A Study of Chinese EFL Learners' Acquisition of English Fricatives

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Abstract

This study attempts to examine the Chinese EFL learner's acquisition of English fricatives by involving 32 non-English major and 26 English major freshmen of Wuhan University as participants. The data were collected through a listening discrimination test and a reading discrimination test. The results show that (1) all subjects' performance in both tests is unsatisfactory. (2) With regard to listening discrimination test, both groups of participants have difficulty in making distinctions between /ð/ vs. /z/ and /w/ vs. /v/. As to reading exercise, all participants cannot discriminate between /ʃ / and /ʒ/, /θ/ and /ð/ quite well. (3) English major participants have better performance than non-English major participants, both in recognition and production of sounds. This is probably ascribed to the course on English pronunciation and intonation they attend in their first term in university

Keywords

English fricatives, acquisition, pronunciation, listening

1 Introduction

English fricatives, consisting of nine sounds, namely, /f/, /v/,/θ/, /ð/, /s/, /z/, /ʃ/, /ʒ/, /h/, have been the largest group of English consonants with regard to manner of articulation. Chinese learners of English have experienced many difficulties learning them (Gao Haiping, 2002). However, little research has been done to investigate how our learners perceive and pronounce these sounds. To address the lack, this paper aims to probe into this issue by answering the following questions:

(1) How well do our Chinese EFL learners perceive English fricatives?

(2) How well do our Chinese EFL learners produce English fricatives?

2 Literature Review

As a clear and comprehensible pronunciation is the basis for successful communication, it is important to examine how Chinese learners acquire English sounds. Being the largest group of consonants in English, fricatives may pose various learning problems for our learners. Cheng and He (2008) is one of the few papers discussing the problems Chinese EFL learners' meet in the acquisition of English fricatives. In their analysis of oral segmental errors of advanced English learners, they found that substitution errors are of the highest frequency in learners' segmental pronunciation errors, among which the fricatives /v/, /ð/, /z/ greatly outcome the other consonants. According to their research, learners are likely to replace /ð/ with /d/, /z/ with /s/, /v/ with /w/ in mandarin Chinese respectively. And they hold that as there are no such sounds in Chinese, learners tend to substitute the new sounds in English with the similar sounds in mandarin Chinese.

The similar conclusion can be drawn from other studies, such as Chen Hua and Bi Ran's (2008), Sui Zhenhua and Li Chuanbin's (1998) study. Much the same as Cheng Chunmei and He Anping (2008), the studies mentioned above found that substitution of consonants, including fricatives, is the major problem for Chinese learners□. In addition, their research shows that Chinese learners have difficulty telling the difference between /v/ and /w/. And they have ascribed these mistakes to principle of least effort. That is to say, when confronted with new sounds which are not familiar to learners, they are liable to use the most similar ones to avoid the difficulty in pronunciation.

Addition is another major problem found in learners' acquisition of fricatives. Using optimality theory to analyze epenthesis in the English complex codes produced by native speakers of Beijing dialect, Fan (2008) points out that it is common for

Chinese learners to add /u/ in pronouncing /f/ which results from negative influence of mandarin Chinese. For example, subjects tend to pronounce *self* as /seləfu /, which is inaccurate because of an additional /ə /and /u/.

More mistakes have been found in fricatives production. Feng (2005) carried out a study to investigate the phenomenon of Chinese learners' swallowing sounds. And the result demonstrates that swallowing sounds occurs in consonants most frequently, among which fricatives being the second largest group posing obstacles for learners. And he also ascribes this kind of faulty acquisition mainly to the difference between English and mandarin Chinese system.

Except for the analysis of the problems Chinese EFL learners meet when acquiring English fricatives, researchers have also made effort to find ways to solve the problems.

To tackle the problem that Chinese learners have in distinguishing /v/ and /w/, Xie Mi (2009) conducted an experiment to examine the effect of frequency on pronunciation correction by means of microgenetic method. The results of the experiment shows that (1) task frequency brings great advantages to pronunciation correction; (2) while input frequency and output frequency both contribute a lot to pronunciation correction, input frequency outweighs much more. Rau and Chang (2009) examined Chinese EFL learner production of English interdental fricative /θ/ by using a variationist framework. The results demonstrated that the accurate production of /θ/ is mainly ascribed to immediate phonetic environment and speech style. And this study has, to some extent, drawn the same conclusion with Xiemi's (2009). This is, frequency can facilitate learners' accurate production of /θ/.

In her investigation on how to pronounce fricatives correctly, Gao Haiping (2002) held the same opinion with Sui Zhenhua and Li Chuanbin(1998), ascribing Chinese learners' difficulty of acquiring English fricatives /ʃ/, /ʒ/, /θ/, /ð/ to the lack of equivalents in mandarin Chinese. And she also suggested that teachers are supposed to make comparison between the two language systems so as to make the students clear about the pronunciation of these sounds.

By comparing English fricatives and Chinese ones, Wu Jianxiao (2008) analyzed the errors in Chinese students' pronunciation of English fricatives and attributed the main reasons for these mistakes to the lack of equivalents in mandarin Chinese and negative transfer of learners' mother tongue.

To summarize, the previous research suggests that Chinese EFL learners have various of problems in acquiring English fricatives, and the main reason is the lack of real equivalents for the English fricatives in Mandarin Chinese and the negative transfer of the mother tongue. It is generally accepted that without clear and comprehensible pronunciation, we cannot have successful communication with others. And inadequate pronunciation may lead to poor communication even with the result of disorienting the listener. Therefore, it is of great importance to examine Chinese EFL learners' acquisition of English fricatives.

3 Methodology

3.1 Subjects

This study involves 26 English major and 32 non-English major freshmen at Wuhan University as participants. As almost all of them are at the same age, the educational systems in China they have been involved in have little difference. In addition, different majors have different English classes with respective focuses. Those English majors have special English pronunciation training class with pronunciation correction as the focus, whereas those non-English majors only have comprehensive English class without special emphasis on English pronunciation. Therefore subjects of two majors are chosen to make comparison to find out whether English pronunciation teaching has helped learners make any improvement in their acquisition of English sounds.

3.2 Instruments

As learners' acquisition of sounds need to be measured from two aspects, namely, listening (comprehension) and speaking (production), two instruments are designed for this study accordingly, that is, a listening discrimination test and a reading exercise (see Appendices 1 and 2). The listening discrimination test is prepared for examining the subjects' discrimination of pairs of sounds in listening comprehension, and the reading exercise is designed to test subjects' actual oral production of English fricatives. And the detailed information of the two tests is listed as follows.

(1)Listening Discrimination Test

The listening discrimination test mainly consists of two sections.

In order to get familiar with their background, the subjects are required to fill in their personal information in the first section of the test paper, covering the topics about their main languages communicating with their parents at home; impact by surroundings, (such as the middle schools they

graduated from), whether or not their middle school attach importance to their English pronunciation training, their own attitude towards English pronunciation training.

The main body of the test paper lies in the second section which is designed to examine the subjects' discrimination of sounds. Seven pairs of sounds, namely /f/ and /v/, /w/ and /v/, /s/ and /z/ , /θ/ and/s/, /ð/ and /z/, /ʃ / and /ʒ/, /θ/ and / ð/ are designed to be included in words for learners to make distinction so as to examine subjects' acquisition of fricatives. Subjects are required to listen to the recording and choose the word they hear from each pair of words in the test paper. To make sure that subjects' choices are based on their recognition of the specific sound, these pairs of sounds are designed to appear in pairs of words which are different only in minimal pairs. And as there are no sufficient minimal pairs for sounds /ʃ/ and /ʒ/, /θ/ and /ð/, Section Two of the listening discrimination test is subdivided into two parts, labeled Part One and Part Two.

Pairs of words for sounds /f/ vs. /v/, /w/ vs. /v/, /s/ vs. /z/, /θ/ vs. /s/, /ð/ vs. /z/ are placed in Part One, labeled Group A, B, C, D, E respectively. There are six pairs of words in each group and each pair of words are designed to be different only in the target pair of sounds.

Because of lack of sufficient minimal pairs as mentioned before, the distinction for pairs /ʃ/ and /ʒ/, /θ/ and /ð/ are measured in a different way from the previous five pairs of sounds. They are placed in Part Two, labeled Group A and Group B respectively. Different from Part One, there are no pairs of words but pairs of sounds for subjects to choose in Part Two. For each pair of sounds, subjects would hear six words from the recording and they are required to choose the sounds appearing in these six words of the recording. More specifically, they should make choice between /ʃ / and /ʒ/ for each word they hear in Group A, and between /θ/ and /ð/ for each word in Group B.

Briefly speaking, Group A, C in Part One and Group A, B in Part Two are designed for subjects to make distinctions between /f/ vs./v/, /s/ vs. /z/, /ʃ /vs./ʒ/,/ð/ vs. /z/. And the two sounds in each pair are the same in the place and manner of articulation and only differ in voicing. Group B in Part One is designed to make distinction between /w/ and /v/, which are produced by different vocal organs in different ways but sound similar and therefore bring difficulties to learners. Group D and Group E in Part One are designed to make distinction between /θ/ and /s/, /ð/ and /z/ respectively, which share the same manner of articulation but have different places of articulation.

The listening material is read by a native speaker in America and recorded by MP3, and the details of the seven groups are shown in Appendix1.

(2) Reading Discrimination Test

The reading material is designed almost the same as the listening discrimination test, consisting of seven groups of words, from Group A to Group G. This is designed for students to make oral distinctions between /f/ and /v/, /w/ and /v/, /s/and /z/, /ʃ/and /ʒ/, /θ/ and /s/, /ð/ and /z/, /θ/ and /ð/ respectively. There are three pairs of words in each group. The same as the listening discrimination test, except for Group D and Group G, the two words in each pair are designed to differ only in target phoneme in every pair. To avoid the subjects' consciousness of the difference between each two words in the pair, all the words in the reading exercise are mixed and listed randomly, as shown in appendix 2. To check the learners' oral production, all the students are required to read all the words in the list.

3.3 Procedures

The study was carried out during regular English teaching class. Firstly, the subjects were asked to fill in the personal information in Section One in listening test paper as honestly as possible. After that they were required to listen to the recording in Section Two and tick the words or sounds they had heard. All of their papers were submitted to the researchers after they finished the listening test. Secondly, they were invited to another quiet classroom one by one to read each word in the reading test paper. And their oral productions were recorded by the researchers. All 26 English major participants and 32 non-English major participants handed in both listening discrimination test papers and oral production recordings. Hence, all their papers and recordings are regarded to be valid for this study.

With regard to the listening discrimination test, every 1 point will be given to the subject when he or she has chosen the word or sound actually read by the speaker in each pair. As there are altogether 42 pairs of words, the full mark for the listening discrimination test is 42 points.

As to the reading test, subjects' recordings were submitted to two professional teachers who are experienced in teaching English pronunciation. RP is used as the reference in this study to judge the learner's pronunciation of English fricatives, and evaluation of subjects' pronunciation is based on their actual oral production of target sounds only

regardless of the other sounds in the words. The inter-rater consistency for these two teachers' scoring of every subject is higher than 90%, with the disagreement being solved by their discussion. Every 1 point will be given to one word produced comprehensibly by the subjects. And as there are 42 words in all, the full mark for reading exercise is 42 points.

4 Results and discussion

All of the subjects' scores for the two categories are input into the computer, and the Descriptive Statistics are made using computer software SPSS 13.0 and Microsoft office excel.

4.1 Results of the listening discrimination test

Table 1: Results of the Listening discrimination test for English major participants

	listening	/f/vs./v/	/w/ vs./v/	/s/vs./z/	/θ/vs./s/	/ð/vs./z/	/ʃ/vs./ʒ/	/θ/vs./ð/
N	26	26	26	26	26	26	26	26
Minimum	31	3	2	4	4	1	2	3
Maximum	41	6	6	6	6	6	6	6
Mean	35.42	5.38	4.85	5.35	5.58	3.81	5.42	5.04
Accuracy Rate	84.33%	89.67%	80.83%	89.17%	93%	63.5%	90.33%	84%
Std. Deviation	3.126	.852	1.190	.797	.703	1.357	.987	.916

Table 2: Results of the Listening discrimination test for non-English major participants

	listening	/f/vs./v/	/w/ vs./v/	/s/vs./z/	/θ/vs./s/	/ð/vs./z/	/ʃ/vs./ʒ/	/θ/vs./ð/
N	32	32	32	32	32	32	32	32
Minimum	24	4	1	3	0	0	3	2
Maximum	38	6	6	6	6	5	6	6
Mean	30.47	5.31	3.78	4.88	4.06	2.69	5.25	4.50
Accuracy Rate	72.55%	88.5%	63%	81.33%	67.67%	44.83%	87.5%	75%
Std. Deviation	3.592	.738	1.289	.907	1.605	1.230	.950	1.047

It can be seen from Table1 and Table2 that:

(1) Generally speaking, all subjects' performance in the listening test is unsatisfactory. While the English major participants achieve an average accuracy rate of 84.33%, the correctness percentage for non-English major participants is 72.55%.

(2) Both groups have the lowest scores for group /ð/ vs. /z/, with accuracy rates for English major participants and non-English major participants being 63.5% (SD 1.357) and 44.83% (1.23) respectively.

(3) Their performance for group /w/ vs. /v/ rank the last but one among all groups for both participants. Their accuracy rates for this pair are 80.83% (1.19) for English major participants and 63% (1.289) for non-English major participants respectively.

(4) Both groups of participants have comparatively better performance for groups /f/ vs. /v/, /ʃ / vs. /ʒ/, /s/ vs. /z/, with scores for English major participants and non-English major participants being 89.67%, 90.33%, 89.17% and 88.5%, 87.5%, 81.33% respectively.

(5) It can be found that English major participants have better performance than non-English major participants as they have a higher accuracy rate for each pair of sounds.

4.2 Results of the reading test

Table 3: Results of the reading test for English major participants

	reading	/f/vs./v/	/w/ vs./v/	/s/vs./z/	/ʃ/vs./ʒ/	/θ/vs./s/	/ð/vs./z/	/θ/vs./ð/
N	26	26	26	26	26	26	26	26
Minimum	31	4	3	4	2	5	3	3
Maximum	41	6	6	6	6	6	6	6
Mean	36.31	5.77	5.31	5.27	4.12	5.92	5.04	4.88
Accuracy Rate	86.45%	96.17%	88.5%	87.83%	68.67%	98.67%	84%	81.33%
Std. Deviation	2.429	.587	.928	.533	1.336	.272	.999	.993

Table 4: Results of the reading test for non-English major participants

	reading	/f/vs./v/	/w/ vs./v/	/s/vs./z/	/ʃ/vs./ʒ/	/θ/vs./s/	/ð/vs./z/	/θ/vs./ð/
N	32	32	32	32	32	32	32	32
Minimum	25	3	3	4	0	4	1	1
aximum	40	6	6	6	6	6	6	6
Mean	33.63	5.28	4.53	5.22	3.66	5.50	4.91	4.53
Accuracy Rate	80.07%	88%	75.5%	87%	61%	91.67%	81.83%	75.5%
Std. Deviation	3.949	.924	.842	.553	1.715	.672	1.088	1.319

Table 3and Table 4 reveal that:

(1) All subjects' achievements in reading test are quite low. Only 86.45% of English major participants and 80.07% of non-English major participants can produce fricatives comprehensibly.

(2) All subjects' oral production of pair /θ/ vs./s/ is the best among all the groups, with accuracy rate being 98.67% and 91.67% for English major participants and non-English major participants separately. In addition, English major participants' oral production of pair /f/ vs./v/ arrives at an accuracy rate of 96.17%.

(3) Both groups of participants have the worst performance in producing the pair /ʃ/ vs. /ʒ/ orally. While 68.67% of English major participants' oral production is regarded to be comprehensible, the accuracy rate of this pair for non-English major participants is 61% .

(4) Despite their different majors, all participants have similar advantages in English pronunciation. More specifically, their performance on pairs /f/ vs. /v/ /s/ vs. /z/ are better than pairs /ð/ vs. /z/ and /θ/vs. /ð/.

(5) On the whole, English major participants have better performance in the reading test than non-English major participants as they have a higher mean for each pair of sounds.

To summarize, The major findings of the study are as follows.

1. Generally speaking, all subjects'

performance in both tests are unsatisfactory.

2. With regard to listening discrimination test, both groups of participants have difficulty in making distinctions between /ð/ vs. /z/ and /w/ vs. /v/. As to reading exercise, all participants cannot discriminate between /ʃ /and /ʒ/, /θ/ and /ð/ quite well.

3. While all the subjects have a good performance in groups /f/ vs./v/ and /s/ vs. /z/, their scores concerning groups /ð/ vs. /z/ and /w/ vs. /v/ are comparatively low.

There are some possible explanations for learners' performance concerning English fricatives.

(1) Relatively good performance concerning /f/, /s/, /z/

Subjects' relatively good performance of the sounds /f/, /s/, /z/ may be owing to the positive transfer of their first language. To be specific, there are fricatives /f/, /s/, and affricate /ts/ in mandarin Chinese which sound much the same as English fricatives /f/, /s/, /z/. This seeming similarity between English and Chinese are assumed to be beneficial for learners to master these three English sounds faster and better. When they learn English sounds, they have already been familiar with the actual way of articulation of Chinese sounds /f/, /s/, /ts/ and very sensitive to them when they catch these sounds. With the innate knowledge in their minds, they can transfer the knowledge of these Chinese sounds into English and therefore speed up their acquisition of these English sounds. Hence, they can make the right choice without too much difficulty in listening discrimination and produce much more comprehensible sounds orally. This is the positive transfer of their mother tongue.

(2) Subjects' difficulty in making distinctions between /w/ and /v/

Negative transfer seems to account for many errors learners make in perceiving and producing the pair /v/ vs. /w/. Negative transfer, which is also known as interference, is the negative influence or hindrance of L1 on L2. That is to say, learners' use of a pattern or rule of L1 will lead to an error or mistake in L2.

With the inspection of subjects' oral production in recordings, it can be found that many subjects are liable to replace /v/ with /w/ when they produce these two sounds themselves. Perhaps the main reason for this substitution is the lack of voiced fricative as /v/ in mandarin Chinese. Because of no equivalents or semi-eviqualvents for /v/ in madarine chinese , subjects are unfamiliar with the accurate way of articulation, in other words, they have no idea of how to pronounce the sound /v/ and therefore replace it with /w/ to save effort. This is the negative transfer of their mother tongue.

(3) Learners' poor performance of /θ/ /ð/ and /ʃ/ /ʒ/

As is shown in the previous tables, subjects have the worst performance as to pairs /ʃ/ vs./ʒ/ and /θ/ vs. /ð/. The grades for both groups, in particular those in pronunciation, are evidently lower than other groups. This can also be accounted, to some extent, to the negative transfer of their mother tongue. Same as the sound /v/, there are no dental fricatives/θ//ð/ or

□palato-alveolar /ʃ/ /ʒ/in Mandarin Chinese. In other words, there is no equivalency four these four sounds and subjects are not familiar with the correct patterns of articulation. Therefore, when confronted with these sounds which are new to them, they tend to search for a more familiar sound to save effort, leading to different kinds of production. This is also a demonstration of negative transfer of native language.

5 Conclusion

The results of the study, on the whole, provide some suggestions for our English teaching and learning.

Firstly, the study reveals both strengths and weaknesses of Chinese EFL learners' acquisition of English fricatives, which could help learners and teachers to be clear about the directions in English learning and teaching. On the whole, learners have encountered many difficulties in English fricative acquisition, as they have accuracy rates over 90% for only few groups of sounds. As weakness has been figured out to exist in pairs /w/ vs. /v/, /θ/ vs. /s/, /ð/ vs. /z/, /ʃ/ vs. /ʒ/, top priority should be given to these sounds in case that the learners feel confused and therefore make mistakes.

Secondly, as the positive and negative influence of Chinese mandarin has been proven to interfere with learners' English learning, it is suggested that teachers exploit the positive transfer and avoid negative transfer so as to enhance English teaching efficiently.

Thirdly, it was found that English major participants' have overall advantages over non-English major participants. This may be owing to the pronunciation training classes they have attended in the first semester. This indicates that pronunciation training class plays an important role in English learning. Therefore, it is suggested that English pronunciation training classes should be involved not only for English majors but also for

non-English majors in colleges.

6 References and appendices

6.1 References

Ellis, R. (1994). *The study of Second Language Acquisition.* Shanghai: Shanghai Foreign Language Teaching Press.

Rau, D. V. and Chang, Hui-Huan. A. (2009). Think or Sink: Chinese Learners' Acquisition of the English Voiceless Interdental Fricative. *Language Learning*. 59/3, 581-621.

Underwood, M. (1989). *Teaching Listening*. New York: Longman.

Wang, G. (1993). Pitch movements of Chinese and English utterances and the Chinese EFL learner. *Paper for Pac SLRF, University of Sydney, Australia.*

Wang, G. (2005). Revising the Goal of EFL Pronunciation Teaching in the Chinese Context. *Foreign Languages in China*, 6, 18-23.

Wong, R. (1993). Pronunciation myths and facts. *English Teaching Forum,* 31/4, 45-46.

Yan, M. (2006). An investigation of the factors affecting Chinese students' listening comprehension of English. *Sino-US English Teaching,* 3/3, 28-29.

陈桦, 毕冉. 2008. 英语专业学生朗读任务重语音能力的发展模式研究. 解放军外国语学院学报 4: 43-49.

程春梅, 何安平. 2008. 高级英语学习者口语音段错误分析-一项基于语料库的研究. 解放军外国语学院学报 1: 38-42.

范烨. 2008. 二语韵尾辅音群中的增音分析-优选论及感知图框架下的新视角. 外国语 1: 53-61.

冯友. 2005. 大学英语学习者吞音现象调查-一项基于语料库的研究. 外语教学与研究 6: 453-459.

高海萍. 2002. 如何发好英语中的摩擦音. 吕梁教育学院学报 19(4): 34-35.

何善芬. 1997. 实用英语语音学. 北京：北京师范大学出版社.

寮非. 1998. 第二语言习得中的母语迁移现象分析。外语教学与研究 1: 31-36.

刘锦明, 刘晋婉. 2002. /l.r/ 语音习得错误：类型、成因及其矫正.外语教学 5: 88-93.

隋振华, 李传彬. 1998. 英语语音教学中的误区分析. 枣庄师专学报 2：78-80.

童淑华. 2010. 英语专业学生口语产出中音段音位的发展特征. 外语教学 1： 78-82.

王桂珍. 1990. 汉英音幅与基频模式的特点及其对英语语音教学的启示. 现代外语 1：39-48.

王桂珍. 2005. 英语语音教程. 北京: 高等教育出版社.

汪文珍. 2004. 实用英语语音教程. 上海：上海外语教育出版社.

吴建晓. 2008. 汉英擦音对比分析. 牡丹江师范学院学报（哲社版）5：69-70.

谢谜. 2009. 频率作用对英语语音纠错的影响-关于纠正[v]/[w]不分的一项微变化研究. 外语研究 1：63-69.

阎丽莉, 蔡金亭. 2004. 对英语学习者习得英语辅音群的优选论分析. 解放军外国语学院学报 1：70-74.

6.2 Appendices

Appendix1:Listening Comprehension

姓名　　专业　　学号

Section One

1. 和父母交流的主要语言方式是: A. 普通话　B. 方言（　　方言）　C. 外语（　语）（此题可多选）
2. 你高中毕业于:　A. 普通高中;　B. 外国语学校
3. 中学时期学校重视语言培训吗?　A.　重视;　B. 不重视
4. 你对练习英语语音的态度是:　A. 喜欢　B. 一般　C不喜欢
5. 若自评, 你认为自己的英语发音等级为:　A. 优;　B. 良;　C. 中;　D. 差

Section Two　Part Ⅰ:

Sound discrimination: Listen to the recording and choose the word you hear from each of the following pairs.

第一部分：听录音，请从每组两个单词中选择你所听到的单词。

Example:　a. leave　b. leaf

In this example, the word you hear is **leaf**, so the correct answer is **b**.　例题中,你所听到的单词是**leaf**, 所以正确答案是**b**.

Group A		Group B	
(1) a. fast	b. vast	(1) a. wheel	b. veal
(2) a. rifle	b. rival	(2) a. verse	b. worse
(3) a. veal	b. feel	(3) a. vine	b. wine
(4) a. halve	b. half	(4) a. veil	b. wail
(5) a. save	b. safe	(5) a. wet	b. vet
(6) a. surfer	b. server	(6) a. vary	b. wary
Group C		Group D	
(1) a. bus	b. buzz	(1) a. thick	b. sick
(2) a. lacer	b. laser	(2) a. sink	b. think
(3) a. prize	b. price	(3) a. faith	b. face
(4) a. seal	b. zeal	(4) a. thing	b. sing
(5) a. lazy	b. lacy	(5) a. mouth	b. mouse
(6) a. sip	b. zip	(6) a. mass	b. math
Group E			
(1) a. breathe	b. breeze		
(2) a. thee	b. zee		
(3) a. bays	b. bathe		
(4) a. clothing	b. closing		
(5) a. then	b. zen		
(6) a. breathing	b. breezing		

Part Ⅱ:

Listen to the recording and choose the sound that has appeared in each word you hear.

第二部分：听录音，选择你听到的单词中所包含的发音。

Example:　ash　A: ʃ　B: ʒ

In this example, the sound that has appeared in *ash* is **ʃ**, so the correct answer is **A**.

例题中,你所听到的单词中的发音是**ʃ**, 所以正确答案是**A**.

Group A		**Group B**	
A: ʃ	B: ʒ	A: θ	B: ð
A: ʃ	B: ʒ	A: θ	B: ð
A: ʃ	B: ʒ	A: θ	B: ð
A: ʃ	B: ʒ	A: θ	B: ð
A: ʃ	B: ʒ	A: θ	B: ð
A: ʃ	B: ʒ	A: θ	B: ð

Appendix 2: Reading Exercise

姓名_____ 专业/班级_____ 学号_____

请先报出你的姓名、学号，然后按照序号朗读每个单词。

我的姓名是：_____
我的学号是：_____

1	explosion	22	wheel
2	serving	23	then
3	thing	24	breath
4	wail	25	veil
5	razor	26	closing
6	them	27	pleasure
7	clothing	28	vet
8	racer	29	sink
9	face	30	veal
10	zink	31	zen
11	breathe	32	thick
12	wet	33	confession
13	expression	34	leave
14	sick	35	pence
15	breeze	36	faith
16	view	37	sing
17	occasion	38	bathe
18	surfing	39	pressure
19	few	40	teeth
20	theme	41	pens
21	leaf	42	clothe