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Minimal Pairs: An Analysis Of College Students' English Pronunciation Errors

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ABSTRAK
This study aims to analyze pronunciation in English by using minimal pairs. A qualitative research method with a quantitative approach was used with the number of participants 15 students majoring in English education, North Sumatra State Islamic University. In collecting data, pronounciation tests and listening tests were analyzed using descriptive qualitative techniques. The minimum pairs tested were: /k/ - /g/, /p/ - /b/, /t/ - /θ/, /p/ - /f/, /s/ - /ʃ/, /s/ - /z/, /tʃ/ - /dʒ/, /f/ - /v/, /t/ - /d/. The highest number of errors in the pronounciation test reached 66.7% and in the listening test reached 73.3%. More knowledge about phonology is still needed so that pronounciation skills are even better. If pronounciation is good, listening skills will also be good and communication in English can run smoothly without any misunderstanding.

ABSTRACT
Penelitian ini bertujuan untuk menganalisis pengucapan dalam bahasa Inggris dengan menggunakan pasangan minimal. Metode penelitian kualitatif dengan pendekatan kuantitatif digunakan dengan jumlah partisipan 15 orang mahasiswa jurusan Pendidikan Bahasa Inggris Universitas Islam Negeri Sumatera Utara. Dalam pengumpulan data, tes pronounciation dan tes listening dianalisis dengan menggunakan teknik deskriptif kualitatif. Pasangan minimum yang diuji adalah: /k/ - /g/, /p/ - /b/, /t/ - /θ/, /p/ - /f/, /s/ - /ʃ/, /s/ - /z/, /tʃ/ - /dʒ/, /f/ - /v/, /t/ - /d/. Jumlah kesalahan tertinggi pada tes pronounciation mencapai 66,7% dan pada tes listening mencapai 73,3%. Pengetahuan lebih lanjut tentang fonologi masih diperlukan agar kemampuan pronounciation lebih baik lagi. Jika pronounciation baik, maka kemampuan mendengar juga akan baik dan komunikasi dalam bahasa Inggris dapat berjalan dengan lancar tanpa ada kesalahpahaman.

INTRODUCTION

Minimal pairs in phonology are a pair of words that vary but have the same sound pronunciation in both. A minimal pair is two words, which are identical in form except for a contrast in one phoneme, and occur in the same position. Examples of English minimal pairs are: Ball – Tall, Breed – Bleed, Grow – Glow, Fire – File. Such pairs have been used to determine non-native speakers' ability to understand the contrast in meaning resulting from the minimal sound contrast. As a non – native speakers several words that have the same sound tend to make non-native speakers somewhat confused, due to the similar pronunciation makes them often get confused or misinterpret a sentence that has the same sound. Therefore, we created this journal to provide information about what are minimal pairs in English pronunciation, and explain how it is possible for a word to have the same sound but have a different meaning in English.

We conducted research on several students from the State Islamic University of Medan regarding minimal pairs and also researched how they pronounced the same sound in the minimal pairs of consonant sounds. in this study we target readers to know more deeply about consonant letters using minimal pairs as the medium, which results in consonant letters that initially only consonants can stand due to minimal pairs that produce words with the same sound as several consonant letters another if installed. According to results of the research that we did, some of the volunteers' pronunciations were still wrong due to the sound produced from the minimal pairs, some of them still said one word with the same sound as the Life/Live example, some of them were still wrong in pronouncing the word according to the correct sound. As a result, this causes people who listen to have misunderstandings in communicating due to pronunciation that is similar to this which seems almost the same. In

pronounciation the clarity of sound or sound is a top priority, because if a pronunciation does not have a clear sound this will make it difficult for the listener to hear what sentence is being said by the speakers.

LITERATURE REVIEW

Phonetics

Phonetic is the study of speech-sounds the production, transmission and reception (Kusuma, 1990: 1). Phonetics is the science of human speech sounds, it studies the defining characteristics of all human vocal voice and concentrates its attention on those sounds which occurs in world's language. It looks speech sounds from three distinct but interindependent viewpoints. Interindependent viewpoints:

1. Articulatory phonetics: It studies the vocal organs, though the use of which we articulate the speech sounds.
2. Acoustic phonetics; It studies the sounds 'waves, which is the physical way in which sounds are transmitted through the air from one person to another.
3. Auditory phonetics: It studies the way in which human beings perceive sounds through the medium of ear. As phonetics studies about the speech sounds, it bases the analysis on terms :

- Speech sounds are described in accordance to which of the articulators produce the sounds.
- Speech sounds are described in accordance to the manner of the articulator when it is producing the speech sounds, and,
- Sounds are described in accordance to the presence of the vibration of the vocal cords that will produce voiced and voiceless sounds.

Consonant Sounds

Consonants are sounds in which the air stream meets some obstacles in the mouth on its way up from the lungs, as we learned earlier. Most consonants are not as smooth-sounding as vowels; they pop, hiss, snap, or hum. The table below shows the phonemic symbols for American English consonants. There are alternate symbols for a few of these sounds, but overall, the consonant symbols are very consistent across different versions of the phonemic alphabet, and they are basically the same for American English and British English. Phonologists classify consonants by describing these three sets of categories:

1. Voicing

When the vocal cords are stretched tight so that they vibrate during the pronunciation of sound, we say that the sound is voiced. Sounds that are produced without vibration of the vocal cords are called voiceless. To tell if a sound is voiced or voiceless, touch your throat gently as you say it. When you say a voiced sound, you can feel a vibration or buzzing in your throat. For a voiceless sound, you can't. You can also feel the voicing of sounds by putting your fingers in your ears. When you say a voiced sound, it will seem louder. When you say a voiceless sound, it won't.

When you do this with students, try to say only the sound you're listening to, without a vowel after it. For example, to practice /t/, say only /t/, not /tə/ or /tiy/. If you pronounce a vowel after /t/, the voiced vowel will cause vibration and students will be confused and might mistakenly think that /t/ is voiced. Many of the consonants of English form pairs—a voiced and a voiceless sound that are the same except for voicing. For example, /b/ and /p/ are identical except that /b/ is voiced and /p/ is voiceless. (Notice that one of these pairs—the voiceless sound /θ/and the voiced sound /ð/—are both spelled with the same two letters: th.) However, the voiced sounds /m/, /n/, /ŋ/, /l/, /r/, /w/, and /y/ have no voiceless counterparts, and the voiceless sound /h/ has no voiced counterpart

2. Place of articulation

We can also classify consonants by referring to the parts of the articulatory system that are active when we produce each sound. This is called the place of articulation.

- Bilabial: Both lips touch or almost touch. The sounds in this group are /p/, /b/, /m/, and /w/.
- Labiodental: The upper teeth softly touch the lower lip. The sounds in this group are /f/ and /v/.
- Dental (also called interdental): The tip of the tongue touches the bottom edge of the top teeth or between the teeth. The sounds in this group are /θ/ and /ð/.

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- Alveolar: The tip of the tongue touches or almost touches the alveolar ridge (the tooth ridge). The sounds in this group are /t/, /d/, /s/, /z/, /n/, and /l/.
- Palatal (also called alveopalatal): The blade of the tongue touches or almost touches the hard palate. The sounds in this group are /ʃ/, /ʒ/, /ʧ/, /ʤ/, /r/, and /y/.
- Velar: The back of the tongue touches the soft palate. The sounds in this group are /k/, /g/, and /ŋ/.
- Glottal: There is friction in the glottis (the space between the vocal cords). The only phoneme in this group is /h/.

3. Manner of articulation

There is often more than one sound that is pronounced in the same part of the mouth, that is, with the same place of articulation. To distinguish between these similar sounds, we can describe their manner of articulation. This tells how we produce a particular consonant sound—whether it comes out smoothly or roughly, whether it's like a pop or a hiss or a hum. The manners of articulation for English consonants are listed below.

- Stops (also called plosives): The air stream is blocked completely somewhere in the mouth, air pressure builds up, and then it's released, like a tiny explosion. The stops in English are /p/, /b/, /t/, /d/, /k/, and /g/.
- Fricatives: The air stream is compressed and passes through a small opening in the mouth, creating friction—a hissing sound. The air stream is never completely blocked, so the sound can continue. The fricatives are /f/, /v/, /θ/, /ð/, /s/, /z/, /ʃ/, /ʒ/, and /h/.
- Affricates: A combination of a stop followed by a fricative—an explosion with a slow release. The affricates are /ʧ/ and /ʤ/. Each of these symbols is made up of two parts—a stop symbol and a fricative symbol. This reminds us that the sounds also have two parts.
- Nasals: In these sounds, the tongue or lips block off the vocal tract so air can't go out through the mouth. Instead, the passage leading up into the nose opens so that the air stream can go out through the nose. The sounds in the nasal group are /m/,/n/, and /ŋ/.
- Liquids: These are sounds that are pronounced very smoothly, like water flowing in a river. The air stream moves around the tongue in a relatively unobstructed manner. The liquid sounds in English are /l/ and /r/.
- Glides (also called semivowels): A glide is like a very quick vowel. For this reason, they're sometimes called semivowels, which means "half-vowels." They sound like vowels, but they can function as consonants. The glides in English are /w/ (which sounds like a quick /uw/) and /y/ (which sounds like a quick /iy/).

"Consonant Of American English"

Example	Symbol	Example	Symbol
pot	*/p/*	*shop*	*/ʃ/ or /š/*
take	*/t/*	*house*	*/h/*
thick	/θ/	*lamp*	*/l/*
sun	*/s/*	*win*	*/w/*
zoo	*/z/*	*you*	*/y/ or /j/*
book	*/b/*	*beige*	*/ʒ/ or /ž/*
very	*/v/*	*sing*	*/ŋ/*

Minimal Pairs

Minimal pairs are pairs of words which differ in the pronunciation of one sound only. An example for English is the pair ship and sheep, where the distinguishing sounds are hi and I\:I. Indeed, this pair has become famous as it is the title of a pronunciation coursebook (Baker 1981) which many ELT schools have in their resources library. Minimal pairs are often used as a short cut in taxonomic phonemic theory (the analysis of phonology generally used in the 'British school and associated with names such as Daniel

Jones and A. C. Gimson). If you can find a minimal pair for two sounds, then they are distinctive units (phonemes) in the sound system of the language.
In phonological theory, a minimal pair is a pair of words that only differ in a single sound segment, such as a consonant or vowel. Consonants can have initial, medial, and final positions in a word.

1. Initial sounds refer to consonant sounds that appear at the beginning of a syllable or word. In this theory, initial sounds can be divided into zero initial sounds and consonant initial sounds. For example: /p/ and /b/: *pat - bat*, /s/ and /z/: *sip – zip*.
2. Medial sounds refer to consonant sounds that appear between two vowels in a syllable. Divided into hissing and non hissing medial consonant sounds. Examples: /p/ and /b/: *staple - stable*, /s/ and /z/: *fussy – fuzzy*.
3. Final sounds refer to consonant sounds that appear at the end of a syllable or word. Divided into plosive consonant final sounds and fricative consonant final sounds. Examples: /p/ and /b/: *rope - robe*, /s/ and /z/: *mace – maze*.

"Example Of The Minimal Pairs (consonant sound)"

Pat	***bat***
lot	***not***
flight	***fight***
writer	***rider***
sip	***zip***
tie	***lie***
tease	***knees***
arrive	***alive***
grow	***glow***
sigh	***thigh***
pin	***bin***
tent	***tenth***
sheer	***cheer***
bowling	***boring***
kneel	***near***
hard	***heart***
bent	***vent***

The Relationship Between Pronounciation Skills And Listening Skills

Pronunciation is the way a person pronounces or pronounces words, sounds and sounds in a language. It involves the organs of speech to produce the right sounds. Listening is the ability of a person who obtains and understands information through hearing which involves receiving, processing and interpreting the sounds heard to build understanding conveyed by the speaker. In phonology, there is a close relationship between pronounciation and listening. A person's ability to pronounce sounds correctly also has an impact on their ability to understand and listen to the sounds spoken by others. Likewise, having good listening skills can affect a person's ability to pronounce sounds correctly because they can imitate the sounds they hear.

METHODOLOGY

The research method used is qualitative research with a quantitative approach. This approach combines qualitative and quantitative methods to gain a more comprehensive and in-depth understanding of the phenomenon under study.

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Partisipant

The subjects of this study were fifteen participants from fourth semester English Education students, North Sumatra State Islamic University. Where these fourth semester students have received material about Phonology.

Data Collection

In collecting data, researchers conducted pronounciation tests and listening tests using quantitative data to measure, count, or analyze patterns, frequencies, or relationships between certain variables. The tools used are voice and audio recorders as documentation to analyze the data. Pronunciation tests and listening tests are usually used in research that focuses on analyzing the language ability, pronunciation or auditory understanding of individuals.

Data Analysis

The data analysis technique used is descriptive qualitative data analysis. This technique involves understanding and explaining the test results in depth, focusing on the interpretation and description of the context of the individual's pronunciation or auditory comprehension. The processes involved include: transcription and categorization, identification of patterns and themes, interpretation and explanation, and report generation. This allows the researcher to explain and understand the phenomenon holistically.

FINDINGS

Pronounciation Test

Data collection and data analysisIn this test, the minimal pairs are divided into three parts. Distinguished by consonant sound position including: Initial, Medial and Final.

Initial

Consonant Sound	Students' number (wrong)	Total	Percentage
/k/ - /g/	6,7,12	3	20%
/p/ - /b/	-	-	-
/t/ - /θ/	1,2,4,5,7,10,12,13	9	60%

Medial

Consonant Sound	Students' number (wrong)	Total	Percentage
/p/ - /f/	-	-	-
/s/ - /ʃ/	3,4,6,7,8,9,11	7	46.7%

Final

Consonant Sound	Students' number (wrong)	Total	Percentage
/s/ - /z/	2,3,4,5,6,7,8,9,11,12	9	60%
/tʃ/ - /dʒ/	3,7,9,11,12	5	33.3%
/f/ - /v/	1,2,3,4,5,6,7,9,11,13,15	11	73.3%
/t/ - /d/	2,3,4,5,6, 9,11,12,13,14	10	66.7%

Listening test

In this test, audio pronounciation of one of the words from the minimum pairs previously in the pronounciation test is used.

Consonant sound	Words	Students' number (wrong)	Total	Percentage
/k/ - /g/	Card	-	-	-
/p/ - /b/	Pit	10	1	6.7%
/t/ - /θ/	Tree	10,11,15	3	20%
/p/ - /f/	Coffee	-	-	-
/s/ - /ʃ/	Mashes	2,3,9	3	20%
/s/ - /z/	Eyes	2,3,5,6,7,11,12,14,15	9	60%
/tʃ/ - /dʒ/	Ridge	1,2,3,4,5,8,11,12	8	53.3%
/f/ - /v/	Life	1,9,11	3	20%
/t/ - /d/	Ride	1,4,5,6,7,8,9,11,13,14	10	66.7%

Discussion

From the results that have been listed in the table, it can be seen that there are several minimal pairs that are easy to understand the difference so that in the pronounciation test and listening test no errors occur. But in some minimal pairs there are still many mistakes made by students in their pronunciation and listening. So this needs to be studied specifically.

Minimal pairs /k/ - /g/

The results listed in the table show that most students are good at distinguishing minimal pairs of card and *guard* whose consonant sound is located at the beginning, in IPA card /kɑrd/ and *guard* /gɑrd/. /k/ is a voiceless consonant whose sound formation is referred to as voiceless plosive consonant. So when pronouncing /k/, the tongue and the back palate (velum) contact each other, the air is completely blocked at the back of the oral cavity. Whereas /g/ is a voiced consonant whose sound formation is referred to as a voiced plosive consonant. So when pronouncing /g/, the tongue also contacts the back palate, but the vocal cords vibrate and cause voiced pronunciation. In the pronounciation test, there were three people who got it wrong because they did not pronounce the word *guard* with non-vibrating vocal cords so it still sounded like they were pronouncing the consonant /k/.

Minimum Pairs /p/ - /b/

In the minimal pairs *pit* and *bit*, almost all students were able to distinguish the pronunciation between the two. These minimal pairs are bilabial sounds where the active articulator is the bottom lip and the passive articulator is the top lip. /p/ is a voiceless bilabial plosive while /b/ is a voiced bilabial plosive. When pronouncing /p/, the lips are tightly impregnated, blocking the airflow through the mouth. When pronouncing /b/, the lips are also impregnated, but the vocal cords vibrate and cause voiced pronunciation.

Minimal Pairs /t/ - /θ/

There are many errors in the pronunciation of the minimal pairs tree and three, 60% of the 15 students mispronounce these minimal pairs. In the transcript tree is pronounced /tri/ and three is pronounced /θri/. /t/ is a voiceless alveolar plosive and when pronouncing /t/, the tip of the tongue contacts the canine region and blocks the airflow. Whereas /th/ or /θ/ is a voiceless dental fricative and the way it is pronounced, the tip of the tongue is rubbed between the upper and lower teeth to create a distinctive friction. The students are still mistaken in their pronunciation, they pronounce the word /three/ the same as the pronunciation of the word /*tree*/ or /tri/. In the listening section, it is quite good because the word chosen is the word /tree/ so they are not much confused because they are used to pronouncing *tree* and *three* in the same way.

Minimal Pairs /p/ - /f/

In this medial minimal pairs *copy* and *coffee*, all students can distinguish the pronunciation very well. There were no errors in the pronounciation test and listening test in these minimal pairs. The consonant /p/ in medial position is pronounced as voiceless, or a sound produced without vocal cord vibrations. This means that the lips meet and close completely, then open sharply to produce the /p/

sound. The consonant /f/ in medial position is pronounced as a voiceless consonant. To pronounce it, the upper and lower teeth approach each other and produce a friction sound.

Minimal pairs /s/ - /ʃ/

The pronunciation of minimal pairs masses and mashes is quite confusing for students, as shown in the table, the percentage of errors is 46.7%. In the transcript, *masses* is pronounced /mæses/ while *mashes* is pronounced /mæʃes/. The consonant /s/ is an alveolar voiceless consonant, meaning that the sound is produced with air flowing through the gap between the middle of the tongue and the alveolar palate. Its pronunciation is also often accompanied by a hissing or scraping sound.

While the consonant /ʃ/ is a palato-alveolar voiceless consonant, which means that the sound is produced with slightly curved lips, the tongue approaches the palate, and air flows through the gap between the tongue and the palate. Usually in pronunciation produces a hissing sound that is louder and clearer than the pronunciation of /s/. in the listening test is good enough because only 20% of errors.

Minimal Pairs /s/ - /z/

The minimal pairs *ice* and *eyes* are quite confusing in their correct pronunciation. The transcript of the word *ice* becomes /aɪs/, the pronunciation of the final consonant /s/ is the same as the pronunciation of the previous medial consonant /s/ in the word *masses*. In the word *eyes* transcribed into /aɪz/, the final consonant /z/ is pronounced as an alveolar voiced consonant. The pronunciation produces the same sound as the consonant /s/ but with vocal cord vibration. It can be seen in the table that these minimal pairs make students difficult because of the similarity of the pronunciation of the two words. From the results of both tables both have a percentage error of 60%, it can be concluded that these minimal pairs are difficult to distinguish in pronunciation.

Minimal Pairs /tʃ/ - /dʒ/

The word *rich* with the transcript /rɪtʃ/, the final consonant /tʃ/ is a voiceless palato-alveolar affricate, meaning that air flows through the gap between the tongue and palate, then is released with a slight palatal hold before producing the released sound (plosive). The word *ridge* becomes /rɪdʒ/ a voiced palato-alveolar affricate. In the pronunciation of these minimal pairs it is also quite difficult, in the pronounciation test 33.3% of students were wrong and in the listening test it was higher at 53.3% of students were wrong. Because the similarity is so thin between the two even from native speakers it is still difficult to distinguish.

Minimal Pairs /f/ - /v/

The similarities in the minimal pairs *life* and *live* are so close that they almost sound the same. But if you look closely, you will hear the difference as well as the pronunciation. The word *life* or / laɪf/ in pronunciation is the same as the medial consonant /f/, a voiceless labio-dental fricative. While the word *live* with the transcript /laɪv/ or /liv/, is a voiced labio-dental fricative where the pronunciation is similar to the word life or consonant /f/ but with vocal cord vibrations.

Many students cannot distinguish between /f/ and /v/, especially if the consonant is positioned at the final. So that many of the students are still wrong in their pronunciation. In the 73.3% pronounciation test and 20% listening test. The reason for the lower error in listening is because students only know the pronounciation of live is /liv/ and what is tested on the listening test is the word life. Therefore more people answered correctly on the listening test.

Minimal pairs /t/ - /d/

In the minimal pairs write and ride, there are many errors in the pronounciation test and listening test. The word *write* with the transcript /raɪt/ is the same as its pronunciation with the initial consonant /t/, is a voiceless alveolar plosive and does not involve vocal cord vibrations. While the word *ride* with the transcript /raɪd/ is a voiced alveolar plosive which means the sound produced by holding the sound between the tongue and the alveolar palate, then released with sound and vocal cord vibrations. There are 66.7% who are wrong in the pronunciation test and listening test, this shows that these minimal pairs are still difficult to distinguish on consonants in the final position.

Even though the words *write* and *ride* are often spoken or heard, there are still many students who misinterpret the pronunciation. Many of the students still pronounce *ride* with the consonant ending /t/ instead of /d/.

CONCLUSION AND SUGESSTION

Conclusion

1. Pronunciation in English is not as easy as imagined, it will feel difficult if done. Two tests have been carried out, namely the pronounciation test and the listening test to analyze the ability or understanding of students in pronouncing words in English. These two tests were carried out so that researchers got accurate data. It was found that English education students who have studied phonology still experience errors in pronouncing English words. Many pronunciation errors occur in minimal pairs where the words are often spoken and heard. Errors in the pronounciation test include minimal pairs: initial (/t/ - /θ/), final (/s/ - /ʃ/, /f/ - /v/, /t/ - /d/). While in the listening test there are many errors in minimal pairs: final (/s/ - /z/, /tʃ/ - /dʒ/, /t/ - /d/).
2. So it is very necessary to understand how to pronounce words in English correctly. One of them is by learning phonology. Minimal pairs can be a medium to test how good one's pronunciation is in English. With minimal pairs it also makes it easier for someone to know where the difference lies in words that sound the same in pronunciation. Pronunciation and listening are closely related, so researchers use both tests. If we have good pronunciation then listening skills will be good too. In communication both things are very important, because it will be a benchmark for good communication.

Suggestion

Learning about phonology is important in English because in it there are many branches of knowledge that help us develop English language skills, as in this journal, minimal pairs are one of the materials contained in phonology. Minimal pairs are a pair of words or phrases that have almost the same pronunciation. It's even quite difficult to tell how to pronounce it in detail. therefore we must study it in detail and depth. That's why we created this journal to collect data and also educate readers about minimal pairs material in phonology.

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