

THE UNIVERSITY OF DANANG  
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**ĐẶNG THỊ PHƯƠNG THẢO**

**AN INVESTIGATION INTO THE ARTICULATION OF  
THE MINIMAL PAIRS /p/-/b/, /t/- /d/, /tʃ/-/dʒ/ OF STUDENTS  
IN GRADE 7 AT VICTORY SCHOOL AND SOME  
SOLUTIONS**

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## CHAPTER 1

### INTRODUCTION

#### 1.1. Rationale

Nowadays, in the time of industrialization, modernization, and globalization, the role of English has increased faster and faster. Of all the aspects of English language, phonetics play a significant role in learning and teaching this language. Kenworthy (1987: 65) stated, “We need to remember that you cannot communicate with anything at all unless you can say the words in a way which the hearer can understand”. Therefore, it is very important for students to learn pronunciation which can help students have good communication skills by pronouncing well and controlling what are said. In contrast, it might be difficult to make themselves understood no matter how good their vocabulary and grammar are. It means that when students want to communicate, their incorrect pronunciation will not be understood by native speakers. Furthermore, pronouncing exactly also enables students to perceive information to avoid misunderstanding in communication.

However, most of the secondary students find it difficult to distinguish the differences between English sounds, especially minimal pairs. Therefore, most of them often make errors whenever pronouncing. Practically, although all of schools in Vietnam, especially the Junior High School schedule their students to learn English as one of major subjects in the school, especially for seventh grade and most of these students get relatively a good base of

English knowledge in pronunciation, vocabulary as well as grammar, pronunciation errors which they commit might happen, especially in pronouncing the minimal pairs /p/-/b/, /t/- /d/, /tʃ/-/dʒ/.

This encourages me to conduct a study entitled “*An investigation into the articulation of minimal pairs /p/-/b/, /t/- /d/, /tʃ/-/dʒ/ of the students in grade 7 at Victory school and some solutions*” aiming to describe these students’ pronunciation errors and suppose the solutions to teaching and learning pronunciation effectively and correctly.

### **1.2. Aims of the Study**

- To make a survey of the pronunciation errors which the students in grade seventh at Victory school commit in the minimal pairs /b/-/p/, /tʃ/-/dʒ/, /t/-/d/.

- To analyse the reasons why students in grade seventh at Victory school often make mistakes when performing the minimal pairs /b/-/p/, /tʃ/-/dʒ/, /t/-/d/.

- To suppose the solutions to teaching and learning English in pronunciation, especially in the minimal pairs /b/-/p/, /tʃ/-/dʒ/, /t/-/d/.

### **1.3. Objectives of the study**

- To identify errors in performance of minimal pairs /b/-/p/, /tʃ/-/dʒ/, /t/-/d/ committed by the students in grade 7 at Victory primary, secondary and high school.

- To point out the reasons of making mistakes when producing the minimal pairs /b/-/p/, /tʃ/-/dʒ/, /t/-/d/ of the students in grade 7 at Victory school.

- To suppose the solutions for correcting pronunciation error in these minimal pairs.

#### **1.4. Research questions of the study**

1) What are the current situations of the performance of minimal pairs /b/-/p/, /tʃ/-/dʒ/, /t/-/d/ committed by the students in grade 7 at Victory primary, secondary and high school?

2) Why do the students in grade 7 at Victory primary, secondary and high school make pronunciation errors in these minimal pairs?

3) What are the solutions for correcting pronunciation error in these minimal pairs?

#### **1.5. Significance of the Study**

This investigation is supposed to help learners of English in general and the students in grade 7 at Victory primary, secondary and high school in particular have a better knowledge of the minimal pairs /b/-/p/, /tʃ/-/dʒ/, /t/-/d/ as well as find out the problems that they have to face to help them overcome the difficulties to pronounce these minimal pairs correctly. The result of the study will be used as a reference to provide some tips to help teachers and students feel more confident with their pronunciation. Furthermore, it will help

students and teachers distinguish English sounds when listening and pronouncing.

### **1.6. Scope of the Study**

This study will deal with pronunciation errors that secondary school students might make in performing the English minimal pairs /b/-/p/, /tʃ/-/dʒ/, /t/-/d/ in terms of production and perception. Moreover, the investigation will examine the similarities and differences between these sounds in English and Vietnamese; the students awareness of the phonetic features of these minimal pairs; the situation of teaching and learning concerning the practice of the minimal pairs.

This study will not deal with these pedagogical factors. Furthermore, this study sets limits on the grade 7 students at Victory school and on the minimal pairs of phonemes: /b/-/p/, /tʃ/-/dʒ/, /t/-/d/ in two positions:

- At initial positions
- At final positions

### **1.7. Organization of the Study**

Chapter One, “Introduction”, focuses on the rationale, aims, objectives, research questions and scope of the study.

Chapter Two, “Literature review and theoretical background”, emphasizes the theoretical background and the related studies.

Chapter Three, “Research Design and Methodology”, includes the hypotheses, research method, and procedure of data collection as well as analysis.

Chapter Four, “Findings and Discussion”, indicates the result of data collection from the questionnaires and diagnostic test to point out the mistakes and errors in students’ pronunciation..

Chapter Five, “Conclusion and Implication”, synthesizes the results of the study, gives implications for teaching as well as a suggestion for further researches.

## Chapter Two

### LITERATURE REVIEW

#### 2.1. Prior researches to the study

There have been many investigations into phonetic features of minimal pairs such as Pham (2010) had an investigation into the difficulties in perceiving and producing the minimal pairs of phonemes /b/-/p/, /t/-/d/, /k/-/g/, /s/-/z/, /tʃ/-/dʒ/ experienced by the second-year students at college of foreign languages- Da Nang university problems and solutions. The study finds out a lot of difficulties met by second-year students at college of foreign language at Da Nang university as well as investigates the cause of the problems and suggests some solutions. However, the study does not analyze the minimal pairs in both initial and final positions in the diagnostic test to clarify the mistakes that students often make.

Mohd, Abdullah et al (2019) investigated the extent to which minimal pairs can improve the pronunciation of English consonants among Yemeni learners of English as a foreign language (EFL). They drew the conclusion that the teaching strategy of minimal pairs is an effective way to solve the pronunciation problems among Yemeni EFL learners. The findings have some pedagogical contributions to pronunciation teaching and learning, particularly dealing with English sounds in foreign languages. However, the study was limited to male participants and one experimental group only.

Kenworthy (1992) concentrated on the specific problems encountered by speakers of Arabic, Chinese, French, German, etc. He also examined the areas of difficulty in terms of learning and teaching strategies. Nevertheless, in this study, he has not tackled with the problems which Vietnamese learners often meet in pronouncing English stops.

Recently, a lot of investigations into pronunciation of English have been conducted by students. Giang (2002) conducted a research entitled “*English stops in Vietnamese students’ discourse of English in Da Nang University*”. Thanh (2006) studied *the pronunciation of inflectional endings in English by the 11<sup>th</sup> form in Da Nang city*. Hien (2007) conducted the research named “*English final consonant sounds experienced by the tenth-form students in Quang Nam province*”. An (2007) carried out the study on *the pronunciation of English Stops experienced by the students at Tuy Hoa Industrial College*. Binh (2008) finished the graduation thesis called “*An investigation into the pronunciation of initial consonant clusters performed by the first year students at the College of Foreign Languages-University of Da Nang- Problems and Solutions*”. Chi (2008) directed the master thesis with the title “*An investigation into English consonants /l/-/n/, /b/-/p/, /tʃ/- /dʒ/, /s/-/ʃ/, /r/-/z/ experienced by the Vietnamese learners in Gia Lai*”.

Nevertheless, these studies do not mention the difficulties that secondary students, especially students in grade 7 have to face as well as suggest some solutions to the problems. Accordingly, this

study is designed to fill in this gap and seek more measures to help the Vietnamese learners of English perform their speaking as close to native speakers as possible. This investigation is not supposed to require the students to produce the sounds sequences with exact pronunciation as native speakers, but in somewhat like native speakers' pronunciation.

## **2.2. Theoretical background**

### **2.2.1. English minimal pairs**

As defined in *Dictionary.com* (2020), minimal pairs are “a pair of words differing only by one sound in the same position in each word, especially when such a pair is taken as evidence for the existence of a phonemic contrast between the two sounds”. In other words, minimal pairs are any two words which have only one different sound in the same position; two linguistic units that differ in a single distinctive feature or constituent (Merriam, 2020).

According to Lightbown and Spada (1996), a child learns a new language mainly by their imitation, practice and innate capacities without focusing on the knowledge of phonetics. On the contrary, adolescence and adult's learning a language is not the same due to their developmental changes in the brain. In order to achieve the goal of pronouncing as closely as native speakers, the adult learners need to have good knowledge of the English sounds. That's the reason why apart from the course-books designed for only speech training with little information on how a speech sound is produced, most

writers have discussed the articulation of speech sounds with details, especially the issues of minimal pairs

James (2005) provides a clear definition and explanation of a minimal pair in *The Cambridge Companion to Chomsky*: "A minimal pair is a pair of words that differ in a single phoneme. Minimal pairs are often used to show that two sounds contrast in a language". For example, we consider the following minimal pairs 'sip and zip', or 'bus and buzz' which demonstrate that [s] and [z]. Since the only difference in these words is the [s] vs. [z], we conclude that they belong to distinct phonemes. However, a similar test would show that [a:j] and [A:j] are distinct phonemes in English, since writer and rider appear to be minimal pairs distinguished in their second elements, not their fourth. In *Small glossary of linguistics* (2020), minimal pairs are "any two words which are only distinguished by different sounds in a single position. Such word pairs are used in traditional phonology to determine the status of sounds as phonemes" and also note that "the spelling of minimal pairs is irrelevant".

In short, it is noted that words with different sounds will have a difference in meaning. Therefore, minimal pairs are considered tools to establish two or more contrastive sounds. In fact, a minimal pair is "the clearest and easiest way to identify phonemes in a language" (Ottenheimer 2012).

### **2.2.2. Description of consonant**

## 2.2.2.1. Place of articulation

## 2.2.2.2. Manner of articulation

## 2.2.2.3. Voicing

**2.2.3. Common pronunciation errors in English**

According to Jakub Marian (2013) in *improve your English pronunciation*, here's a list of the most common errors:

**au** in English is pronounced as /ɔ:/ (as “aw” in “law”), not as /**au**/, as in many other languages

**ps** at the beginning of a word is pronounced just as /s/, such as in “psychology” /saɪ'kɒlədʒi/ (saai-**koll**-ə-dzhee)

**eu** unlike perhaps all other languages, “**eu**” in English is pronounced as /**jʊ**/ (mostly UK) or /**ʊ**/ (mostly US), and sometimes also long.

**pn** at the beginning of a word is pronounced as /n/, e.g. “pneumatic” (see above), “pneumonia” /nju:'mæʊniə/ (nyoo-**moh**-nee-ə) (UK), /nu:'mæʊniə/ (noo-**moh**-nee-ə) (US).

**kn** at the beginning of a word is pronounced as /n/, e.g. “know” /nəʊ/ (noh), knee /ni:/ (nee), knife /naɪf/ (naayf).

**x** at the beginning of a word is pronounced as /z/, not as /**ks**/, for example “xenophobia” /zɛnə'fɒbiə/ (zen-ə-**foh**-bee-ə)

**w** is never pronounced as **v** – many languages don't have the “**w**” sound (such as in the word “wow”), and the speakers stubbornly pronounce English w as v (as in “very”).

**v** is never pronounced as **w** — those who do realize that English has a sound as in “wow” often use this sound for all English words containing w or v. However, v is **never** pronounced as in “wow”, but always as in “very”, by making the lower lip touching upper teeth.

**ch** is often not pronounced as “**ch**” – in most languages, the pronunciation rules for the digraph “ch” differ from the English ones.

**e** is often not pronounced as /ɛ/ (as in get) – “e” in non-stressed syllables is often pronounced as /ɪ/ (as “i” in “pit”), especially in words beginning with “de-”, such as “detective” /dɪ'tektɪv/ (di-**tek**-tiv).

**th** in English is pronounced either as /θ/ or /ð/. The former is pronounced similarly as /t/ and the latter similarly as /d/, but the tongue touches the back side of upper teeth, not just the upper palate (the fleshy part behind the teeth, pronounced /'pælət/). They are not pronounced as “s” and “z”!

Another common problem is the pronunciation of the letter “**o**”. It is usually pronounced as /əʊ/ (UK) or /oʊ/ (US) in open stressed syllables (e.g. go, vote, hope) or /ɒ/ (UK) and /ɑ/ (US) in closed stressed syllables (e.g. hot, god, pot)

There is, however, also another, less common pronunciation of “**o**”, namely /ʌ/. For example the word “come” is pronounced /kʌm/; the /ʌ/ is the same sound as in “but” /bʌt/. Below are the most common mistakes produced by the speakers. The bold ones are very commonly pronounced wrong.

**among** /ə'mʌŋ/;

another /ə' nʌðə/ (UK), /ə' nʌðər/ (US);

#### 2.2.4. The difference of consonants in English and in Vietnamese

**Table 2.1. The comparison of consonants in English and in Vietnamese**

Consonants in English	Consonants in Vietnamese
- Final stops do not have either a release burst or have a nasal	- Final stops neither have a release burst nor have a nasal
- Stops are divided in different positions in words	- Vietnamese does not have a voiceless stop [p] in the initial position. Therefore, Vietnamese learners may incorrectly pronounce the voiceless stops [p] in this position. They may produce the word “pen” like “ben” because they might not focus on the force of articulation that /p/ is produced with a stronger breath effort than /b/.
- /p/, /t/, /k/ in English have the phonetic variants [ph], [th], [kh] in the initial position - /p/, /t/, and /k/ appear at the end	- In Vietnamese, [p], [t] and [k] are realized as /p/, /t/ and /k/ morphemes and [p <sup>h</sup> ], [t <sup>h</sup> ] and [k <sup>h</sup> ] are recognized as /p <sup>h</sup> /, /t <sup>h</sup> / and

<p>of words without releasing, so the learners are more likely to delete these sounds in the final positions in English words. As a result, they may perform words ending with voiced stops like words finishing with voiceless ones.</p>	<p>/k<sup>h</sup>/ morphemes.</p>
<p>- Both vowels and consonants closed by lenis /b, d, g/ are often produced longer than those closed by fortis / p, t, k /</p>	<p>- Vietnamese learners of English do not pay attention to the influence of English stops on the length of the preceding sounds</p>

## CHAPTER 3

### RESEARCH DESIGN AND METHODOLOGY

#### 3.1. Research design

Descriptive with quantitative and qualitative information is chosen as the methods that are most frequently used so as to give a detailed description of the phonetic features.

The students' phonological ability is evaluated according to the differences of English and Vietnamese consonants.

The data are mainly collected through questionnaires and diagnostic test.

#### 3.2. Research methods

Descriptive method

Qualitative method

Quantitative method

Analytic and synthetic methods

#### 3.3. Hypotheses

+ Students may have a lot of problems when recognizing, understanding, and pronouncing the minimal pairs /b/-/p/, /t/-/d/, /tʃ/-/dʒ/.

+ Students may pronounce /p/ like /b/, /tʃ/ like /dʒ/ at the initial position.

+ Students may not pronounce the sounds /b, p/, /t, d/, /tʃ, dʒ/ correctly at the final position.

+ Students can find it hard to distinguish the minimal pairs when listening to the video tape due to their mispronunciation.

### **3.4. Subject selection and description**

The subject involved in the investigation was the 7<sup>th</sup> grade students at Victory primary, secondary and high school and the head teachers of three classes 7A5, 7A6, 7A7 who helped deliver the questionnaires to every student as well as record the students' voices when visiting each students' houses during coronavirus pandemic leave.

### **3.5. The samples**

The population from which the sample was drawn was the 7<sup>th</sup> grade students of Victory primary, secondary and high school. The investigation was conducted based on stratification. It meant the target groups with the same characteristics were selected to carry out the investigation. 3 classes 7A5, 7A6, 7A7 in the school year 2019-2020 consisted of 90 students in total. However, only 60 students of these classes have been chosen for the study. These classes had the same learning ability especially in English, so they were chosen to provide the information.

### **3.6. Data collection**

#### **3.6.1. Methodology**

The data of the study are obtained by using 2 measurement instruments: questionnaires and diagnostic test.

### **3.6.2. Procedure**

The data collection was conducted on the subjects described above. The questionnaires were delivered to students at the beginning of March by the head teacher of every class who came to each students' houses during coronavirus pandemic leave. It is comprised of four stages:

Stage 1: The students are asked to pronounce the minimal pairs in the word list after having 2 minutes to read through it.

Stage 2: The students are told to listen to a list of word pairs and circle the word that they hear.

Stage 3: The students are required to listen to a list of sentences containing the minimal pairs mentioned in the study and choose the words they hear in each sentences.

Stage 4: The students are asked to choose a topic to make a presentation. They have 5 minutes to prepare then talk about that topic.

In the diagnostic test, the native speaker voice was taken from the text to speech website which was developed to read the text of the users by using American or British voice. Besides, the voices of 12 students were recorded with the software Audacity which was designed to edit as well as record the audio. The recording would

transcribe all the students' performances. After that, the transcription was compared with the version produced by the native speaker's voice as the baseline data.

### **3.7. Data analysis**

Data analysis was carried out by using the policy of taking the statistics of frequencies, writing down the results, declaring the data in the form of frequency and percentage tables, analyzing and interpreting the data based on the research objectives. The survey is divided into 2 parts:

The first part which is designed in the format of questionnaire aims at finding out the information about the current circumstance of grade 7 students at Victory primary, secondary and high school.

The second part of the study which is in the form of diagnostic test is conducted to have some details of the students' performance of pronunciation of English.

### **3.8. Validity and Reliability**

The students were picked in three classes of different levels and backgrounds and were asked to do the same diagnostic test. Moreover, they were treated equally because they have to follow the same programme at Victory school without concerning their abilities. Although the questionnaires were delivered to 60 students in 3 classes: 7A5, 7A6, 7A7 of Victory primary, secondary and high school, the study could only record the pronunciation of 12 students that were randomly chosen from these classes. The research was

managed objectively on the data collected without the researcher's interference. As a result, the results of the findings and recommendations might meet the demand of pronunciation teaching and learning at Victory school.

**Chapter four:**  
**FINDINGS AND DISCUSSION**

**4.1. Current situation of grade 7 students at Victory school**

**4.2. Result discussion**

**4.2.1. The errors of students in pronouncing the minimal pairs /b/-/p/, /t/-/d/, /tʃ/-/dʒ/**

**4.2.1.1. Common errors made by students drawn from the questionnaires**

With regard to the hypotheses that the students may meet a lot of issues in understanding and uttering these minimal pairs of phonemes. I can claim that this hypothesis is proved by our qualitative and quantitative evidence.

Looking at the results from the test involved in the questionnaires, we can see that, the percentage of students who do not have any knowledge of the minimal pair is very high (78.3%). That's the reason why only 13.3% of the students could have the correct choice when being asked to identify the minimal pairs and 91.7% of the students admitted that they met a lot of difficulties in articulating the minimal pairs. In students' viewpoint, the resemblance of these minimal pairs leads to the difficulties in classifying them. They cannot differentiate the pairs /b/-/p/, /t/-/d/, /tʃ/-/dʒ/. Therefore, they often pronounce them similarly at both beginning and ending position of the words, or drop these sounds when they were placed at the final place. The results of the data analysis of the recordings below will help us to have a general view

about students' performance of minimal pairs of phonemes /b-/p/, /t-/d/, /tʃ-/dʒ/.

#### **4.2.1.2. Common errors made by students in the diagnostic test.**

The researcher noticed numerous mistakes of the students. The biggest problem was that many of them could not tell the difference between minimal pairs /p/ and /b/; /t/ and /d/; /tʃ/ and /dʒ/.

In terms of the minimal pairs /p-/b/, they often pronounced /p/ like /b/ at the initial position. Most of the students did not produce /p/ and /b/ at the ending place, only a few students remembered to utter the /p/ and /b/ sound at the final position of the word.

With regard to the sound /t-/d/, students did not seem to produce /t-/d/ at the end of the words. They unaspirated /t/ at the initial position, either. Some of them even made mistakes when pronouncing /d/; e.g. down /daʊn/= /jaʊn/

In the case of the pair /tʃ-/dʒ/, most of the students thought of this pair as the most difficult minimal pair of phonemes. Students could not distinguish them either at the initial or at the final position. Therefore, they often pronounced /tʃ/ like /dʒ/; e.g. they produced /tʃ/ and /dʒ/ in jest- chest in a similar way: jest = chest = /tʃest/. Many students pronounced /g/ instead of /dʒ/ and /ʒ/ instead of /tʃ/; e.g. jest /dʒest / = /gest/, chest / tʃest/ = /ʒest/. Sometimes, they also forgot to release /tʃ-/dʒ/ at final position.

#### **4.2.2. Reasons to make errors of the students in pronouncing the minimal pairs /b-/p/, /t-/d/, /tʃ-/dʒ/.**

Little time to self- study

A small number of chances to practise English with other people

Being unable to distinguish the differences between the minimal pairs /b/-/p/, /t/-/d/, /tʃ/-/dʒ/

### 4.3. Solutions for the problems

#### 4.3.1. Stop

##### a) /b/ - /p/

- \* Place of articulation
- \* Manner of articulation
- \* Compare /p/ with /b/

##### b) /t/ - /d/

- \* Place of articulation
- \* Manner of articulation
- \* Compare /t/ with /d/

#### 4.3.2. Affricate

##### a) /tʃ/ - /dʒ/

- \* Place of articulation
- \* Manner of articulation
- \* Compare /tʃ/ with /dʒ/

### 4.4. SUMMARY

**Chapter five:****CONCLUSION AND RECOMMENDATIONS****5.1. Summary of the main findings**

The outcome also indicates that there is a need to improve the pronunciation skills for both teachers and students by applying new methods of teaching pronunciation. Here are some conclusion from the result analysis:

- With regard to production, students could not distinguish each minimal pairs /b/-/p/, /t/-/d/, /tʃ/-/dʒ/. Therefore, they often make mistakes when pronouncing these sounds both at initial and final position.

- Regarding to the perception aspect, most of the students claimed that these minimal pairs were so alike that they could not recognize them even at the beginning or the ending of the words. They often mistook /b/ for /p/ and /tʃ/ for /dʒ/.

- There are a lot of reasons why students met a lot of difficulties in understanding and producing the minimal pairs of phonemes such as lack of time to practise pronunciation on their own at home, lack of suitable teaching methods and materials to practice, shorting of modern facilities such as computers or learning softwares, lack of chances to practise English with other people, the habit of wrong pronunciation at the young age, and the limited ability of producing the sounds.

**5.2. Implications from the results**

From the conclusions, I suggest some recommendations relating to the ways of improving the understanding and utterance of the minimal pairs of phonemes: /b/-/p/, /t/-/d/, /tʃ/-/dʒ/ for the students in grade 7 at Victory school. Here are the techniques:

In order to help students solve the problems when understanding and uttering the minimal pairs of phonemes /b/-/p/, /t/-/d/, /tʃ/-/dʒ/, flexible activities as well as fun games should be applied so that students can feel interested and have a lot of motivations to practise their pronunciation skill. We suppose the activities to improve teaching these minimal pairs to motivate students in grade 7 as following:

- \* Activity 1: Stand up, sit down
- \* Activity 2: minimal pair fruit salad
- \* Activity 3: Number dictation

### **5.3. LIMITATION AND SUGGESTIONS FOR FURTHER RESEARCH**

After carrying out the research, this study just examines the difficulty of students when pronouncing the minimal pairs /b/-/p/, /t/-/d/, /tʃ/-/dʒ/ and the solutions to those issues. However, other elements are still ignored. The study certainly has some limitations:

Firstly, because of coronavirus pandemic leave, it's hard to collect data through questionnaires and the diagnostic test. As a result, it's so time- consuming to conduct the study because the research group had to come to each students' house.

Secondly, the study is deliberately limited in materials. We have also selected the more recent reference books, but some may be not contained.

The following aspects of minimal pairs should be investigated in the further study:

- The phonetic features of each minimal pairs in perception and utterance.
- The processes that each of the sounds may experience in terms of connected speech.