

The Effect of Using PRAAT Software on Pre-Intermediate EFL Learners' Supra Segmental Features

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Abstract. The present study investigated the effect of using PRAAT as a free computer software package for the scientific analysis of speech in phonetics on pre-intermediate Iranian English as foreign language (EFL) learners' supra segmental features (i.e., intonation and stress). The design of the study was a Quasi-experimental research design with a pre and post-test. In doing so, 40 male and female majoring in English translation with the age ranging from 19 to 37 years old were selected. They were studying EFL at the Islamic Azad University of Abadan, Iran. The participants were selected among 55 students through the Oxford Placement Test (OPT) and their level of proficiency was determined as the pre-intermediate level. Then they were divided into two experimental and control groups through convenience sampling method. Then they took a pre-test to evaluate their proficiency in supra segmental features (i.e. intonation and stress). The control group (n= 20) was exposed to the traditional method and the experimental group (n=20) was exposed to the use of PRAAT software in learning supra segmental features (i.e. intonation and stress). After the treatment sessions, both groups took the post-test that was a modified pre-test. Data were analyzed through Independent and Paired Samples t-tests. Result indicated the

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experimental group outperformed the control group. Implications of the study suggest that the EFL teachers can use PRAAT software to teach supra segmental features effectively.

Keywords: PRAAT Software, supra segmental features, pronunciation, EFL learners

1. Introduction

With the growing availability of computers into teaching and learning process, majority of second language (L2) teachers now have the options of using a wide variety of educational computer software to help their students to practice speaking and then to improve their pronunciation (Chou, 2005). Recently teachers of foreign languages have claimed that technology should not be ignored in languages classroom and should adopt it and find suitable computer software to facilitate the process of the second language (L2) learning and help their students to improve their pronunciation by a modern way (Andoh, 2012).

PRAAT is a free computer software package for analyzing the phonetic structures and patterns of sounds. This software was designed by Paul Boersma and David Weenink (2018) at the University of Amsterdam. PRAAT is a Dutch word which means talk, and was developed by two phoneticians (i.e., Boersma & Weenink, 2018). PRAAT technology has been used widely in teaching pronunciation as a pedagogical tool. Several studies (e.g., Boves, Cucchiarini, Neri & Strik, 2002; Wilson, 2005) showed that using technology might enhance learners' motivation.

The PRAAT software can be a great tool to help non-native speakers to improve their pronunciations by practicing supra segmental features. PRAAT is simple to use, and L2 learners will be able to record their own voices and see a spectrogram with different types of analysis such as pitch, intensity and formants (Chou, 2005).

English pronunciation is divided into segmental and supra segmental features, so it is essential for language teachers to understand how these different aspects work because both are applied when we speak. Supra segmental features that include the individual sounds, such as stress, intonation, phrasing, and timing. Stress is a supra segmental feature of

utterances and it does not refer to certain vowels and consonants but it refers to whole syllables or a word is pronounced more prominently than the other words (Ladefoged & Johnson, 2010).

Harrison, Kondo, Lee, Meng, and Viscelgia (2009) highlighted the importance of supra-segmental features training for L2 learners since they must appropriate their oral productions for effective communication. However, this learning process includes practice on sounds articulatory motions design and collect systematic analysis of L2 supra segmental features. In this area selected textual environments are important too, because it shows how supra segmental features convey information such as, part of speech, syntax, speech acts and semantics. In this area, stress and intonation are important for correct word pronunciations and effect on encoding information structure that helps the listener to identify meaning words, phrase boundaries and speech acts.

Mott (1991) stated that English pronunciation could be a mixture of Germanic and Roman languages. Thus, L2 teachers must be able to solve these which problems with proper tools and materials. However, it seems that these features are too difficult for both EFL teachers and learners to deal with by using traditional approaches.

Teaching and learning English pronunciation is the most difficult and important to acquire not only for the students but for English teachers as well (Daryagasht & Khodabandehlou, 2014). Accordingly one problem of Iranian EFL learners for acquiring good pronunciation is the lack of ability to produce and apply the supra segmental features (i.e., intonation and stress) correctly. In this case, the learners face the lack of ability to produce four types of intonation patterns (i.e., Falling, Rising, Falling-Rising, Rising-Falling). This may be due to the interference of their mother tongue (i.e., L1) or unfamiliarity with the importance of using correct intonation patterns of the native language (i.e., L2).

In this area, some languages, each syllable in each word is pronounced with the same stress, but not in English language because the placement of stress is unpredictable. So, finding correct placement of stress is too difficult for non native learners but, completely natural for English speakers (Mott, 1991). Because of this reason, the L2 teachers need to teach stress and intonation with special attention and ESL students can

learn and remember some of these stress and intonation rules in English language. In this case, PRAAT software could be used to practice supra segmental features (i.e., intonation and stress). Therefore, the students can record and hear their own pronunciations and improve it by modern tools.

This study aims to examine the effect of PRAAT software on learning supra segmental features that help the EFL learners to improve their pronunciation after the experiment. The researcher focuses on the area of supra segmental that is, intonation and stress, because these are not paid attention by non-native speakers of English. It also deals with intonation, because intonation functions deal with distinguishing between question types and the way in which questions differ from statements and used to express speakers' personal attitudes or emotion (Nasiri, Soltani Moghaddam, Sepehrinia & Zarea, 2012).

2. Literature Review

2.1. Using technology in education

Saka, Yildirim and Zayim (2006) claimed higher education institutions have concerned for supporting the use of technology in education system. There are many reasons both technical and societal to explaining why technologies have not been widely used; however, the major reason is the lack of motivation to adopt and use technology motivation in education process. In this area, technology adoption integrated the process of involving people, ideas, procedures, devices and organizations, for analyzing problems and devising, evaluating and managing solutions to those problems involved in all aspects of human learning.

Nicolle (2005) notes that technology of instruction reflected particular ways of thinking, acting, speaking, or feeling. These technologies of instruction take on many varying forms, ideas, concepts, and strategies that could be used in total application of educational technology to facilitate the process of teaching and learning. Technology could be used in to theory of the design, utilization, development, management and evaluation in education. It largely includes data processing and communications such as media (i.e., film and radio) and could be used by both EFL teachers and learners.

According to Carney, Kyza, Reiser, Sorsa, Steinmuller and Spillane (2000), teachers concern both technology match to the level of learners and the difficulty of access to use the academic technology. L2 teachers are also concerned chiefly with the ready and open-ended nature of the tasks, learners' skills and background conceptual knowledge.

While the use of electronic communication technology as a medium of instruction is just beginning in basic education, it could be a dominant attitude over the next decade. The use of technology in the language classroom contributes to the L2 teacher training and the pedagogical strategies that help the teachers to use effective curriculum (Chapman & Mahlck, 2004).

2.2. Supra segmental features

Birjandi and Salmani- Nadoushan (2005) referred to the term supra segmental features as distinguishing different sound segments of English language. These features were considered the qualities of sound segments; they are sometimes called segmental features. Phoneticians have classified supra-segmental features to five categories, include (a) stress, (b) tone, (c) intonation, (d) length, and (e) syllable.

Supra segmental features can be classified based on their linguistic domain, which is ranging from the shorter lexical (phonemic) level to the longer (sentential) level. In phonetics, the smallest segment is a phone; and phonology involves the analysis of speech into phonemes that corresponds to phonetic segments of analyzed speech. The supra segmental features of oral languages involve variation in syllable length, pitch, and loudness of speech sounds and they are more relevant to pronunciation rather than meaning. Typically, stress, length, intonation, syllabification and tone can be classified in supra segmental category, and speech divided into segmental and supra segmental (Goertel, 2013).

2.3. Research questions

This study focuses on the research questions as follows:

RQ1. Does PRAAT software enhance the learners' pronunciation (i.e., supra segmental features) at the pre-intermediate level?

RQ2. Is there any difference between the learners who are taught through

PRAAT and the ones who are instructed through the traditional methods (i.e., repetition, pattern practice, etc.) of teaching pronunciation?

3. Methodology

3.1. Participants

Participants of the study consisted of 40 male and female students majoring in English Translation, and their age ranged from 19 to 37 years old. The participants were selected among 55 EFL students at the Islamic Azad University of Abadan, Iran. They took the Oxford Placement Test (OPT) to assess their level of proficiency at pre-intermediate level. Then they were non-randomly divided into two groups based on convenience sampling method.

3.2. Instrumentations

The research tools in the present study are as follows:

1. OPT: The OPT was used as a homogeneity test to determine the participants' level of proficiency at the pre-intermediate level. Then the learners whose scores were included in the band score (i.e. from 28 to 36) were divided into two groups. The test consisted of 60 multiple-choice items covering only grammar items; the allotted time was 50 minutes.
2. Pre-test: The pre-test was designed based on the classroom pronunciation materials before the treatment sessions in order to determine how well the participants knew the supra segmental features. The participants were asked to answer two sections of the pre-test and each section consisted of 15 items. The items of the two sections including several conversations in the textbook, "Four Corners" (Richards & Bohlke, 2011). In the first section, the participants should determine the intonation patterns at the end of each sentence, and in the second section, the participants should put the primary stress on the underlined words in 15 minutes. The pre-test was piloted on a small group of the learners in the same class. They were the students other than the participants of the study. The content validity of the pre-test was confirmed by two experts in teaching EFL and the reliability of the pre-test was calculated through KR-21 as ($r = .691$).

3. Post-test: At the end of the course, the post-test was used the same as the pre-test regarding the time and the number of items. The only difference of this test with the pre-test was that the order of items and the alternatives were changed to avoid reminding the items. The pre and the post-tests were performed as part of the classroom evaluation activities. The reliability value of the post-test was met again since the format was changed. It was calculated through KR-21 formula as ($r=.750$).

3.3. Materials

The materials used in the study included reading passages extracted from the textbook. They were the rules of intonation patterns and stress placement. They had been selected from the following sources:

1. *Four Corners*: It was developed by Richards and Bohlke (2011). It consisted of twelve units. Moreover, two of them were taught on the oral test performance.
2. *An introduction to phonetics*: It was developed by Birjandi and Salmani-Nodoushan (2005). It consisted of eight chapters, just five of them were taught during the course.
3. <http://www.nceltr.mq.edu.au/pdamep>: This web site covers the nature of pronunciation and some theory that teachers should know to teach English pronunciation.

3.4. Data collection procedure

To accomplish the purpose of the study, firstly 40 male and female participants who were studying English Translation at the Abadan Azad University were chosen. Then they took the OPT to determine their homogeneity as pre-intermediate level. They were also divided into two groups, control ($n=20$) and experimental ($n=20$). The participants took a pre-test, consisting of supra segmental test items before the treatment to determine their level of pronunciation knowledge. To motivate and encourage the participants to pay attention to and play more active role in the research program, they were told that the purpose of the extra instruction was to improve their pronunciation knowledge such as supra-segmental features that enable them to read the passages correctly.

After the pre-test, the researcher created a group on WhatsApp (i.e., the experimental group) to observe their practice through sending instruction on using PRAAT in learning processes. They were also given the numeric identity (i.e., age and initial word of first and last name) of each participant. Then they were taught the rules of intonation and stress in English languages through WhatsApp. The control group was taught the same materials in the classroom and the supra segmental activities were the use of repetition and pattern practice in groups or individually. In order to teach supra segmental features in the experimental group, the following phases were carried out:

Phase 1: In the first session, the participants received instruction on how to use place and manner of articulations and notice super-segmental features. Then the stress rules in English language were explained and the participants took a speaking pre-test, that focused on accuracy of stress and intonation in the participants' oral performance by PRAAT software. The most important part of the study was the preparation of the pronunciation instruction in the treatment period that should be matched with the level of participants. After that, the researcher ensured that the experimental group had access to PRAAT software, and during the first week the researcher checked all the participants' WhatsApp in their cell phones. This ensured the researcher that the students paid enough attention to lessons and practice based on the stress patterns.

Phase 2: In the second session, the researcher explained the rules of intonation patterns in English language and introduced the basics of PRAAT software program. During the week, the researcher sent the information on using PRAAT to check their intonation patterns according to the pamphlet by WhatsApp. Then the participants did the exercises and provided the researcher with appropriate feedback.

Phase 3: After 12 sessions of treatment, each 30 minutes, the participants took a speaking post-test, that focused on accuracy of supra segmental features with PRAAT. The experimental group received instruction and exercised through using WhatsApp to learn supra segmental features.

Finally, both groups took a speaking post-test on supra segmental features. It focused on accuracy of stress and intonation in the par-

ticipants' oral performance. The post-test evaluated the participants' progress and the effect of the two types of treatment on learning stress and intonation. Data were collected and analyzed through descriptive and inferential statistics to compare the means of the Iranian pre-intermediate learners in both the experimental and control groups at the pre and post-tests.

The data were analyzed using the "SPSS", version (17). The means of the pre-test for each group were analyzed separately in order to find the standard deviations of the scores in each group. Paired and independent samples t-tests were employed to see if there was a significant difference between the means of the groups' scores. In this case, the effect of using PRAAT software on teaching supra segmental features among pre-intermediate EFL learners' pronunciation and was assessed at a (0.05) level of significance.

4. Results

Data were analyzed through descriptive and inferential statistics. Since the participants in each group were fewer than 30, the K-S normality of test scores was used and the results are presented in Table 1.

Table 1: One-Sample Kolmogorov-Smirnov Test

		Pre-test experim ental	Post- test experim ental	Pre-test control	Post- test control
N		20	20	20	20
Normal Parameters ^{a,b}	Mean	8.8000	17.8500	8.2500	10.0000
	Std. Deviation	7.02327	3.93734	6.27338	7.92730
Most Extreme	Absolute	.151	.157	.190	.150
Differences	Positive	.151	.112	.190	.150
	Negative	-.105	-.157	-.094	-.104
Kolmogorov-Smirnov Z		.676	.704	.850	.673
Asymp. Sig. (2-tailed)		.751	.704	.465	.756

a. Test distribution is Normal.

b. Calculated from data.

Table 1 shows the participants of each group were fewer than 30; thus, a normality test of K-S was conducted and results indicated that the score distribution was normal (i.e., the significant value of the table is greater than ($p < .05$). In other words, the parametric statistics such as t-test can be run to analyze data. Descriptive statistic of the pre-test is presented in Table 2

Table 2: Descriptive Statistics (Pre-tests)

Groups	N	Mean	Std. Deviation	Std. Error Mean
Experimental	20	8.8000	7.02327	1.57045
Control	20	8.2500	6.27338	1.40277

Table 2 shows the descriptive statistics of the participants' tests in the pre-test. The mean score of the experimental group is 8.80 and the mean score of the control group is 8.25. In order to see if there is any significant difference between two groups in the pre-test and they have been homogeneous before the treatment or not, an Independent Samples t-test was administered. The results are presented in Table 3.

Table 3: Independent Samples t-test (Pre-test)

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	<i>t</i>	df	Sig. (2- tailed)	Mean Differ ence	Std. Error Differ ence	95% Confidence Interval of the Difference	
Experimental vs. Control								Lower	Upper
Equal variances assumed	.457	.503	.261	38	.795	.550	2.105	-3.71	4.81
Equal variances not assumed			.261	37.5	.795	.550	2.105	-3.71	4.81

Table 3 shows the observed t (.261) is less than the critical t (1.684) with $df=38$. In other words, the difference between the two groups' means is not significant. Descriptive statistics of the post-test is shown in Table 4.

Table 4: Descriptive Statistics (Post-tests)

Groups	N	Mean	Std. Deviation	Std. Error Mean
Experimental	20	17.8500	3.93734	.88042
Control	20	10.0000	7.92730	1.77260

Table 4 indicates the mean score of the experimental group is 17.85 and the mean score of the control group is 10. To find out if there is any significant difference between the two groups in the post-test, an Independent Samples t-test was administered. Table 5 shows the results.

Table 5: Independent Samples t-test (Post-test)

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	<i>t</i>	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Experimental vs. Control								Lower	Upper
Equal variances assumed	5.97	.01	3.966	38	.000	7.850	1.979	3.84	11.85
Equal variances not assumed			3.966	27.8	.000	7.850	1.979	3.79	11.90

Table 5 shows the observed *t* (3.966) is greater than the critical *t* (1.684) with *df*=38. Thus, the difference between the two groups' means is significant. In other words, both groups are significantly different at (*p* 0.05).

In order to discover if there is any significant difference between the pre and post-tests of each group, a Paired Samples t-test was administered. Table 6 indicates the results.

Table 6: Paired Samples t-test (Pre vs. Post-test)

		Paired Differences			<i>t</i>	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean			
Pair 1	Exp. Pre vs. Post-test	-9.05	8.63	1.931	-4.687	19	.000
Pair 2	Control. Pre vs. Post-test	-1.75	8.91	1.994	-.877	19	.391

Table 6 indicates that the observed *t* (-4.687) of the pair 1 (i.e., the experimental group) is greater than the critical *t* (1.729) with *df*=19. Thus, the difference between the pre and post-test of the experimental group is significant. In contrast, the observed *t* (-.877) of the pair 2 (i.e., the control group) is less than the critical *t* (1.729) with *df*=19. Therefore, the difference between the pre-test and post-test of the control group is not significant. In addition, the treatment of WhatsApp enhanced learning supra segmental features in the experimental groups more effectively than the control one.

5. Discussion

The two research questions are discussed to prepare appropriate answers for the research questions.

RQ1. Does PRAAT software enhance the learners' pronunciation (i.e., supra segmental features) at the pre-intermediate level?

The results obtained from the descriptive statistics of the pre-test, comparing to the post-test indicated an increase in the mean scores of the experimental group in contrast to the mean scores of the control group in the post-test. The reason of this progress can be justified as the available and accessible exercises, which are usable in the experimental group. The drills in virtual manner such as WhatsApp can be done when the participants are free or when they are out of classroom. They also found out that good pronunciation could help them to convey right meanings for better communication. In this area also to motivate and encourage the subjects to pay attention of and to play more active role

in the research program, they were told that the purpose of the extra instruction was to improve their knowledge of pronunciation such as supra segmental features that enable them to read and speak correctly as much as possible.

Esling, Fraser, Jenkins, Hancock & Herbert (2001) support the findings of this study and state the way we speak immediately may convey something about ourselves to the people around us. Learners with good pronunciation in English are better than learners whose pronunciation is difficult to understand, even if their grammar is perfect. The L2 learners were often judged by their pronunciation; therefore, learners with poor pronunciation may be judged as incompetent, or lacking in knowledge. Because of this reason, most of the L2 learners find pronunciation as one of the main difficult aspects of English language to acquire; thus, L2 teachers need more attention to teaching pronunciation and should use appropriate materials in their language classrooms.

The EFL learners need to use modern and attractive techniques and tools to practice and work on their pronunciation outside the classrooms. The findings of this study indicated that the use of PRAAT software might achieve the pedagogical goals like the motivation of the learners to use PRAAT and play more active in the research program. The participants may be motivated to use this software and work on their pronunciation for later use. In this case, they could compare their pronunciation with the native speaker simply and try to match their oral production with the native speakers' stress and intonation through using PTAAT. This enables them to identify their errors by visual analysis and improve their pronunciation as much as possible. Furthermore, they may learn how to use PRAAT for the purpose of self-autonomy in learning English pronunciation.

Olson (2014) studies are in line with the findings of this study and notes that, with a growing technology the last 40 years have led to creating a number of speech analysis tools. In this area some of these tools were limited while others may be more useful than others and can improve L2 learners' pronunciation in language classrooms. Researchers have investigated the benefits of visual analysis by software that enable L2 learners to self-produce speech and compare by native speakers that

leads to better communication. PRAAT software can provide learners with visual representations of a variety of speech sounds such as, stops, fricatives and liquids with spectrograms. PRAAT software also provides the participants with a variety of facilities that may improve the process of learning English language pronunciation.

In this study, the experimental group received a pamphlet prepared and gathered by the researchers and consisted of the rules of intonation and stress patterns in English languages in order to teach supra segmental features in the experimental group classes. Since limitations of time and the lack of appropriate materials, most of the L2 teachers do not work on learners' pronunciation individually in their language classrooms and prefer to teach other parts of English language such as grammar and vocabulary. Peabody (2011) supports the findings of this study and states that intelligible pronunciation is only one of the essential skills for speaking English language, and it is often not or less emphasized in the classroom. Thus, to improve L2 learners' pronunciation, especially the learners whose pronunciation is less than desirable level is possible through pronunciation training by suitable material and techniques altogether. Shortage of time made the work on pronunciation difficult for both L2 teachers and learners. In addition to requiring lots of output to improve pronunciation, students cannot attend to all aspects of pronunciation at the same time.

The poor performance of the control group in the post-test comparing to the experimental group may be due to the lack of pronunciation drills, which are limited to the class hours. They were not exposed to enough exposure outside the classroom. This may affect their ability to follow the rules of applying stress placement and intonation patterns. Both groups were somehow the same in the pre-test since they were not significantly different. This may be due to the lack of ability to produce accurate stress and intonation patterns at the beginning of the research period. The amount of progress in both groups may be affected by either the L1 pronunciation interferences or unfamiliarity with the intonation and stress patterns.

Abbasi (2012) supports the findings of this study and states that teaching pronunciation is the main part of teaching English language. In

Persian language, lack of some consonants and vowels can make correct learners' pronunciation difficult, for this reason, this knowledge can have significant effects to pedagogical techniques in language classes. English language consists of 44 sounds in which 24 of these sounds are consonantal and 20 of the others sounds are called vocalic. In this case, some of these consonant sounds are absent in Persian language, so L2 learners have to use alternatives for each of these absent consonants (e.g., /v/ used as /w/ and /t/, /s/, /d/ or /z/ for pronouncing / ? /or / ? /.

This study could be a help for the learners who are going to follow self-study programs and become autonomous learners through relying on their own activities. They may need to make learning pronunciation independent and autonomous through PRAAT software. Wilson's (2005) study is matched with the idea that PRAAT software may provide appropriate feedback in pronunciation classes and also provide autonomous environment to learning English language as much as possible. PRAAT can analyze the speech of any learners with different background knowledge. It could be useful with a combination of the appropriate teaching activities. This method can provide the EFL teachers with an opportunity to recognize the weaknesses of each learner. Thus, they can use the class time for working on learners' pronunciation difficulty. Moreover, L2 teachers can increase the learners' knowledge of some important elements of English pronunciation such as intonation and word stress and practice on their weakness by effective and modern tools. Thus, learners may use PRAAT and have a sense that they can check their pronunciation without any anxiety in an attractive way at any time. Opposite to traditional teaching of pronunciation, the learners do not need the teachers' guides and it means that they arrive at the belief that they themselves who should solve their pronunciation problems. In addition, the results gained from the diagram analysis by PRAAT software of oral performance of experimental group showed an increase in applying some aspects such as intonation patterns and word stress in their pronunciation in the post-test in contrast to their pre-test.

RQ2. Is there any difference between the learners who are taught through PRAAT and the ones who are instructed through the traditional methods (i.e., repetition, pattern practice, etc.) of teaching pro-

nunciation?

In order to answer the second research question, the researcher compared the traditional and modern methods to teaching pronunciation to EFL learners and through the administration of the pre and post-tests. Results were gained through the comparison of pronunciation of both control and experimental groups before and after the treatment. In general, after the treatment on using PRAAT software there was an improvement of applying supra segmental features (i.e., intonation, stress) in the experimental group who had a significant change in accuracy of their voice recorded by PRAAT software in the post-test compared to their pre-test performance. Thus, the second null hypothesis was rejected.

Most methods that the EFL teachers apply in their classrooms to improve their learners' pronunciation refer to general points of phonological rules that the learners cannot understand and apply correctly to their pronunciation. The challenging area among EFL learners is reaching native like accent and this needs an appropriate pronunciation for better communication. In our Iranian context, unfortunately, many EFL teachers do not pay attention to teach appropriate pronunciation in their classrooms and they prefer to teach this aspect of teaching English language traditionally. These teachers should be able to speak like natives but many of these teachers need to learn comprehensible pronunciation since they have to be able to teach this aspect to their learners. While textbooks on pronunciation pedagogy are widely available, they are usually designed for interactions that involve native-people and refer to acquire their communication strategies and cultural conventions as the target language as much as possible. In addition, the results indicated many language teachers do not have adequate knowledge of phonetics and phonology of L2 language system in our county. They also are not aware of negative transfer coming from L1. This may disappoint the learners to learn correct pronunciation. Accordingly, it is expected that EFL teachers try to identify educational problem and try to design or use useful activities on their classroom to improve learners' pronunciation.

Komar (2009) supports the findings of this study and argues that EFL learners must have appropriate supra segmental features produc-

tions for suitable and effective communication with native people. In this case, the process of L2 pronunciation acquisition tends to be influenced by applied perceptions and productions of sounds in the L1. This may refer to the L1 (i.e., inter-lingual transfer) or of the target language (i.e., L2 or intra-lingual transfer). Negative transfer of L1 to L2 leads to speech productions wrongly. Thus, L2 teachers should apply useful methods to teaching supra segmental phonology in order to teach Iranian learners appropriate stress and intonation patterns. The PRAAT software could be helpful in teaching typology of supra segmental features through continuous matching with the native speakers' pronunciation models.

Since there is a rise of technologies in our life, it is expected that EFL teachers try to match with modern world and the use of new tool in their courses to encourage their student to work on their pronunciation with attractive and modern way. Whichever the case, most teachers and learners still have problem to use technology on teaching and learning process and in this case the use of PRAAT software, for different reason such as lack of knowledge and confidence.

Betts (2013) supports the findings of this study and cites, the main limitation of the use of PRAAT software could be the challenge of training instructors and learners to work and practice by this software. In fact, some learners might not still have an interest in technology or they might not be technology-user in adopting and using them in teaching and learning process. In this case, it might take a long time to adapt and apply modern tools in L2 language classes, so the EFL teachers can help their students to start using PRAAT to improve their pronunciation individually without any anxiety.

In this study, the results indicated the use of PRAAT software to improve supra segmental features has significant difference in pronunciation of most experimental groups that contain the voice recorded by the researcher and also the voice was recorded and sent by the experimental group but not the discussion and routine speech into classroom. As a result, the modern way to teach pronunciation to L2 learners is paying attention to the background knowledge and observes their feedback to focus and work on their weaknesses. In this area, the L2 teachers should

make environment to provide the L2 learners with appropriate input to improve their pronunciation in real situations.

The modern method to teaching pronunciation, which refers to create something that has a relevance to the real classroom for preparing L2 learners to real situations. The best way is to observe the L2 learners and the best feedback would be from teachers and learners who had tried out the different tasks in practice. Without such a feedback, at this point the success of the material can only be based on self-assessment. As to originality, the teaching material includes both original ideas but also ideas of others that have been adopted and further developed, and naturally acknowledged. Many traditional methods are still valid and therefore some tasks might seem even conventional and some of these tasks are incomplete for English teaching. However, the L2 teacher may know his or her classes better than the material designers to choose the additional materials they wish to use in their language classrooms.

6. Conclusion

Teaching English pronunciation is not only the most important part but also it is the hardest part, thus the teachers should be aware of some techniques that make learning foreign language effortless. This study focuses on the use of computer technology and in this case PRAAT software to motivate and encourage EFL learners to practice on their pronunciation in private and free stress places.

Computer technology has many advantages for teaching L2 language. Therefore, teachers should adopt adequate and appropriate software into classroom. The use of technology can provide environments to increase creativity and self-autonomy of the L2 learners. However, many teachers have serious problems with the use of technology in their instruction for different reasons such as lack of knowledge and confidence. In fact, the main concern of this study increases learners' consciousness of the areas in which they face problems produce to correct pronunciation (i.e. stress and intonation) and give them appropriate and authentic practice to overcome these difficulties in order to avoid their incorrect pronunciation.

Another result that the researcher found in this study indicated applying the use of PRAAT software and modern strategy may improve the L2 learners' pronunciation when they record their voice by this software and learners are more interested and more comfortable with this modern method. The L2 teachers should solve the main problems by the combination of modern and traditional altogether for more successful teaching and learning in their classrooms.

This research focused on the area of supra segmental such as intonation and stress. The results of this study will help EFL teacher to select a proper strategy that may facilitate the process of learning and focuses and works on intonation patterns and stress placement.

L2 teachers should be aware of mistakes and errors of L2 learners' pronunciation and have an appropriate knowledge of the source of these problems. According to the results of this study, it is suggested that EFL teachers teach supra segmental features with explicit instruction and help their learners by using different strategies and methods to teach pronunciation individually and explain the importance of having proper pronunciation to the L2 learners for better communication.

Results can also help L2 teachers who wish to teach phonology, especially supra segmental features, in a systematic way and in this case, the use of (PRAAT). This device provides the users with an autonomous environment that can help L2 teachers to work on learners' pronunciation.

Teaching and learning English pronunciation is the most difficult and important to acquire for the L2 learners, especially at the university level where they need to communicate with native people as much as they can. Therefore, the results of this study will help EFL learners to select a proper strategy that can facilitate the process of learning pronunciation.

This study also suggests that EFL learners need to take more responsibility for their learning, rely less on teachers, and adopt cooperative learning. Learners' autonomy is the ultimate goal of language teaching that can be facilitated by the adoption of technology and in this case using PRAAT software. Learners' autonomy implies that in the absence of language teachers and classes, language learners continue their learning

in stress-free and comfortable places.

This study evaluated the role of computer mediated (PRAAT) software in improving supra segmental features among pre-intermediate EFL learners.

It is strongly suggested that research be conducted with the same characteristics of this study including more participants. Future studies can include other aspects of supra segmental features for achieving the better results and new teaching strategies. The areas which are very outstanding in the future research may be the study of inter and intra-lingual errors which affect the four language skills (i.e., listening, speaking, reading and writing). The effect of L1 and L2 in learning speaking skill in general and phonological patterns in particular could be a challenging area of investigation. A future study is essential in which the immediate and delayed post-tests are conducted at different time intervals to show the effectiveness of instruction of research relation in shorter and longer periods. Variables other than the ones used in this study can help the investigation of the same issue. For instance, the same experiment with just male or female learners within the close age range is necessary to confirm the result of this study. This study lasted for three weeks and succeeding studies can allocate more time to the instruction of teaching supra segmental features by modern tool and new strategies.

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