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The Effect of L2 Minimal Pairs Practice on Iranian Intermediate EFL Learners' Pronunciation Accuracy

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Abstract

The aim of the current study was to investigate whether L2 minimal pairs practice would have an effect on Iranian intermediate English as a Foreign Language (EFL) learners' pronunciation accuracy. For this purpose, 30 Iranian intermediate EFL learners at Simin Institute participated in the experiment of the study. The selection of subjects was done from among 150 EFL learners at intermediate level. In order to make subjects homogenized an SPT was used, then they divided into two groups of 15 who were assigned to experimental and control group randomly. A pre-test of pronunciation accuracy was administered to both groups, then the experimental group received 5 sessions of teaching L2 pronunciation as well as Minimal Pairs Practice (MPP) while the control group received a placebo, in other words, teaching L2 pronunciation via the existing method. After the treatment again the same test was administered as posttest to both groups of the study. The data obtained from the tests were analyzed via independent samples T-test between the posttest scores of experimental and control group to see whether there is a difference between performance of the groups and the paired-sample T-tests was used between the pretest and the posttest of each group to show the progress. The results revealed that Iranian EFL learners in the experimental group performed better and received higher score in pronunciation test after 5 session of treatment.

Keywords: pronunciation accuracy, minimal pair, EFL learner, teaching pronunciation, intelligibility

1. Introduction

In light of the fact that many factors such as instructional, environmental, psychological ones can influence language learning, specifically pronunciation, in EFL/ESL learners, a great deal of studies concerned with learning and teaching L2 pronunciation. Because of this fact, two controversial fields in language studies, minimal pair and pronunciation accuracy, is investigated in the present study. Pronunciation is a concept in English language teaching and learning which is very crucial for communication and it needs the comprehension and production of the sound systems. EFL learners need to have pronunciation competence in order to avoid any ambiguity in communicating the message.

Yule (2011) claims that vocal tract is different in every person, in other words, people will pronounce sounds differently. Phonology refers to the study of sound system in a language, this phonological knowledge helps receiver understands what a speaker says in his own way. In a sense, it deals with the mental aspect of the sounds in a specific language. According to Yule (2011), pairs and sets of words, minimal pair or minimal set, are used to test phonemic distinctions in a language and to teach EFL/ESL learners to differentiate the existing contrast between them.

2. Statement of the Problem

Accurate pronunciation is a subcategory of intelligibility. It deals with the mastery of phonological characteristics in L2 learners' production. Van Den Doel (2007) asserts that English is an international language so it should function as an organized and effective medium focusing on intelligibility. In other words, learners try to make themselves understood not only to the non-native speakers but also to native speakers. It means the ability to understand and to be understood.

Keshavarz (2011) believes that through comparing various types of English and Persian syllable, it is clear that acquiring English syllable structure is not easy for Iranian EFL learners. Thus, complexity of consonant clusters is one of the sources of pronunciation errors among Iranian EFL learners. He added that such learners tend to transfer phonological feature of their mother tongue to target language. For instance, in English the position of word stress is not predictable, while in Persian language stress is on the final syllables of words.

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According to Yates (2002), age is a factor that has a great effect on pronunciation learning and the ability to learn the sounds of a new language after puberty will reduce. 'The good news is that these neurological differences between adults and children seem to result from a change, rather than a deterioration, in the way the sounds in a new language are processed, and so training can help adults improve their ability to discriminate new sounds and establish new phonetic boundaries'(Yates, 2002, p. 14).

Goh (2000) asserts various problems EFL learners have in their listening. He stated that most of the problems are related to the perception of pronunciation rather than production which lead to more emphasis on perception phase of pronunciation. Randall (2007) claims that one of the difficulties language learners face in perceiving L2 is the differences between their L1 sounds system and L2 sound system. So, they need to extract salient features of aural input in order to perceive aural stimulus. These features are the same in all languages but the combination of them varies from language to language and at the first step language learners should adjust to the new combination of features used in L2.

Consequently, in the light of the aforementioned problems, the purpose of the current study is that whether using minimal pair has any effects on Iranian EFL learners' pronunciation accuracy. One of the aspects of the results of such a study is that it seems to be more practical and compatible to an Iranian situation of foreign language learning particularly for those who encounter problems regarding their pronunciation accuracy. Therefore, in the teaching English as a foreign or second language if learners want to acquire native-like accent, L2 pronunciation on all levels needs to be learned. The results of the study would have theoretical and practical implications in language teaching. For instance, teachers can realize the importance of MPP in pronunciation teaching and learning and learners will be also motivated to move in this specific use of language. Minimal pair practice can be beneficial in helping language learners understand and distinguish different sounds, phonemes and achieve better pronunciation.

3. Research Question

Based on the problems and purposes which were explained above, the present study attempts to answer the following question:

RQ: Does using L2 minimal pair have any effect on Iranian intermediate EFL learners' pronunciation accuracy?

4. Hypothesis of the Study

In accordance with the above research question, the formulated null hypothesis is as follows:

H_0: Using L2 minimal pairs practice does not have any effect on Iranian intermediate EFL learners' pronunciation accuracy.

5. Review of the Literature

EFL pronunciation should be considered in the same way as the other concepts and skills of English such as vocabulary, grammar, reading, and writing, for it is an important and effective part of communication, especially in listening and speaking. Ladefoged (2010, p.33), claims that 'Phonology is the description of the systems and patterns of sounds that occur in a language. It involves studying a language to determine its distinctive sounds, that is, those sounds that convey a difference in meaning.' When two words differ in a sound it is called phonemic difference (such as cat and bat), such differences can be stated in terms of phonological rules. According to Ladefoged (2010), systematic phonetic transcription is also part of phonological rules, it refers to transcription which shows phonetic details of a language.

Pourhosein Gilakjani (2012) believes that pronunciation plays an important role in learners' communicative competence and performance. Learners' understandable pronunciation skill is a key factor in language proficiency. In teaching pronunciation, teachers should be pronunciation coaches and learners need to be motivated enough and the focus of teaching is on intelligible pronunciation rather than perfect pronunciation as well. Nowadays English becomes lingua franca that is used internationally and learners' realistic goal is intelligible pronunciation and perfect communication instead of native-speaker like accent.

Isaacs (2009) claims that balance between form and meaning in English as a Second Language (ESL) teaching particularly pronunciation pedagogy is an essential factor. In the past decade, pronunciation had little importance in language teaching because many researchers believed that learners do not need pronunciation instruction and it would improve with input and through exposure. So, most of the time pronunciation was ignored or paid little attention at

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that time. From 1980s pronunciation has been highlighted but still there is a gap between pronunciation and communicative instruction.

Minimal pair is one of the difficulties a language learner faces (Kutszik, 2005). The term minimal pairs refer to two words in a language which have different meanings but vary in one sound segment only. For example, the words "fat" and "hat", and there are many of these in the English language. Which minimal pairs cause a student problems, depend on their native language phonetics and their language of study (L1 and L2). It is difficult for language learners to clearly differentiate between the sounds both when they hear them and when they attempt to pronounce them.

In turn, difficulties with minimal pairs may even cause language learners problems in areas like reading and spelling, as students mix up words and meanings. The problem is that it is not as simple as teaching a rule and then reinforcing it with an exercise or homework. Though minimal pairs are addressed by many language learning texts, they are used in one time activity or some simple repetition which aid students in gaining improvement in either listening or pronunciation. Minimal pairs need to be seen as a problem to be dealt with over a longer period. They are a more serious problem than simple poor pronunciation or listening skills on the part of a student.

Bowen (2012) believes that phonological approaches try to teach children the function of sounds, specifically the changing sounds that changes the meaning of word, and that making meaning is a necessary to communication. The basis of minimal pairs approach is to modify a group of sounds that are produced in error, in a patterned way, and to emphasize contrasts rather than accurate production of sound, and also to focus on the use of sounds for communicative purposes. The aim of phonological therapy is to select activities that help child see how changing sounds results in changes in word meaning and this affects communication.

5. Method

5.1 Design of the Study

This study followed a quantitative method; pretest-posttest. First, there was a subject selection through administering a SPT with the criteria of 1 standard deviation below to 1 standard deviation over the mean to show the acceptable proficiency level of the participants of the study. Second, the participants were divided into two groups of experimental and control. A pre-test of L2 pronunciation accuracy was administered to both groups of the study and then, the experimental group received 5 sessions of teaching L2 pronunciation and MPP while the control group received a placebo (teaching L2 pronunciation via the existing method). Next, a post-test of L2 pronunciation accuracy was administered to both groups of the study and finally the data was analyzed.

5.2 Participants

The participants of the current study were 30 Iranian EFL learners at intermediate level. All of them were native speakers of Persian language. Participants' age varied from eighteen to twenty four. They were selected from Simin English Language Institute in Tonekabon. The selection was based on the result of the SPT. In fact the participants of the study were selected based on one standard deviation below and one standard deviation above the mean of the scores of the SPT.

5.3 Materials

The SPT was used in the current study to homogenize the selected groups and know their language level. It was adopted from the book 'Pronunciation Contrast in English' (Nilsen & Nilsen, 1993) by the researchers and the reliability index which was estimated through Cronbach's alpha (coefficient alpha) was reported to be %74.

A test of pronunciation accuracy was used as the pre-test of the study. This pronunciation test consists of 20 multiple choice questions which were adopted from the book "A Practical Course of English Phonetics and Phonology" (Keshavarz, 2006) by the researchers. The reliability (r=%69) of both pre-test and post-test of the study was estimated using Cronbach's alpha (coefficient alpha).

The treatment for the experimental group in this study included five lists of minimal pairs which were selected from the book 'Pronunciation Contrast in English' (Nilsen & Nilsen, 1993). The researchers taught L2 pronunciation through different examples and explanation as well as minimal pairs by repetition.

The post-test of the present study involves a test of pronunciation accuracy which was used as pre-test as well. Due to the fact that the aim of the study was to show the progress from the pre-test to the post-test of the experimental group after five sessions teaching, the same test was administered by the researchers in both experimental and control groups.

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It consisted of 20 multiple choice questions of L2 pronunciation accuracy and the participants were asked to choose the best answer.

5.4 Procedures

The SPT which was used in the current study was a paper-and-pencil test in multiple-choice format that are made by the researchers themselves. In order to determine the quality of the test, the researchers applied more than one evidence to support the validity of the SPT. It was used to determine participants' proficiency level specifically their knowledge of pronunciation. They had to answer it in 15 minutes which was determined by the researcher. They answered the 20 questions in specific answer sheets. It was administered in a quite setting of a class at Institute in the afternoon.

Bothe the pre-test and the post-test included a pronunciation accuracy test. The time assigned for the tests was about 15 minutes. The treatment used in the study consisted of MPP for experimental group for at least 15 minutes in each session. Five separate lists of minimal pairs were used, one list for each session. The researchers gave participants the list and asked them to repeat the pairs to distinguish the difference between them.

Finally, the results of tests were compared through SPSS software to determine the effectiveness of the treatment. All the tests were given by the researchers at Simin Institute and no technical instrument such as computer was used. The reliability of both pre-test and post-test of the study was estimated using the Cronbach's alpha (coefficient alpha). The data obtained from the tests in this study was analyzed via independent samples T-test between the post-test scores of experimental and control group to see whether there is a difference between performance of the groups, and the paired-sample T-tests was used between the pre-test and the post-test of each group to show the progress.

6. Data Analysis and Findings

The descriptive as well as the inferential analysis of the obtained data in the current study are as follows:

Table 1. Paired samples statistics between the pre-test and the post-test of the experimental group of the study

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test EX	16.2667	15	1.53375	.39601
	Post-test EX	17.0000	15	1.06904	.27603

As is indicated above (table 1), the number of subjects participated in the study has been 15 in the experimental group. The mean for the p-test EX (pre-test of the experimental group) was shown to be 16.266 as compared to the mean for the post-test EX (post-test of the experimental group) which was 17.000. The standard deviations obtained for the experimental group show more variability among the scores of pre-test EX rather than post-test EX scores.

Table 2. Paired samples statistics between the pre-test and the post-test of the control group of the study

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test-CON	13.1333	15	1.45733	.37628
	Post-test-CON	12.8000	15	1.97122	.50897

As is indicated in table 2, the number of subjects participated in the study has been 15 in the control group. The mean for the pre-test CON (pre-test of the control group) was shown to be 13.133 as compared to the mean for the post-test CON (post-test of the control group) which was 12.800. The standard deviations obtained for the control group show more variability among the scores of pre-test CON rather than post-test CON scores.

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Table 3. Independent samples T-test results of the study

		t	df	Sig. (2-tailed)
Pronunciation	Equal variances assumed	7.254	28	0.000
	Equal variances not assumed	7.254	21.580	0.000

As is pointed out in table 3, the observed t value was calculated as to be 7.254 which is higher than the critical t value (t_{crit}= 2.048) and the degree of freedom was 21.580 (df= 21.580) and also the level of significance was calculated as to be .000.

Paired sample T-test was run to determine students' progress within groups. It showed the participants' progress between pre-test and post-test in the following table:

Table 4. Paired sample T-test result for the experimental group of the study

		t	df	Sig. (2-tailed)
Pair 1	Pre-test EX – Post-test EX	3.556	14	0.003

According to the results of paired samples test correlations between the pre-test and the post-test scores of the experimental group, the sig. value (.003) is smaller than 0.05 which means the difference is significant. The observed t value is 3.556 (t_{obs}=3.556) that is higher than the critical t value (t_{crit}= 2.145). Additionally, the degree of freedom was 14 (df=14). This rejects the null hypothesis. Based on the result of paired samples T-tests, the progress was statistically significant for experimental group. It means that the experimental group of the study made a distinct improvement in comparison to the control group.

Table 5. Paired sample T-test results for the control group of the study

		t	df	Sig. (2-tailed)
Pair 2	Pre-test CON – Post-test CON	1.581	14	0.013

As is shown in table 5, the sig. value of the control group of the study was calculated to be 0.013 (sig. value= 0.013). The observed t value is 1.581 (t_{obs}=1.581) that is lower than the critical t value (t_{crit}= 2.145). Additionally, the degree of freedom was 14 (df=14).

7. Discussion

The results indicated that there was a noticeable progress in the performance of experimental group who went under treatment as an extra teaching tool. Consequently, the null hypothesis of the study was rejected. Evidence from the different sources of data verifies the rejection. The results of the T-Test of the study can be used to prove this analysis, and also the observed t value calculated by the SPSS was 7.254 while the critical value of t was 2.048. So, the observed t was higher than the critical t to reject the null hypothesis of the study (t_{obs}= 7.254 > t_{crit}= 2.048).

The next evidence to verify the hypothesis rejection was the value of the level of significance (determined by the SPSS, .000), thus this was lower than 0.05 (based on SPSS regulations), the difference between post-tests of the study is not by chance. It can also be verified by showing the progress of experimental groups' performance from pre-test to post-test.

The findings of the study revealed that using L2 MPP in teaching pronunciation lead to a better performance of language learners in L2 pronunciation accuracy tests. Minimal pairs can be used as a means to solve pronunciation problem of EFL/ESL learners and both of the teachers and learners can demonstrate high appreciation of pedagogical effectiveness of minimal pairs when they are used as either teaching or learning tool.

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Furthermore, the findings are in line with Yules' (2011) view that minimal pairs have been used in English as a second or foreign language teaching in order to help learners distinguish the contrast in meaning of the words based on the minimal sound contrast. So, the results of this study can have contributions towards a relationship between language instruction and language use due to focusing on minimal pair practice in pronunciation teaching rather than pure instruction.

8. Implications of the Study

Based on the difference between target pronunciation and L2 learners' pronunciation evidenced in the current study and others in literature, language teachers should use activities and tasks such as minimal pairs which help learners distinguish different sounds and phonemes. They can also make L2 learners aware of the importance of segmental aspects of phonology in conveying message and increase their ability to distinguish words that are different in only one sound or phoneme.

To this end, teachers can raise learners' awareness that if they fail to convey intelligibility because of their disability in distinguishing the suitable word, no communication would occur and they cannot be understood. Similarly, the findings of the study suggest that teachers can use minimal pair prominently while teaching pronunciation. In countries such as Iran where there is few or no opportunities for L2 learners to have exposure outside the classroom or to speak with a native speaker to improve their pronunciation, there are various, simple, and efficient ways to teach pronunciation, as it is evident in the current study that minimal pairs were used as a good practice in teaching pronunciation.

The results of the study are more practical to the foreign language learning situation specifically for those who face problems regarding their pronunciation competence. Accordingly, the findings are applicable to Iranian EFL learners at any level who feel the need of strengthening their knowledge of pronunciation patterns. Finally, the results of the study can be beneficial for material designers to develop new curricula for pronunciation teaching and for EFL testers.

9. Limitations of the Study

There are a number of practical implications for the above findings and discussion. The firs fact to be considered is the problem of sample population limitations of the study. In this study, it was not practical to use a larger population due to the problem of distance. The other fact is the time, in other words, it was not practical to choose samples from all parts within the limitation of time to write the work. Furthermore, administrating the test, teaching, and treatment by the researchers took a lot of time.

Moreover, this study was conducted on intermediate EFL learners of Simin Institute at Vali Abad Tonekabon, as a result of this fact, future research on different levels at institutes or even at university levels is required. Another limitation of this study is the fact that the treatment used here is a list of minimal pairs to be repeated while future research can include a variety of minimal pair tasks that gaze learners' attention more and more.

10. Suggestions for Further Research

This study may motivate researchers to conduct future research on this issue and there may be some useful ideas for the improvement of the issue as future attempts in using minimal pairs in teaching pronunciation. In the light of the fact that researches particularly in pronunciation are not limited fields and there are different topics to be worked on at least for the variables discussed in the study, there is always room for improvement. Studies like that can be replicated more and more with the help of some suggestions.

It can be suggested to future researchers to expand the replications of the current study to different teaching situations such as high school. In spite of attempts made in the study to determine the effect of using minimal pairs practice on subjects' pronunciation knowledge, the findings are also applicable to university level. In the next research, it is better to conduct qualitative research as well as quantitative research in order to elicit learners and teachers various views and pros and cons about the results and treatment of the study.

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