Think, Tink or Sink, the Phonological Awareness of English Voiceless Interdental Fricative [θ] and [ð] Among Chinese, Arab and Pakistani Learners of English

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Abstract: Phonology means the sounds of a language, how they are organized to form words. Phonological consciousness is that talent to understand and recognize that words and phrases comprise of different sound units [33]. The target of this study is to research the Phonological awareness of the English Voiceless Interdental Fricative [θ] and [ð] sounds Among Chinese, Arab and Pakistani learners of English. Twelve respondents took part in this study six respondents from China, four from Pakistan and two respondents from Egypt. A wordlist was given. This list consists of 50 words terms of dental fricatives [θ] and [ð] sounds. This wordlist selected mostly from common vocabulary to give the respondents the feeling of relaxing and unknowing what vocabulary would be analyzed. An evaluation paper ready-made adapted from a study for the fulfillment of the requirement for the master degree of arts [36]. The results state the dental fricatives [θ] and [ð] are replaced by /the/ and /d/ by most respondent especially the Pakistani and Chinese learners.

Keywords: Phonology, Voiceless Interdental Fricative [θ] and [ð] Sounds, Non-Native English Speakers, Native Language

1. Introduction

Phonological awareness is that ability to understand that words and phrases individually or in a context compose of various sound units. This term involves several sound-related skills necessary for a person to develop as a learner. Children develop phonological awareness understanding that words consist of small sound sections (phonemes). They learn that the words could be divided into greater sound “chunks” recognized as syllables, in addition, every syllable starts with a sound (onset) and finishes with another sound (rime).

Phonological understanding develops the cornerstone regarding phonics. Phonics seems to produce words tend to be related to reading. When computing any learner’s phonological awareness, we all take a look at his capability to use distinctive expertise. Children having powerful phonological awareness will be able to recognize to employ rhyme, break phrases directly into syllables, mix phonemes directly into syllables in addition to phrases, identify the beginning and ending sounds in a syllable and see smaller words within larger words. (i.e. “Cat” [kæt] in “catalog” [ˈkætəlɔg]).

Figure 1. “Cat” [kæt], “catalog” [ˈkætəlɔg] syllable tree.

1.1. Background of Study

Different people from different countries need to learn English although they find out the English language difficult language to learn. Even though the English language is mostly spoken all over the world, most of English speakers are non-natives, [38].
1.2. Statement of Problem

Non-native English Language speakers all over the world normally have their own means to produce English sounds. The reason for this is the interfering of their native language. Lott, (1983) states that intrusion denotes to “the errors made by learners in using the target language and it can be traced back to the learner’s native language,” (p.256) [27]. The interference of native language also happens among Chinese, Pakistani and Arab learners of English. Both Chinese, Urdu, Arabic and English languages have distinctively different language system.

1.3. Purpose of Study

The target of this study is to study the pronunciation of two distinguishing English sounds \( \theta \) and \( \partial \) when different groups of Pakistani, Chinese and Arab learners of English produce. This study aims to make a comparison of the pronunciation of voiceless interdental fricative \( \theta \) and \( \partial \) sounds pronounced by Pakistani, Chinese and Arab learners of English at university Utara Malaysia.

1.4. Research Question

This study posits the following question:
1-How do Pakistani, Chinese and Arab learners pronounce the voiceless interdental fricative \( \theta \) and \( \partial \).
2-What is the level of sounds substitution?

1.5. Conceptual Framework

![Figure 2. Conceptual Framework.](image)

1.6. Significant of Study

In Malaysian universities, English language has come to be an important medium of tutoring, Pakistani, Chinese and Arab learners need to learn and obtain English skills before sitting for the study in the university. Therefore, it is very vital to comprehend the problems faced by the Pakistani, Chinese and Arab students in the process of learning and acquiring English.

1.7. Limitation of the Study

The current study emphases on features of phonetic sounds that are the voiceless inter-dental fricative \( \theta \) and \( \partial \) sound. The Pakistani, Chinese and Arab learners, however, might be having more problems in producing other English sounds as some English consonants and vowel sounds do not exist in their first language. Hence, it is suggested for the future research to investigate and compare the production of other English sounds among Chinese, Pakistani and Arab learners of English.

1.8. Definition of Terms

These explanations are generally to help you, readers, fully grasp and also have an obvious take on the particular setting of the study. Additionally, it is designed to give an obvious thought of the research with the investigator and also the readers.

Inter-dental - It talks about to the manner of articulation of English consonant where the tip of the tongue is placed in between the upper and lower lips.

b) Voiceless Sound - It refers to an English sound that is produced without any vibration of the vocal cord.
c) Fricative - It refers to “consonants with the characteristic that air escape through a narrow passage and makes a hissing sound,” [35].
d) Non-native English speakers - It refers to English speakers whose mother tongue is not English.
e) Native language - It refers to the mother tongue of a speaker.

2. Literature Review

2.1. Introduction

Several researchers believe the native vernacular impedance adopts a main part in many errors done by English students in obtaining the language Thus, [41] furthermore commend the pronunciation of second language students to be influenced by their "first language impedance, learner's age, learner's state of mind and brain science, former articulation direction, and insufficient language information of English phonology and phonetics.”.

The reason for this research is to present a research of different pronunciation in English sounds such as interdental dental fricative \( \theta \) and \( \partial \) by Chinese, Arabs, and Pakistani learners.

2.2. Phonology

The massive difference in phonology between Chinese, Urdu, Arabic and English languages gives rise to difficulty in pronunciation of words for Chinese, Arabs, and Pakistani learners. Let’s have a look at the nature of the two challenging two sounds to most non-native learners.

2.3. Chinese Learners

As second language learners, Chinese learners are pronounced some English sounds differently. In spite of the diverse nationality and tongue of Chinese dialect, most Chinese learners of English are constantly known as having a comparable issue in learning and obtaining English because of the distinctive framework and structure of English and their local dialect, Chinese. Some English consonants and vowels won’t exist in the Chinese sounds framework, [41].

2.4. Arab Learners

As a second language learners Arab learners especially Egyptian pronunciation of English Voiceless Interdental
Fricative [θ] and [ð] [1]; [6]; [26]; [28]. It is distinguishable noted that Egyptian have the same challenge in pronouncing those two [θ] and [ð] sounds, the phonemes (/θ/ and /ð/) are non-core characteristics and replacing them with other phonemes (for example/s/ and/z/) is suitable as it has been proved empirically that this substitution does not cause breakdown in communication, [23]; [10]; [19].

2.5. Pakistani Learners

As second language learners in Pakistan, the researcher tries to define the phonological and phonetic characteristics of the English language as spoken in Pakistan. The dental fricatives [θ] and [ð] are replaced by /θ/ and /ð/. This is also true for Indian speakers of English [34]; [39]; [4]; [3]; [32]. Pandit, 1964, who furthermore do not have [θ] and [ð] in their languages. Kachru calls this a case of transfer to the substitution of elements from L2 into L1 (1969: 27). It must be noted, however, of which Pakistani audio speakers do not experience the particular phonetic distinction between your realizations in addition to the traditional acoustic quality of the English phonemes in addition to their own alterations except if their particular attention is usually particularly guided by it.

2.6. Production Environment of [θ] and [ð] Sounds

Language is really a special possession associated with human beings. It is a God’s exclusive reward to humans. The item will come close to the food and also creates humans’ superior by various other varieties in the globe. This is the language because of which all the dealings of the world are going on. There are thousands of languages spoken in the world, however, English is the most famous among those. The British Council says “English is the primary dialect of books, daily papers, airplane terminals and airport regulation, worldwide business and scholastic meetings, science, innovation, discretion, sport, universal competitions, popular music and publicizing”.

The/θ/ sound. As in the words: thing [θɪŋ], think [θɪŋk], through [θruː]. The [θ] is a sound from the ‘Consonants Pairs’ group and it is named the ‘Voiceless dental fricative’ [18].

This means that we create friction between the tongue and top teeth. The [θ] sound is made through the mouth and it is Unvoiced which means that we don’t use our vocal chords to make the sound. It is defined by the position of our tongue and teeth and it is a fricative, which is a sound that is produced by high-pressure airflow between narrow spaces in the mouth. In this case, it is the space between the tip of the tongue and the top teeth. To produce the sound, we have to stick out our tongue a little bit. This can feel very unnatural for some people who are not used to it. But it is essential to produce the sound correctly [18].

So we rest our top teeth on our tongue and then force air out between our teeth. The /θ/ sound is normally spelled with the letters ‘θ’ as in the words: three [θriː], something [ˈsʌmθɪŋ], month [ˈmʌðə], both [bəʊθ].

Words that begin with the [θ] sound: thank [θæŋk], third [θɜːd], thousand [ˈθɔʊzənd], throw [θroʊ],

Words with the/θ/ sound in the middle: nothing [ˈnʌθɪŋ], anything [ˈeniθɪŋ], author [ˈɔːθər], method [ˈmeθəd]. Words with the [θ] sound at the end: health [helθ], north [nɔːθ], truth [truːθ], mouth [maʊθ].

The[ð] is a sound from the ‘Consonants Pairs’ group and it is called the ‘Voiced dental fricative’. To produce the sound, we have to stick out our tongue a little. This can feel very unnatural for some people who are not used to it. But i is essential to produce the sound correctly. Rest our top teeth on our tongue and force air out between our teeth while voicing out [17].

The [ð] sound. As in the words: this [ðɪs], that [ðæt] other [ˈʌðə] the [ð] is a sound from the ‘Consonants Pairs’ group and it is called the ‘Voiced dental fricative’. This means that we create friction between the tongue and top teeth. The [ð] sound is made through the mouth and it is Voiced which means that you vibrate your vocal chords to make the sound. It is defined by the position of your tongue and teeth and it is a fricative, which means the sound is produced by high-pressure airflow between a narrow space in the mouth. In this case, it is the space between the tip of the tongue and the top teeth. To produce the sound, we have to stick out your tongue a little.

This can feel very unnatural for some people who are not used to it. But it is essential to produce the sound correctly. Rest your top teeth on your tongue and force air out between your teeth while voicing out. The [θ], phoneme is normally spelled with the letters ‘θ’ as in the words: the [ðə] mother [ˈmʌðə] whether [ˈweðə] either [ˈʌðə]. Words that begin with the [θ] sound: they [ðeɪ], though [ðəʊ], those[ðəʊz], then [ðen]. Words with the [ð] sound in the middle: other [ˈʌðə], although [əˈləʊθ], brother [ˈbrʌðə], southern [ˈsʌðən] words with the [θ] sound at the end /ð/ sound: with [wið] smooth [smuːθ], booth [buːð].

Nakamura, (1997) SLA researchers have discussed the adequacy of contrastive analysis hypothesis [31], Lado, (1957), in which the reason for second language learners' errors is said to be in the dissimilarity between the first language and the second language [25]. Several constant findings [7]; [14]; [13]. Duly & Burt, 1974) determined that all learners seem to learn languages in much the same way, which is developmental than interlingual [12], ignoring the dissimilarities of their first languages.

Regardless of contrastive studies that have been detected to be successful to some extent in the phonological part of language [8]; [6]; [5]; [29] they try to prove that even the phonological difficulties are not caused so much by the interference of the learner’s first language but by a universal learning mechanism of cognitive processes.

Selinker, (1972) stated When any learner learning any language other than his first language, he or she creates what we call an intermediary system that is framed of two parts, one is his first language (L1) and the other is the language he is learning (L2) [36]. For instance, if you are learning English (L2) and your first language is Arabic, you eventually have
an intermediary system composed of both Arabic and English called Interlanguage especially if you are not thoroughly proficient yet in the target language [21]; [15]; [16] [40]; [30]. In such a case, both Arabic that is what we can call the (L1) and English is the (L2) can result in the interlanguage which is produced by the learner as a structure of learning procedures and strategies such as Language Transfer, Overgeneralization, and Simplification that includes the features and rules of (L1) and (L2) where neither of them can’t be mastered by the learner. As a matter of fact, there are so many theories, some are supporting and the others are against this theory [24]; [20]; [28]; [22]; [2]; [11].

3. Research Methodology

3.1. Introduction

This investigation objects to study the production of voiceless inter-dental fricative [θ]and [ð] sound among Pakistani, Chinese and Arab learners of English. Grounded on many previous types of research, most non-native learners of English encounter challenges in learning and pronouncing English words because of the different construction and system of English language and their mother tongue, Chinese. This research employs a mixed method quantitative and qualitative method to analyze the respondent's pronunciation of [θ] and [ð] sound among Chinese, Pakistani and Arab learners of English. Thus it is better to conduct the study using both quantitative and qualitative research methodology. This is because the research problem of this study can be answered best by “a quantitative and qualitative study in which researcher seeks to establish the overall tendency from an individual,” [9].

3.2. Research Design

Observation analysis is selected as the research design of the pronunciation made by four different nationalities, China, Pakistan, Egyptian and Iraqi, both the Egyptian and the Iraqi students can be categorized under the umbrella of Arab students. The two specific English sounds [θ] and [ð] are chosen by researchers as the focus of observation. Using a word list as the instrument of this research, the respondents’ pronunciation is observed and assessed using a Likert scale in the adapted evaluation form.

3.3. Population and Sample

Twelve respondents took part in this study, six respondents from China five females, four respondents are degree students study at University Utara Malsia they Chinese students from China they were asked to pass the ELPT before they join the study in UUM. One respondent is a Ph. D. student who was also asked to pass the ELPT, the male respondent was asked to pass the ELPT all the Chinese respondents study English in their native schools before they join the university. Four male respondents from Pakistan two respondents are Ph. D. students they already passed IELTS test before joining the university and the were studied English in their secondary and two respondents are Master degree finally two Arab male respondents, a Ph. D. respondent from Egypt and the other a Master degree from Iraq.

3.4. Instrumentation

A list of words was given. The list comprised 50 words terms of dental fricatives [θ] and [ð] sounds. The words prepared in the word list were mostly common words in order to make the respondents feel more relaxed and unaware what words were being analyzed. An evaluation paper ready made to evaluate the respondent's production of this list of words focusing on the targeted 16 words and how the Substitution happen in their natural pronunciation. The evaluation did by English language teacher doing his master degree in phonetics his concentration on the targeted words and the way the respondent produce the [θ] and [ð] and the substitution done by respondents.

3.5. Research Procedures

The data of this research is collected from the target population of Twelve respondents took part in this study, six respondents from China five females, four respondents are degree students study at University Utara Malsia (UUM), Sintok, Kedah. Before the data collection was conducted. The respondents then are brought to a closed classroom and are asked to read, Reading wordlist individually. The whole reading session is recorded using a battery operated audio tape recorder (Sony IC RecorderLR03), were used for recording work. And also used TOSHIBA laptop core i3. The respondents’ pronunciation then is analyzed and transcribed by three different examiners to ensure the reliability of the transcription.

![Methodological Framework](image-url)
The list comprised 50 words terms of dental fricatives [θ] and [ð] sounds. The words prepared in the word list were mostly common words in order to make the respondents feel more relaxed and unaware what words were being analyzed. Before the recording process, the respondent was asked to familiarize themselves with the words and sentences through reading them once. The recording was conducted individually in a quiet room and took approximately five minutes for each respondent. Each respondent was required to read at a normal speed. Under the guidance of phonemic transcription in Cambridge English Pronouncing Dictionary, the recording was replayed many times and the pronunciation errors were noted.

4. Findings

In this chapter, the findings attained for this study are presented and the analysis will be presented. The wordlist was distributed to the Twelve respondents took part in this study. Since the objective of the study was to investigate the pronunciation of dental fricatives [θ] and [ð] sounds hence force, to achieve this objective, statistical techniques were applied by using SPSS 20. Data were collected from different age groups, education levels, and different nationalities.

The pronunciation of the [θ] and [ð] sounds by the respondents is analyzed as they read the wordlist. The respondents’ score for each of the correct and wrong pronunciation of the [θ] and [ð] sounds is evaluated in details using a Likert scale in an evaluation form. Besides, the substitutions used in replacement of the wrong pronunciation of the [θ] and [ð] sound are also documented.

4.1. Data Analysis

4.1.1. Substitution of [θ] by /t/

The pie chart figure 4, depicts the percentage of 65% of the total percentage of the respondents took part in this study this percentage shows that the Pakistani respondents occupy the first rate of the Substitution of the [θ] by /t/ sound. As this sound is considered a challenging sound to them. The chart also gives the detail about Chinese respondents who took part in this study. The Chinese percentage is 31% in the Substitution of the [θ] by /t/ sound, this clarifies the difficulty of pronouncing this exact sound according to the Chinese respondents. As far as the Iraqi is concerned 4% are not capable of pronouncing the correct [θ] sound. The chart shows that the Egyptian respondent who took part in this survey get 0% percent of making mistake in the pronunciation of the [θ] sound. Although most the Egyptian find the [θ] sound is very challenging sound to produce although in standard Arabic the [θ] is there but it is noted that in Egyptian Arabic Egyptians didn’t substitute [θ] by /t/ sound in the wordlist given.

Figure 4. Substitution of [θ] by /t/.

4.1.2. Substitution of [ð] by /d/

The pie chart figure 4, depicts the percentage of 58.67% of the total percentage of the respondents took part in this study this percentage shows that the Pakistani respondents occupy the first rate of the Substitution of the [ð] by /d/ sound. As this sound is considered a challenging sound to them. The chart also gives the detail about Chinese respondents who took part in this study. The Chinese percentage is 37.33% in the Substitution of the [ð] by /d/ sound, this clarifies the difficulty of pronouncing this exact sound according to the Chinese respondents. As far as the Iraqi is concerned 4% are not capable of pronouncing the correct [ð] sound. The chart shows that the Egyptian respondent who took part in this survey get 0% percent of making mistake in the pronunciation of the [ð] sound. Although most the Egyptian find the [ð] sound is very challenging sound to produce although in standard Arabic the [ð] is there but it is noted that in Egyptian Arabic Egyptians didn’t substitute [ð] by /d/ sound in the wordlist given.

Figure 5. Substitution of [ð] by /d/.
4.1.3. Total Mistakes

Table 1. Gender.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>7</td>
<td>58.3</td>
<td>58.3</td>
<td>58.3</td>
</tr>
<tr>
<td>Female</td>
<td>5</td>
<td>41.7</td>
<td>41.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Nationality.

<table>
<thead>
<tr>
<th>Nationality</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese</td>
<td>6</td>
<td>50.0</td>
<td>50.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Egyptian</td>
<td>1</td>
<td>8.3</td>
<td>8.3</td>
<td>58.3</td>
</tr>
<tr>
<td>Pakistan</td>
<td>4</td>
<td>33.3</td>
<td>33.3</td>
<td>91.7</td>
</tr>
<tr>
<td>Iraq</td>
<td>1</td>
<td>8.3</td>
<td>8.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: depicts the number of total mistakes according to Nationality factor, it shows that 50.0 % out of 100 percent mistakes is for Chinese respondents who take part in this study. While the Egyptian respondent's percentage is 8.3 out of 100 percentage of respondents who take part in this study are female. The Pakistani respondents’ percentage is 33.3 out of 100 percentage of respondents who take part in this study. While the Iraqi respondent's percentage is 8.3 out of 100 percentage of respondents who take part in this study.

Table 3. The level of Education.

<table>
<thead>
<tr>
<th>Level</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>degree</td>
<td>4</td>
<td>33.3</td>
<td>33.3</td>
<td>33.3</td>
</tr>
<tr>
<td>master</td>
<td>3</td>
<td>25.0</td>
<td>25.0</td>
<td>58.3</td>
</tr>
<tr>
<td>PHD</td>
<td>5</td>
<td>41.7</td>
<td>41.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: depicts the number of total mistakes according to the level of education factor, it shows that 33.3% out of 100 percent mistakes is for degree respondents who take part in this study. While the master respondents’ percentage is 25.0 out of 100 percentage of respondents who take part in this study are female. The Ph. D. respondents’ percentage is 41.7 out of 100 percentage of respondents who take part in this study.

Table 4. Age.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-25</td>
<td>4</td>
<td>33.3</td>
<td>33.3</td>
<td>33.3</td>
</tr>
<tr>
<td>26-30</td>
<td>2</td>
<td>16.7</td>
<td>16.7</td>
<td>50.0</td>
</tr>
<tr>
<td>31-35</td>
<td>4</td>
<td>33.3</td>
<td>33.3</td>
<td>83.3</td>
</tr>
<tr>
<td>36-40</td>
<td>2</td>
<td>16.7</td>
<td>16.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 4: depicts the number of total mistakes according to Age factor, it shows that 33.3 % out of 100 percent mistakes is for age group 1 from (20-25) respondents who take part in this study. While age group 2 from (26-30) respondents’ percentage is 16.7 out of 100 percentage of respondents who take part in this study are female. The age group 3 from (31-35) respondents’ percentage is 33.3 out of 100 percentage of respondents who take part in this study. While the age group 4 from (36-40) respondents’ percentage is 16.7 out of 100 percentage of respondents who take part in this study.

5. Conclusion

5.1. Introduction

Phonological awareness skills are important in order to develop learners’ skills. Having good phonological awareness skills means that learners are able to produce sounds and words correctly similarly to native speakers of English language, phonological awareness is important because it is a basis for understanding and using English in all forms of communication.

5.2. Limitation of the Study

This study is limited by the respondents who took part in it and the postgraduate students who actually study at the University Utara Malaysia. This study can take respondents from other universities to broaden the area of study, in my study I take just the students of this university without touching the school area. This study clarifies the research area by taking respondents from schools, college, and universities in other places in different places.

5.3. Suggestions for Future Studies

Phonology and sounds of English language are very significant for all non-native learners who study this language as a mediator in their degree and post graduate studies. It is very important to know and understand the nature of the pronunciation of English sounds in general [θ] and [ð] in particular. More detailed studies should be conducted to investigate why non-native learner find difficulty in pronunciation of English sounds, and to investigate the causes and cures to this phenomenon.

5.4. Conclusion

Language is a unique possession of human beings. English language is a unique possession of human beings. Voiceless Inter-dental Fricative [θ] and [ð] to non-native learners of English are challenging sounds. Learners are influenced by their first language. Age, the level of education
are significant factors that affect the proper production and the pronunciation of these challenging sounds. Phonological awareness to learners is a talent that can be developed through more practice, more training and comprehending second language phonological system.

References


