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The Impact of Rhythmic Teaching on the Vocabulary Knowledge of Field Dependent and Field Independent EFL Learners

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Abstract

This study aimed at investigating the effect of using rhythmic instruction on FD and FI EFL learners' vocabulary knowledge. To this end, 30 EFL learners were selected based on their performances on the Solutions Placement Test. Group Embedded Figure Test (GEFT) was also administered to identify groups as field dependent and field independent participants. The participants were randomly assigned to one experimental and one control group. The experimental group was provided with rhythmic instruction whereas the participants in the control group were instructed through GTM. Both groups went through a 17-week instructional period. A 50-item vocabulary test, consisting of multiple-choice, matching items, and true or false items was developed, and used as pre-test and post-test. At the end of the course, an independent samples t-test was run between the obtained means of the two groups to determine whether there was any significant difference between the mean scores of the two groups on the post-test. The results revealed there was a significant difference between the mean scores of the two groups. To conclude, the participants in the experimental group who had received rhythmic instruction outperformed those in the control group without such instruction. However, the mean difference between the participants in the FI group in comparison with FD was not significant, and it indicated that FI and FD learners exposed to rhythmic instruction performed similarly. The major implication of the study is that rhythmic instruction as a crucial method of vocabulary learning should receive further attention in language teaching programs.

Keywords

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Introduction

One of the main problems that learners face in learning a language is how to retain and recall vocabulary and gain control over it. Despite the fact that vocabulary plays an important role in any language, other aspects of language learning (such as, reading, writing, or grammar) have been emphasized by many researchers (Hedge, 2000; Richards & Renandya, 2002), but among them to a greater extent vocabulary has drawn researchers' attention (Amiryousefi &Vahid, 2010). Vocabulary learning is a vital part of both language teaching and learning. Learners encounter serious problems in sharing their ideas and thoughts when they lack sufficient lexical knowledge (Boonkongsaen & Intaraprasert, 2014).Thus, vocabulary learning will be challenging for foreign language learners if they are not able to gain mastery over L2 lexicon.

Even if teachers try to reinforce vocabulary knowledge through the majority of the classroom activities such as flashcards and wordlists, their students are not motivated, and are still struggling with acquisition and retention of new vocabulary. Lack of sufficient vocabulary knowledge often poses great challenges for learners to develop their linguistic fluency at the upper elementary and secondary levels (Thornbury, 2002).Therefore, teachers need to use modern teaching methods to prevent students from getting bored and discouraged from learning vocabulary items during their training.

Researchers recognize that learners approach language learning differently. Some learners understand and interact easily with new input that is presented out of context. For others, a lack of context indicates a challenge since most of their choices are based on external clues that help learners understand and interact with new input. This type of differentiation can be based on cognitive styles of learners (Davis, 2006). Moreover, cognitive styles act as powerful variables in various educational areas, such as interaction between learners and teachers in the classroom (Yang, 2006).

Researchers have indicated that the two hemispheres of the brain process information differently. The left hemisphere relates to logical,

analytical thought and linear information processing whereas the right hemisphere perceives tactile, visual, auditory images and processes information emotionally (Urgesi & Fabbro, 2009). Both sides of the brain can be engaged at the same time by activities such as music, which enable the brain to be more effectual in processing information. Furthermore, employing songs might be a valuable teaching aid in learners' vocabulary development. Therefore, Lake (2003) asserted that integration of music with words in both hemispheres of the brain helps long-term memorization. In this sense, the use of music in learning words stimulates both brain hemispheres and facilitates word recall.

Integration of music into school curriculum helps children improve their overall language skills and complements traditional methods (Mott, 2004). Moreover, since music is closely related to the nature of language, language learners will probably be more engaged in the learning process. Therefore, communicating through a musical tool has a beneficial effect on language learning (Stansell, 2005).

Several cognitive styles have been studied over the years. Cognitive style, defined as "a psychological construct relating to how individuals process information" (Brown & Brailsford, 2006, cited in Shi, 2011, p. 327), has many classifications. Among various types of cognitive styles, both field independence (FI) and field dependence (FD) have been extensively studied and viewed as the most well-known styles (Hedge, 2000). The function of the left and right brain is related to field-independent/dependent style, since the left hemisphere of the brain is related to cognition (logic, analysis) and the right hemisphere of the brain deals with perception (visual, auditory). Left and right brain learners learn faster when class activity includes dialogs, noticing details, etc. Left-brain learners feel better when topics consist of plenty of explanations and development of parts in a logical sequence. On the other hand, right-brain dominant learners see the topic more holistically and get better results in social encounters since they are more socially-oriented. Generally, better results are achieved in any topic for left and right brain learners when learning

process conditions are more consistent with their styles or needs (Davies, 2000).

The researcher's interest in this study comes from her experience as an EFL teacher who desired to know how differently students approached learning vocabulary presented through rhythm and how their learning styles impacted the choices they made. This perception leads to choose FD/FI learning styles that relate to the right and left-brain function. Some evidence exists that there may be such a relation. For example, Zoccolotti and Oltman (1978) declared that field-independent subjects display greater right hemisphere specialization for configurational processing and greater left hemisphere specialization for verbal processing than those who are relatively field-dependent subjects.

Furthermore, according to Salcedo (2002) majority of learners use their right hemisphere to process music. Applying nonverbal right-brain skills such as actions, emotions, and music assist learners to enhance their creativity, memory, and recall. Hence, in this study, the possible link between rhythmic instruction and enhancement of FD/FI learners' vocabulary knowledge was investigated.

Literature Review

Vocabulary acquisition

Recent studies indicate that teaching vocabulary is probably challenging because many teachers are not sure of the best way in vocabulary teaching nor do they know how their teaching will affect vocabulary learning (Berne & Blachowicz, 2008).Teaching vocabulary plays an important role in learning a language. The more words learners know, the more they will be able to comprehend and produce efficiently. Thus, learning a language without words is impossible as communication between human beings is based on words. Both teachers and learners are of the same opinion that acquisition of the vocabulary is essential in teaching a language (Walters, 2004).

It has been shown that there is a relationship between vocabulary learning strategies and vocabulary size of EFL learners. Learners who

use different strategies instead of a limited number of learning strategies can acquire a large number of vocabulary items (Nation, 2001). It has been proposed that teachers attempt to make learners are aware of the contribution of learning strategies to their vocabulary size and ask them to apply these strategies in their vocabulary learning. Teachers should familiarize learners with how to use these strategies, and try to use these strategies in class activities and assignments in order to push learners to internalize these strategies (Cameron, 2001).

Teaching vocabulary is one of the most important parts of teaching English as a foreign language. A good teacher should equip himself or herself with different effective vocabulary teaching techniques and implement them in the language class. It is vital for teachers to be able to gain over mastery of content in order to be understandable by students, and engage them in teaching and learning process in the classroom (Alqatani, 2015).

Teaching methodology for English language learners has essentially changed. Just as general teaching method has changed from teacher-centered activities to student-centered activities, memorizing lists of decontextualized vocabulary has changed to learning vocabulary that is embedded within contexts (Segal, 2014).Thus, content should be introduced authentically and teachers use enjoyable and interesting ways to teach learners.

Theories related to the Brain, Music, and Language Production

Multiple Intelligences Theory and Application

Many teachers have tried to use multiple intelligences (MI) theory, first introduced by Gardner (2006), to enhance their teaching practice (Segal, 2014). Gardner (2006) states that learners learn effectively when teachers' lesson plan is based on learners' multiple intelligences. This gives learners an opportunity to take part in different activities that appeal to the various intelligences. In addition, neural networks that bring about long-term memory are activated when different parts of the brain are stimulated by targeting different intelligences.

Armstrong's (2009) literature considered that MI theory in the classroom is used as a teaching strategy, class management, and

assessment tool. Furthermore, Stanford (2003) indicated that similar aspects of MI theory are applied in the classroom based on three basic aspects of the theory. These three aspects consist of teaching strategies, curriculum adaptations, and student assessment, especially in the field of general education. There are several studies that show teachers' application of MI theory integrated with musical experiences. Indeed, unmotivated students have experienced academic improvement when exposed to techniques principled by MI theory (Janes et al., 2000).

Suggestopedia

Suggestopedia is an instructional technique that assists learners to enhance their receptive skills. In this method, both left and right hemispheres of learners become active during lesson due to the use of music that stimulates both hemispheres of the brain (Larsen-Freeman, 2000). Moreover, it is asserted that this method aids learners to be in a relaxed learning atmosphere, and brings about effective language acquisition. The key to the method is the idea that changing the rhythm of music constantly prevents boredom. Krashen, who indicates that Suggestopedia enables students to enhance their learning subconsciously, has supported this method (as cited in Salcedo, 2002).

Rhythm and Brain

The nature of rhythm and the correlations between rhythm in language learning and rhythm in music have been considered by studies that relate to brain functioning (Corriveau & Goswami, 2008; Patel, 2003). According to Overy and Turner (2009) rhythm as a "basic organizing principle of music" is the result of some musical behaviors such as clapping and dancing. In addition, they state that musical rhythm "strongly relates to temporal aspects of language"(p. 1). Research has indicated that the language and speech skills of children can develop if rhythm is involved in children's language and motor play. Learning becomes more holistic when the utterances are more rhythmic and voice modulated. Furthermore, music can be helpful for other kinds of language learners, that is to say it can help holistic learning by providing rhythmical exercises (Mora, 2000).

According to Medina (2002) in the psychological research, music and its subcomponent, rhythm, have both played an important role in rote memorization process. When different types of verbal information (e.g. spelling lists) are presented simultaneously with music, memorization is enhanced (Šišková, 2008). Besides, learners' memorization skills develop twenty-five times more than the traditional methods when music is used in a language class (Richards & Rogers, 2001). Callan et al. (2007) asserted that learning can be doubled if information processing in the brain is supported through memory aids such as music.

According to neuroscience studies, there is an overlap in the brain between language and music processing. Because of this overlap, using songs in English language teaching contexts might facilitate teaching language (Besson & Friederici, 2005). Another aspect of music that relates to brain functioning is the Mozart effect, which suggests that music can maximize brainpower and enhance students' cognitive abilities (Shellenberg, 2005).

It has been proven that music and language have always been interconnected in order for teaching vocabulary of a foreign language through rhythm to be effective (Fitch, 2005). Furthermore, rhythm helps to improve the ability of the mind to recall information. Therefore, rhythmic instruction helps learners to learn new vocabulary more efficiently and it is one of the best ways to stick information in mind (Šišková, 2008).

Rhythmic Instruction

What is Rhythm in English

Rhythm is a complex feature of pronunciation. Rhythm, in English, includes combination of stressed and unstressed syllables. That is to say, the contrast of stressed and unstressed syllables makes the rhythm of English, and the rhythmic beat is carried by the stressed syllables (Celce-Murcia et al., 2010). Rhythm of spoken English is based on a unit with different terms. Roach (2000) called this rhythmic unit the foot**.** The foot "begins with a stressed syllable and includes all

following unstressed syllables up to (but not including) the following stressed syllable'' (Roach, 2000, p.135).

The pattern of spoken speech is referred to as rhythm when word and sentence stress combine. The combination of word stress and sentence stress (the regular patterned beat of stressed and unstressed syllables and pauses) creates the rhythm of an English utterance (Roach, 2000).

Current Strategies for Teaching Rhythmic Instruction

Strategies for teaching rhythm have been suggested by several music educators (e.g. Brown & Chesnutt, 2001; Conway, 2003; Dalby, 2005; Whaley, 2004). Researchers have recommended several strategies for teaching rhythm:

1. Teach correct word stress when introducing vocabulary (Field, 2005).When vocabularies are introduced in different contents, teacher should teach stress at the individual word level. Then, learners should focus on correct syllable stress in order to practice speaking new words. Besides, when words are used in a sentence, accurate stress of content words and unstress of function words may be modeled by the teacher. Therefore, learners will get an opportunity to practice rhythm.

2. Frequent choral repetitions with body movement (Celce-Murcia et al., 2010). Choral repetition has been a traditional technique to assist learners practice pronunciation and to reach automaticity. In this way, learners can unconsciously practice intelligible chunks of language. Ideally, this choral practice correlates with kinesthetic movement, such as tapping, stepping, or clapping (McCurdy & Meyers, 2014, cited in Haasch, 2016).

3. Rhythm drills/congruent rhythm drills (Celce-Murcia et al., 2010).This technique enhances learners' awareness to stressed elements within words and sentences. First, learners try to identify stressed elements in a sentence that teacher reads them aloud. Then, learners can tap on their desks or snap fingers while they listen for the second time. Learners should care about the stressed words that occur at regular intervals. Figure 1 is an example of a rhythm drill.
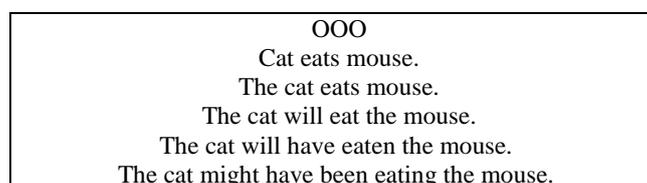
OOO
Cat eats mouse.
The cat eats mouse.
The cat will eat the mouse.
The cat will have eaten the mouse.
The cat might have been eating the mouse.

Fig. 1. Example of a rhythm drill

Based on the pattern, learners can practice chorally then in pairs. Rhythm drill is a controlled practice of the nature of English as a stress-timed language. Congruent rhythm drills provide controlled practice as well. A model of a given pattern is provided by tapping or clapping. Next, the example sentences are repeated chorally by learners. Figure 2 is an example of a congruent rhythm drill.
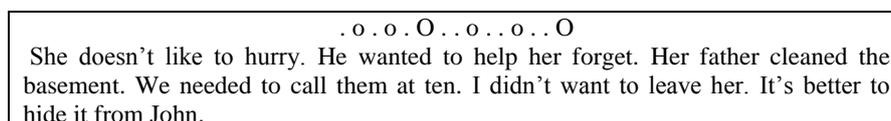
. o . o . O . . o . . o . . O
She doesn't like to hurry. He wanted to help her forget. Her father cleaned the basement. We needed to call them at ten. I didn't want to leave her. It's better to hide it from John.

Fig. 2. "Congruent rhythm drills" (Celce-Murcia et al., 2010, p.215).

Rhythm and Movement

Anvari et al. (2002) have stated that young children possess the ability to perceive rhythms within a musical context. However, Music educators at the elementary level believe that younger students are not able to comprehend rhythms completely. Based on this belief, instruction of rhythms to their younger students may be delayed by music educators (Bebeau, 1982). The musical growth of students can be hindered by this philosophy of teaching because rhythmic vocabulary needs to enhance over time and with experience (Ferrin, 2003).

Movement is a common component of rhythmic instruction. Many music educators use movement to teach rhythms (Celce-Murcia & Olhstain, 2000; Ferrin, 2003). Movement plays an important role in rhythmic instruction. Besides, rhythmic reading ability improves in learners who encounter kinesthetic learning activity in rhythmic education (Ferrin, 2003). The use of foot tapping and clapping during rhythmic instruction has been considered by some researchers (Boyle,

1970; Parisi, 2004). Rhythmic reading ability of learners significantly improves when learners use these learning devices (e.g. foot tapping and clapping) during rhythmic instruction. Thus, movement has been found to aid learners to learn rhythmic content in music.

Cognitive Styles

Cognitive psychologists tried to know human intelligence and the way people think. The theory of cognitive style became known during the 1970s, when cognitive psychologists placed greater emphasis on individual differences in domains of cognitive functioning and how individuals process information (Goodenough, 1976). Cognitive style refers to a different strategy used by everyone for encryption, storage and use of information (Atkinson, 2004). Allinson and Hayes (2012) examined cognitive style as the best way to accumulate, process, and evaluate data. Some authors have considered cognitive or learning styles, particularly FD/FI cognitive style (Chapelle & Heift, 2009; Rittschof, 2010; Thomas & McKay, 2010).

Field Dependence and Field Independence

Field dependent learners compared with field independent ones are more interested in group work and follow group instructions. Besides, Brown (2002) argues that FD learners see things that are generally less flexible and affiliated with others, whereas FI learners approach problems more analytically and they are more self-reliant and self-confident. In language learning classrooms, FD learners prefer group activities, role-plays and socially-oriented activities, while FI learners prefer to work individually and enjoy specific details in the exercise (Daniels & Moore, 2000).

Brown (2000) stated that field dependent people have a tendency to rely upon total field so that they cannot easily recognize the details embedded within the field although total field as a unified whole is perceived more clearly. He describes that field independent people can perceive particular connected items and are not distracted by other items in the context.

Field Dependence and Field Independence and Language Learning Strategy

Studies revealed that cognitive style (FD/FI) can be considered a crucial factor that affects language learning strategies (Naimie et al., 2010). Findings indicated that there is a significant relationship between FD/FI cognitive style and vocabulary learning strategies. Moreover, one of the most heuristic cognitive style constructs is field dependence/independence that consistently affects academic achievements (Tinajero et al., 2011).

Tinajero et al. (2012) explained that cognitive and metacognitive strategies were frequently used by field-independent learners. Three hundred thirty three first-year Brazilian university students participated in the study. The results indicated that field-independent learners consistently get better results than their field-dependent counterparts in terms of academic achievement. Furthermore, Chapelle and Heift (2009) investigated that FD and FI learners certainly vary in using learning strategies. Besides, they showed that FI learners intended to use cognitive and metacognitive strategies more frequently than their FD counterparts. Moreover, memory strategies such as elaboration, grouping, retention are used by FI participants whereas FD participants used more social strategies than FI ones (Dowlatabadi & Mehraganfar, 2014)

Empirical Studies

Ho, Cheung, and Chan (2003) examined the effect of musical training on verbal memory. They found that in multiple left hemisphere cortical areas including plenum temporal (PT) and auditory cortex, greater left hemispheric activation occurs in musicians compared to non-musicians (Ohnishi et al., 2001).This finding is crucial because language processing occurs in the left hemisphere too. Thus, musical training might activate the left hemisphere more than the right hemisphere and verbal memory abilities are enhanced in musicians.

Several researches have focused on the effect of musical training on verbal recall (e.g. Franklin et al., 2008; Ho et al, 2003). Ho et al. (2003) considered the effect of musical training on verbal memory in

children by conducting cross-sectional and longitudinal study. A word list was presented three times to the participants by the researchers. The participants were asked to recall as many words as possible after each test. Delayed recall test was administered within 10-minute and 30-minute in order to measure verbal memory. Results showed that more words were recalled in children who received musical training than the children without musical training.

Hart (2015) evaluated the impact of chant on student's ability to recall, read and spell words. To conduct the research, students were individually assessed using second edition of the Developmental Reading Assessment (DRA2) to determine a baseline of their language and reading abilities. Then, two songbooks were selected to use throughout the study. The first book was Down by the Bay (1988) and the second was Baby Beluga (1992). To incorporate a chant, days of the week chant was used because most of the students had difficulty in putting the days of the week in the correct order. Moreover, the researcher incorporated a chant for each new sight word to determine whether it would be helpful for learners to recall, read, and spell words or not. Along with this, a variety of nursery rhymes including Little Miss Muffet, Jack and Jill, Mary Had a Little Lamb, and Humpty Dumpty were utilized.

Over a period of four weeks, the two songbooks were incorporated. Prior to reading the first book, *Down by the Bay*, vocabulary pretest was administered in which ten specific key words from the book were selected. Then, researcher pointed to the picture in the songbook and asked students to tell her the word for the picture. The same test would then be conducted at the end of the study to determine vocabulary development.

Furthermore, each songbooks was practiced line by line, and sung the tune repeatedly for two weeks. In addition, words of the songs, which written on large chart paper, pointed to and read using a pointer. Over the course of the study, rhymes were introduced and practiced line by line daily over a one week period.

During the last week of the study, DRA-2 post-test was conducted to assess students' language development. Results showed that the use

of songs and nursery rhymes improved students' vocabulary knowledge throughout the course of the study.

However, previous research was conducted over a period of four weeks in which the researcher had time limit to do research. Furthermore, the study took place in a kindergarten classroom and did not focus on other levels and age groups. It is worth noting that most of the studies so far have considered the impact of music on vocabulary knowledge or learning styles separately. De Groot (2006) stated that music has a crucial role in enhancement of vocabulary knowledge. Moreover, Tinajero et al. (2011) determined the significant relationship between FD/FI cognitive style and vocabulary learning strategies. Taking into account the fact that no empirical study has been conducted on the effects of rhythmic instruction on the enhancement of vocabulary knowledge of FD and FI EFL learners, this study aims to investigate the effect of using rhythmic instruction on the enhancement of FD and FI EFL learners' vocabulary knowledge at pre-intermediate level. Thus, the research questions guiding this study are as follows:

1. Does rhythmic instruction have any impact on learners' vocabulary knowledge?
2. Will FD and FI learners perform similarly or differently when exposed to rhythmic vocabulary teaching? Will they display the same pattern?

Methodology

Participants

To accomplish the aims of this study and ensure homogeneity of all participants, Solutions Placement Test was utilized, and 40 participants were selected for the study. The participants' age varied from 12 to 17, who were randomly assigned to two groups, experimental and control group, each included 20 females.

Instruments

The following instruments were employed to collect data from the participants. The main instrument was Group Embedded Figure Test

(GEFT), which included 18 complex figures, each with an embedded simple figure. The participants were expected to find the hidden form or figure in the more complex one in a given time (12 minutes). The scores on GEFT ranged from 0 (the most FD) to 18 (the most FI) based on the number of correct answers given by students. The second instrument Solution Placement Test was used to ensure the homogeneity of the experimental and control groups prior to the commencement of the study. In addition, Oxford word skill Test was conducted as pre-test and post-test in which the words learners learned through rhythmic instruction were included.

Group Embedded Figure Test (GEFT)

Group Embedded Figure Test (GEFT) was developed by Oltman et al. (1971), and was used to assess subjects' degree of FI/D. The test included a booklet containing 25 complex geometric designs in which test- takers were expected to find and mark the indicated simple designs within the complex designs in a given time (12 minutes). GEFT was sorted into three sections. The first section contained seven simple items in order to familiarize test -takers with the task, had a time limit of 2 minutes to practice, and the results obtained in this part were not included in the final score. Second and third sections, which were the main part of this test, each included nine difficult and challenging items within the time limit of five minutes for each. Based on the number of correct answers given by learners in second and third section the scores on GEFT ranged from 0 (the most FD) to 18 (the most FI). Those who scored above 11 were FI learners and those who scored below were FD learners.

Textbook

The learners' course book was "Oxford word skills'' by Ruth Gains and Stuart Redman; Oxford University Press (2008). The selected materials from ten chapters of the book were utilized during the treatment phase.

Solutions Placement Test

A solution placement test, a standardized proficiency test developed

by Oxford University press (2013), was given to the learners at the beginning of the study. Solutions Placement Test has been developed after consultation with teachers and was designed to assess learners' knowledge of key language from elementary to intermediate levels as well as their receptive and productive skills. The test contained 50 multiple-choice questions, each worth one point aimed to measure learners' grammar and vocabulary knowledge, a reading passage with 10 graded multiple-choice comprehension tests and a writing test.

Oxford Word Skill Test

Since available tests were not based on the materials taught to participants in the present study, samples in this exam were collected from the book, Oxford word skills by Ruth Gains and Stuart Redman, which is utilized in intact classes. The test consisted of 50 items: ? multiple choice items, ? true/false questions, ? matching questions and ? cloze tests. The learners were asked to answer within 50 minutes. The total score for the test was 50, each item worth one point.

Data Collection Procedure

The study followed placement test administration, GEFT administration, pre-test, treatment sessions, and post-test. The whole study was completed in 17sessions. At the beginning of the study, Solution Placement Test was administered to both groups in order to ensure the homogeneity of learners. The participants who scored 21 to 30 on grammar and vocabulary items, and those who gained 5 to 7 on their reading and writing tasks, were classified as pre-intermediate and qualified to be included in the analysis. Accordingly, forty pre-intermediate female EFL learners were selected based on Solution placement test administration for the present study. Having conducted the proficiency test, the researcher administered GEFT. Then the participants were randomly assigned into two groups (experimental and control). Although the number of the students to be included in each group was twenty, only eighteen learners from the experimental group and twelve learners from the control group participated in the study. This was because two learners in the experimental and eight

learners in the control group were not present on the day of the pre-test and GEFT. Thus, only students who had taken the pre-test and GEFT were included in the post-test after the study had been conducted. Based on the scores obtained from Group Embedded Figures Test (GEFT), nine learners were field dependent (FD) and nine were field independent (FI) in the experimental group, and there were eight field dependent (FD) and four-field independent (FI) learners in the control group.

Next, Oxford word skill Test as pre-test was administered. Then, course objectives were clarified and elaborated on by the researcher. The experimental group received a 30- minute treatment at the end of regular class hour in each session. The group was taught vocabulary through rhythm and the learners were asked to practice the new words for the next session. But with the control group, the same words were taught through grammar translation method (GTM). That is new words and their meaning in learners' first language were given in each session and the learners were asked to memorize them. At the end of the study, a post-test was administered to evaluate the effectiveness of the treatment. The results obtained from the pre-test, post-test, and GEFT were analyzed through Independent Samples T-Test using the SPSS software.

How to Implement Rhythmic Learning in Classroom Context

Language has a natural rhythm, so using words instead of rhythmic gestures is a very intuitive way for students to learn. There are many variations to this approach, but a simple way of thinking about it is to determine words of common rhythmic gestures; for example, four semiquavers could be 'fascinating' (fa-sci-na-ting), a triplet might become 'festival' and two quavers could be 'contest'. Students clap the pulse and say the rhythm.

Furthermore, the general method that learners use to learn rhythm is to tap a steady beat with their feet. They can tap the pulse with their feet (and keep tapping through steps 3-5) and accent the pattern they are working on in their counting, then stop counting and vocalize the pattern. How they tap is up to them. They can alternate feet or use just

one foot. They can tap their heel or tap their toe, or rock back and forth from heel to toe.

Learners with their foot, tap four beats repeatedly as follows, making the beat on ONE the hardest.

ONE two three four ONE two three four ONE two three four

| . . . . | |

Then, learners sing nonsense syllable ''Da'' and hold it for four steps of their foot (tap the top line, sing the ''Da'' line).

| | |
Da . . .   Da . . . Da . . .

Next step, learners practice to create notes that are half the duration.

. | . . . | . . . | . .
DadaDadaDada

When learners are able to do this comfortably, they practice to mix notes of different durations.

. | . . . | . . . | . .
DadaDaDada

After that, learners practice to create notes that take up only one beat.

. | . . . | . . . | . .
DadaDadadadaDada

When learners are able to do this comfortably, proceed to the next exercise where they are going to sing a different pattern.

. | . . | . . | . . | . .
DadadaDadadaDadadadaDa

Like any element of teaching, persistence plays an important role. In order to ingrain rhythm in learners, repetition and constant attention are necessary. Therefore, the teacher who teaches through rhythm should participate at least in ten session's workshop in order to know how to teach vocabulary through rhythm. Therefore, the researcher had attended several training courses regarding the implementation of rhythmic instruction in language classrooms and was well- trained in this area.

Data Analysis

In order to address the research questions, the analysis of the data included two distinct components. First, after gathering the data through pretest and posttest, it was analyzed by SPSS. Second, independent samples t-test was used to measure the differences, if any, between rhythmic learning group and the non- rhythmic learning group.

Results

Regarding question one, Independent Samples t-test was used in order to reveal the effects of rhythmic instruction on vocabulary learning. Besides, the assumption of normality of the analyzed data, which was tested through a one-sample Kolmogorov-Smirnov test in the present study, it was required to verify homogeneity of variances of the data sets:

Table 1. Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Control Pre-Test	.234	12	.068	.947	12	.596
Experimental Pre-Test	.183	12	.200[*]	.945	12	.570
Control Post-Test	.159	12	.200[*]	.908	12	.201
Experimental Post-Test	.175	12	.200[*]	.941	12	.509
Lilliefors Significance Correction b*. This is a lower bound of the true significance.						

Table 1 demonstrates the results of Normality test; there was not a statistically significant difference at the p > .05 level between the

means of the groups. In addition, to see whether the control and experimental groups were in equal conditions before receiving any treatment, the descriptive data of the study such as the mean scores and standard deviations of the groups were calculated.

Table 2. Descriptive Statistics of Rhythmic Instruction for Experimental and Control Pre-Test Scores

	Groups	N	Mean	Std. Deviation	Std. Error Mean
Scores	Control Pre-Test	12	5.0833	2.10878	.60875
	Experimental Pre-Test	18	5.0556	2.09964	.49489

Table 3. Independent Samples Test of Rhythmic Instruction Scores from Experimental and Control Pre-Test Scores

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Scores	Equal variances assumed	.019	.891	.035	28	.972	.02778	.78383	-1.57783	1.63338
	Equal variances not assumed			.035	23.658	.972	.02778	.78454	-1.59267	1.64822

Table 2 shows that the actual difference in the mean scores of the groups was very small (5.05and 5.08). Moreover, it shows that the mean score for the experimental group (M=5.05, SD=2.09) was not significantly different from the control group (M=5.08, SD=2.1). According to table 3, there was not a statistically significant difference at the p > .05 level between the means of the two groups. In short, the mean difference between the two groups was not significant, and it is assumed that they were at the same level before receiving any treatment.

Table 4. Descriptive Statistics of Rhythmic Instruction for Experimental and Control Post-Test Scores

	Groups	N	Mean	Std. Deviation	Std. Error Mean
Post-Test Scores	Control	12	22.5000	5.38516	1.55456
	Experimental	18	32.3333	6.31525	1.48852

Table 5. Independent Samples Test of Rhythmic instructions from Experimental and Control Post-Test Scores

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Post-Test Scores	Equal variances assumed	.488	.490	-4.422	28	.000	-9.83333	2.22383	-14.38865	-5.27802
	Equal variances not assumed			-4.569	26.178	.000	-9.83333	2.15229	-14.25596	-5.41070

An Independent Samples T-test was conducted to explore the difference between the rhythmic instruction post-test scores of the experimental and control group. The actual difference in the mean scores between the participants in the control group in comparison with the experimental group is quite large. As Table 4 indicates the mean score for the experimental group (M=32.33, SD=6.31) was significantly different from that of the control group (M=22.5, SD=5.38). Furthermore, there was a statistically significant difference at the $p < .05$ level in the post-test scores of the two groups (table 5). Briefly, the mean difference between the two groups was significant, and it shows the effect of rhythmic instruction on vocabulary learning.

Regarding the second research question, Independent Samples t-test was used in order to reveal the effects of rhythmic instruction on FD and FI learners. In addition to the assumption of normality of the

analyzed data, which was tested through a one-sample Kolmogorov-Smirnov test in the present study, it verified the homogeneity of variances of the data sets:

Table 6. Descriptive Statistics of Rhythmic Instruction for FI and FD Pre-Test Scores

	Groups	N	Mean	Std. Deviation	Std. Error Mean
Pre-Test Scores	FI	9	5.1111	1.83333	.61111
	FD	9	5.0000	2.44949	.81650

Table 7. Independent Samples Test of Rhythmic Instruction Scores from FI and FD Pre-Test Scores

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Pre-Test Scores	Equal variances assumed	.602	.449	.109	16	.915	.11111	1.01986	-2.05090	2.27313
	Equal variances not assumed			.109	14.822	.915	.11111	1.01986	-2.06495	2.28717

Table 6 shows that the actual difference in the mean scores of the groups was very small (5.11and 5). Moreover, it shows that the mean score for the FI group (M=5.11, SD=1.83) was not significantly different from the FD group (M=5, SD=2.44). According to table 7, there was not a statistically significant difference at the p > .05 level between the means of the two groups. In short, the mean difference between the two groups was not significant, and it is assumed that they were at the same level of the rhythmic instruction at the outset of the study.

Table 8. Descriptive Statistics of Rhythmic Instruction for FI and FD Post-Test Scores

	Groups	N	Mean	Std. Deviation	Std. Error Mean
Post-Test Scores	FI	9	32.0000	5.52268	1.84089
	FD	9	32.6667	7.34847	2.44949

Table 9. Independent Samples Test of Rhythmic Instruction Scores from FI and FD Post-Test Scores

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Post-Tes Scores	Equal variances assumed	.109	.745	-.218	16	.831	-.66667	3.06413	-7.16233	5.82900
	Equal variances no assumed			-.218	14.851	.831	-.66667	3.06413	-7.20340	5.87007

An Independent Samples T-test was conducted to explore the difference between the rhythmic instruction post-test scores of the FI and FD groups. The actual difference in the mean scores between the participants in the FI group in comparison with the FD group is quite large. As Table 8 indicates the mean score for the FI group (M=32, SD=5.52) was not statistically different from that of the FD group (M=32.66, SD=7.34).

Furthermore, there was not a statistically significant difference at the $p > .05$ level in the post-test scores of the two groups (table 9). Briefly, the mean difference between the two groups was not significant, and it showed that FI and FD learners exposed to rhythmic instruction performed similarly.

Discussion

This study was conducted to investigate the impact of rhythmic instruction on vocabulary knowledge of EFL learners. More specifically, the effectiveness of rhythmic instruction on FD/ FI

learners' vocabulary knowledge was the main question of this paper. The overall findings of this study, aligned with the results of many other studies (e.g., Cruz-Cruz, 2005; Fitch, 2005; Gardner, 2006, 2011;Šišková, 2008), support the position that rhythmic instruction can greatly enhance vocabulary knowledge of EFL learners suggesting that teaching vocabulary of a foreign language through rhythm could be effective and can help improve the ability of the mind to recall information.

The comparison of the rhythmic instruction and traditional methods revealed that rhythmic instruction was more effective, and the learners were generally eager to attend in class activity and that they were motivated to learn vocabulary, while they were reluctant to learn before the rhythmic instruction. This could be justified by several reasons. One likely reason for this could be related to fun and enjoyable atmosphere of the class due to utilizing rhythmic instruction. This finding concurs with the results of previous studies which stated that music reduces classroom stress, thereby facilitates learning (Engh, 2013; Salcedo, 2002).

Another possible explanation might be the fact that while recalling the text, mental mechanical activities help learners to hold in mind some information (for example, a sentence to be written down) while doing something that for them is mentally challenging (such as recalling vocabulary). When learning vocabulary through rhythmic instruction is accompanied by movement activities, the amount of oxygen in the brain is raised, which can help improve attention and focus. The findings of the present research are compatible with (Cruz-Cruz, 2005; Fitch, 2005; Gardner, 2006, 2011; Urgesi & Fabbro, 2009), since they all revealed that utilizing music in classroom context might ease learning more words in a language due to stimulating both hemispheric parts of the brain. Another convincing explanation could stem from the fact that rhythmic instruction stimulates both hemispheres of the brain. Thus, rhythmic instruction can promote learners' vocabulary knowledge by involving their right and left hemispheres.

The findings of the study fully support Salcedo's (2002) assertion that Suggestopedia aids learners to develop their language acquisition which stimulates both hemispheres of the brain by using background music and benefits learners in case of providing a relaxing atmosphere. Besides, the result of this study are in line with Lake (2003) who confirmed that both hemispheres of the brain integrate music with words more effectively. In this sense, learning more words in a language might be facilitated due to using music and stimulating both hemispheres of the brain. Furthermore, the findings of the current study agree Callan, Kawato, Parsons, and Turner (2007), who asserted that learning can be doubled if processing knowledge in brain is supported by memory aids such as music.

The final justification for the success of the rhythmic instruction comes from the fact that the performing rhythmic tasks could have activated the part of the brain that relates to language production. It means that music and its subcomponent rhythm could have engaged both brain hemispheres and affected the activities of the right and left hemisphere. Besides, whole brain was activated during rhythmic instruction in both FD/FI learners in order to learn vocabulary. Thus, rhythmic instruction assisted learners in both groups to have better performance in learning vocabulary in which rhythmic tasks facilitated recalling and storage of information in long-term memory. This could be regarded as a convincing argument in which both group of learners (FD/FI) had something in common when they were exposed to rhythmic instruction.

The interaction of FD and FI learners' variables and rhythmic instruction has never been considered the way present research has, as researchers so far have investigated the above-mentioned variables related to vocabulary learning in isolation. The findings of present study are consistent with the findings of these studies (Naimie et al., 2010) which indicate that there is significant relationship between FD/FI cognitive style and vocabulary learning strategies. Moreover, one of the most heuristic cognitive style constructs is field dependence/independence that consistently affects academic achievements (Tinajero et al., 2011).

The findings are also compatible with the findings of the study done in this area by Yang (2006), who argued that learning style is not the effective factor to impact learners achievement, and indicates that field-independent and field-dependent learners are not significantly different in their achievements. Consequently, even if learners have different learning styles, they learn equally well and there is no difference in their utilization of learning strategies.

Conclusion

The overall aim of the present study was to consider the effect of rhythmic instruction on vocabulary knowledge of FD/FI Iranian EFL learners. With regard to this general purpose, the main purposes of this study included: First, to ascertain whether rhythmic instruction had any impact on EFL learners' vocabulary knowledge. Second, to see if any pattern of performance existed for FD and FI learners when exposed to rhythmic instruction in terms of vocabulary knowledge. Thus, based on the obtained results and findings, the following conclusions were drawn. With respect to the first question, whether there is a relationship between rhythmic instruction and vocabulary knowledge of the Iranian EFL learners, it was found that there is significant correlation between rhythmic instruction and the learners' vocabulary knowledge. With regard to the impact of rhythmic instruction on FD/I learners, and the interaction of them on learning vocabulary, the results of the statistical procedure revealed that rhythmic instruction had a significant effect on both field dependent and field independent learners 'vocabulary knowledge.

This study can help improve teachers' knowledge about teaching vocabulary through rhythmic instruction in English language teaching classes, raise their awareness as to how to put rhythmic instruction into practice, and encourage them to use rhythmic instruction in teaching vocabulary in their courses. The present study provides evidence for and lends support to the use of rhythmic instruction in classroom settings, and thus help dispel some teachers' misconceptions about implementing rhythmic instruction in classroom contexts. These results may bring about changes in the curriculum, so

that teachers will willingly outline ways in which rhythmic vocabulary instruction can be applied more effectively in classroom settings.

An awareness of the learner's cognitive styles in rhythmic vocabulary learning may give educators the most powerful advantage and tool to analyze, motivate, and help learners in vocabulary learning. This type of knowledge can assist language instructors to choose the type of instructional materials that are well-suited to learners' cognitive style and help teachers know how such materials will have to be exploited and manipulated to cater for different learners' cognitive style, and the ways in which the same instructional materials should be introduced, presented and assessed in the language classrooms. Moreover, it is easy for children to remember words and patterns through rhythmic instruction. Words seem to be more emotively and personally significant when linked to rhythm, thus they will be easier to recollect (Cruz-Cruz, 2005).

In order to reach a better understanding about the relation between FD/FI cognitive styles and vocabulary learning strategies especially rhythmic instruction, other factors related to vocabulary learning such as gender, age, and learners' proficiency level need to be investigated. Overall, teachers and students are recommended to consider rhythmic instruction as a facilitative tool in learning English, especially in learning vocabulary.

The main delimitation of the study that affects its generalizability is gender of the participants. The study has delimited itself to female participants. Other studies on male learners also are required. The second point is the number of participants that limits the generalizability of the research to other populations. Moreover, convenient sample rather than random selection may limit the generalizability of the results of the study to other contexts.

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