits
Phonetics	**1 :30h**	**1 :30h per week**	**2**	**1**

Assessment modes	
Formative	**Examination**
50 %	**50 %**

Phonetics Course Handout 1& 2 Semesters Repartition

By Dr Nisrine SAHNOUNE

nismkedder@gmil.com

Month	Lecture	Illustration
October 1st week	Introduction to Phonetics	- Definition and Scope of Phonetics
October 2nd week	Branches of Phonetics	- Speech Sounds Production System Articulatory Phonetics Acoustic Phonetics Auditory Phonetics
October 3rd week	Speaking vs Writing	- Sound System and Spelling - International Phonetic Alphabet
October 4th week	Anatomy and Physiology of Speech Production / Speech Organs	-The Respiratory System -The Phonatory System
November 1st week		- The Articulatory System
November 2nd week		-Active and Passive Articulators
November 3rd week	The Description and Classification of Speech sounds	- The Differences in Production and Function of Vowels versus Consonants.
November 4th week	The Description and Classification of Consonants	-Place of Articulation
December 1st week		-Manner of Articulation
December 2nd week		-Voicing

January 4th week		-Exercises on Recognizing and Producing Consonant Sounds
February 1st week	The Description and Classification of Vowels	1. Definition 2. Description of vowels Quality
February 2nd week		Monophthongs/ Pure vowels - Short Vowels - Long Vowels
February 3rd week		-Diphthongs -Closing Diphthongs - Centring Diphthongs
February 4th week		-Triphthongs
Mars 1st week	Introduction to Transcription	-Definition of Transcription -Transcription Types - Broad Transcription - Narrow Transcription
Mars 2nd week		-Phonemic vs Phonetic Transcription
Mars 3rd week		-Phonemes, Allophones and minimal Pairs
April 3rd week		-A selected Short Activities
April 4th week	Final Project Presentations	-Discussion on Phonetic Variation and its Implications
May 1st week		-Project Submission and Presentation

Module Description and Syllabus

Instructor Dr Nisrine SAHNOUNE
Contact nimkedder@gmil.com
Time **Every Tuesday, 10:00-11:30 pm**

Module description

This module is designed for first-year English students who are preparing for their Licenses' degree. The main aim of this module is to provide students with a comprehensive understanding of the sounds of human speech, including their production, classification, and transcription. In addition, it involves studying the physical properties of speech sounds, such as articulation (how sounds are made using the vocal tract), as well as the acoustic properties of those sounds (how they are perceived and analysed). Weekly lectures will introduce students to sound production to help them understand how speech sounds are physically produced by the articulatory organs (mouth, tongue, lips, etc.) and how different sounds are formed, in which they are strongly advised to develop their critical listening skills to be able to analyse and identify speech sounds in the English language and to represent the sounds of language in written form. The overall aim of lectures, the students are required to be equipped with the foundational knowledge and skills necessary for understanding the structure and production of speech sounds, which is essential for various academic and professional pursuits in linguistics, language teaching, speech pathology, and related fields. This module also requires a commitment to developing strong Communication Skills that will Enhance students' overall communication skills by improving their pronunciation, articulation, and phonemic awareness.

Assessment

Regular attendance and participation in discussions and presentations (25%)
Homework, practical exercises and transcription exercises (25%)
Test (50%)

Assignment Descriptions

Regular attendance and active participation

Students are expected to regularly attend classes, punctually arrive for each session without habitual tardiness and engage actively in discussions all lectures as outlined in the course.

Homework:

Phonetics and Language Variation

Based on a suggested *Investigating Dialect Variation* (particularly between speaker groups: sociolect, gender, age, etc.) provided by the teacher in the domain of phonetics, is an important area of scientific phonetic study. Introducing students to phonetic variation allows for richer connections between theory and students' intuitions about their language and the world around them. They should understand the concept of phonetic variation, including how speech sounds can vary due to factors like regional accents, social factors, and individual differences. The goal of developing research skills in phonetics is to provide students with a thorough understanding of the sounds of human speech perception or production phenomena and the ability to analyse and describe those sounds systematically:

- Explore how speech sounds vary across different dialects and accents
- Understand the social and linguistic factors that influence phonetic variation
- Develop awareness of one's speech patterns and how they may differ from those of others

Determining how phonetic variation is significant in real-world applications forms part of the extended goal of first-year phonetics curricula. you will have an assignment to do before a given deadline **(homework submitted after the deadline will not be approved!).** With these challenges in mind, pedagogical goals for first-year phonetics students will be covered over six classroom contact hours:

1. Establishing the importance of the International Phonetic Alphabet for accurate transcription.
2. Familiarizing students with cardinal vowel placement.
3. Working towards phonetic and phonemic understanding.
4. Exploring variation in fricative articulation.
5. Describing manners of articulation.
6. Exploring vocal fold phenomena.

Test Announcement: A written activity covering material from previous lessons. (Please note that the test date will be communicated to you two weeks in advance, and the test will not be rescheduled, so attendance is crucial).

Syllabus of Semester 1&2

Unit 1: Introduction to Phonetics
Unit 2: The Organs of Speech
Unit 3: The Description and Classification of Speech Sounds
Section 1: The Description and Classification of Consonant Sounds
Section 2: The Description and Classification of Vowel Sounds
Unit 4: Introduction to Transcription

Semester 1&2
Introducing Phonetics

Unit one: Introduction to Phonetics

Learning Objectives

1/ By the end of the session, the students will be able to learn the International Phonetic Alphabet (IPA) and its symbols for representing speech sounds. They will be able to transcribe words and phrases accurately using IPA symbols.

2/ Student will be able to understand the physiological mechanisms involved in speech production, learn how different speech sounds are produced by the articulators (lips, tongue, teeth etc.) and analyse the movements and positions of articulators during speech.

3/Students will be able to study the physical properties of sound waves produced during speech.

4/Students will be able to understand how the human auditory system perceives speech sounds and learn about auditory processing and perceptual mechanisms involved in speech perception.

1. Introduction

Phonetics is the science that studies the production, transmission and reception of speech sounds. It can be defined as the scientific study of sound. Greek philosopher Plato has been called the father of speech pathology. Aristotle dealt with speech sounds in his problem pages. He identified the stops, fricatives, vowels, nasals, and voiced and voiceless consonants. He noted that the tongue and what lay on the roof of the mouth were responsible for the production of speech sounds. With these, he became the father of phonetics. A phonetician is a person who is involved in the scientific study of sound. A phoneme is the smallest unit in the sound system of a language that can differentiate word meaning.

In this unit, we are going to get in touch with the branch of phonetics; sound system and spelling and International Phonetic Alphabet. With the help of phonetics, we can understand how sounds are produced and articulated. This is important for us, as students

of English language, because knowing phonetics helps us pronounce and spell difficult words. Under this unit, we will introduce ourselves with the sound system of English. By the end of this unit, we will have a basic understanding of phonetics, which we shall need throughout this course.

2. Definition of Phonetics

The English word 'phonetics' is derived from the Greek word (phone), a phone can be called any sound, irrespective of its nature. By definition, phonetics is the scientific study of the sounds of language and is largely descriptive (observing how different languages and accents sound). It's part of linguistics (the scientific study of language), it is the study of the speech sounds used in the languages of the world, how they are produced by the articulators of the human vocal tract, how they are realized acoustically, and how this acoustic realization can be digitized and processed. It is defined by Crystal (2003:349) as:

> "[t]he science which studies the characteristics of human sound-making, especially those sounds needed in speech, and provide methods for their description, classification and transcription."

In language, we use a variety of sounds, but we may not be aware of how many types of sounds are used or how they are formed. Speech sounds are produced naturally and implicitly in the atmosphere during the physical process. Sometimes, we may have difficulty understanding these speech sounds. We use different ways to produce sounds, and their qualities can vary. These differences are called phonetics. These speech sounds help us understand each other's meaning and communicate.

3. Branches of Phonetics

3.1 Articulatory phonetics: focuses on how the vocal tract produces the sounds of language. In other words, it is the study of the way speech sounds are made (articulated) by the speech organs (articulators)i.e., the speaker's vocal tract.

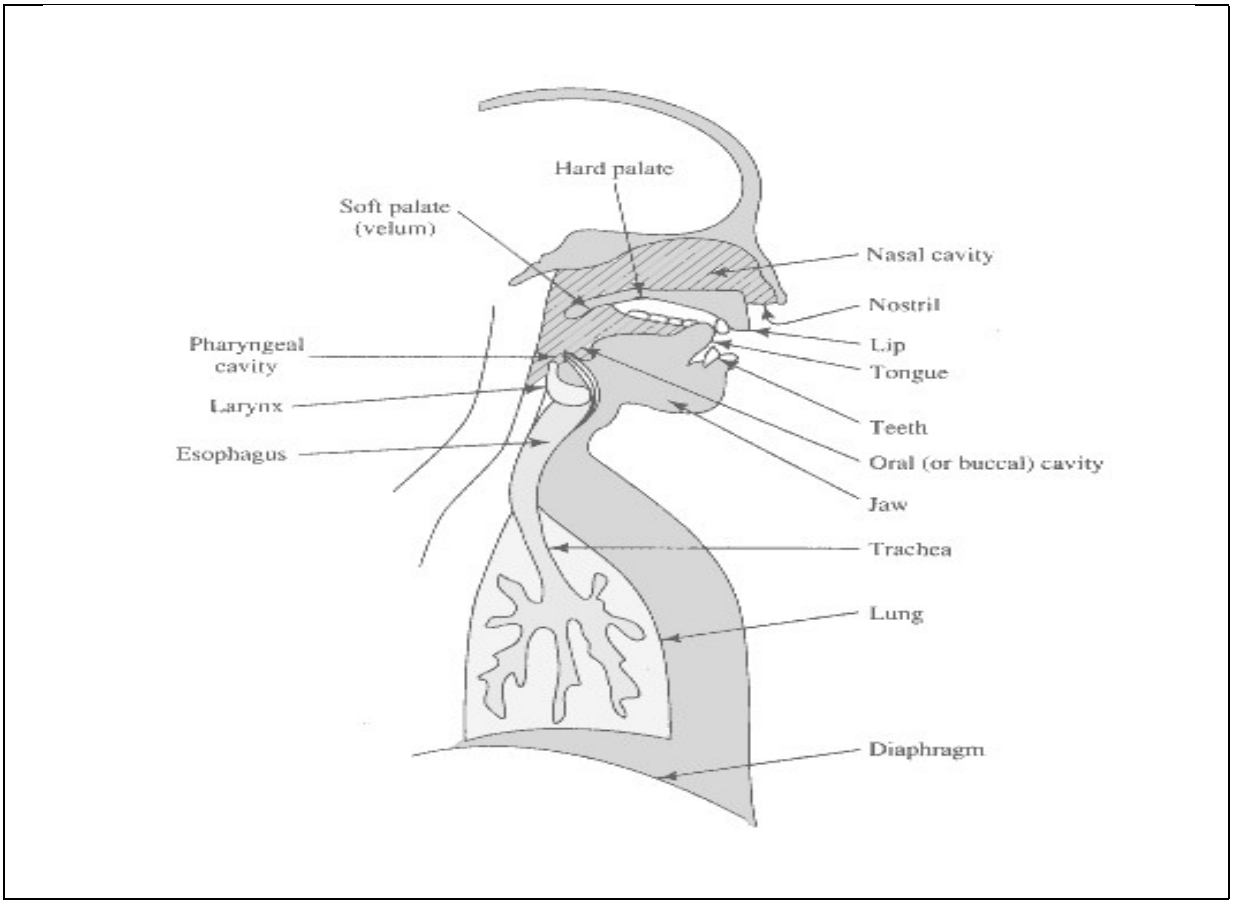


Figure 1.1: Speech Sounds Articulation

3.2 Acoustic phonetics: focuses on the physical properties of the sounds of language. For instance, Figure 2.2 represents the sound waves of the words "Father"

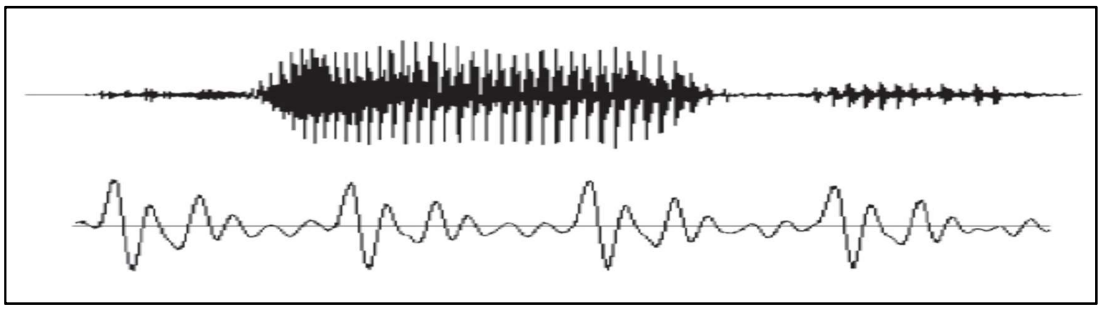


Figure 1.2: Waveform of Speech sounds

3.3 Auditory phonetics: focuses on how listeners perceive the sounds of language as mediated by the ear, auditory nerve and brain, i.e., the listener's brain.

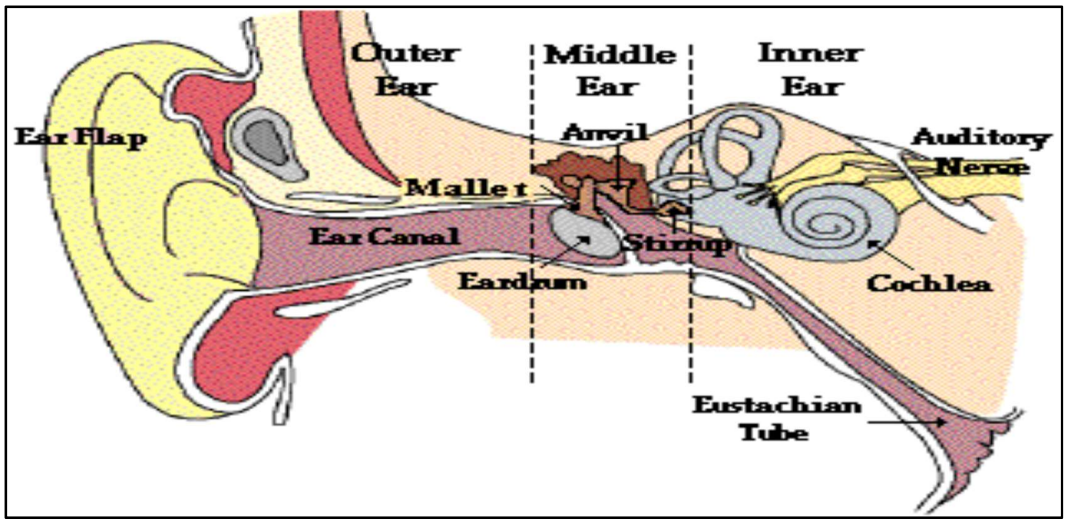


Figure 1.3: Auditory System

4. Sound System and Spelling

One should grasp that in studying phonetics, a crucial realization is that sound structure and spelling are distinct elements. Since there is a strong link between the sound system and spelling, it is important to make a clear distinction between the two aspects. The sound system is part of the phonetic aspect that focuses particularly on the speech sound system of a language. It deals with how speech sounds are organized into the sound system of a language, examining the meaningful and meaningless sounds (morpheme, syllable, consonant, vowel, tone, etc.); their underlying representations in morphological processes (like prefix, suffix, infix, and circumfix, etc.); how to spell them into their alphabetic symbols; as well as spelling. To cut a long story short, the sound system in phonetics is concerned with the speech sound system of a language (arbitrarily), designed ways of representing them, and underlying representations of speech sounds in morphological processes in a particular language/languages of the world/languages.

Phonetics is a "scientific study of speech sounds and the system of qualitatively and quantitatively describing them". The focus of phonetics is on the 'speech sounds', which are distinct from the written symbols or orthography. Phonetics is primarily concerned with 'how sounds are made'; later it could provide rules to spell those sounds into their written form. Since the concern on how sounds are spelt is a later stage of scientific inquiry, there are different kinds of writing systems in the world to spell speech sounds. The English language, for instance, uses an alphabetic system in which there is a one-to-one correspondence/symbol to represent one particular speech sound.

5. International Phonetic Alphabet

This system of phonetics notation founded in 1888, based primarily on the Latin alphabet. In order to represent modern British pronunciation as accurately and completely as possible, it has been necessary to use a considerably larger number of different symbols than were used in the transcriptions based on General British. There are some sixty vowel

sounds in the various regional accents of present-day British English, and about thirty different consonant sounds. To provide separate symbols for each of the sounds, the 400 or so different sounds that can be made with the organs of speech have been analysed into a set of distinct sounds, called phonemes, most of which are notated using letters taken over from the Roman alphabet.

The transcriptions included in the English Pronouncing Dictionary were made based on what was then called a General British pronunciation. Over the years, many of the pronunciations in the International Phonetic Alphabet (IPA) have changed, with the result that the transcriptions in the Dictionary do not always represent current British pronunciation. For example, the vowel sound in "cat" was then pronounced as in American English "cat," and the word "two" as "tyu." Thus, we transcribed the former as "ket" and the latter as "tu." The first of these has since changed to the American value, and the second to "t."

	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	ɴ		
Trill	ʙ			r					ʀ		
Tap or Flap		ⱱ		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	ʟ			

Figure 1.4: International phonetic Alphabets

Clicks		Voiced implosives		Ejectives	
ʘ	Bilabial	ɓ	Bilabial	ʼ	Examples:
ǀ	Dental	ɗ	Dental/alveolar	pʼ	Bilabial
ǃ	(Post)alveolar	ʄ	Palatal	tʼ	Dental/alveolar
ǂ	Palatoalveolar	ɠ	Velar	kʼ	Velar
ǁ	Alveolar lateral	ʛ	Uvular	sʼ	Alveolar fricative

Figure 1.5: Diacritics

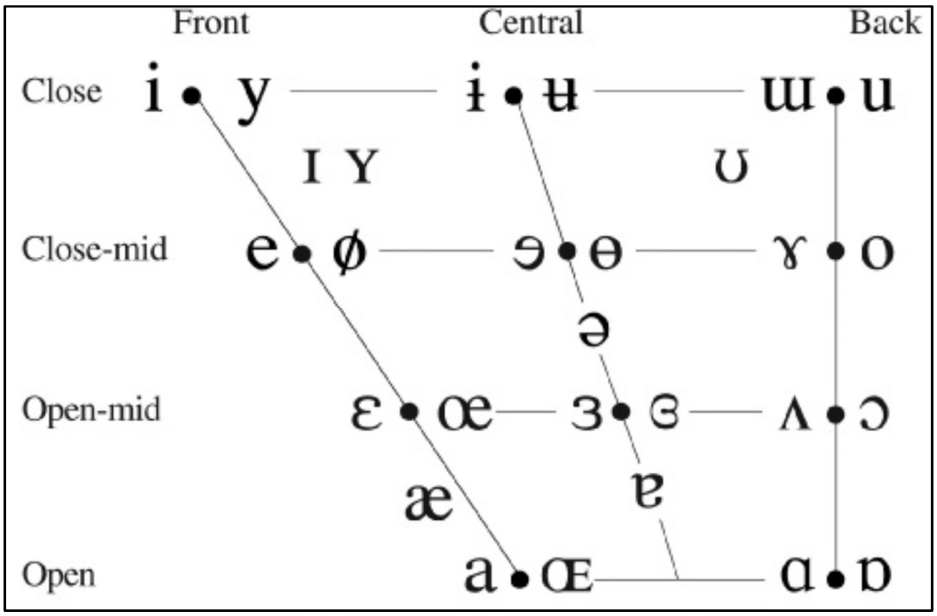


Figure 1.6: Vowels

6. Summary

Phonetics is defined as the branch of linguistic study that investigates the transmission of sounds produced by means of a circle between interlocutors. The circle can be of very variable proportions, be it one to one interaction or mass communication system. As a means of communication, language needs a sound mechanism for its transmission; and the importance of spoken transmission of sounds is major, especially since humans are

able to produce such a variety of sounds as in the vocalization system. Without the existence of oral communication, it would have been inconceivable for the human species to reach its current level of development. Articulatory phonetics is the study of the production and modelling of the production of speech sounds. It is often related to the study of mechanical and acoustic parameters of the adjustments and the sound signals resulting from these parameters' application during the production of such sounds.

The sound or auditory wave is the vibratory motion of the particles in an elastic medium. These particles are, say, pulled from their original positions, and then they strike their neighbour particles, the latter then regain their equilibrium, hence generating vibrations and spreading as waves. A sound wave is a longitudinal wave, meaning that the direction of propagation, determined by the mean movement of the particles, is parallel to the vibration of the particles themselves. The impact causing the vibration is nothing else than the difference in pressure or tension between the different zones where a sound wave is produced. In a medium consisting of several gaseous layers, during an acoustic disturbance, the air particles undergo rapid compression, generating an overpressure in the motion direction, followed by evaporation, thereby creating a pressure drop.

The next unit The following section will deal with an exploration of *The Organs of Speech,* outlining their distinct characteristics and how they contribute to speech production.

7. Practice

Task 1: Deepen your understanding of the various branches of phonetics and their practical applications

- ✓ Practice producing different speech sounds by manipulating your articulators (tongue, lips, palate, etc.).

- ✓ Record yourself pronouncing various sounds and analyse the articulatory movements involved.
- ✓ Listen to recordings of speech in different languages and transcribe them phonetically.
- ✓ Trace the historical development of specific sound changes in a language family.
- ✓ Research and present a report on the phonetic changes that have taken place in a particular language over time.
- ✓ Practice techniques for improving the English language articulation and pronunciation.

Task 2: Individual Work

1. Get ready to speculate on the topic
    - What objective (and subjective) factors cause the innovation processes in the evolution of the English language?
    - Is the worldwide spread of English a positive or negative process? »

Task 3: Create a table highlighting the main differences in the phonetic structure of the Arabic and English languages.

Task 4: INDIVIDUAL RESEARCH

1. Write a report on the topic: ***Speech Behaviour.***
    - «How does our background influence the way we speak? »,
    - «In what cases do people oppose the disclosure of their origins?

Unit Two: The Organs of Speech

Learning Objectives

This unit aims to familiarise learners with understanding the roles and functions of the anatomical structures and physiological processes involved in the production of speech, including respiration, phonation, and articulation.

1. Introduction

To produce any sounds, there must be some disruption in the air. Such disturbance, in the case of speech sounds, is provided by the movement of certain organs of the body such as the muscles of the chest, the vocal cords, the tongue, the lips, and so on. This disturbance, in the form of sound waves, travels to the ear of the listener, who interprets the waves as sounds. The organs of speech, and their speech functions, can best be described under three systems:

- The respiratory system,
- The Phonatory system,
- The articulatory system.

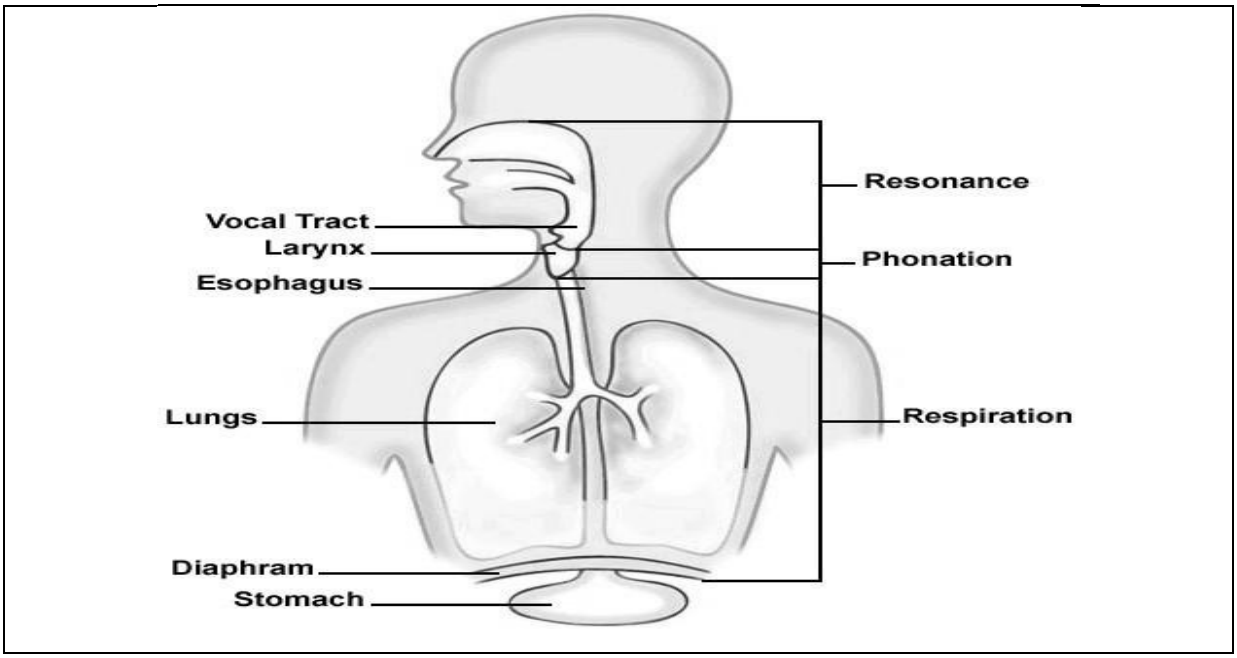


Figure 2.1: The Stages of Speech Production

2. The Respiratory System

The respiratory system comprises the lungs, the muscles of the chest, and the windpipe (also called the trachea). Through the process of breathing or respiration, when the lugs are compressed, the former process is breathing out or exhalation and the latter is breathing in, or inhalation. The respiratory system provides an airstream that acts as a source of energy.

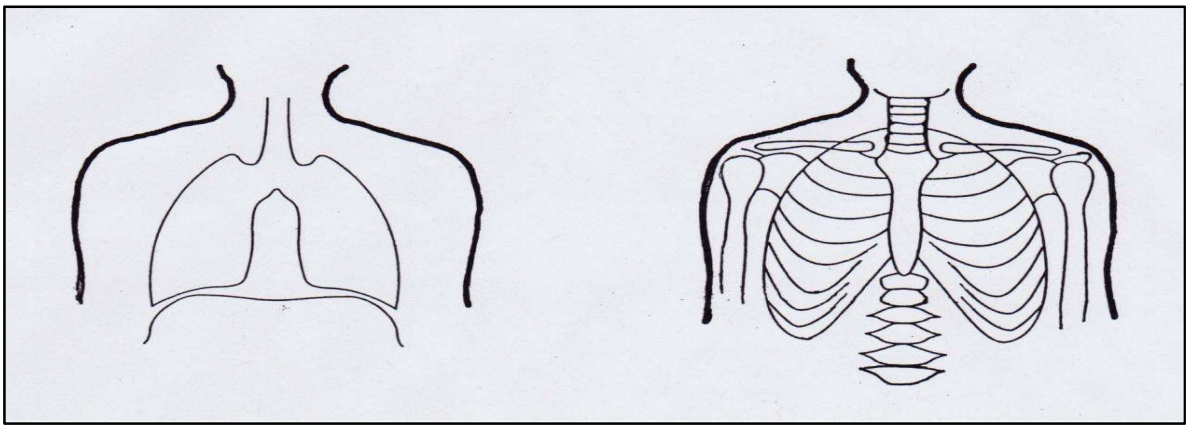


Figure 2.2: The Respiratory Mechanism (Roach 2009, 25)

Further, the airstream is initiated by the air exhaled from the lungs that is chiefly used for speech production. This airstream mechanism is called the pulmonic egressive airstream mechanism. (pulmonic is the adjective from lungs, and egressive airstream means the stream of air going out of the lungs through the trachea up into and out of the mouth and nose.)

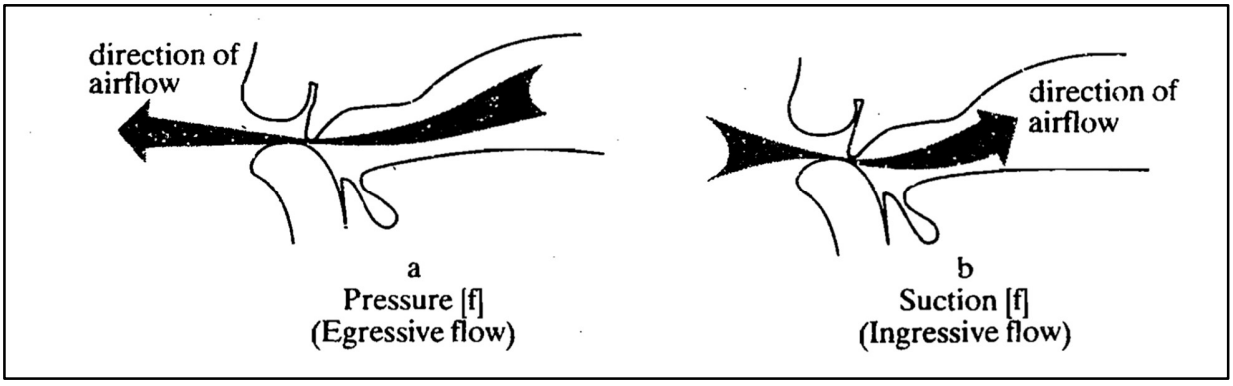


Figure 2.3: Pressure and suction varieties of /f/

3. The Phonatory System

The Phonatory system refers to the anatomical structures and physiological processes involved in generating voiced sounds or speech sounds with the vibration of the vocal cords. The phonation phase occurs within the laryngeal mechanism, with the larynx serving as the primary speech organ. Within the larynx are two horizontal folds of tissue known as the vocal folds, which create the glottis when separated. As air travels from the trachea, it reaches the larynx, marking the initial step in speech sound production within the vocal tract. The prominent Adam's apple, located at the front of the larynx, is notable in many individuals, particularly men. While anatomically complex, the larynx's relevance for speech sound production primarily centers on its mobility and the presence of two pairs of structures: the vocal folds and ventricular folds. The Vocal Folds, also referred to as Vocal Cords or Vocal Bands, are positioned horizontally within the larynx, with their front ends fused at the rear of the Adam's apple and their rear ends separated. This arrangement allows for various movements such as inward, outward, forward, backward, and slight tilting in different directions.

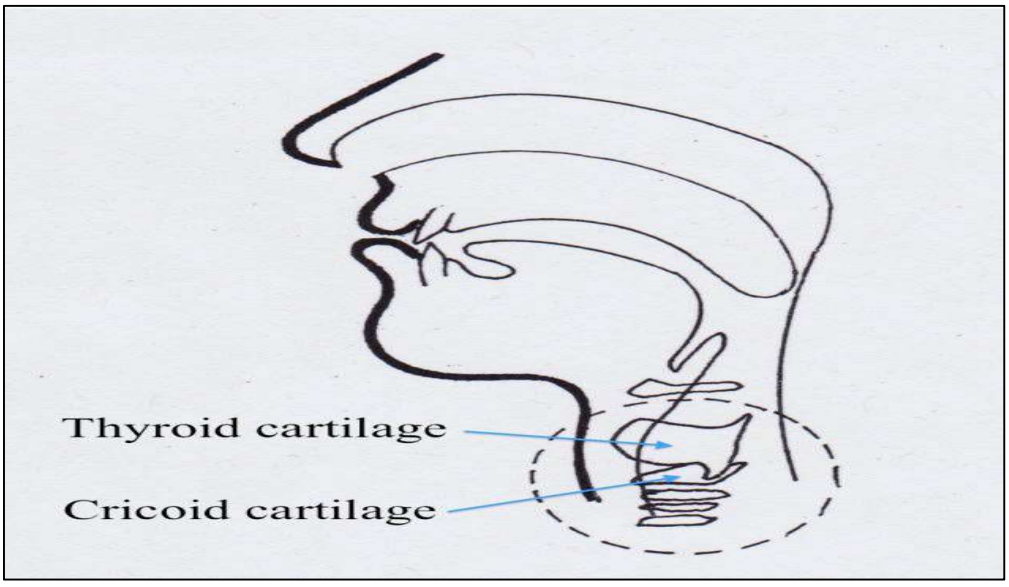


Figure 2.4: The Laryngeal Mechanism (Roach 2009: 25)

This system encompasses various components such as the larynx (voice box), vocal folds (vocal cords), glottis (the space between the vocal folds), and related muscles and cartilages. Phonation is the production by appropriate activities (vibrations, pulsations, etc.) of a waveform of the vocal cords that is normally perceived as voice, and it occurs sporadically as a character in the voice-related sounds of most languages.

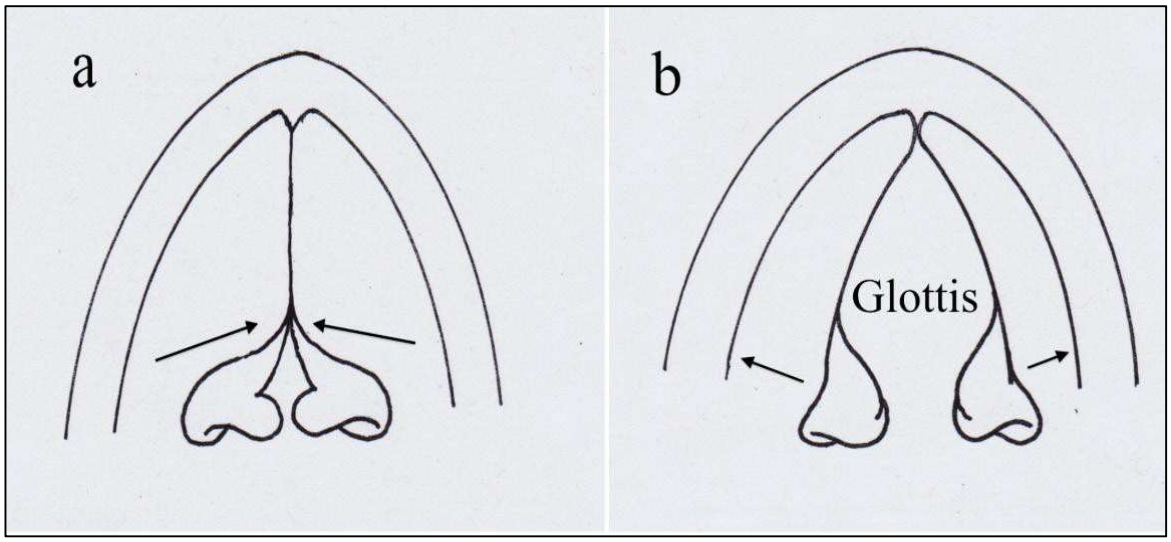


Figure 2.5: The Actions of the Vocal Folds (Roach, 2009)

During phonation, air from the lungs passes through the larynx, causing the vocal folds to vibrate. These vibrations generate sound, which can be modified further as it travels through the vocal tract. The Phonatory system plays a crucial role in speech production by providing the source of voice sounds, which are fundamental building blocks of human speech.

This stage of speech sound production involves controlling airflow in the upper vocal tract. Once air passes through the larynx and pharynx, it enters either the nasal or oral cavity. This process relies on the presence of the pharynx, which serves as an air passage during breathing and divides into two resonating cavities: the oral and nasal cavities. The soft palate plays a crucial role in this process by directing airflow into one of these cavities. When the soft palate is raised, it blocks airflow to the nasal cavity, allowing air to flow

solely through the oral cavity, producing oral sounds. Conversely, when the soft palate is lowered, airflow is directed through both cavities, resulting in air escaping through both the nostrils and mouth simultaneously, producing nasal sounds. Due to the unique acoustic properties of the nasal cavity, nasal sounds are relatively quieter compared to oral sounds. The distinction between nasal and oral sounds is made possible by the presence and interaction of the oral and nasal cavities.

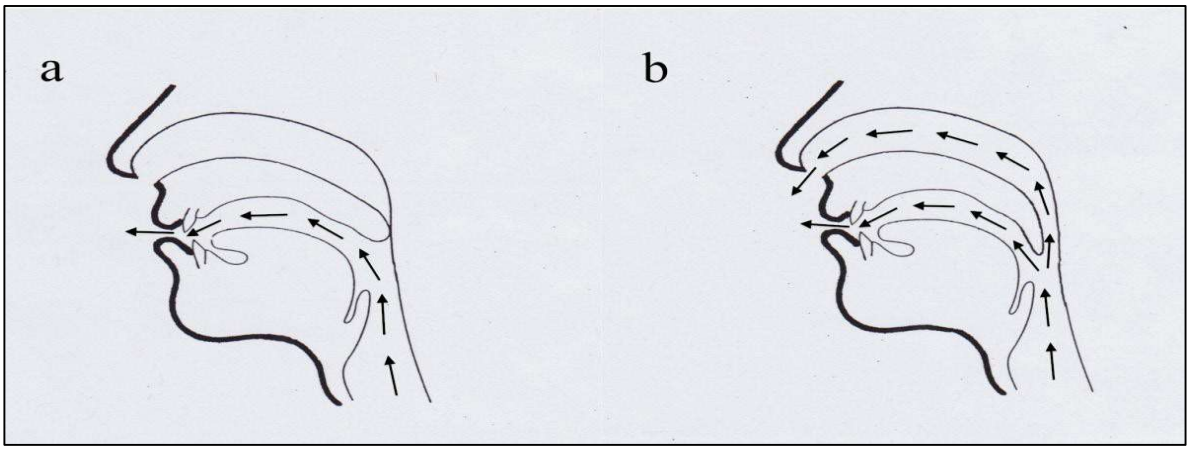


Figure 2.6: The Oro-nasal System (Roach 2009: 25)

The nasal cavity refers to the space within the nose where airflow passes during speech production. It plays a crucial role in producing nasal sounds, which are sounds where air escapes through the nose rather than solely through the mouth. The nasal cavity contains the nasal passages and nasal conchae, which help to modify the resonance of the sounds produced. Nasal sounds are produced by lowering the soft palate (velum) to allow air to pass through both the oral and nasal cavities simultaneously. Examples of nasal sounds in English include [m], [n], and [ŋ]. Whereas, the oral cavity refers to the space inside the mouth where speech sounds are formed. It includes the area from the lips to the back of the throat, encompassing various structures such as the tongue, teeth, hard palate, soft palate (velum), and uvula. The oral cavity plays a crucial role in articulating different sounds by controlling the airflow and shaping the resonance of the voice. It's essential for producing vowels and many consonants in human speech.

3.1 The Larynx

The function of the vocal folds is to regulate the airflow for phonation. During phonation, the vocal folds are set into vibration by exhalatory airflow occurring between the vocal folds. By tightening or loosening themselves, and by adjusting and adapting to the vocal tract, the vibrations are intensified, while the sound is transformed from one register to the other

3.2 Vocal Cords Drawn Wide Apart

During the process of breathing, if the **glottis** is open, i.e. if the vocal folds are drawn wide apart, the air passes freely through the glottis without causing the vocal folds to vibrate. Sounds produced in this way are called **voiceless.**

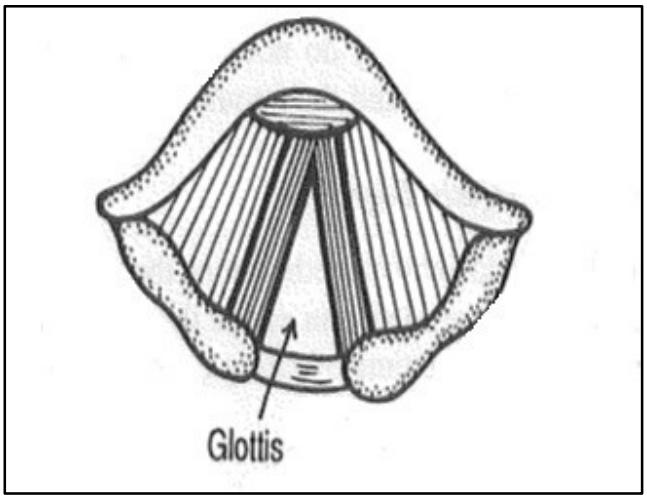


Figure 2.7: Vocal Cords Drawn Wide Apart

3.3 Vocal Cords Held Loosely Together

If the glottis is narrow, i.e. if the vocal folds are together, the airstream forces its way through and causes the vocal folds to **vibrate**. Sounds produced in this way are called **voiced**

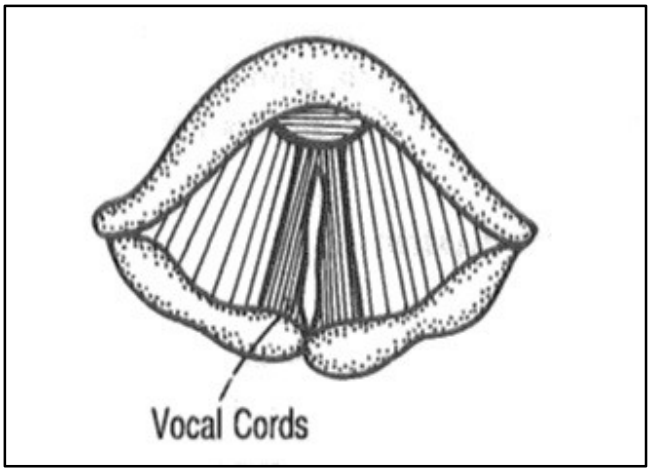


Figure 2.8: Vocal Cords Held Loosely Together

3.4 Vocal Cords Held Tightly Together

If the glottis is closed, i.e. the vocal folds are firmly pressed together, and the air stream is stopped completely. Such a glottal closure can produce only one sound called a glottal stop or glottal plosive **/ʔ/** as in: 'football' /fuʔbɔl/.

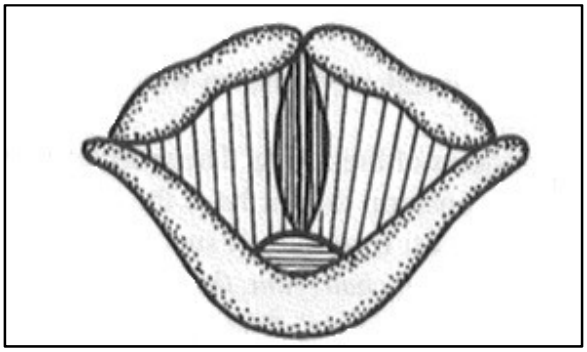


Figure 2.9: Vocal Cords Held Tightly Together

3.5 The State of the Glottis

The glottis, situated between the vocal folds within the larynx, plays a critical role in generating speech sounds. Its condition, whether fully open, closed, or somewhere in between, dictates both the airflow and vibration of the vocal folds, thereby influencing the resulting sounds. For instance, during voiced sounds, the glottis is partially shut to permit airflow and induce vibration of the vocal folds, producing sound. Conversely, during voiceless sounds, the glottis remains open, enabling airflow without vocal fold vibration. This precise control of airflow and vocal fold vibration is essential for generating a diverse array of sounds found in human speech.

- ✓ If the glottis makes the air move outwards, we speak of an **egressive glottalic** air-stream mechanism. A sound produced is called, **ejective.**
- ✓ If the glottis makes the air move inwards, we speak of an **ingressive glottalic** air-stream mechanism, and the sound is called **implosive.**

The distinction between voiceless and voice sounds can easily be felt in the case of the sounds that can be lengthened. The **s-**sound and the **z-**sound constitute one such pair. Put your finger on your Adam's apple, and produce a prolonged s-sound. You will feel no vibration on your finger. Now, perform the same experiment with the z-sound. This time you feel vibrations of vocal cords on the finger. Therefore, the z-sound is voiced and the s-sound is voiceless.

4. The Articulatory System

All the sounds we make when we speak are the result of muscles contracting. The muscles in the chest that we use for breathing produce the flow of air that is needed for almost all speech sounds; muscles in the **larynx** produce many different modifications in the flow of air from the chest to the mouth. After passing through the larynx, the air goes through what we call the **vocal tract,** which ends at the mouth and nostrils; we call the part comprising the mouth the **oral cavity** and the part that leads to the nostrils the **nasal cavity.**

4.1 The Pharynx:

The **pharynx**, starting just above the larynx, is a tubular structure split into two sections: one connecting to the rear of the oral cavity, and the other initiating the passage to the nasal cavity.

4.2 The Lips

The **lips** are important in speech. They can be pressed together (when we produce the sounds (**p, b**), brought into contact with the teeth (as in **f, v**), or rounded to produce the lip shape for vowels like **u:** Sounds in which the lips are in contact with each other are called **bilabial** while those with lip- to-teeth contact are called **labiodental.**

4.3 The Teeth

The **teeth** (upper and lower) are usually shown only at the front of the mouth, immediately behind the lips. The tongue is in contact with the upper side teeth for most speech sounds. Sounds made with the tongue touching the front teeth, such as English **T, D**, are called **dental.**

4.4 The Alveolar Ridge

The **alveolar ridge** is between the top front teeth and the hard palate. You can feel its shape with your tongue and is covered with little ridges. Sounds made with the tongue touching here (such as t, d, n) are called **alveolar.**

4.5 The Hard Palate

The **hard palate** is often called the "roof of the mouth". You can feel its smooth curved surface with your tongue. A consonant made with the tongue close to the hard palate is called **palatal.** The sound/ j/ in 'yes' is palatal.

4.6 The Soft Palate or Velum

The **soft palate** or **velum** is seen in a position that allows air to pass through the nose and through the mouth. In speech, it is often raised so that air cannot escape through the nose. The lower side of the soft palate is one of the articulators that can be in contact with the tongue. When we make the sounds k, g, and we call these **velar** consonants.

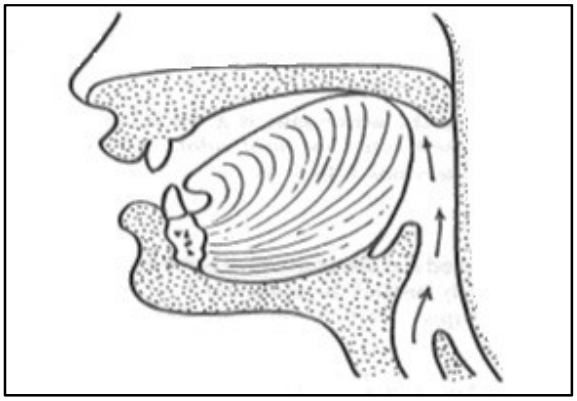


Figure 2.10: Velic Closure and Velar Closure

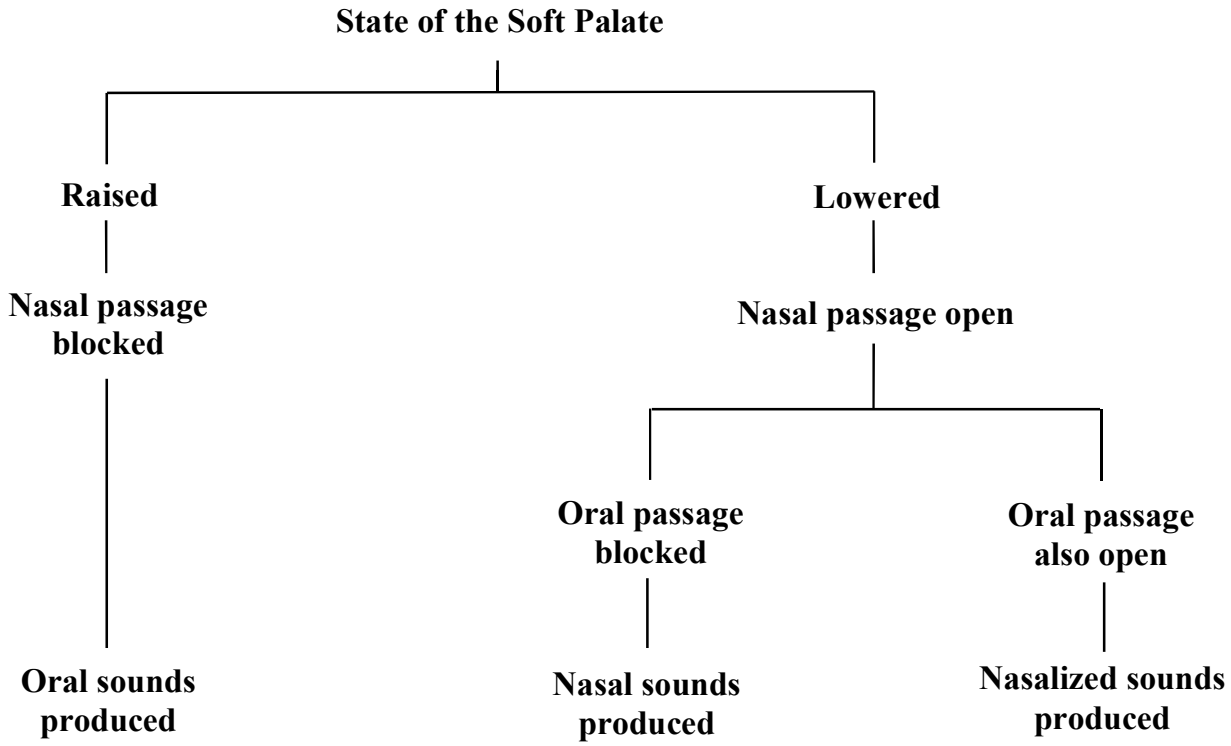


Figure 2.11: State of the Soft Palate

4.7 The Uvula

The **uvula** is one of the palate organs. It is a piece of flesh behind the velum. The uvula can function as a point of articulation if touched by the back of the tongue "dorsum) to produce sounds called uvular. This kind of sound does not exist in the English language.

4.8 The Tongue

The tongue is a very important articulator, capable of assuming various positions and shapes within the mouth. It's common to categorize the tongue into distinct sections, though there are no clear dividing lines within its structure. the tongue on a larger scale with these parts shown: **tip, blade, front, back** and **root.**

 The Tip "**Apex**": it is the very front part of the tongue and is very active as an articulator. It touches the alveolus as in **/t/** and comes between the upper and lower teeth.

 The Front "**Blade**": it is the area of the tongue between the apex and the middle of the tongue. The front of the tongue touches or approaches the parallel part of the palate when producing sound like **/y/**.

 The Centre: it is the area of the tongue between the front of the tongue and the back. It touches or approaches the palate upon articulating some sounds in some languages.

 The Back "**Dorsum**": it is the back part of the tongue. It usually touches or approaches the back part of the palate as in **/k/** and **/g/.**

 The Root: it is the farthest part of the tongue. It has a role in producing pharyngeal sounds like in Arabic language such as the number 9 but it has no role in English.

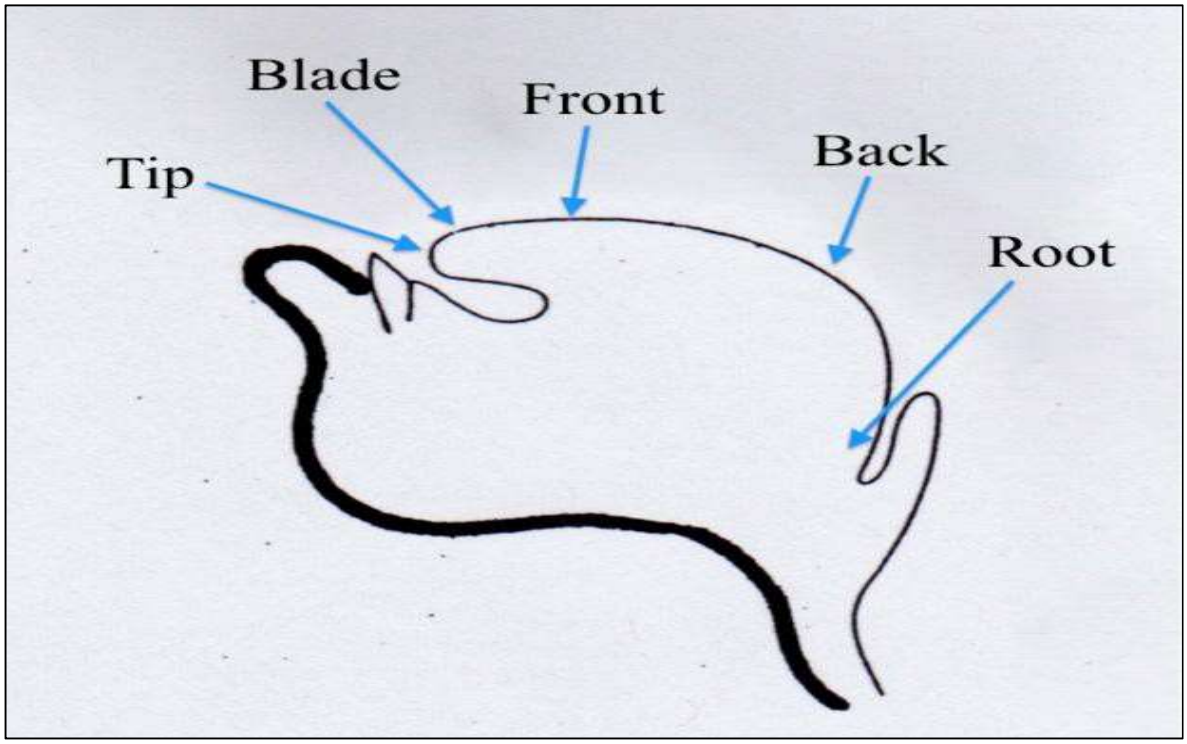


Figure 2.12: The Anatomy of the Tongue “Roach; 2009”

5. Active and Passive Articulators

EXAMPLE:

In the production of the **f**-sound as in the English word *fat,* the lower lip is the active articulator and the upper teeth are the passive articulator.

Active Organs: they are also called “flexible” organs of speech because they can be moved into contact with the other articulators.

- The lungs
- The vocal cords
- The tongue
- The soft palate (velum)
- The uvula
- The lips (upper and lower lips)
- The jaw
- The teeth

Passive organs: they are also called “stable” organs of speech because they are immobile in speech sound production and their most important function is to act as the places of articulation.

- The upper teeth
- The alveolar ridge
- The hard palate
- The pharynx
- The larynx
- The vocal tract

Exception: The soft palate (velum) is an active and passive articulator. It is an active articulator, it can be raised to shut the nasal passage of air to produce oral sounds. The passive articulator, located at the back of the mouth, interacts with the active articulator, typically the tongue, to generate sounds like the initial consonants found in English words such as "come" and "go." Indeed, these oral sounds are both active and passive articulators at once.

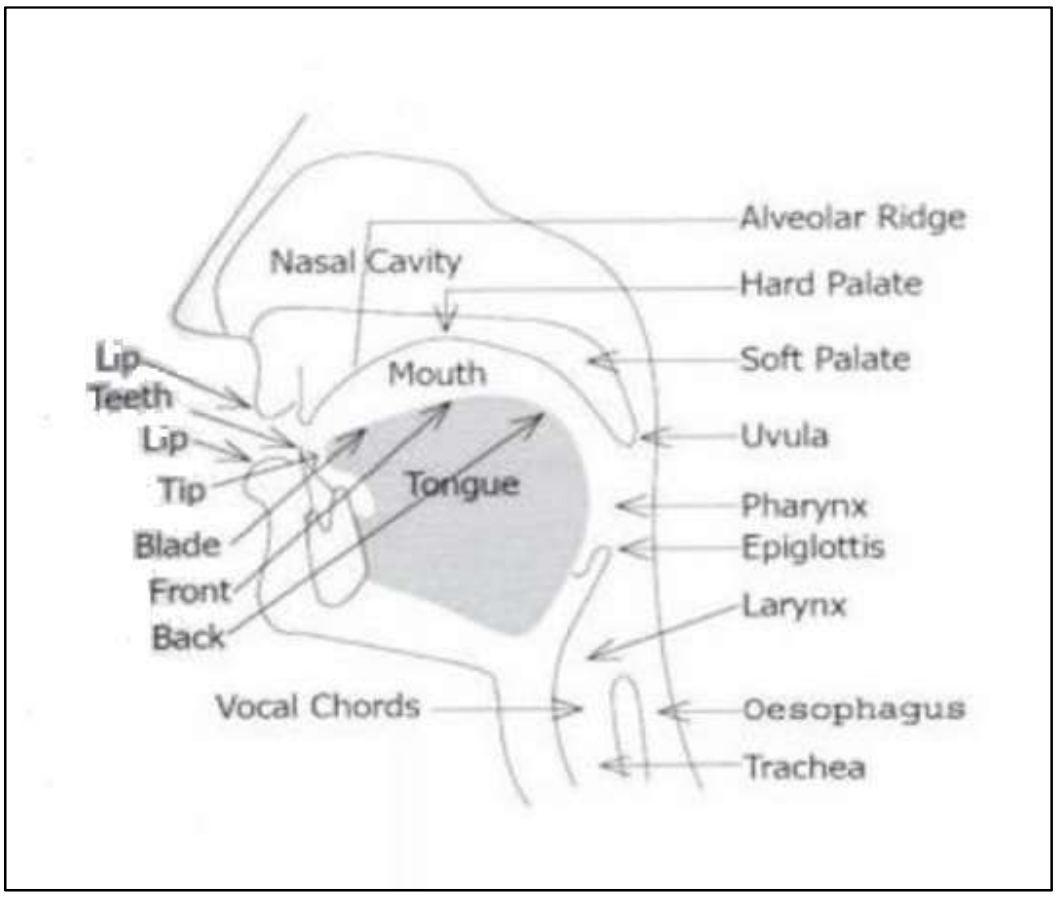


Figure 2.13: The Movable Organs

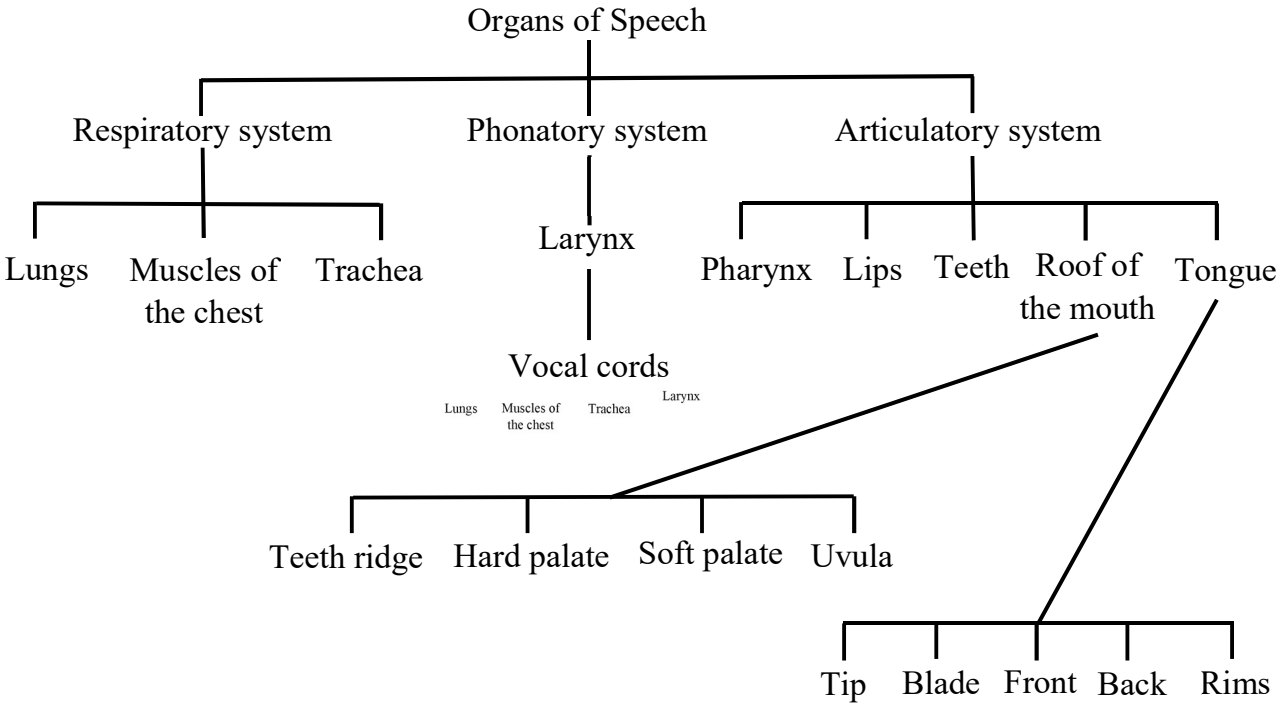


Figure 2.14: Organs of Speech

6. Summary

In this unit, students are expected to understand the various parts of the vocal tract and where they are located. It is clear that creating speech sounds is a complicated task that requires coordination between different parts of the upper body. This coordination relies on two main factors: the organs involved in speech and the airflow. As speech production progresses, it goes through various stages and processes, each requiring specific development to move smoothly to the next stage. The upcoming unit will focus on describing and categorizing speech sounds, covering two main areas: consonants and vowels.

7. Practice

Study questions: Answer the following Questions.

1/ What is phonetics?

2 / Define the following concepts:

-Articulatory phonetics

- Acoustic phonetics

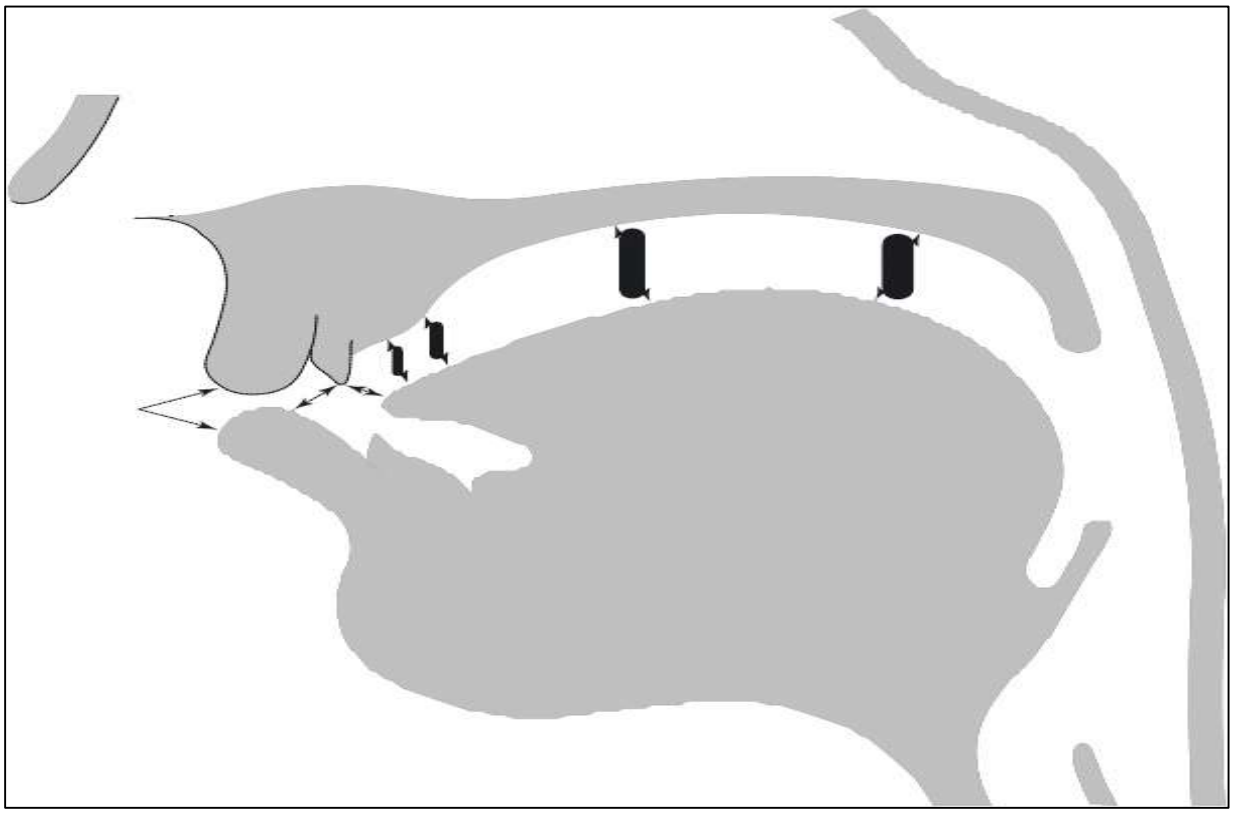
- Auditory phonetics

3/ How do the three systems of the organs of speech operate?

Study Questions: discuss the following questions briefly.

1. What is meant by the word “consonant sound”?
2. What is the nature of the air stream for consonants?
3. How are consonant sounds different from vowel sounds?
4. What are the main criteria used to describe consonants?
5. State the assigned role for the articulators concerning each consonant sound.
6. Do the speech organs change their positions for consonant sound production? Why?
7. What is the main difference between the place and manner of articulation?

Task One: Fill in the names of the vocal organs numbered in Figure



Unit three: The Description and Classification of Speech Sounds

Learning Objectives

On successful completion of the lecture, students should be able, among other things, to:

1. Recognize the distinction in the production and function of vowels versus consonants.
2. Enable learners to Foster deeper reflection on the specific criteria for vowel sounds production, description and classification.
3. Enable learners to Develop the ability to differentiate between the criteria employed in describing and classifying consonants and vowel sounds.
4. Identify the four descriptive parameters that are used for vowel articulation.
5. Understand the importance of the vowels and consonants in the evaluation process.
6. Understand the importance of the vowels and consonants in the process of correct pronunciation of English words correctly.

1. Introduction

As linguists, however, the descriptions par excellence of the sounds of languages are those that reflect how speech sounds are actually used when they are used to articulate words. Phonetic descriptions of language are phonological descriptions. We transcribe how speech sounds are used in articulating (saying) words by using the 52 symbols of the International Phonetic Alphabet (IPA). The purpose of this chapter is to introduce and provide examples of the basic articulatory and acoustic properties of the 52 consonant and vowel symbols of the International Phonetic Alphabet. These include, for consonants, voicing, place, and manner of articulation as well as for vowels, tongue height and tongue

backness. The transmission of this knowledge is an essential component of the course content. It is the learners' responsibility to know the material in this chapter and to accurately convey this knowledge to the other learners in the group.

We can describe the sounds of a language as we hear them in several ways. We commonly consider physical properties of speech sounds such as frequency, duration, and intensity. For example, to describe the vowel sound of the English word "food", we might use the terms "close", "back", "unrounded", and "long". To describe the vowel sound of the English word "kit", we might use the terms "close", "front", "unrounded", and "short". In addition to physical properties, we also consider perceptual properties of speech sounds such as loudness, pitch, and sound quality. For example, it is commonly said that high-frequency sounds have a high pitch and that low-frequency sounds have a low pitch.

2. Differences between Vowels and Consonants

The main difference between vowels and consonants is that consonants allow for significant articulatory obstruction to the airflow, while vowels are produced with an articulatory bottleneck only in the oral cavity. Also, vowels intrinsically have a voice: in the case of normal phonation, the vocal cords are set into motion and voicing occurs. Of course, there are languages which may use voice consonants instead of voiceless resonant vowels. Such a feature is relatively rare, however, since basically speech is a product of airflow through the incomplete articulatory tract, and vibration of muscular components of the speech apparatus that creates complex temporal variations in the acoustic energy emitted through the mouth in the direction of a potential listener.

Furthermore, there are also sound differences observed between vowels and consonants that are shared by other sound types, but which have never been studied in the context of the vowel/consonant contrast. Although asymmetry in terms of duration is a characteristic of vowels vs. consonants, one can observe that when duration differences due to articulation or sonority are minimized by controlling for sonority or voicing of

obstruents, vowel-like differences in duration begin to emerge. Fricatives used in Spanish as the sole articulation for the phonemes /p, t, k/ are shorter in duration than their coarticulated, geminate, and syllable-final counterparts. Statements about fricatives are significant, but circumstantial, indicating that the feature of fricatives that draws them closer to vowels, compared to consonants such as stops, lies in the articulatory nature of fricatives rather than the arbitrary division drawn between vowels and consonants.

Consonant sounds differ from vowel sounds in that they differ in the way their sounds are produced while the sounds of vowels are released by the free passage of air through the vocal cords for a continuous period, the consonant sounds are generated by an interruption, accompanied or not by elastic pressure in the vocal cavity. This distinction is easily explained from a purely phonetic standpoint by comparing one kind of sound with the other. In the case of the consonant sounds, we have sensible friction following a series of imperceptible pressures which originate from them and accompany the audible sound. This friction varies in intensity or completely disappears, depending on the articulation of the particular sound, and the phonetic apparatus plays its part in one way or another determining the main sounds which accompany or follow the performance of consonant sounds.

Abrupt and smooth consonant sounds. Consonants are sounds articulated with the tip of the tongue or the lips against the hard palate and the teeth, determining perceptible friction. It is generally agreed to classify the consonants of the English language into two main groups: abrupt and smooth.

The vowels and diphthongs of the English language are, to a large extent, equivalent to those of many other languages. It should be noted that, from a purely phonetic standpoint, these approximations are not always accurate, especially as regards the diphthongs. In order to render this phenomenon of diphthonging clear to those who have difficulty in understanding the use of phonetic symbols, those who have to do with teaching of English to foreigners may find it advisable to use the phonetic terminology employed in many

modern textbooks intended for the general public and refer to our two class English diphthongs simply as "mixed sounds.

Section1: The Description and Classification of Consonants

Learning Objectives

The main objective of a lecture on the description and classification of consonants in phonetics would likely cover the International Phonetic Alphabet (IPA), which provides symbols to represent each consonant sound and to delve into the specific articulatory mechanisms involved, such as the place of articulation (where in the vocal tract the obstruction occurs), manner of articulation (how the airflow is obstructed), and voicing (whether the vocal cords vibrate during the production of the sound).

- Students will be able to learn how to interpret IPA symbols and understand the articulatory properties they represent.
- Students will be able to identify and differentiate between different sounds in spoken language and understand the phonetic inventory of the English language.
- Students will be able to produce the consonant sounds of the target language and improve their pronunciation skills.

1. Introduction

Consonants are sounds produced by obstructing the airflow in the vocal tract during their production. This obstruction can occur at various points of articulation, which are places in the mouth or throat where airflow can be restricted or modified. Consonants can be described and classified on the basis of three features:

- Place of articulation
- Manner of articulation
- Voicing

2. Place of Articulation

The place of articulation refers to the position in the vocal tract where the airflow is obstructed or modified to produce the consonant sound. the 24 English consonants are classified into eight types. Here are the main places of articulation for consonant sounds:

2.1 Bilabial: sounds produced by bringing the lower and the upper lips together as in **/p/, /b/, /m/, /w/**

2.2 Labio-dental: these sounds are produced by placing the lower lip against the upper teeth as in **/f/, /v/**

2.3 Dental or Interdental: Sounds produced by placing the tip of the tongue against the back of the upper teeth as in **/θ/, /ð/**

2.4 Alveolar: sounds produced by raising the tip of the tongue against the alveolar ridge as in **/t/, /d/, /s/, /z/, /n/, /l/**

2.5 Post-alveolar or Palato-alveolar: sounds produced by raising the blade of the tong toward the alveolar ridge as in **/ʃ/ /ʒ/ /tʃ/ /dʒ/**

2.6 Palatal: Sounds produced by raising the front of the tongue toward the hard palate as in **/j/**

2.7 Velar: sounds produced by raising the back part of the tongue toward the soft palate (the back part of the roof of the mouth) as in **/k/, /g/, /ŋ/**

2.8 Glottal: sounds originating from the glottis, there is a space between the vocal cords in the larynx; **/h/,** plus the glottal stop **[ʔ]** as an allophonic realization.

3. Manner of Articulation

Manner of articulation refers to the process in which speech sounds are produced by the vocal organs (such as the tongue, lips, and palate) in the human vocal tract. It describes the degree and type of obstruction or constriction of airflow as it passes through the vocal tract during speech production. Manner of articulation is a fundamental aspect of phonetics,

the branch of linguistics concerned with the physical properties of speech sounds. It encompasses various categories, including stops, fricatives, affricates, nasals, approximants, liquids, trills, and taps/flaps, each characterized by distinct articulatory mechanisms. Understanding the manner of articulation is essential for analysing and describing the sounds of human languages. There are six degrees of obstruction.

This criterion can be discussed through the following question: what is the degree of pressure on the articulators? In this respect, manners of articulation refer to the kind of closure, obstruction or constriction used in the vocal tract while making the sound. In other words, it refers to how the air stream is modified in the vocal tract. So English consonant sounds are classified according to the following three degrees of constriction and thus different categories or manners:

- Closure or complete approximation: For complete closure the articulators in question may form a stricture of complete closure;
- Narrowing or close approximation: Sounds which are produced with this kind of constriction entail a bringing together of the two articulators in question to the point where the airflow is not quite fully blocked: enough of a gap remains for air to escape, but the articulators are close together that friction is created as the air escapes. Sounds of this sort are referred to as fricatives and glottal.
- Approximation or open approximation This category of sounds is produced with the least radical degree of obstruction which occurs when the articulators in question come fairly close together, but not sufficiently close together to create friction. This kind of stricture is called open approximation.

3.1 Plosive: these sounds are produced when the airflow is completely blocked and then released suddenly with explosion. Examples include **/p/, /b/, /t/, /d/, /k/, /g/**

3.2 Fricative: airflow is constricted, creating friction and making a hissing sound. Fricatives are continuant consonants, which means that you can continue making them without interruption as long as you have enough air in your lungs. Examples include / **ʃ/, /f/, / z/, /v/, /h/, /s/, / ð/, / ʒ/**

3.3 Affricate: they begin as plosives and end as fricatives. where the airflow is initially blocked and then released with friction. Examples include **/tʃ/, /dʒ/**

3.4 Nasal: these sounds are produced by lowering the soft part, allowing air to escape through the nasal cavity. Examples include **/m/, /n,/ ŋ/**

3.5 Lateral: airflow is obstructed at the centre of the oral cavity and then escapes down the sides of the tongue as in **/ l/**

3.6 Approximant: The articulators come together closely, forming a narrow opening through which airflow can move with minimal disruption as in **/j/ /w/ /r/.**

/j/ /w/ are also sometimes referred to as Semi-vowels. These sounds have some qualities of both a vowel and a consonant. They are produced with a relatively open vocal tract, similar to vowels, but with a slight constriction that creates friction in the airflow.

The table of the sounds below outlines the position of the three-term labels: Voice, place and manner of articulation.

Phonemes	Description	Examples
/k/	voiceless velar plosive	**cat**
/g/	voiced velar plosive	**go**
/ŋ/	voiced velar nasal	**sing**

/ʒ/	voiced palato-alveolar fricative	**loch**
/m/	voiced bilabial nasal	**man**
/n/	voiced alveolar nasal	**name**
/h/	Voiceless glottal fricative	**here**
/ f/	voiceless labio-dental fricative	**fire**
/z/	voiced alveolar fricative	**zone**
/s/	voiceless alveolar ricative	**salt**
/v/	voiced labio-dental fricative	**voyage**
/ʃ/	voiceless palato-alveolar fricative	**shoe**
/ʒ/		**Measure**
/t͡ʃ/	voiceless palato-alveolar affricate	**Church**
/d͡ʒ/	voiced palato-alveolar affricate	**Judge**
/θ/	voiceless dental fricative	**Thick**
/ð/	voiced dental fricative	**Father**
/p/	voiceless bilabial plosive	**pen**
/b/	voiced bilabial plosive	**board**
/t/	voiceless alveolar plosive	**time**
/d/	voiced alveolar plosive	**dark**
/ l/	voiced alveolar lateral approximant	**loyal**
/j/	voiced palatal approximant	**yellow**

/w/	voiced labial-velar approximant	**wine**
/r/	Voiced post-alveolar approximant	**road**

Table 3.1: Three criteria of consonant sounds

4. Voicing

Voicing is a fundamental feature that indicates whether the vocal cords are vibrating or not during the production of speech sounds. The when articulating sounds with vibration of the vocal cords are voiced as in "z", while sounds produced without this vibration are voiceless as in "s".

- When the vocal cords are drawn wide apart without any vibration, the resulting sounds are voiceless. English includes the following voiceless sounds: **/p/, /t/, /k/, /f/, /Ɵ/, /s/, /ʃ/, /tʃ/.**
- When the vocal cords are held firmly together, they become constricted or narrowed, it produces the voiceless fricative sound **/h/.**
- When the vocal cords are held loosely together, the airflow passing through the glottis triggers vibration, resulting in voiced sounds such as in **/b/, /d/, /g/, /v/, /ð/, /z/, /ʒ/, /dʒ/, /m, /n/, /ŋ/, /l/, /w/, /j/, /r/**

The table below illustrates the categorization of English consonant sounds according to the three aforementioned aspects.

N	Bilabial		Labio-dental	Interdental	Alveolar	Alveo-palatal	Velar	Glottal
1	**Plosive**	P b			t d		k g	
2	**Fricative**		f v	Θ ð	s z	ʃ		h
3	**Affricate**					ʧ ʤ		
4	**Nasal**	M			n		ŋ	
5	**Approximant**	w			L r	j		

Table 3.2: Places and Manners of Articulation of the English consonant sounds

5. Summary

In this unit, we've examined the definition, depiction, and categorization of the English consonants. Learners need to distinguish between different consonants and their production by obstructing the airflow, often by closing or narrowing the vocal tract. They're classified based on various articulatory features like place of articulation, manner of articulation, and voicing.

The next unit will delve into describing and categorizing English vowels.

6. Practice

Practice:

1/ Give three-term labels for the consonants represented by the italicized letters in the following English words:

Chat, ma***ch***ine, a***ch***e

2/ Name the passive articulator for the initial consonants in the following words:

Pharynx, **s**peech, **c**losure, **b**reath

3/ Compare the following sounds in terms of vocal cords position: **/p/, /g /, /h/**

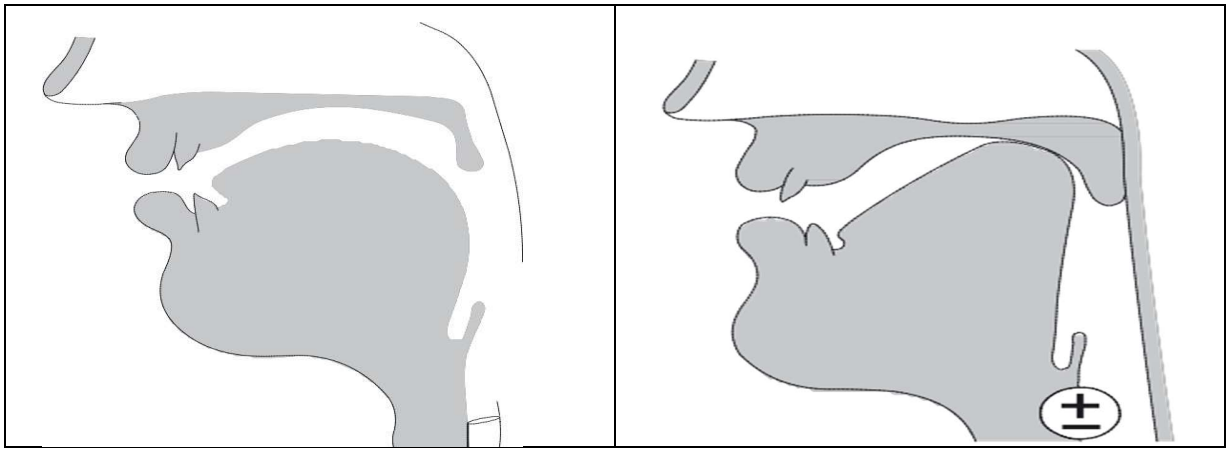
Task 1: Practice reading the word contrasts below at normal conversational speed (teacher controls, explains and helps if necessary to maintain proper pronunciation).

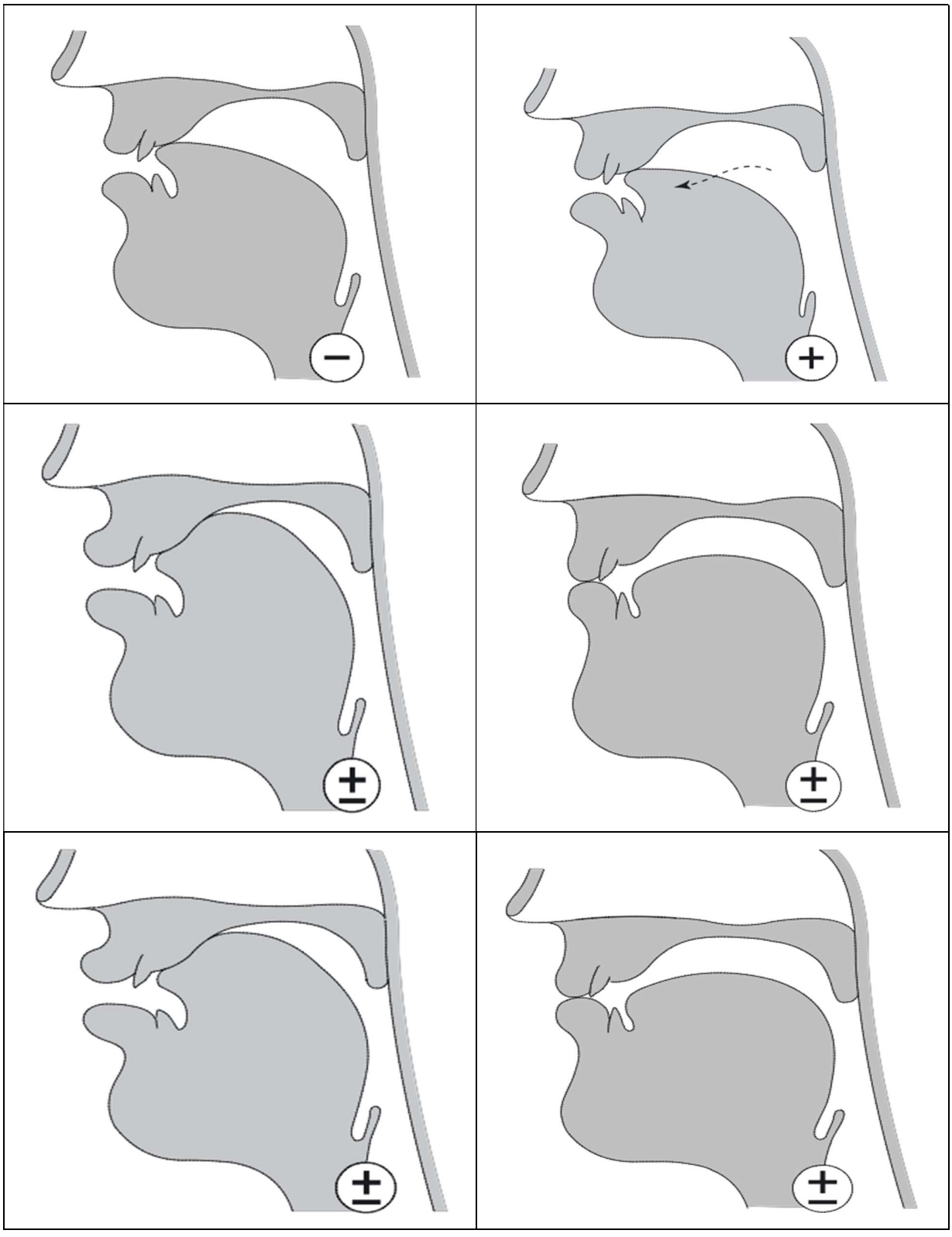
[k-g] card – guard	**[t-d]** ton – done
[θ-ð] thick – this	**[s-θ]** sin – thin
[tʃ-dʒ] cheap – jolly	**[l-m]** line – mine
[ð-d] then – den	**[p-b]** pig – big
[θ-s] thick – sick	**[s-z]** soup – zoo
[n-ŋ] not – tongue	**[ʃ-j]** sheep – yet
[f-θ] Finn – thin	**[f-v]** feel – veal
[s-ʃ] see – she	**[ð-z]** though – zone
[v-ð] vain – they	**[v-w]** vest – west

Task 2: Create a table that represents English vowels and consonants and suggest 10 words to illustrate each letter.

sound 1 [aʊ]	**sound 2 [əʊ]**

Task 3: Sounds that illustrate all the places of articulation discussed so far





Task 4:

1. Circle the words that begin with a bilabial consonant.

   Met net set bet let pet

2. Circle the words that begin with a velar consonant.

   Knot got lot cot hot pot

3. Circle the words that begin with a labiodental consonant.

   Fat cat that mat chat vat

4. Circle the words that begin with an alveolar consonant.

   Nip lip sip tip dip

5. Circle the words that begin with a dental consonant.

   Pie guy shy thigh thy high

6. Circle the words that begin with a palato-alveolar consonant.

   Sigh shy tie thigh thy lie

7. Circle the words that end with a fricative.

   Race wreath bush bring breathe bang

   Rave real ray rose rough

8. Circle the words that end with a nasal.

   Rain rang dumb deaf

9. Circle the words that end with a stop.

   Pill lip lit graph crab dog hide

   laugh back

10. Circle the words that begin with a lateral.

    Nut lull bar rob one

11. Circle the words that begin with an approximant.

    We you one run

12. Circle the words that end with an affricate.

    Much back edge ooze

13. Circle the words in which the consonant in the middle is voiced.

Tracking mother robber leisure massive

stomach razor

14. Circle the words that contain a high vowel.

Sat suit got meet mud

15. Circle the words that contain a low vowel.

Weed wad load lad rude

16. Circle the words that contain a front vowel.

Gate caught cat kit put

17. Circle the words that contain a back vowel.

Maid weep coop cop good

18. Circle the words that contain a rounded vowel.

Who me us but him

Task 5:

Define the consonant sounds in the middle of each of the following words as indicated in the example.

adder voiced alveolar stop

father/ singing/ etching/ robber/ ether/ pleasure/ hopper/ selling/ sunny/ lodger

Task 6:

Give the symbol sound that best represents the following descriptions:

1. Pulmonic, affricate, voiced, oral, post alveolar / /
2. Alveolar, lenis, plosive, and oral / /
3. Velaric, voiced, and nasal / /
4. Egressive, pulmonic, lenis, semi vowel, and oral / /
5. Voiced, dental, fricative, and oral / /
6. Voiced, nasal, and bilabial / /
7. Voiceless, alveolar, plosive, and oral / /

8. Glottalic, voiceless, fricative, and oral / /
9. Voiceless, alveolar, fricative, and oral / /
10. Lenis, labio-dental, fricative, and oral / /

Section Two: The Description and Classification of Vowels

Learning Objectives

It is of paramount importance at this stage to provide students with a comprehensive understanding of vowel description and classification to analyse and transcribe vowel sounds using the International Phonetic Alphabet (IPA), encompassing both theoretical knowledge and practical skills in phonetic

1. Introduction

Vowel sounds are an indispensable element of spoken language, serving as the basis of syllables and imparting clarity and sense to words. Unlike consonants, which involve obstruction or constriction of the airstream, vowel sounds are generated with an unrestricted vocal tract. They are distinguished by the absence of substantial constriction, allowing the air to flow relatively freely through the mouth.

2. Description of vowel quality

In the International Phonetic Alphabet (IPA), vowel sounds are represented by symbols that correspond to specific articulatory configurations. Vowels are characterized by the position of the tongue, lips, and jaw, which determine the resonance of the sound. Vowel sounds are produced with relatively free airflow. They are classified based on several criteria, including:

2.1 The Height of the Tongue: The following features are the main characteristics of the vowels according to the height of the tongue whether raised or lowered.

- ✓ ***High or close quality*:** these vowels are pronounced with the tongue positioned closer to the roof of the mouth. The sounds produced under this position are as follows: **/i/, /i:/, /u/, /u:/**
- ✓ ***Mid or mid open quality*:** these vowels are pronounced with the tongue lowered in the oral cavity. /e/
- ✓ ***Low or open quality*:** these vowels are pronounced with the tongue positioned as low as possible to leave a lot of space for the airflow. / æ/

2.2 The Advancement of the Tongue: Tongue advancement towards the front or back area is crucial in forming sounds as follows:

- ✓ **Frontal vowels:** these vowels are pronounced with the tongue raised toward the hard palate as in / i /,/ e / , /æ/,/ iː /
- ✓ **Central vowels:** are pronounced with the tongue retracted to the middle area in the oral cavity. /ə / / ɜː / / ʌ /
- ✓ **Back vowels:** these vowels are articulated with the tongue raised toward the soft palate like
  / ɒ / / ʊ / / ɑː / / ɔː / / uː /

2.3 The Shape of the Lips: Vowel articulation can also be distinguished by the kind of opening formed by the lips:

- ✓ **Rounded Quality:** these vowels are pronounced with the lips forming a circular shape, as in /ɔː/

- ✓ **Spread Quality:** Vowels in this category involve the corners of the lips moving away from each other, seen in /iː/
- ✓ **Neutral Quality:** these vowels are articulated when the lips neither noticeably rounded or spread: / ə /

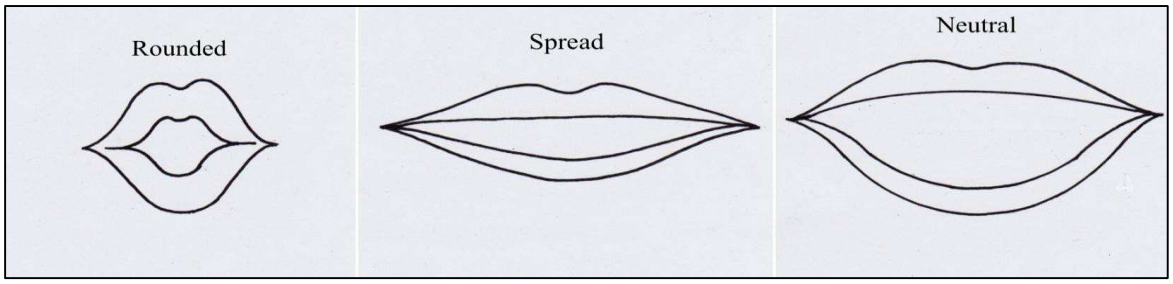


Figure 3.1: The Shapes of the Lips for Vowels Sounds

2.4 Length of the vowel: short, or long

2.5 State of the velum: always raised

2.6 Action of the vocal cords: for vibration

2.7 State of the tongue: tense, or lax

3. Classifications of Vowels

The number of English vowel sounds is greater than the number of vowel letters, there are 12 monophthongs,7 short vowels,5 long vowels, 8 diphthongs and 5 triphthongs. To better describe the vowel sounds you need to consider the following questions:

- ✓ **position of the tongue,** *what is the advancement of the tongue?* (front, central, back);
- ✓ **position of the tongue,** *what is the height of the tongue?* (lose, mid close, mid open, open);
- ✓ **Lips position,** *what is the position of the lips?* (rounded, unrounded, neutral);

✓ **Duration of time,** *what is the length of the sound?* (Short, long, diphthongs, triphphongs).

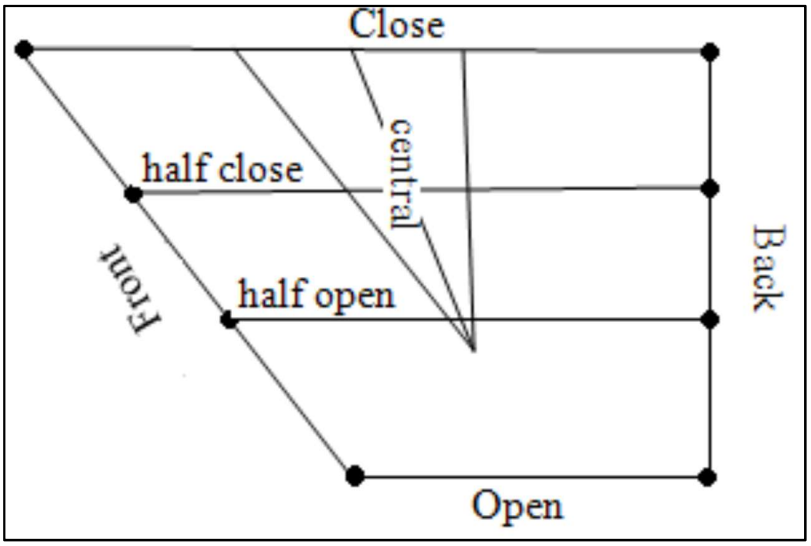


Figure 3.2: English Vowel Chart

3.1 Monophthongs:

Monophthongs are pure vowel sounds comprised of a single phoneme, unchanging sound quality throughout their duration. Unlike diphthongs, which involve a glide from one vowel sound to another within the same syllable, monophthongs are characterized by their singular, steady sound. Examples include the vowel sounds in words like "cat," "bed," and "boot."

3.1.1 Short Vowels

Short vowels are vowel sounds that are typically of shorter duration and are pronounced with a relatively relaxed tongue position. They are found in many languages and are usually represented by a single vowel letter. In English, examples of short vowels include the sounds in words like "cat," "bed," and "pin." English has a large number of vowels. The first category worth to be examined is short vowels. In this respect, American linguists distinguish between two types of vowels **Lax** and

Tense vowels. Lax vowels are articulated with weak breath force, and the duration is very short (this can be seen with short vowels) versus tense vowels which are articulated with more energy, the duration is longer than short vowels (this can be seen with long vowels). There are six short vowels. The sound symbols for these vowels are represented in the following list of words;

3.1.2 Long vowels

Long vowels are vowel sounds that are pronounced with an extended duration, often held for a longer period compared to short vowels. In English, long vowels are usually represented by a single vowel letter followed by the letter 'e' (e.g., "cake," "team") or by a double vowel letter (e.g., "bee," "boat"). They typically have a different quality or pronunciation compared to their short counterparts. But, to distinguish between them and short vowels when we represent these sounds phonetically a length mark is added to the symbol sound. They are marked with the vowel sound symbol + a dot at the end **/: /.** The sound symbols for these vowels are represented in the following list of words;

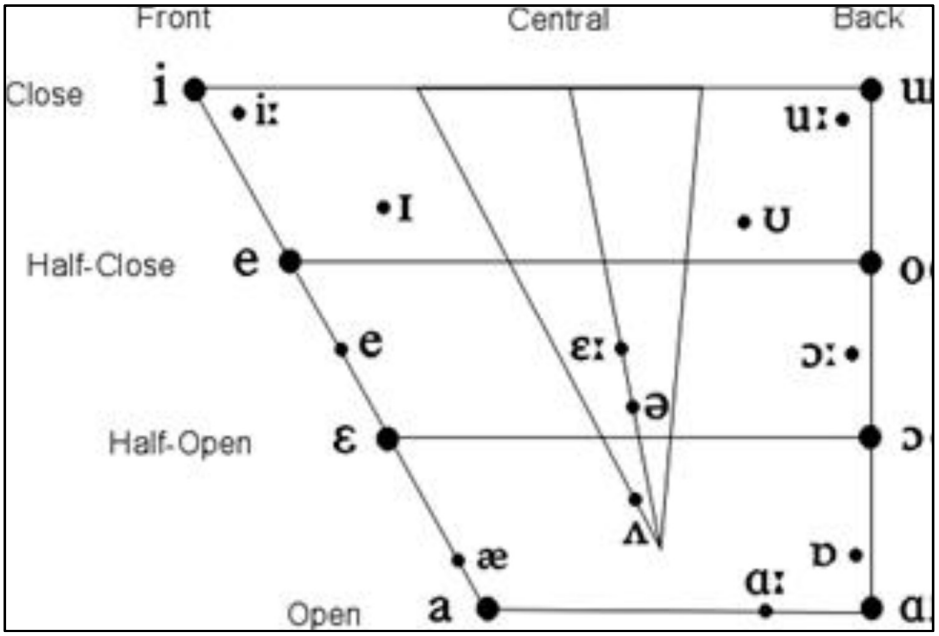


Figure 3.3: English Long and Short Vowels Chart

Description of short and long vowels according to the vowel charts

Vowel sounds	Description	Examples
/i:/	high front unrounded tense vowel	**bead**
/ɪ/	high front unrounded lax vowel	**bid**
/e/	mid front unrounded lax vowel	**bed**
/æ/	low front unrounded lax vowel	**bat**
/ɑ:/	low back unrounded tense vowel	**bard**
/ʌ/	mid-central unrounded lax vowel	**bud**
/ɜ:/	mid-central unrounded tense vowel	**Bird**
/ɔ:/	mid back rounded tense vowel	**Bored**
/ʊ/	high back rounded lax vowel	**book**
/u:/	high back rounded tense vowel	**boot**

Table 3.3: Description of Short and Long Vowels Sounds

3.2 Diphthongs

Diphthongs consist of two vowel sounds pronounced in a single syllable. They involve a glide from one vowel to another, where the loudness of the sound decreases. The initial segment of the diphthong is longer and stronger compared to the second one. English encompasses a total of eight diphthongs, which are classified as follows:

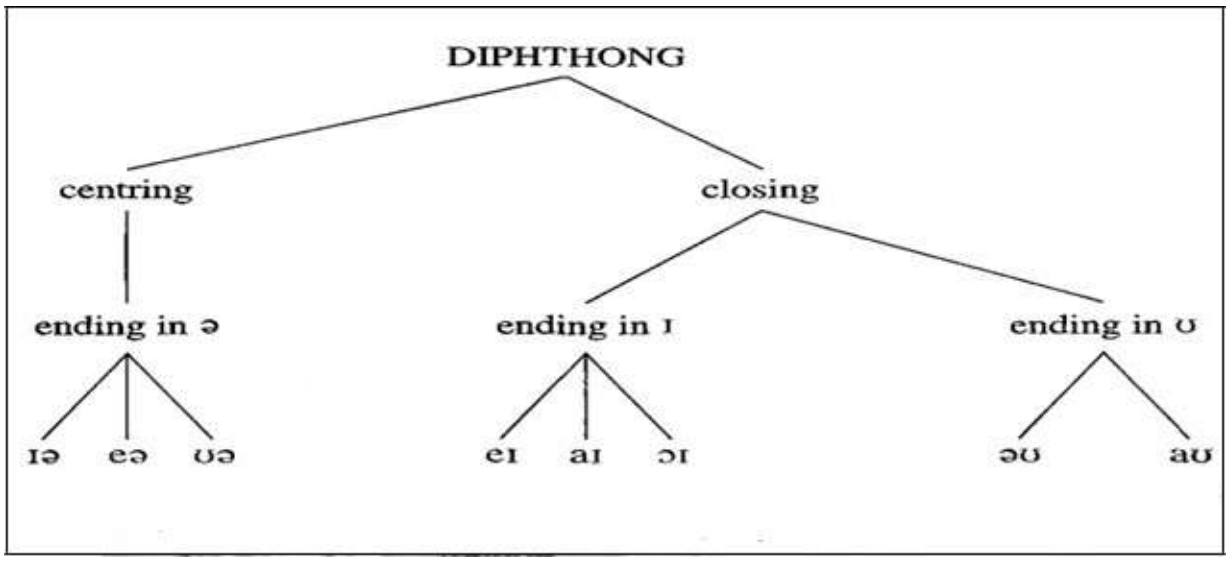


Figure 3.4: The Tree of Diphthongs (Roach: 2009: 27)

3.2.1 Centring diphthongs

In English, the centring diphthongs typically involve front /back vowel sounds with the schwa / ə /sound at the centre within the same syllable. They are **[], [ɪə], [ʊə]**

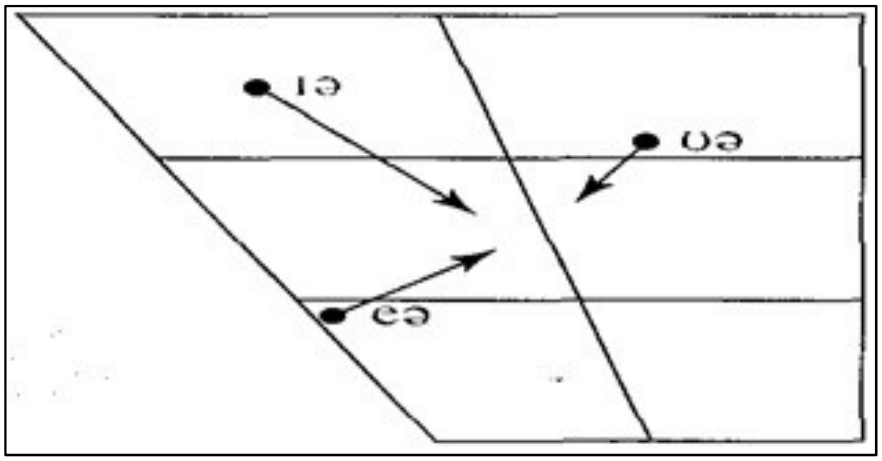


Figure 3.5: Gliding Movements of the Centring Diphthongs (Roach: 2009)

3.2.2 Closing diphthongs

Closing diphthongs are a type of vowel sound where the tongue glides from one vowel to another within the same syllable. Unlike opening diphthongs, which start with a more open vowel and move towards a closer one, closing diphthongs start with a closer vowel and move towards a more open one. In English, common examples of closing diphthongs include the sounds in words like "boy" /ɔɪ/, "buy" /aɪ/, and "cow" /aʊ/. These diphthongs typically end in a more open vowel sound.

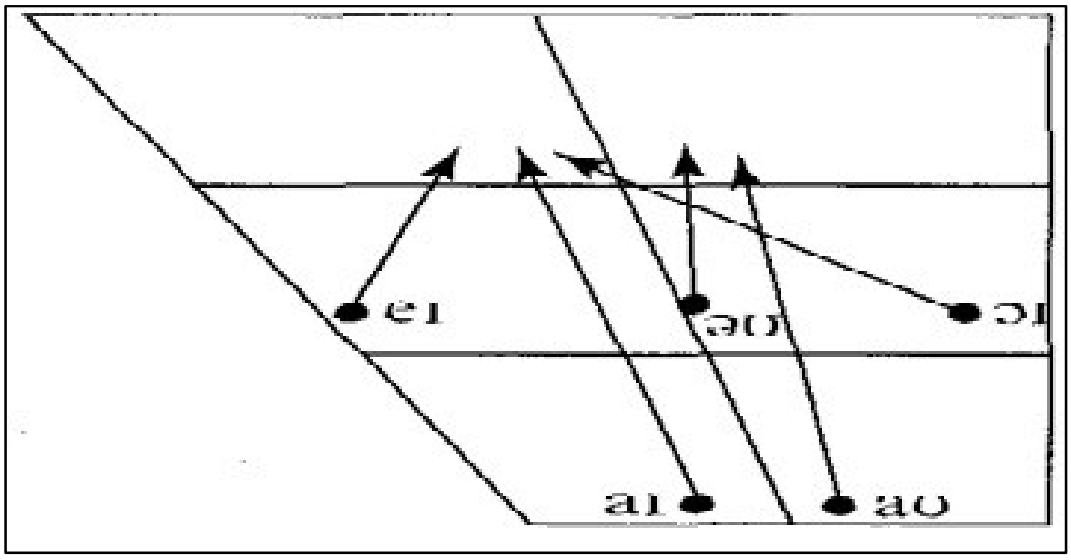


Figure 3.6: The Gliding Movements of the Closing Diphthongs (Roach: 2009)

Description of Diphthongs according to the vowel charts:

Vowel sounds	Description	Examples
/eɪ/	Diphthong moving from mid-front unrounded to mid-high front unrounded	**Face**
/aɪ/	Diphthong low central unrounded to mid-high front unrounded	**Time**
/ɔɪ/	Diphthong mid back rounded to mid- high front unrounded	**Voice**
/ɪə/	Diphthong mid-high front unrounded to mid central unrounded	**Beard**
/eə/	Diphthong mid front unrounded to mid central unrounded	**Scarce**
/ʊə/	Diphthong high back unrounded to mid central unrounded	**Tour**

/**a**ʊ/	Diphthong low central unrounded to high back rounded	**Now**
/əʊ/	Diphthong mid central unrounded to high back rounded	**No**

Table 3.4: Description of Diphthongs

3.3 Triphthongs

In English, a triphthong is a sound of three distinct vowel sounds, where they glide smoothly from one sound to another and then to the third one within a single syllable. These vowels are articulated with somehow long time relatively longer than diphthongs. there are 5 closing diphthongs, followed by the schwa sound / ə/.

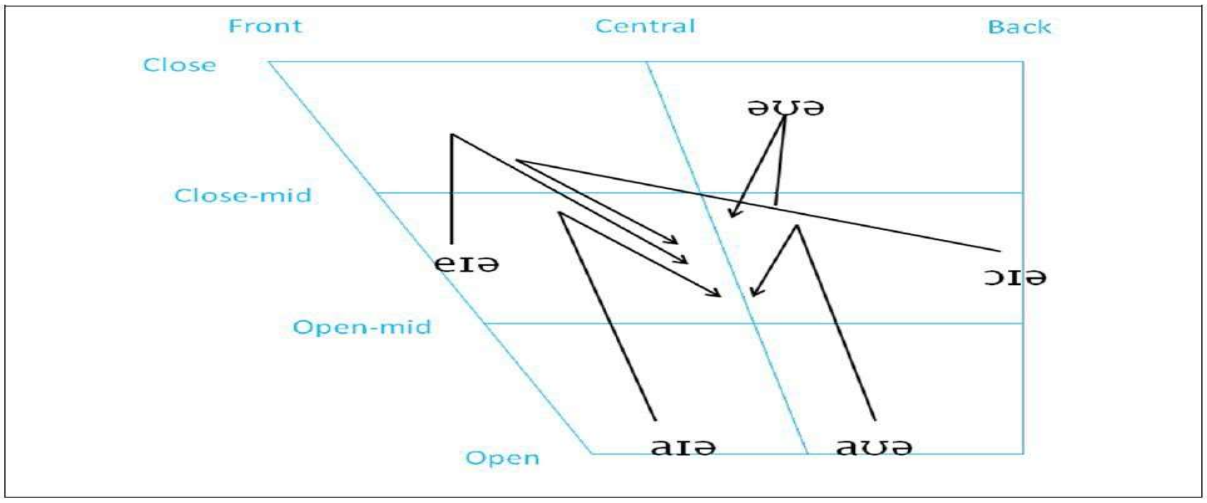


Figure 3.7: Gliding Movement of the Triphthongs

Description of triphthongs according to the vowel charts:

Triphtongs	Description	Examples
/eɪə/	Triphthong moving from mid-front unrounded to mid-high unrounded to the center	layer

/aɪə/	Triphthong moving from low central unrounded to mid-high front unrounded then tot eh center	liar
/aʊə/	Triphthong moving from low central unrounded to high back rounded then to the center	power
/əʊə/	Triphthong moving from mid central unrounded to high back rounded then to the center	lower
/ɔɪə/	Triphthong moving from low back rounded to mid-high front unrounded then to the center	loyal

Table 3.5: Description of Triphthongs

4. Summary

In this unit, we viewed the definition, the description and classification of the vowel sounds. Learners should produce the different vowel sounds, understand how they are articulated in the mouth and be introduced to phonetic symbols (such as those from the International Phonetic Alphabet) used to represent vowel sounds to transcribe and analyse words accurately. Build students' confidence in speaking English by helping them develop clear and accurate vowel pronunciation, which is crucial for effective communication. Students should gain a deeper understanding of English vowel sounds and how they function within the language, ultimately enhancing their proficiency in speaking, listening, reading, and writing.

If we want to describe a sound, we have to ask and answer several questions. Some of the questions are primary and basic. Some of the questions are attributed to the description of consonants while others are for vowels. To conclude:

 Consonants are described in relation to the nature of air stream “origin and direction”, position of the vocal folds, position of the velum, place of articulation and manner of articulation.

 Vowel sounds are described in relation with the position of the tongue in terms of height and advancement, the shape of the lips and the duration.

5. Practice

Study Questions:

Task 1: ***A doctor*** who wants to look at the back of a patient's mouth often asks them to say "**ah**", making this vowel sound is the best way of presenting an unobstructed view. But if we make a sound like **/s/, or /d/** it can be felt that we are making it difficult or impossible for the air to pass through the mouth. The words vowel and consonant are very familiar, but when we study the sounds of speech scientifically we find that it is not easy to define exactly what they mean.

Examine the English vowel sounds and illustrate them with examples.

Task 2: How do you pronounce the ***-o-*** correctly? Write the words into the correct column: **no, now, brown, clothes, window, yellow, go, over, radio, road.**

Task 3: Create a table of English vowels and consonants and suggest 10 words to illustrate each letter.

Task 4. Animals in hiding

Find the animals hiding in the following sentences.

Example: Close the door at once! (rat)

1. That will be a real help.	13. I made a Xerox copy of it.
2. She came late every day.	14. She clothes naked babies.
3. He came to America today.	15. At last, I, Gerald, had won.
4. Eric owes me ten cents.	16. Was Pilar mad, ill or glad?
5. We made errors in each one.	17. That man ate eleven cookies.
6. Do good workers succeed?	18. Your comb is on the table.
7. If I shout, he'll hear me.	19. We're sending only one book.
8. If Roger comes, we'll begin.	20. He regrets having said that.
9. We will go at two o'clock.	21. If Al concentrates, he'll win.

10. Is it the sixth or seventh? 11. In April I only came once. 12. I'll sing; you hum on key.	22. When I withdrew, Al rushed in. 23. He called Mikko a lazy boy. 24. It's only a kilometre away.

Task 5: Questions to control comprehension:

1. What is a vowel sound?
3. What are the differences between vowels and consonants?
4. What does the articulation of a sound consist of?
5. What principles of classification do you know?
6. What is the quality of a vowel determined by?
7. What criteria are used for the classification of vowels?
8. What are English vowels subdivided into?
9. Comment on the terms *monophthong*, *diphthong* and *Triphthong.*

Unit Four: Introduction to Transcription

Learning Objective

The students will be able to develop proficiency in transcribing spoken language, enabling effective analysis of communication. This involves representing speech sounds in writing through a standardized symbol system, identifying phonetic patterns, providing a visual representation of pronunciation, and achieving accurate and natural-sounding speech.

1. Introduction to Transcription

In phonetics, transcription is the most significant skill which represents speech sounds from an acoustic signal to a systematic and consistent written form using a specific system of symbols. This system aims to capture human sounds of speech, syllables, words and sentences accurately and consistently to analyse and understand the pronunciation of words in the same way as they are said or heard. In this context, there are two ways of phonetic writing system.

2. Broad Transcription

Broad transcription is a systematic method used in phonetics to represent sound patterns of a language at a relatively general level. It typically uses a simplified set of symbols to represent phonemes (distinct units of sound in a language), without including allophonic (specific variations of phonemes) variations and phonetic details. In English, the word "cat" might be broadly transcribed as /kæt/, which represents the phonemes /k/, /æ/, and /t/, without indicating specific allophones or variations in pronunciation.

3. Narrow Transcription

Narrow transcription provides a detailed indication of speech sounds, commonly employing symbols from the International Phonetic Alphabet (IPA) with the addition of diacritics, small symbols used to indicate particular phonetic qualities, such as stress, tone, length, nasalization, and articulation to capture phonetic differences like variations in vowel tones or how consonants are articulated. For example, a narrow transcription could precisely detail the pronunciation, such as [k^hæt], indicating more precisely aspiration on the 'k' and a more centralized 'a' vowel sound.

4. Phonemic vs Phonetic Transcription

One significant distinction between broad and narrow transcriptions lies in the representation of phonemes. In broad transcription, phonemes are enclosed in slashes //, whereas phonemes in narrow transcription, are notated within square brackets []. Both slashes and square brackets indicate that we are referring to sounds rather than letters and providing transcription rather than using spelling. For instance:

Spelling	Broad	Narrow
K	/k/	[k]and [k^h]
L	/l/	[l] and [ɬ]

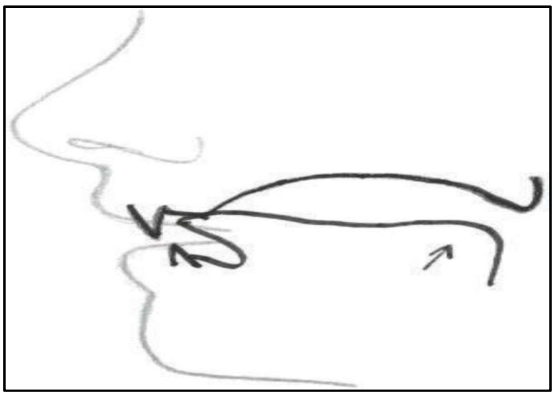


Figure 4.1: Dark ‘l’ [ɬ]

Figure 4.2: Clear ‘l’ [l]

The different realization is called the allophones (variant pronunciations of phonemes) of that phoneme. For instance, the phoneme /p/ has to allophones: unaspirated [p] and aspirated [p^h]

Spelling	Broad	Narrow
Pat	/pæt/	[p^hæt]

5. Phonemes, Allophones and Minimal Pairs

5.1. Phonemes

A phoneme is the smallest distinctive unit of sound in a language that can change the meaning of a word. It's an abstract unit that represents a group of sounds, perceived as the same by speakers of the language. For example, the English sounds /p/ and /b/ are phonemes because they can differentiate words like "pat" and "bat." The difference between them changes the meaning of the word.

5.2. Allophones

Allophones are variant pronunciations of a phoneme. They are the different ways a phoneme can be realized in different contexts without changing the meaning of a word. These variations are often influenced by the sounds surrounding the phoneme or by the speaker's accent. For instance, in English, the /p/ sound can be pronounced slightly differently depending on its position within a word or its adjacent sounds. The aspirated /p^h/ in "pat" and the unaspirated /p/ in "spin" are allophones of the phoneme /p/.

5.3 Minimal pairs:

Minimal pairs are pairs of words in a language that differ in only one phonological element (usually a phoneme) and have different meanings. These pairs are used to identify and contrast between distinct phonemes in a language. For example, in English, "pat" and "bat" are minimal pairs because they differ only in the initial phoneme /p/ versus /b/, and changing that sound changes the meaning of words.

6. Summary

In this unit, we have looked at several key concepts related to transcription. Learners should discern the difference between spoken and written languages. The English writing system doesn't directly relate spelling with sound. Transcription plays a crucial role in studying and analysing the sounds of spoken language. It enhances communication and provides insights into the structure and variability of human speech across various linguistic contexts.

7. Practice

Task 1: Study Questions: Answer the following questions.

1. What does "transcription" refer to?
2. List the most common prevalent writing systems?
3. Make a distinction between the Alphabetic and Transcription systems?
4. How do Phonemic and Phonetic transcription differ?

5. Explores the functions and significance of diacritic used in transcription?

Task 2: Transcribe Minimal Pair.

Cat/ Cut

Ship/ sheep

Fan /van

Bit/ bet

Bag/ Beg

Sit/ seat

Hit / heat

Pat/ Pot

Mat / Mad

Task 3: Improve your pronunciation skills and overcome challenges with specific transcription of phonemes.

1. She sells seashells by the seashore.
2. How much wood would a woodchuck chuck if a woodchuck could chuck wood?
3. Six thick thistle sticks."
4. Peter Piper picked a peck of pickled peppers
5. The big black bug bit the big black bear.
6. Sheep should sleep in a shed.

Task 4: Dictation. transcribe what you hear phonetically.

The teacher provides recordings of English native speakers.

Task 5: ***Transcription of Personal speech sample*****:** Transcribe your speech from real-life speech patterns phonetically.

Homework:

Transcribe words from a book or online resources, focusing on writing them as they sound instead of their correct spelling, as a way to practice transcribing specific sounds in your worksheets.

Conclusion

The module of phonetics attempted to illuminate the essential skills necessary for students to immerse themselves in the realm of academia and embark on their linguistic endeavours.

First of all, the first and the second semesters of this module delved into basic components of phonetics including the articulation, production, and perception of speech sounds. They learn about the International Phonetic Alphabet (IPA), which provides a standardized system for representing the sounds of human language.

This unit also addressed fundamental skills that students should gain a deeper understanding of the complexities of language production and perception. They become equipped with the tools necessary to analyse, articulate and describe the speech sounds of the English language, establishing a foundation for advanced exploration in linguistics. The unit is designed to empower students with the ability to speak and read. Furthermore, alongside theoretical knowledge, students develop practical skills through activities like transcription. Engaging in these exercises not only improves their phonetic precision but also nurtures an understanding and respect for the rich variety of English speech sounds.

The final phase enabled the students to actively engage in fostering critical thinking and problem-solving skills as students grapple with complex concepts such as phonological processes and acoustic properties of speech. Students are empowered to apply phonetic principles to real-world contexts, deepening their understanding of language as a dynamic and multifaceted phenomenon. Ultimately, the journey of learning phonetics to first-year students at a university level is not merely about acquiring knowledge—it is about nurturing a lifelong fascination with the intricate workings of human language. As students embark on this foundational exploration, they lay the groundwork for future academic and professional endeavours, while also gaining a richer appreciation for the beauty and complexity of linguistic

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2nd Semester Assessment for Final Project

1/ Oral Presentations:

- Students should work in pairs
- Choose your Theme: Collaboration on a designated topic is mandatory
- Time management: present the work in 10 minutes.
- The presentation should be precise and concise.
- Powerpoint presentation is compulsory
- Acknowledge your sources.
- Avoid reading directly from your notes and explain the information in your own words.

2/ Presenting a Theme: Students should adhere to a structured approach comprising multiple steps.

1. Select a theme or topic that interests you
2. Gathering information on your chosen theme (academic journals, books, articles, and reputable websites).
3. Formulate specific research questions that you want to explore within your chosen theme.
4. Decide on the research methodology that best suits your theme and research questions
5. Choose methods that will allow you to gather relevant data and answer your research questions effectively

6. Implement your chosen research methods to collect data related to your theme.
7. analyse the data systematically to identify patterns, trends, and relationships relevant to your research questions
8. Interpret the results of your data analysis concerning your research questions and the broader theme you're exploring
9. Consider how your findings contribute to existing knowledge on the topic and what implications they may have
10. use visuals or other aids to enhance understanding.

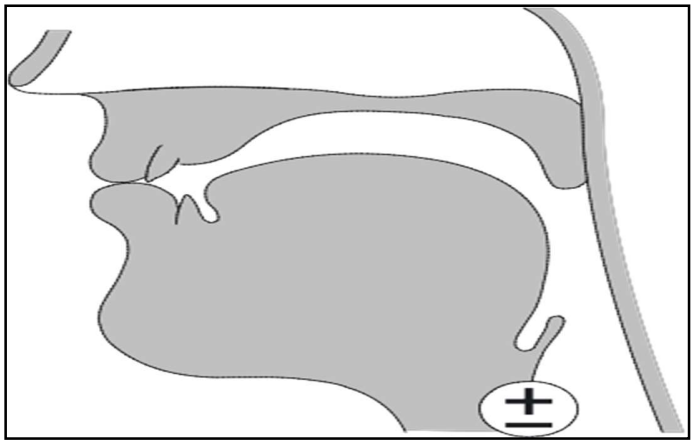
Exemplars of Official Exams

First Semester Exam of Phonetics

Study Questions: discuss the following questions briefly. Illustrate with examples

1. When we produce a speech sound, we intend it to be transmitted and heard. As this is the case, there are three stages at which a speech sound can be studied. **D*iscuss***
2. What process occurs in the larynx, and what organs are involved?
3. Describe the actions of the vocal cords while speech sounds are produced.

Practice: Consonants are best described in terms of their articulation. For such a description, however, look at the diagram carefully and answer each of the questions that follow:



1. Guess what sound the diagram represents?
2. What is the nature of the airstream?
3. Do the vocal cords vibrate or not?
4. Show the position of the soft palate or the velum?
5. At what point the articulation take place?
6. What is the manner of articulation?
7. Give three-term labels for the consonant sound represented in the diagram

Phonetics Second Term Examination

Study Questions: discuss the following questions briefly. Illustrate with examples

1. Supply the criteria needed in the description of vowels.

2. Try to distinguish between narrow and broad transcriptions.

Practice:

1/ GIVE

- **a.** Two words in English have a high back rounded vowel.
- **b.** Two words in English having a consonant cluster, each standing for one vowel.
- **c.** Two words in your mother tongue containing a central vowel.
- **d.** Two words in Standard Arabic having at the beginning a consonant letter, but a vowel sound.

2/ Transcribe and then draw the vowel diagram to indicate the gliding movement of the following words:

Doubt fire break voyage swear pure