جامعة الانبار كلية التربية للعلوم الإنسانية القسم العلمي: اللغة الانكليزية المرحلة الدراسية: الاولى المادة: علم الصوت

ملخص المادة:

This module is a practical overview of articulatory phonetics, teaching the interrelated skills of recognition, production and transcription of a large variety of speech sounds, via. Vowels and consonants. These skills are helpful in learning to understand and speak English language properly.

The module gives the students some basic notions about vowels and consonants and their articulation.

At the end of the course, the students will be able to:

- 1. Identify and produce a broad range of the phonetic sounds observable in in English
- 2. Transcribe sample data of various words using the International Phonetic Alphabet.
- 3. Demonstrate a basic knowledge of the articulatory system and its operation during the production of various speech sounds.
- 4. Demonstrate a familiarity with the technical descriptions of speech sounds.
- 5. Understand the need to look at each language on its own merits.
- 6. Start to hear and transcribe pitch accurately.

7. An understanding of the some basic procedures used in phonemic analysis.

Course Content:

- 1. How the speech Organs work in English
- 2. The Consonants of English

- 3. Consonants Sequences.
- 4. The Vowels of English
- 5. Words in Company
- 6. Intonation

Articulators above the larynx

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. Here the air from the lungs escapes into the atmosphere. We have a large and complex set of muscles that can produce changes in the shape of the vocal tract, and in order to learn how the sounds of speech are produced it is necessary to become familiar with the different parts of the vocal tract. These different parts are called **articulators**, and the study of them is called **articulatory phonetics**.

A vowel is a speech sound made with your mouth fairly open, the nucleus of a spoken syllable.

A consonant is a sound made with your mouth fairly closed.

When we talk, consonants break up the stream of vowels (functioning as syllable onsets and codas), so that we don't sound like we've just been to the dentist for four fillings and the anaesthetic hasn't worn off yet.

Consonants require more precise articulation than vowels, which is why children find them harder to learn, and often end up in speech therapy after having become so cross at not being understood that they've started hitting people. Only a few children with severe speech sound difficulties (often called dyspraxia or apraxia) sometimes need therapy to help them produce vowel sounds correctly.

Most syllables contain a vowel, though vowel-like consonants can occasionally be syllables. And to complicate matters, many English vowels are technically two or three vowels shmooshed together.

The last four consonant sounds on the above list - "y", "w", "r", "l" - are produced with less mouth constriction than other consonants, and in linguistics are called "approximants".

Approximants occupy a kind of linguistic grey area between vowels and consonants, in fact "w" and "y" are also known as semivowels.

Producing a consonant involves making the vocal tract narrower at some location than it usually is. We call this narrowing a **constriction**. Which consonant you're pronouncing depends on where in the vocal tract the constriction is and how narrow it is. It also depends on a few other things, such as whether the vocal folds are vibrating and whether air is flowing through the nose.

We classify consonants along three major dimensions:

- place of articulation
- manner of articulation
- voicing

The **place of articulation** dimension specifies where in the vocal tract the constriction is. The **voicing** parameter specifies whether the vocal folds are vibrating. The **manner of articulation** dimesion is essentially everything else: how narrow the constriction is, whether air is flowing through the nose, and whether the tongue is dropped down on one side.

For example, for the sound [d]:

- Place of articulation = alveolar. (The narrowing of the vocal tract involves the tongue tip and the alveolar ridge.)
- Manner of articulation = oral stop. (The narrowing is complete -- the tongue is completely blocking off airflow through the mouth. There is also no airflow through the nose.)

• Voicing = voiced. (The vocal folds are vibrating.)

stop consonant completely cuts off the airflow through the mouth. In the consonants [t], [d], and [n], the tongue tip touches the alveolar ridge and cuts off the airflow at that point. In [t]and [d], this means that there is no airflow at all for the duration of the stop. In [n], there is no airflow through the mouth, but there is still airflow through the nose. We distinguish between

- **nasal stops**, like [n], which involve airflow through the nose, and
- **oral stops**, like [t] and [d], which do not.

Nasal stops are often simply called **nasals**. Oral stops are often called **plosives**. Oral stops can be either voiced or voiceless. Nasal stops are almost always voiced. (It is physically possible to produce a voiceless nasal stop, but English, like most languages, does not use such sounds.)

Fricatives

In the stop [t], the tongue tip touches the alveolar ridge and cuts off the airflow. In [s], the tongue tip approaches the alveolar ridge but doesn't quite touch it. There is still enough of an opening for airflow to continue, but the opening is narrow enough that it causes the escaping air to become turbulent (hence the hissing sound of the [s]). In a **fricative** consonant, the articulators involved in the constriction approach get close enough to each other to create a turbluent airstream. The fricatives of English are [f], [v], [θ], [δ], [z], [\int], and [3].

- [p] voiceless bilabial plosive[b] voiced bilabial plosive[t] voiceless alveolar plosive
- [d] voiced alveolar plosive
- [k] voiceless velar plosive
- [g] voiced velar plosive
- [tf] voiceless postalveolar affricate
- [tʃ] voiceless postalveolar affricate
- [d3] voiced postalveolar affricate
- [m] voiced bilabial nasal
- [n] voiced alveolar nasal
- [ŋ] voiced velar nasal

[f]	voiceless	labiodental	fricative
[v]	voiced	labiodental	fricative
[θ]	voiceless	dental	fricative
[ð]	voiced	dental	fricative
[S]	voiceless	alveolar	fricative
[Z]	voiced	alveolar	fricative
[ʃ]	voiceless	postalveolar	fricative
[3]	voiced	postalveolar	fricative
[I]	voiced	retroflex	approximant
[j]	voiced	palatal	approximant
[w]	voiced	labial + velar	approximant
[1]	voiced	alveolar	lateral approximant
[h]	voiceless	glottal	fricative

In English words there may be either two to three consonants in sequence: 1-Sequences of two consonants initially CCV These are two main kinds: a. /s/ followed by one /p/, /t/, /k/, /f/ , /m/ , /n/ , /l/ , /w/ , /j/ e.g. spy /spai/ , stay /stei/ , sky /skai/ , sphere / sfiə/ , small / smol/ , snow /snəu/ , sleep /sli:p/ , swear /sweə/ , suit /sjut/. b. One of the /p/ , /t/ , /k/ , /b/ , /d/ , /g/ , /f/ , / θ / , /j/ , /v/ , /m/ , /n/ , /h/ followed by one /l/ , /r/ , /w/, /j/. Note: not all these sequences are found (e.g. /pw/ , /dl/ do not occur). The full list is /p/ followed by /l/, /r/, j/ e.g. play , pray , pure /t/ followed by /r/ , /w/, / j/ e.g. try , twice , tune. /k/ followed by /l/ , /r/ , /w/ , /j/ e.g. climb, cry , quite, cure /b/ followed by /l/ , /r/, /j/ e.g. blow , bread, beauty. /d/ followed by /r/, /w/ , /j/ e.g. throw , thwart (rare) /j/ followed by /r/ e.g. shriek , shrink /v/ followed by /j/ e.g. view /m/ followed by /r/ e.g. music /h/ followed by /r/ e.g. huge.

The heterogeneous nature of consonants in the medial position of words may have prevented earlier studies from depicting a clear phonetic relationship between them and consonants in the initial and final positions. In this study, auditory perceptual judgments of children's consonant productions in the initial position of words were compared with those on medial consonants varying in number and order. Neither the perceived frequency of correct articulation nor the error pattern differentiated single consonants in the initial and medial positions of words at any age. Performance on consonant blends in the initial position of words differed from that on both types of medial sequences, but it was more similar to medial consonant sequences that corresponded with permissible word initial blends than to those that did not. It was concluded that initial and medial consonants may be regarded as performance equivalents only under certain conditions.

The word *daalks* is an adapted form of Dutch *dadelijk*/dadə+lək/, so originally it is a derived form. This also holds for the three words ending in /-rks/. The word *korps* is a loanword. These sequences therefore do not occur in simplex native words, which is indicative of their scarcity.

On the face of it, the mirror image of /str-/ occurs in words like *larts*/lats/lark, *l(j)urts*/l(j)øts/lark, *koarts*/koəts/fever,

and *koerts*/kuəts/course. Although in these native words <r> is still written, it has undergone a historical process of deletion (see /r/-deletion in simplex words), so it may no longer be part of the underlying representation of the words in question. This, however, is not the case with /r/ in the loanwords *arts*/arts/doctor and *erts*/ɛrts/ore, where it is always realized.

IPA classifies vowels according to:

1.Position of the highest point of tongue on two-dimensional plane (closeopen; front-back)

2.Posture of lips (unrounded-rounded)

3. Any secondary articulation(s) (e.g. nasality, rhoticity)

•Spacing of cardinal vowels designed to reflect equal articulatory steps that correspond to equal auditory steps

•These criteria yield the quadrilateral as a basic framework for description and classification

Vocal tract filter for vowels

•Vocal tract filter selectively passes energy in the harmonics of the voicing source

Vowels differ from one another according to the extent to which the jaws are either **open** or **close** (not 'closed', as a complete closure would prevent the free flow of air out of the mouth). Look at yourself in a mirror and say the vowel sound / α /, as in the word *palm*. It should be obvious that the jaws are wide apart and you have adopted a relatively open mouth posture