CHAPTER II

LITERATURE REVIEW

Theoretical Framework

This chapter consists of theories that underlie the research topic and previous study.

2.1 Phonology

Phonology is one of the component that compose the discipline of linguistics (Odden, 2005). Peterson (1982) Phonology is the definition of the system and pattern of sounds that occurs in a language. According Aarts and McMahon (2006) Phonetic and phonology are concerned with the ways how human produces and hears speech. The connection between them is correlated each other. It is strengthened by Odden (2005) that both phonetic and phonology are the study about "sound" system of language. In addition, Poole (1999) argues, phonology studies about "sound" in the context of language, and phonetic is focused with the making of "sound" which is producing in the speech of language. Besides that, Ramelan (1994) said that phonology is the study of phones or speech sounds. There are two studies of phonology; phonetics and phonemics.

Phonemics is the study of speech sounds with a view to finding out the significant units of sounds in a given language. Phonetics is the study of speech sounds as sounds without regard to their function as signalling units of language (Ramelan, 1994). Phonetics is the study of how the language sounds

are formed, in the form of vibration frequency, intensity, and timbre, and how the sounds of language can be received by the ear. Based on the breadth of the scope of phonetics study, phonetic is divided into three types namely organic phonetics, acoustic phonetics, and auditory phonetics (O'Grady and Archibald, 2000). Supported by Dew and Jensen (1977) says there are three kinds of phonetics, those are physiology phonetic, acoustic phonetic, and auditory phonetic. Aarts (2006) explained that a articulatory phonetics is the proccess that generate an air-stream which carries linguistic content. Accoustic phonetics is the physical characteristics of the resulting sound waves that pass between the speaker's vocal tract and the listener's ear, and a auditory phonetics is the proccess where by the mechanical movements into the middle and inner ear and perceived at a cortical level as sound.

In other hand, Malmberg (1963) says that whait is learned in the field of acoustic phonetics is the sound of language in the terms of sound as phsycal phenomena, such as studying the frequency of vibration, amplitude, intensity, and timbre.

In this research, the writer concerns with the acoustic phonetic of vowel sound. In this way concern with the producing vowel sounds between the speaker's vocal tract and the listener ear.

2.2 Pronunciation

Pronunciation is the study about speech sound and language. Kreidler (2004) stated that in discussion the pronunciation of English, we can focus on two aspects namely; speech and language. Brown (2000) stated that language

is a system of arbitrary conventionalized vocal, written, or gestural symbols that allow the members of a given community to communicate intelligibly one another. Speech is an activity which is carried on in numerous events, and language is knowledge, a code which is known shared by people who use their knowledge for transmitting and interpreting massage in these events.

According to Adult Migrant English Program Research Centre journal (2002), Pronunciation refers to the production of sounds that uses to produce meaning. It includes attention to the particular sounds of a language (segments), aspects of speech beyond the level of the individual sound, such as intonation, phrasing, stress, timing, rhythm.

Christiane Dalton and Barbara Seidlhofer in Pronunciation book (1994), they stated that pronunciation in general terms as the production of significant sound in two senses. The first sense is talk about pronunciation as the production and reception of sound speech. Then the second is talk about pronunciation with reference to acts of speaking. In the simple word, we can define pronunciation as a part of speaking skill that related with how to make correct sounds in order to achieve meaning in context of use. Based on Corder (1980) "Pronunciation is the way in which a word is pronounced.

2.3 Errors of pronunciation

Erdoğan (2005) stated that an error is the use of linguistic item in a way that affluent or native speaker of the language regards it as showing a mistake or incomplete learning". In other words, Erdogan also explained that

the errors may occur because the learner does not know what is the correct, and thus it cannot be self corrected.

The errors in pronouncing English may be viewed as a part of learning English process for people who speaks English as a foreign language, because of the errors, they will motivate learn how to correct pronounce well in English. Lado (1996) stated that common errors in English are usually occur in every linguistics.

2.4 Acoustic Analyses

Acoustic phonetic is the study that relies on the physical structure of language sounds and how the human auditory tool to provide reaction to the sounds of the language (Malmberg, 1963). Acoustic phonetic can analyze physical of vowel sound of measuring the actual frequencies of the formant represent graphically (Johnson, 2011). Lagefoged (1982) said that the average of the number frequencies of the first two formants in American English vowel.

Johnson (2011) stated that, there is a computer program that can analyze sounds and shows the components, those components are spectral, formant, pitch, intensity. The display is called a spectrogram. One of the webs that can be used to make spectrograms is Praat Software. The praat is one of computer software that is used to analyze physical properties of speech and phonetics (acoustic), such as loudness, pitch, and quality.

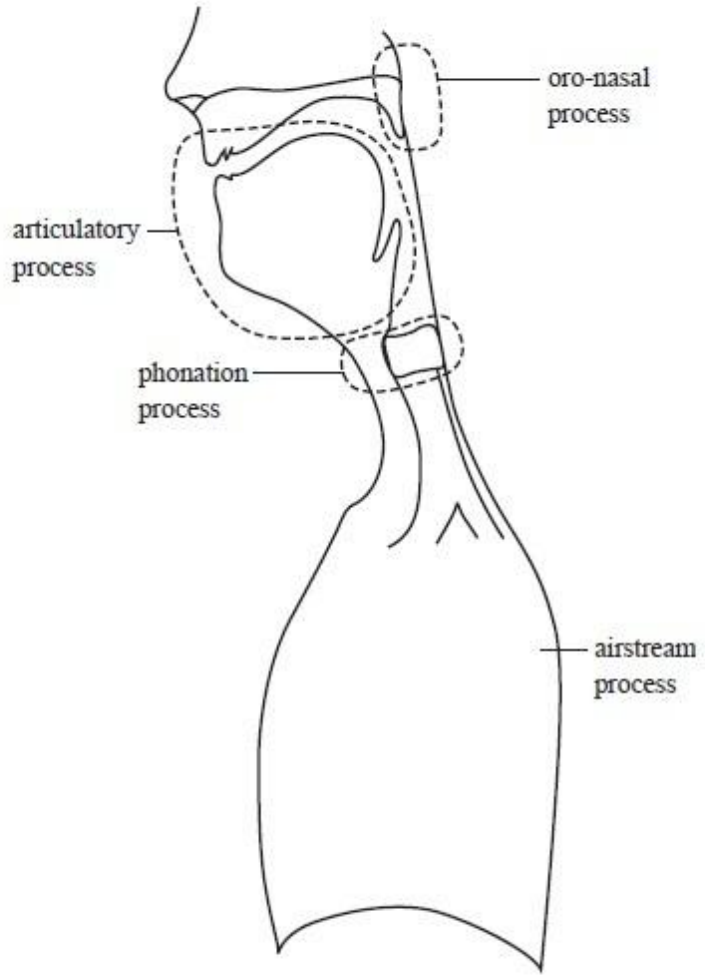
2.5 Speech Production

Lagefoged and Johnson (2011) stated that the discribing how speech sound are made, those are the result of the tongue and lips. It means that these movements as gestures forming particular sound. He also explains that people can get all of information by gestures of hands that people can see, but in making speech that people can only hear, people have found a marvelously efficient way to give information. The gesture of the tongue and lips are made audible, so that they can be heard and recoqnized.

Making speech gestures audible influences pushing air out of the lungs while producng a voice in the throut or mouth (Lagefoged, 2011). He explains producing air of spech sounds is the respiratory system pushing air out the lungs.

On the other hand, Lagefoged (2011) explains that the speech production mechanism shows the four main components. They are the airstream process, the phonation process, the oro-nasal process, and the articulatory process. The airstream process includes all the ways of pushing air out that provide the power for speech. The possibility of the airstream going out through the mouth. The movements of the tongue and lips interacting with the roof of the mouth and the pharynx part of the articulatory prosses.

Figure The four main components of the speech mechanism.



2.6 Vowels

In English, the most important to learn the sound is vowel. Because it is difficult to know where to put tongues when people make pronouncing vowels, they need to experiment with the sounds.

Vlack (2004) stated that the place of articulation of vowels is made especially difficult because in vowels the tongue should not actually touch any particular place in the mouth. That is there is no physical contact between the tongue and the mouth in vowels sounds. Vowels are usually found at the center of a syllable and it is rare to find any sound other than a vowel which is able to stand alone as a whole syllable (Clark and Yallop, 1995). There are various kinds of English vowel sound, they are short vowel, long vowel and diphtong. Those are short vowel, long vowel, and diphthong. According O'Connor (1973) classified vowel sound are:

2.6.1 Short vowels

Short vowel means that makes short sounds. There are seven short vowels in English. The symbol for these short vowel are /ɪ/, /ʊ, /e/, /ə/ /æ/, /ʌ/, /ɒ/**.**

/ɪ/ lips are spread loosely, the tongue is more relaxed, and the tongue sides may just touch the upper molars. /ʊ/ lips are rounded but loosely, while the tongue is relatively relaxed and the part of the tongue just behind the center is raised. /e/ lips are loosely spread, the front of the tongue is between half open and half close position and the sides of the tongue may touch the upper molars. /ə/ lips are relaxed and neutrally spread. The centre of tongue is between the half closed and half-open positions. /æ/ lips are neutrally open and the front of the tongue is raised just below the half open position. /ʌ/ lips are neutrally open and the centre of the tongue is raised to

just above the fully open position. /ɒ/ lips are lightly and the back of the tongue is in the fully open position.

2.6.2 Long vowels

Long vowels are the vowels which tend to be longer than the short vowels in similar context.There are five long vowel sounds in English. The symbol for these long vowel are /i:/ /u:/ /ɜ:/ **/ɔ:/ /ɑ:/.**

/i:/ lips are spread the front of the sides of the tongue touches molars. /u:/ the back of the tongue is raised the lips are rounded and the tongue is tense. /ɜ:/ lips are relaxed and neutrally spread. The centre of the tongue is between the half-close and half-open position. **/ɔ:/** lips are loosely rounded and the back of the tongue is raised to between the half-open and half-closed position. **/ɑ:/** lips are neutrally open and the tongue is between the centre and the back in the fully open position.

2.6.3 Diphthongs

According to Jones (2003), a diphthong is a sound that there is a glide from one to another. A diphthong is also defined as a combination of vowel sounds that acts like long vowels in one syllable. However, according Hill and Ure (1962) a diphthong can be a combination of two vowels even they do not belong to the same syllable.

2.7 Vowel Quality

According Lagefoged and Johnson (2011) showed that the speech sounds can be different in pitch, in loudness an in quality. He stated the

differences in quality of a vowel depends on its overtime structure. It means that a vowel sound sound contain a number of different pitches stimultaneously. There is pitch which s actually spoken and the various overtone pitches that gives distinctive quality. He also said that one vowel to anotherr can be distinguished by the differencess in these overtones. Johnson (2011) said the overtones are called formant.

Ladefoged (2011) said that there are two features of vowel quality. They are height and backness that are used to contrast one vowel with another, and there are other features that are used less frequently. In this case, the feature of vowel quality based on the explanation of Lagefoged can be concluded the formant frequency has some affects. Such as frequency of formant one affect height and frequency of formant two affects backness.

2.8 Instrument to vowel Quality

According Sharma and Podesva (2013) said that there are four kinds of transcribing software. Those are Praat, CLAN, ELAN, TypeCraft. The writer chooses Praat software because it is easier than others. It makes easier the writer to analyze and it is also easy to understand for me as beginner. Praat has been designed for both beginners and expert users (Goldman, 2004).

Praat is a software tool for speech signal edition and labeling, as well as for various acoustic analyses (spectral, formant, pitch, intensity). The praat program is designed by Paul Boersma and David Weenik of the Institute of Phonetic Science of the Amsterdam. The home page is http://.praat.org or http://www.fon.hum.uva.n1/praat/. The praat is one of computer software that

is used to analyze physical properties of speech and phonetics (acoustic), such as loudness, pitch, and quality. It can be operated in UNIX, LINUX, Max and Microsoft Windows (Wright and Nichols, 2009).

2.9 Previous Study

Hassan (2014) investigated learners whose first language is Sudanese Spoken Arabic. The subjects for the study were fifty students from University of Sudan of Science and Technology (SUST), and thirty university teachers of English language from the same university. The instruments used for collecting the data were observation, recordings and a structured questionnaire. The data collected were analyzed both statistically and descriptively. The findings of the study revealed that Sudanese Students of English whose language background is Sudanese Spoken Arabic, had problems with the pronunciation of English vowels that have more than one way of pronunciation in addition to the consonant sound contrasts e.g. /z/ and /ð/, /s/ and /θ/, /b/ and /p/, /ʃ/ and /ʧ/. Based on the findings, the study concluded that factors such as Interference, the differences in the sound system in the two languages, inconsistency of English sounds and spelling militate against Sudanese Students of English (SSEs) competence in pronunciation.

Mayasari (2013) analyzed of students' errors in pronouncing vowels. Most of the students may have problems to pronounce English vowels, although they get English lessons in their school and they can not master English pronunciation well. Therefore, students often make errors. The

problem in this study is kind of errors that students faced in pronouncing English diphthong and the purpose of this study is to find out the error that the student faced in pronouncing the English diphthong. Population of this research is consisted of 7 classes total number 266 students are chosen as the population, but only 31 students were the subject of research. Instrument that is used by the writer is a test and recorder to record the pronunciation of students in conducting tests. In analyzing the data using descriptive analysis to calculate the percentage of all errors and interpret the results of the data analysis. There are 3 diphthongs *aɪ* the error number is 63,63%, while the number of *aʊ* 30.54%, 6.08% and then *ɔɪ* numbers. So, the results of then analysis, the most diphthongs that students' errors pronouncing diphthong is *aɪ*.

This research has similarity with the previous study. Both of them analyzed pronounce vowel sound. In Hasan's research did not mention the data fully in his research. In other hand, Mayasari (2013) she mentioned all the data, but she only analyzed vowel sounds that focused on the diphthong. In this research, the writer tries to complete the previous study include the data and analyze vowel sounds (long vowel and short vowel).