

The Effect of Musical Rhythm on the Development of EFL Learners' Pronunciation

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Abstract: This investigation intends to seek into investigating the effect of teaching the pronunciation through a fun activity of Rhythm on the learners' pronunciation improvement. This study is to find out whether students in this group will perform a significant improvement in pronunciation comparing to the other group.

Rhythm of English is considered as one of the biggest difficulties for many foreign learners of English. It is more important for EFL learners who have a very different system in their L1 (e.g. Persian). These learners are not usually motivated for pronunciation practice. Therefore, this study will explore the effect of musical rhythm, on pronunciation improvement. 120 Iranian EFL elementary learners in an English language institute aging from 7-9 years old will participate in this study. After the pretest, they will be divided in two groups namely, control and experimental. In one group, teacher uses musical rhythm to teach as treatment of the study while in the other one she does not. At the end of the term, a posttest will be given to both experimental groups to check any significant difference between their performances. There are, particularly, two opposite types of rhythm in languages: stress-timed and syllable-timed. According to Mackay (1985), stress-timed rhythm is determined by stressed syllables, which occur at regular intervals of time, with an uneven and changing number of unstressed syllables between them; syllable-timed rhythm is based on the total number of syllables since each syllable takes approximately the same amount of time. English, with an alternation of stressed and unstressed syllables, is obviously stress-timed (Chen, C. et al., 1996).

Keywords: Musical rhythm, Student, English study. Learner.

INTRODUCTION

1.2. Statement of the Problem

Persian, with nearly equal weight and time in all syllables, is syllable-timed. The syllables in Persian have almost the same length and weight. Many Kurd learners are not aware of this difference. They use the rhythm of Persian (syllable_timed rhythm) when they speak English. So these pronunciation problems may make speech unintelligible. It may also be boring for the learners to practice pronunciation and word stress in traditional language teaching method. Many students are tired of the traditional methods of teaching word stress.

L1 interference is a main concern for EFL learners' speech. A language such as Persian which has a drastically different stress system with English can cause that the learners put stress in any syllables in a word or a sentence.

In order to help students, realize that English rhythm is different from Persian, we can use these two illustrations.

English: stressed timed rhythm

Persian: syllable timed rhythm



Pronunciation

In the illustration, the English rhythm is composed of higher bouncing balls (stressed syllables) and lower bouncing balls (unstressed syllables), that shows English as a language with different length and weight syllables. On the other side Persian is composed of equal bounces that show Persian as the language with the same weight and length syllable language.

1.3. Research Questions

Does teaching English through musical rhythm have any significant effect on the development of young Iranian EFL learners' pronunciation improvement?

1.4. Hypotheses

In accordance with the question of the study, the following null hypothesis formulated:

H0: Teaching English through musical rhythm does not have any significant effect on the young learner's pronunciation.

2. LITERATUREREVIEW

2.1 Introduction

Language and music are the two ways that human beings use to communicate and express themselves through sound. Many ESL students who have attained advanced English proficiency levels are still having difficulty in communicating, due to low intelligibility. Word and sentence stress are components that contribute greatly to intelligibility. The study includes specific methodology that may be useful in many ESL classrooms. Imagine you are an advanced adolescent English language learner (ELL). You have mastered the complicated syntax, grammar, and vocabulary of English. Indeed, there seems no barrier to your social and academic success, except for one problem. Your poor pronunciation impedes your ability to communicate orally. Adolescent language learners are not likely to unconsciously "pick up" the pronunciation patterns of a new language, whereas native speakers (NSs) of English unconsciously acquire the skills to produce the rhythmic impulses of our language very early in life. It is only when another speaker fails to produce acceptable stress, intonation, and rhythm we anticipate that we become aware of these aspects at all.

Non-native speakers (NNS) are oftentimes painfully self-conscious of their failure to know how and when to produce these aspects of spoken English. It is a mystifying and elusive system for them. Secondary students are particularly susceptible to feelings of frustration and embarrassment when they fail to communicate successfully. Considering the enormous physiological, sociological, and psychological phases through which they are passing, it is no small wonder that being clearly understood rates very highly on their hierarchy of needs. Acceptance among peers, for instance, is of the utmost importance at this age. Teens are notorious for stigmatizing individual differences, such as a "funny-sounding accent." Limited pronunciation skills have been found to undermine learners' self-confidence and to drastically restrict social interaction (Morley, 1998).

In addition, lowered expectations from the NS listener can negatively impact their perception of the NNS. Schumann (1975) found that NNSs frequently feel demeaned or rejected by NSs of a target language. His study reveals that poor intelligibility negatively influences NS estimations of a NNS's credibility. NSs in this study perceived NNSs with poor pronunciation skills as less competent and intelligent. One can only imagine how undermined the NNS must feel after being so harshly and unfairly judged.

Schumann's study also found that feelings of rejection could incubate a negative attitude that impedes language acquisition in NNSs. This can create a vicious circle in many situations. Mainstream teachers' lowered expectations of an advanced ELL with poor intelligibility could result in potentially negative consequences. That student's performance could be substantially affected in such circumstances. To date, there is a relatively meager selection of pronunciation methods designed specifically for secondary ELLs. When students arrive in the United States in their teens, their future working situation must be taken into consideration. They do not have as many years to fully develop effective communication skills necessary to succeed in the workforce. Although future professional success within the American culture depends largely upon strong interpersonal communication skills (Gillespie, 1996), teachers and curricula tend to deemphasize or even ignore pronunciation issues. ESL teachers must increase the amount of teaching time devoted pronunciation skills that enhance the ability of NNSs to speak intelligibly enough to interact within the target culture.

2.2. Rhythm and Language Learning

Rhythm is one of the most pervasive cultural elements found across the world (Martinec, 2000). In exploring literature related to the effect of rhythmic exercises on ESL instruction, I found no specific research on the use of rap music in English language instruction. However, some independent research has been done on the relationship between rhythm and language. A sense of rhythm is present in all cultures through chants, percussion, poetry, music, and other forms. Human language has deeply rhythmic foundations. When teaching pronunciation, it is important to make students not only aware of the universality of rhythm, but also of how to compare the patterns of their native language rhythm to those of English.

According to Adams, (1979), the rhythmic impulse is the most essential phonological feature of language. This phonetician found that command of the rhythm of a target language provides a key to mastery of the spoken language. Furthermore, she found that insufficient control of rhythm leads to the most salient barrier to fluency and intelligibility at all levels of language usage. The group of subjects in this study consisted of graduate teachers of English from Asian countries, who were attempting to boost their professional skills. Although this group of subjects was very different from the group in this study, the analysis and conclusions in the study support many facets of this project. Adams contends that the major contribution to faulty organization and timing of English rhythm is the syllable-timed nature of the first language.

All languages possess speech rhythm, but the manner with which they divide that rhythm into time varies widely. Stated another way, the rhythm of a given language has a particular timing and organization of rhythmic units, which is a crucial and distinctive phonological feature of that language (Kenworthy, 1987). There are two general types of speech rhythm in languages: syllable-timed and stress-timed. There are very few languages that are both stress and syllable-timed. The rhythm of English has a stress-timed nature. This means it is based on a series stressed pulses that are uniformly spaced. A phrasal group consists of one strongly stressed syllable plus one or more unstressed syllables, interrupted by pauses (Adams, 1979). Hence, the stresses carry the rhythmic impulse in Northern American English (NAE), e.g. The CAT was CHASED by the DOG.

The vast majority of world languages follow a rhythm pattern that is more closely related to the syllable. Syllable-timed languages are based on a more evenly timed spacing of syllables. Thus syllables, rather than stresses, carry the rhythmic pulse, and are spoken at more evenly spaced time intervals. In such languages, the duration of an utterance is equivalent to the total number of syllables it contains.

Conversely, some research argues that there may be more of an underlying universal pattern recognition device. Although the pattern of stress-timed English varies greatly from syllable-timed languages, universal regularities in the timing and tempo as early as infant babbling have also been discovered. Pettito (2001), along with her team of Dartmouth colleagues, has researched infants intensively for 20

years and found their brains to be universally “hardwired” for rhythmic patterns of language. She discovered an innate sensitivity to specific rhythmic patterns naturally found across all languages.

Pettit’s study compared the rhythmic hand movements of hearing infants born to profoundly deaf parents to hearing infants who were exposed to spoken language. The infants who lacked exposure to spoken language still produced rhythmic hand activity that contains the specific patterns of natural language (silent babbling). However, the babies demonstrated a significantly different type of low-frequency hand activity that corresponds to the rhythmic patterns of the sign-syllables of American Sign Language. This study concludes that such linguistic and motor patterns could only be differentiated if babies are able to utilize the rhythmic patterns underlying human language. These findings are therefore in alignment with Chomsky’s theory of a LAD.

The findings support the idea that infants are sensitive to rhythmic language patterns. The results of Pettit’s studies have driven her to posit that babies’ perception of these patterns is major factor in triggering the language acquisition process. Research directed at infantile pattern detection may also provide some provocative implications for older language learners (Petitto et al., 2001). If rhythm is an innate universal structure, it may prove useful to tap into this aspect of language, even in later years. There is research pertinent to my topic about older language learners, who must encounter entirely new rhythm patterns.

In older learners, the acquisition of rhythmic patterns of English may be considerably more complicated, because they are learned after a previous language’s rhythmic pattern has already been acquired. Interference from the first language patterns is inevitable (Adams, 1979). Stress patterns of English are often related to attitudinal contrast, emotional overtones, and numerous other factors. These types of stress patterns are not likely to be “automatic,” or “hardwired.” Hence, it cannot be assumed that all specific rhythm patterns of English are innate. Rather, a predisposition for general pattern recognition may be universal. This is an important consideration for this Capstone, because this study is based upon the premise that rhythmic patterns are part of the background experience and are programmed into the brains of the subjects.

Many other studies have demonstrated that improvement is possible when teaching English stress patterns to NNSs. Learning accurate rhythm of standard American English has also resulted in the improvement of other acoustic features, such as syllable length and appropriate intonation. This study compared acoustic contours of NAE and Japanese speakers and found that the Japanese speakers transfer their first language features to English. One of these features is that they did not know how to sufficiently stress and lengthen prominent stressed syllables. Todaka recommends training through a “hyper-pronunciation” method where pitch, rhythm and duration of stressed syllables are exaggerated. The Japanese speakers were able to significantly improve their pronunciation through this method.

In another study, Anderson-Hsieh & Ventatagiri (1994) also found that it is possible to learn appropriate English rhythm. The researchers compared the syllable duration and length and frequency of pauses between groups of high- and intermediate-proficiency Chinese speakers of English. Then they compared the productions of these two groups to NAE speakers, according to acoustic measures. The high-proficiency Chinese demonstrated nearly native-like proficiency on the variables mentioned above. Their use of rhythm was far more natural sounding than that of the intermediate group, who failed to distinguish duration of stressed versus non-stressed syllables. The intermediate group also demonstrated more frequent and inappropriate pauses, which indicates they had not successfully internalized the rhythm of English.

Additional research has been done on rhythm indicating that acquisition of English stress patterns may be the most challenging facet of English pronunciation for speakers of other languages (Florez, 1998). The researcher experimented with various approaches of teaching English rhythm to Spanish speakers. The subjects in this study made the most substantial gains when rhythm patterns were taught in the following manner:

- 1). Vocabulary items or phrases are taught in isolation.
- 2). The items are then matched by patterns of rhythm to items or phrases.

3). The patterns are imposed on words, phrases, and sentences.

The Spanish speakers in this study demonstrated great improvement in producing the rhythm of English, particularly when they practiced under controlled conditions. Flores also acknowledges that extended practice in multiple situations would be necessary for these improvements to carry over into automatic production during spontaneous speech.

3. METHODOLOGY

3.1. Participants

120 Iranian EFL elementary learners in an English language institute aged from 7-9 years old will participate in this study. To ensure the homogeneity of the two groups, the Nelson Proficiency Test will be administered among 120 EFL learners. 82 students whose scores fell within the range of one standard deviation above and below the mean (scores from 26 to 38) were chosen as homogeneous participants for this study.

3.2. Instrumentation

The following instruments are employed in order to conduct the study:

1. First, to ascertain the homogeneity of the participants of the study in terms of language proficiency, a general language proficiency test named Nelson Proficiency Test will be utilized.

2. An oral pretest and post test using some observation cards to determine the differences in each group before and after the instruction will be employed.

3.3. Procedure

To ensure the homogeneity of the two groups, the Nelson Proficiency Test is administered to 120 EFL learners. Afterwards, reliability of Nelson proficiency test is calculated through K-R 21 Method. 82 students whose scores fell within the range of one standard deviation above and below the mean (scores from 26 to 38) were chosen as homogeneous participants for this study. In control group and experimental one 42 and 40 students are assigned with 45 male participants and 37 female ones respectively. After that Pearson test of English is handed to students as the oral pre-test. Next, reliability of pre-test is computed through Cronbach's Alpha formula. Then, Levine's test for equality of variances is employed to demonstrate that four sets of scores (control & experimental, male and female) have equal variances and therefore are homogeneous at pretest. In experimental group, teacher uses musical rhythm to teach as the treatment of the study while in the other one she does not. At the end of the term, a posttest is given to both experimental group and control one to check any significant difference between their performances. Later, Reliability of post-test is computed through Cronbach's Alpha. Levine's test for equality of variances is also employed to demonstrate that four sets of scores (control & experimental, male and female) have equal variances and therefore are homogeneous at post-test.

4. Results and Discussion

4.1. Homogeneity process through nelson Proficiency Test

To ensure the homogeneity of the two groups, the Nelson Proficiency Test was administered among 120 EFL learners. Those students (N = 82) whose scores fell within the range of one standard deviation above and below the mean (scores from 26 to 38) were chosen as homogeneous participants for this study. Descriptive statistics for this homogeneity test is represented in Table 4.1.

N	Range	Min.	Max.	Mean	Median	Mode	Std. Error	Std. Deviation
120	26	20	46	32.27	32.00	30	.558	6.109
120								

Table 4.1 Descriptive Statistics of Nelson Proficiency Test

The mean score of participants was 32.27 with standard deviation of 6.109. the min of students was 20 and the median of the group was 32.00.

Reliability of Nelson Proficiency Test	Valid	Number of Students	%	Number of Items	K-R 21 Method
	Excluded	30	0	50	.86
	Total	30	100.0		

Table 4.2 Reliability of Nelson Proficiency Test

4.2. Pretest

Between-Subjects Factors

		Value Label	N
Group	1	Control	42
	2	Experimental	40

Table 4.3 Between-Subjects Factors

Reliability of Pretest	Valid	Number of Students	%	Number of Items	Cronbach's Alpha
	Excluded ^a	0	0	30	.89
	Total	18	100.0		

Table 4.4 Reliability of pre-test

The mean score of participants in control group for men was 19.61 with standard deviation of 5.639 and mean for female was 19.47 with standard deviation of 6.177, for experimental group the mean score of male participants was 18.45 with standard deviation of 5.096 and for female the mean was 19.28 with standard deviation of 5.410.

Group	Gender	Mean	Std. Deviation	N
Control	Male	19.61	5.639	23
	Female	19.47	6.177	19
	Total	19.55	5.815	42
Experimental	Male	18.45	5.096	22
	Female	19.28	5.410	18
	Total	18.83	5.188	40
Total	Male	19.04	5.351	45
	Female	19.38	5.737	37
	Total	19.20	5.496	82

Table 4.5 Dependent Variable: Pronunciation at Pretest

Levene's Test of Equality of Error Variances

F	df1	df2	Sig.
.057	3	78	.962

Levene's Test for Equality of Variances demonstrates that the hypothesis of equal of variances was supported because Sig. was .96 at pretest, which is greater than the .05 significance level for this study ($p > a$). Therefore, it was concluded that four sets of scores (control & experimental, male and female) have equal variances and therefore are homogeneous at pretest.

Two-way AVOVA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	17.597	3	5.866	.188	.904	.007
Intercept	29933.545	1	29933.545	961.114	.000	.925
Group	9.246	1	9.246	.297	.587	.004
Gender	2.403	1	2.403	.077	.782	.001
Group * Gender	4.658	1	4.658	.150	.700	.002
Error	2429.281	78	31.145			
Total	32660.000	82				
Corrected Total	2446.878	81				

Table 4.6 Two-way AVOVA

ANOVA failed to detect a statistically significant effect for group, ($F= .29$ $p = .58$, $p > .05$, Effect size = .004). Accordingly, there was no significant difference between the pronunciation improvement of participants in control and experimental groups.

4.3. Posttest

Reliability of Posttest	Valid	Number of Students	%	Number of Items	Cronbach's Alpha
	Excluded ^a	0	0		
	Total	18	100.0		

Table 4.7 Reliability of post-test

		Value Label	N
Group	1	Control	42
	2	Experimental	40
Gender	1	Male	45
	2	Female	37

Table 4.8 Between-Subjects Factors

The mean score of participants in control group for men was 21.00 with standard deviation of 5.143 and mean for female was 21.32 with standard deviation of 5.850 for experimental group the mean score of male participants was 25.64 with standard deviation of 5.619 and for female the mean was 24.39 with standard deviation of 6.307.

Descriptive Statistics

Dependent Variable: Pronunciation at Posttest

Group	Gender	Mean	Std. Deviation	N
Control	Male	21.00	5.143	23
	Female	21.32	5.850	19
	Total	21.14	5.408	42
Experimental	Male	25.64	5.619	22
	Female	24.39	6.307	18
	Total	25.08	5.894	40
Total	Male	23.27	5.813	45
	Female	22.81	6.191	37
	Total	23.06	5.953	82

Table 4.9 Dependent Variable: Pronunciation at Posttest

Levene's Test of Equality of Error Variances

Dependent Variable: Pronunciation at Posttest

F	df1	df2	Sig.
.345	3	78	.793

Levene's Test for Equality of Variances manifests that the hypothesis of equal of variances was proved since Sig. was .79 at posttest, which is greater than the .05 significance level for this study ($p > a$). As a result, it was concluded that four sets of scores (control & experimental, male and female) have equal variances and therefore are homogeneous at posttest.

A) Null Hypothesis One

ANOVA detected a statistically significant effect for group, i.e. Teaching music and rhyme ($F = 9.26$ $p = .003$, $p < .05$, Effect size = .10). Accordingly, the first null hypothesis which predicted that Teaching music and rhyme does not affect Pronunciation of young Iranian EFL learners was rejected. Thus with high degree of confidence it can be claimed that Teaching music and rhyme affects Pronunciation of young Iranian EFL learners.

5. Conclusion

5.1. Reflections

This entire Capstone project has been an exciting labor of love for numerous reasons. I had been musing about the notion of rap music as a vehicle for pronunciation instruction for several years. Having experimented with rap beats in the classroom in previous years increased my belief in and desire to develop a method that could be used by other ESL teachers. Now, this methodology has emerged out of my imagination and onto paper.

Once other ESL teachers implement the techniques laid out in the teacher's guidebook, I will receive affirmation and ideas for expansion and further development of this method. Hence, this project is a work in progress, with no end point in sight. This excites me, because I do not feel finished with this in any way. I wish to delve further into this type of education, as I encounter new materials that relate to my topic.

The results obtained show promise for the potential of this method. Five of the six subjects demonstrated improvement when speech samples were compared before and after the course. The raters were impartial, objective, and were non-ESL practitioners. This contributes to the validity of this study.

The most exciting aspect of this study stemmed from the students' enthusiastic response to the method. Learning became playful, creative, and innovative to all of us involved. The students arrived to class each day eager to find out what activities would take place. We laughed, played games, and got to know each other on an entirely different level than before. As we worked together, a strong feeling of community emerged and grew with time. There were hugs and tears when the four weeks ended. There is no greater reward for teachers than moments like those.

My vision of improving pronunciation became a secondary result of the great level of bonding and trust that took place within this class. It was rewarding to see the pride in the students' faces as they correctly identified suprasegmental and segmental aspects of speech, stress patterns of English, and anatomical terms of the speech mechanism. Their greatest pride, however, was in the daily communicative successes

they experienced and reported. They would burst into the room, exclaiming! “My friend told me they could tell I have been doing something different! Now, they want to borrow my CD!” “Can you help me when I have to speak in front of a class next year?” “I’m not afraid to go to my job interview now.” Although these results are difficult to measure according to scientific parameters, they are the most gratifying to me. The students expressed increased confidence in speaking to NSs as well as NNSs. Confidence is not easily measurable, but I was impressed with the level of enthusiasm expressed regarding communication outside of class. The amount of time students spent listening to and practicing along with the rap CD is also a good indication that they are headed in the direction of improving their pronunciation.

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