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THE EFFECT OF ACCURATE USE OF WORD STRESS ON IMPROVEMENT OF PRONUNCIATION IN EFL LEARNERS THROUGH SUBCONSCIOUS LEARNING

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ABSTRACT

This study investigates pronunciation problems of Iranian learners of English language at intermediate level and describes the result of a study which aims at testing the rules and regulations of word stress and application of subconscious learning in improvement of pronunciation. For this study a group of 50 students are randomly selected from among intermediate learners of a boy English institute in Tehran, fairly distributed on their pronunciation ability in two 25-member groups. Both groups participate in a reading pre-test which was held with an aim of measuring their pronunciation ability with regard to word stress pattern. Members of the experimental group next received a one-month training of the word stress rules and regulations while the control group received no training. The course included rules and regulations on words with one, two and three syllables. The course was followed by a reading test in which learners read a text containing sentences including the words they had already practiced. After the test, the learners in the experimental group were given CDs which contained 75 words (appendix 1) with accurate pronunciation of the words and their stress recorded by a native speaker. The learners were instructed to listen to the CDs at sleeping time for a period of two weeks. After this period another reading test was conducted to determine the effectiveness of the subconscious learning in the improvement of their pronunciation. The result showed that there is a significant difference in the pronunciation accuracy of those who received the rules and regulations of word stress and the subconscious learning through CDs. It was concluded that the subconscious learning seems to be an effective method in improving the learners' overall pronunciation comprehensibility.

Keywords: Subconscious learning, rules and regulations, pronunciation comprehensibility

INTRODUCTION

Problems that leaners of English language are faced with in the field of pronunciation can both be found with segmentals and suprasegmentals although recent research studies show that suprasegmentals can play a more significant role than the segmentals in the acquisition of English as a second language. On this basis, the present research

study focuses on using word stress rules and regulations with the help of subconscious learning in which the learners listen to the accurate pronunciation of the words while they are sleeping.

For many years pronunciation was pushed back to the sidelines of English language acquisition and research works but in recent years there has been a remarkable shift towards awareness of its importance, prompting some to refer to pronunciation as the "Cinderella of language teaching" (Underhill, 2010).

The importance of learning how to pronounce sounds, words and sentences correctly is just similar to learning the grammar of the language. As pronunciation teaching has become more focused on increasing intelligibility rather than emulating a 'native-like' accent (Levis, 2005), faulty production of word stress has been found to significantly decrease intelligibility (Cutler &Clifton, 1984; Gallego, 1990;Bond, 1999; Field, 2005). We know that faulty suprasegmental aspects of speech can impact on intelligibility (Anderson-Hsieh, Johnson& Koehler, 1992; Derwing, Munro,& Wiebe, 1998; Hahn, 2004; Kang, Rubin & Pickering, 2010) and that word stress constitutes a significant part of suprasegmental speech. There is evidence to indicate that intelligibility and comprehensibility are undermined specifically by faulty word stress (Cutler & Clifton, 1984; Gallego, 1990; Bond, 1999; Field 2005). Faulty prosodic features including word stress may affect comprehension more adversely than segmental errors (Anderson-Hsieh, Johnson, & Koehler, 1992; Bond, 1999). This misunderstanding of word stress can have significant impact beyond the language lab or classroom. For example, it has been found that word stress mispronunciation contributes to misunderstandings between GPs (general practitioner) and their patients in multicultural medical clinics (Roberts, Moss, Wass, Sarangi & Jones, 2005). In an era of globalization, studying stress pattern in English is particularly important for speakers of other languages whose stress rules are more regular and/or different (Celce-Murcia et al, 1996) and this interferes with comprehensibility.

Despite the fact that achieving native-like pronunciation is considered to be important for many language learners and teachers alike, there have been few experimental studies of pronunciation in applied linguistics (Derwing & Munro, 2005; Levis, 2005). For example, Derwing and Munro (2005, p. 386) state that "it is widely accepted that suprasegmentals are very important to intelligibility, but as yet few studies support this belief." This claim is supported by other researchers such as Hahn (1994) and Levis (2005) who state that over the past 25 years there has been encouragement to teach suprasegmentals though very little pedagogy that has been based on empirical research.

As Levis (2005) states, "instruction should focus on those features that are most helpful for understanding and should deemphasize those that are relatively unhelpful" (pp. 370-371). Munro (2008) echoes this point when stating ,"it is important to establish a set of priorities for teaching. If one aspect of pronunciation instruction is more likely to promote intelligibility than some other aspects, it deserves more immediate attention."

AJ Hoge, author of Effortless English (2008) says: "Languages should be learned subconsciously, not consciously. The research shows that subconscious learning of English is much better than consciously "studying" the language. In countless studies, the result is always the same: students who learn English subconsciously learn faster and better than students who use traditional, conscious, analytical study methods."

In a study led by bio-psychologist Björn Rasch, sixty German-speaking students were asked to learn some Dutch words that they had never seen before at 10 p.m. Half of the group were then allowed to go to sleep, with the words played back to them, while the other half were kept awake to listen to the words. The first group was then woken at 2 a.m. and all sixty students were tested on the new vocabulary. The researchers found that those who had listened to the Dutch while sleeping were much better at recalling the new words. Thus, humans learned new information during sleep.

The subconscious mind works like a radio receiver and once you switch it on, it constantly receives information from the station, whether

anybody's listening to it or not. The subconscious mind follows the same principle – the only difference is that the brain is much more sophisticated than a radio receiver.

Purpose of the study

The purpose of this study is to explore ways in which ESL learners can improve their pronunciation to near native speakers. This study will especially focus on two primary objectives:

1. To determine the relationship between study rules and regulations of word stress and improvement of pronunciation.
2. To determine the extent to which subconscious learning can improve pronunciation.

Good pronunciation should be one of the first things that is learnt in English. One can live without advanced vocabulary — one can use simple words to say what he/she wants to say. One can live without advanced grammar — one can use simple grammar structures instead. But there is no such thing as "simple pronunciation".

Proper pronunciation can be defined as a reproduction of language sounds in such a way that the intended message is passed easily, and is properly understood by a fluent speaker of the language in question.

Practice of word stress rules and regulations will help the learners to pronounce words correctly and thereby improve their pronunciation comprehensibility.

Significance of the study

One of the most important aspects of learning English is pronunciation. Without clear pronunciation, it is difficult to make yourself understood. Good pronunciation comes from stressing the right words – this is because English is a time-stressed language. In other words, some words – the content words – receive more focus, whereas other words –function words – are less important. In this globalized world, English language has become very important in our day to day life. Lack of successful communication in English can prevent one from jobs, promotions, higher education, and even friendships. Improving the pronunciation and accent gives the speakers of English language more confidence, eliminates misunderstandings, and helps them to communicate more effectively. Benefits of improved pronunciation are as follows:

- Creates advancement opportunities
- Earns a higher salary
- Increases self-esteem
- Gains confidence in oneself
- Enhances communication with superiors, thus increases potential for career advancement and earnings
- Enhances communication in daily life thus improves social status and strengthens friendships

The result of this research study can be practiced in high schools, English language institutes and even academic classes on general English. Practice of this method at academic centers is of high importance as our university graduates are mostly suffering from improper pronunciation in speaking English. This leaves a negative impact on their future activities both inside and outside the country.

Methodology

The setting for the proposed study is an English Institute for boys in central part of the capital city Tehran. The study is a mixed methods research, combining an experimental design with a minimal quantitative component. The research study involves the gathering of information about improvement of English language pronunciation and word stress learning from two different groups of students.

Students of both classes will be given a pre-test in which a section chosen from their English textbook containing words mentioned in Appendix 1 will be selected and each student will read the paragraph loudly which will be recorded and later graded by the researcher. The section for both the classes is the same. Based on their marks, the researcher will form two intermediate groups each with 25 students. Distribution of the students is as such that they have been equally distributed in the two groups as far as pronunciation of English words are concerned.

The study is composed of two cycles. In the first cycle a one-month course, two one-hour sessions a week (altogether 8 sessions), of explicit pronunciation instruction with a focus on word

stress were given to the first group (experimental group). This course includes rules and regulations concerning word stress pattern regarding the words in which stress falls on the first, second, and third syllables. Examples of the stressed words which are practiced with the learners are as follows:

- First syllable: **doc**tor; **hand**icap; **tes**timony; **cap**italism;
- Second syllable: a**lone**; de**lete**; com**pa**rison; so**phis**ticated;
- Third syllable: under**stand**; contro**ver**sial; uni**ver**sity;

The course is followed by a test using appendix 1 words, measuring the progress of pronunciation on word stress. The second cycle is a self-study period of another two weeks based on a program which has received by the learners through CDs. The CDs contain 25 words from each category with stress on their first, second, and third syllables of appendix 1. The program is accompanied by a written note which is given to the learners asking them to listen to the pronunciation of the words and the stress put on different syllables while they go to sleep. The second cycle is followed by another test using appendix 1 words for measuring the progress the learners have made with the word stress and improvement of their pronunciation as a result. The purpose of this cycle is to compare the extent of progress the treatment group makes after listening to the CDs while sleeping. The assessment is made by the researcher who considers the pronunciation ability of the learners on a scale of 1-5, where:

5 = Perfect pronunciation
4 = Good pronunciation
3 = Understandable pronunciation
2 = Difficult to understand
1 = Null

To determine the validity of the proposed hypothesis, t-tests is used in order to examine any significant differences between the means of the two considered groups using SPSS statistical software package version 23.

Present research

This study is conducted in a period of one month and two weeks in an English language institute with randomly selected 50 English learners at intermediate level at an age range of 16 to 25. A diagnostic pronunciation test will be taken right after the subject selection which will include the recording of speech samples.

A course of explicit pronunciation instruction with a focus on word stress is held for the first group after a period of one month receiving rules and regulations on word stress. A second group is given no specific pronunciation instruction, but will sit the same test as the first group.

A course of 2 one hour sessions a week training sessions is implemented for a month. This is followed by a test, measuring the progress of pronunciation on word stress. The result of this test compares the two groups pronunciation improvement. Following this test, there will be a self-study period of two weeks for the first group based on the given instruction and a CD containing words with stress on their syllables which should be used while the learners are asleep. The result of this test compares the improvement of pronunciation of treatment group before and after subconscious learning. The result shows that there is a significant difference in the pronunciation accuracy of those who receive the subconscious learning through CDs and that the subconscious learning seems to be an effective method in improving the learners' overall pronunciation comprehensibility.

Results and Analysis

To check the homogeneity of the participants regarding their pronunciation ability in both the treatment and control groups the data in appendix 2 are analyzed and the results are shown in the following tables:

Table 1. Paired Sample Statistics for mean scores of learners pronunciation before start of the program

	Mean	N	Std. Deviation	Std. Error Mean
Control Group	2.1376	25	0.71069	0.14214
Treatment Group	2.13 44	25	0.557	0.1114

Table 2. Paired Sample Test for the mean scores of learners pronunciation before start of the program

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig.(2-tailed)
				Lower	Upper			
Pair 1	0.0032	0.18	0.181	-0.3624	0.36875	0.018	24	0.986

As it has been indicated in table 2, paired sample 't' test did not reveal a significant difference between the mean score of learners pronunciation, where 't' value was 0.018 and P value was 0.986. By considering the results of table 1 and 2, and that P = 0.986 > 0.05 the null hypothesis is not rejected i.e., there is no difference between the mean of the two group . Therefore, it can be concluded that a balanced treatment and control group were constructed as such that there is no advantage or disadvantage between the two groups for pronunciation of English words before the program starts.

Research Question 1

Is there a significant difference in the performance of Iranian ESL learners in pronouncing English words after studying rules and regulations of word stress?

In order to answer the first research question, data in appendix 3 were analyzed and the results are shown in the following tables:

Table 3. Paired Sample Statistics for mean scores of learners' pronunciation after the treatment group studied rules regulations of word stress

	Mean	N	Std. Deviation	Std. Error Mean
Control Group	2.1488	25	0.56528	0.11306
Treatment Group	3.0272	25	0.70093	0.14019

Table 4. Paired Sample Test for the mean scores of learners' pronunciation after the treatment group studied rules and regulations of word stress

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig.(2-tailed)
				Lower	Upper			
Pair 1	0.8784	0.84273	0.16855	0.53054	1.22626	5.212	24	0

As it has been indicated in the table 4, paired sample 't' test revealed a significant difference between the mean score of learners pronunciation, where 't' value was 5.212 and P value was 0.000. By considering the results of table 3 and 4, and that P = 0.000 < 0.05 the first research hypothesis is rejected. Therefore, we can come to this conclusion that Iranian ESL students were more improved in pronouncing English words after study rules and regulations of word stress.

Second Research Question

Is there a significant difference in the performance of Iranian ESL learners in pronouncing English words after participating in subconscious learning?

In order to answer this research question, a test was administered to students in treatment group data after they went through their program of CD listening while sleeping. Collected data in appendix 4 were analyzed and the results are shown in the following tables:

Table 5. Paired Sample Statistics for mean scores of pronunciation of treatment group before and after participation in subconscious learning

	Mean	N	Std. Deviation	Std. Error Mean
Treatment Group pre-test	3.0272	25	0.70093	0.14019
Treatment Group post- test	3.4768	25	0.66542	13308

Table 6. Paired Sample Test for the mean scores of pronunciation of treatment group after participation in subconscious learning

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Pair 1	0.4496	0.27038	0.5408	0.33799	0.56121	8.314	24	0

Above paired sample 't' test revealed a significant difference between the mean score of learners pronunciation, where 't' value was 8.1463 and P value was 0.0000 By considering the results of table 5 and 6, and that P = 0.0000 < 0.05 it can be concluded that Iranian ESL students were more improved in pronouncing English words after participating in subconscious learning.

The results showed that studying rules and regulations of word stress accompanied by audio CD listening of correct pronunciation of English words can significantly help students to improve their English pronunciation.

Discussion

The importance of learning how to pronounce sounds, words and sentences correctly is just similar to learning the grammar of the language. As pronunciation teaching has become more focused on increasing intelligibility rather than emulating a 'native-like' accent (Levis, 2005), faulty production of word stress has been found to significantly decrease intelligibility (Cutler &Clifton, 1984; Gallego, 1990; Bond, 1999; Field, 2005).

We know that faulty suprasegmental aspects of speech can impact on intelligibility (Anderson-Hsieh, Johnson& Koehler, 1992; Derwing, Munro,& Wiebe, 1998; Hahn, 2004; Kang, Rubin & Pickering, 2010) and that word stress constitutes a significant part of suprasegmental speech. There is evidence to indicate that intelligibility and comprehensibility are undermined specifically by faulty word stress (Cutler & Clifton, 1984; Gallego, 1990; Bond, 1999; Field 2005).

Faulty prosodic features including word stress may affect comprehension more adversely than segmental errors (Anderson-Hsieh, Johnson, & Koehler, 1992; Bond, 1999). This misunderstanding of word stress can have significant impact beyond the language lab or classroom. For example, it has been found that word stress mispronunciation contributes to misunderstandings between GPs (general practitioner) and their patients in multicultural medical clinics (Roberts, Moss, Wass, Sarangi & Jones, 2005).

In an era of globalization, studying stress pattern in English is particularly important for speakers of other languages whose stress rules are more regular and/or different (Celce-Murcia et al, 1996) and this interferes with comprehensibility.

As Levis (2005) states, "instruction should focus on those features that are most helpful for understanding and should deemphasize those that are relatively unhelpful" (pp. 370-371). Munro (2008) echoes this point when stating, "it is important to establish a set of priorities for teaching. If one aspect of pronunciation instruction is more likely to promote intelligibility than some other aspects, it deserves more immediate attention."

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studies, the result is always the same: students who learn English subconsciously learn faster and better than students who use traditional, conscious, analytical study methods."

In a study led by bio-psychologist Björn Rasch (2014), sixty German-speaking students were asked to learn some Dutch words that they had never seen before at 10 p.m. Half of the group were then allowed to go to sleep, with the words played back to them, while the other half were kept awake to listen to the words. The first group was then woken at 2 a.m. and all sixty students were tested on the new vocabulary. The researchers found that those who had listened to the Dutch while sleeping were much better at recalling the new words. Thus, humans learned new information during sleep.

This is because the subconscious mind works like a radio receiver and once you switch it on, it constantly receives information from the station, whether anybody's listening to it or not. The subconscious mind follows the same principle – the only difference is that the brain is much more sophisticated than a radio receiver.

This study shows that practice of word stress rules and regulations by the Iranian learners of English language at intermediate level can successfully solve their pronunciation problems and describes the result of a study which concluded in the improvement of pronunciation through practice of those rules and regulations and application of subconscious learning.

The findings of the present study suggest that practicing rules and regulations of word stress through subconscious learning have significant effects on improving learner's pronunciation. This is in line with the findings of other studies claiming that subconscious learning of the language is much better than the traditional methods.

In the present study, a comparison between table 3 and 4 brings us to the conclusion that Iranian ESL students made more improvement in pronouncing English words after studying word stress rules and regulations. Also, a comparison between table 5 and 6 - before and after participation in subconscious learning - shows that Iranian ESL students made more improvement in pronouncing English words after participating in subconscious learning.

Conclusion

The status of English as an international language nowadays calls for appropriate measures for learning it as a language which could be communicated properly and this type of communication is possible through accurate pronunciation which is vitally crucial in this regard.

Clear pronunciation is essential to successful communication. Pronunciation is one of the most difficult parts of learning language for a learner. Pronunciation must be viewed as an integrated part of communication that should be incorporated into classroom activities.

Good pronunciation comes from stressing the right words – this is because English is a time-stressed language. Lack of successful communication in English can prevent one from jobs, promotions, higher education, and even friendships. Improving the pronunciation gives the speakers of English language more confidence, eliminates misunderstandings, and helps them to communicate more effectively.

As the result of this research works show, correct use of stress rules and regulations can make a marked improvement in the speech of intermediate ESL learners. Learners with decent pronunciation are likely to be understood even if they make grammatical errors, whereas learners with poor pronunciation will not be understood, even if their grammar is perfect.

The present research study focused on using word stress rules and regulations with the help of subconscious learning in which the intermediate learners, after receiving instructions on the correct use of the stress, listened to the accurate pronunciation of the words while they were sleeping.

The results of the present research show that studying rules and regulations of word stress accompanied by audio CD listening of correct pronunciation of English words can significantly help students to improve their English pronunciation.

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Appendix 1

	Words with stress on first syllable		Words with stress on second syllable		Words with stress on third syllable	
1	Doctor	Doctor	Alone	Alone	Understand	Understand
2	Handicap	Handicap	Delete	Delete	Controversial	Controversial
3	Testimony	Testimony	Comparison	Comparison	University	University
4	Capitalism	Capitalism	Sophisticated	Sophisticated	Continental	Continental
5	Medicine	Medicine	Report	Report	Corporation	Corporation
6	Cemetery	Cemetery	Prepare	Prepare	Disability	Disability
7	Library	Library	Outrun	Outrun	Clarinet	Clarinet
8	Kilometer	Kilometer	Invite	Invite	Graduation	Graduation
9	Supervisor	Supervisor	Believe	Believe	Idiotic	Idiotic
10	Automobile	Automobile	Support	Support	Information	Information
11	Interesting	Interesting	Complete	Complete	Instrumental	Instrumental
12	Necessary	Necessary	Relax	Relax	Interrupt	Interrupt
13	Comfortable	Comfortable	Receive	Receive	Representative	Representative
14	Chocolate	Chocolate	Direct	Direct	Revolution	Revolution
15	Camera	Camera	Among	Among	Situation	Situation
16	Business	Business	Aside	Aside	Transportation	Transportation
17	Average	Average	Between	Between	University	University
18	Desperate	Desperate	Contest	Contest	Lamentation	Lamentation
19	Bakery	Bakery	Defect	Defect	Contribution	Contribution
20	Nursery	Nursery	Insert	Insert	Interfere	Interfere
21	Family	Family	Object	Object	Consultation	Consultation
22	Interest	Interest	Present	Present	Operation	Operation
23	Orange	Orange	Protest	Protest	Guarantee	Guarantee
24	Conference	Conference	Recall	Recall	Engineer	Engineer
25	History	History	Record	Record	Cigarette	Cigarette

Appendix 2: pronunciation score of ESL learners before the start of the program

Treatment learners	Scores		Control learners	Scores
1	1.08		1	1.12
2	1.4		2	2.64
3	1.28		3	2.12
4	1.12		4	1.92
5	1.96		5	1.52
6	2.04		6	2.36
7	1.56		7	3.48
8	1.88		8	1.48
9	1.64		9	2.16
10	1.96		10	2.2
11	2.04		11	1.8
12	1.6		12	2.36
13	1.8		13	1.48

14	1.52		14	2.32
15	3.52		15	1.44
16	2.88		16	3.04
17	2.84		17	3.08
18	2.28		18	2
19	2.24		19	2.4
20	3.48		20	1.6
21	3.36		21	2.52
22	2.76		22	1.96
23	2.68		23	1.92
24	2.56		24	2.28
25	1.96		25	2.16

Appendix 3: pronunciation score of ESL learners after studying rules and regulations of word stress

Treatment learners	Scores		Control learners	Scores
1	2.64		1	1.08
2	1.8		2	2.64
3	1.96		3	2.16
4	2.32		4	1.96
5	3.04		5	1.44
6	2.96		6	2.32
7	2.76		7	3.48
8	2.24		8	1.36
9	2.64		9	2.2
10	2.76		10	2.2
11	2.92		11	1.96
12	2.80		12	2.4
13	2.04		13	1.6
14	2.36		14	2.4
15	3.52		15	1.44
16	3.68		16	3.04
17	3.68		17	3.16
18	3.92		18	2.04
19	3.80		19	2.4
20	4.04		20	1.6
21	4.24		21	2.44
22	3.88		22	1.96
23	2.84		23	2
24	3.56		24	2.28
25	3.28		25	2.16

Appendix 4: Pronunciation score of treatment group before and after participation in subconscious learning

	pre-test	post-test
1	2.64	2.92
2	1.8	2.64
3	1.96	2.88
4	2.32	2.68
5	3.04	3.24
6	2.96	2.96
7	2.76	2.96
8	2.24	3.24
9	2.64	3.44
10	2.76	3.24
11	2.92	3.12
12	2.80	2.96
13	2.04	2.56
14	2.36	2.64
15	3.52	3.76
16	3.68	3.88
17	3.68	3.96
18	3.92	4.44
19	3.80	4.52
20	4.04	4.28
21	4.24	4.76
22	3.88	4.36
23	2.84	3.64
24	3.56	3.96
25	3.28	3.88