

Learning styles and vocabulary learning by Iranian undergraduate EFL learners

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Abstract

Each English as a foreign language (EFL) learner may have a particular learning style which may affect the mastering of new language skills and components, one of which is vocabulary. The current study aims to find out the preferred learning style(s) of Iranian undergraduate EFL learners and their achievement in the vocabulary test. Forty-four undergraduate students took part in the study. visual, auditory, reading/writing and kinaesthetic learning style questionnaires and the teacher developed test of vocabulary were used in this study. The validity and reliability of the learning style questionnaire and the teacher developed test of vocabulary were determined. The data were collected and analysed using appropriate statistical analyses including descriptive statistics and one way analysis of variance. The results indicated that the participants were mainly auditory learners. Moreover, it was found that visual and multimodal learners had the best performances on the vocabulary test.

Keywords: Learning style, vocabulary learning, undergraduate EFL learners.

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1. Introduction

To ensure that students acquire and master the covered materials requires understanding their individual differences, one of which is learning style. Learning style is not an ability, but it is related to how one prefers to use this ability (Sternberg, 1994). Each individual may have a particular learning preference; some learn better through reading or writing down the material, some through seeing pictures and graphs, and yet others through hearing (auditory). That is, different individuals learn differently, some learn the newly taught materials through listening (auditory learners), some through seeing (visual learners) and some through experiencing (tactile/kinaesthetic learners). The four learning styles, namely visual, auditory, reading/writing and kinaesthetic (VARK), have their own features. Visual learners learn best through the use of maps, charts, diagrams and the same. Auditory learners are in favour of listening to tapes or a lecture describing something to them. Read and write learners learn most by reading or writing when they are going to gather information. Kinaesthetic learners prefer to do things to learn.

It may be assumed that learning style is not related to the way individuals learn other things since it mainly deals with learning preferences. Learning and how to learn, English vocabulary here, are controversial matters undergraduate students face in the process of language learning. Individuals are considered to be different in learning. Some people learn better individually, and some prefer group learning. Therefore, there are some variations in the way people learn. These differences may be affected by factors including background knowledge, age, gender and culture.

Individuals, furthermore, have strong or weak abilities in information processing. The way individuals learn affects mastering of materials. 'Learning styles research focuses on how students prefer to learn. Some students, for example, are visual learners who learn best when they can see (e.g., read) the material they are to learn' (Wintergerst, DeCapua & Verna, 2002, p. 17). 'Students and teachers need a starting place for thinking about, and understanding how they learn' (Fleming & Baume, 2006). Determining the learning style of individuals, therefore, is helpful to both students and teachers to employ the best approaches and methods that correspond to the learners' learning preferences. It helps teachers to present materials according to the learning preferences of learners, and makes it possible for learners to become aware of their own learning style(s) and to take advantage of their preferred learning styles or other styles to master the materials more effectively.

One of the challenges language learners face, nowadays, is that they do not learn well despite putting in energy and time. This problem also challenges language teachers to look for a remedy. The familiarity of instructors with the learning styles of students and the coordination between their teaching methodologies and students' preferred learning styles may help obviate the problem to some extents.

Vocabulary, on the other hand, is central for language learners without which communication is somehow hindered. Put in another way, the knowledge of vocabulary is conducive to all language skills and components; it affects the mastering of all language areas more or less. Cook (1991) argues that 'grammar provides the overall patterns, vocabulary the material to put in the patterns'. 'Vocabulary is central to language teaching and is of paramount importance to a language learner' (Alqahtani, 2015).

Vocabulary teaching and learning has been emphasised by different researchers in the field (Ghazal, 2007; Huyen & Nga, 2003; Read, 2004). Different researchers have discussed the role of vocabulary in language learning. Van Zeeland (2013) discussed the relationship between vocabulary and listening; Olinghouse and Wilson (2012) point to the importance of vocabulary in writing. Matsuoka and Hirsh (2010), concerning the significance of vocabulary, state that ‘there is a strong link between vocabulary knowledge and reading comprehension’. These signify the importance of vocabulary as the building block of language. It is one of the main problems individuals encounter in learning a language. Cook (1991) states that the problem is related to both learning and remembering L2 vocabularies. ‘Words are not coins you exchange from one language to another according to a fixed exchange rate’ (Cook, 1991). Learners have to pick up vocabulary on their own to be able to communicate in the target language efficiently.

Different techniques have been offered to facilitate vocabulary learning, but it is still a big challenge for English as a foreign language (EFL) learner in dealing with vocabulary learning. For many language learners, English here, vocabulary learning is a demanding task, and they should pay more attention to it. ‘Given the difficulties of vocabulary learning in a second or foreign language (L2)...one would expect that vocabulary instruction would be at the top of the agenda for language teachers’ (Oxford & Crookall, 1990). Due to individual differences, different learners may apply different techniques such as using flash cards, writing down the words, using computer and other technologies, using games and the same. However, learning style, as one of the individual differences, can be among the factors that may affect vocabulary learning in EFL context.

1.1. Literature review

The findings of a study by Daoruang, Sintanakul and Mingkhwan (2019) revealed that 12.77% of the participants were unimodal, most of them kinaesthetic learners, and 87.23% of them preferred multimodal styles. A large number of students were shown to have four learning styles. The findings, moreover, depicted that student with visual, auditory and kinaesthetic learning styles, multimodal styles, obtained the highest score on the learning achievement.

Nasiri, Gharekhani and Ghasempour (2016) conducted a study, using VARK learning style, on Iranian dental students to find out the relationship between the learning style and academic status of the students, and found that the participants mainly preferred multiple modalities: bimodal, trimodal and quadmodal in order. For students with and without aural, read/write and kinaesthetic learning styles, no significant difference in their final exam's mean scores was reported. For final clinical course scores, no significant differences were found by individuals with different leaning styles. A significant difference was found in the mean scores of learners with and without visual preference. The results also indicated that gender does not have a significant impact on learning style.

Peyman et al. (2014) carried out a study to determine the learning styles of first-year medical sciences students in Iran. The results revealed that the preferred learning styles of the learners with unimodal learning style were aural, read and write, kinaesthetic and visual in order. For more than one learning style, the preferred learning styles of the participants were four models, then bimodal and finally trimodal styles. They, therefore, found that aural and read and write were the preferred learning styles of the students.

Kharb, Samanta and Jindal Singh (2013) investigated the learning style of first-year medical students and concluded that 39% of the students preferred the unimodal style, mainly kinaesthetic, and the rest (61%) of the students favoured multimodal styles, most of the whom preferred two, three and four learning styles, respectively. Zokaei, Zaferanieh and Naseri (2012), in a study on undergraduate EFL's learning styles and vocabulary learning strategies, concluded that visual learning style was the dominant style followed by kinaesthetic and auditory styles, and that there was a relationship between vocabulary learning strategies and perceptual learning. Metacognitive strategy was shown to be the preferred vocabulary learning strategy. No statistically significant differences were found between vocabulary learning strategies and learning styles of males and females.

Doczi (2011) concluded that social and metacognitive strategies were avoided by the Hungarian students. The results, moreover, indicated that as the students' level increased, the number of strategies they used decreased. Amini, Zamani and Abedini (2010), in another study, attempted to determine the preferred learning style of Iranian medical students and found that the dominant learning style of the participants was visual, and the least preferred style was kinaesthetic. They also found no significant differences between the preferred learning styles of the male and female participants.

The findings of another study by Moenikia and Zahed-Babelan (2010) indicated that learners with aural and social learning styles had good progress on speaking; those with a verbal style performed better on writing. For structure, learners with visual style, and for reading section students, with verbal and social learning styles showed good progress. Baykan and Nacar (2007) in another study administered the Turkish version of VARK learning style to find out the learning style of first-year medical students and concluded that majority of the participants preferred multimodal styles. No statistically significant differences were reported for males and females. Moreover, the differences between the students' learning styles and first semester grade points were not significant.

1.2. Purpose of study

The current study focuses on determining the preferred learning style and the performances of EFL learners on vocabulary according to their learning styles. Whatever procedures they employ in the process of vocabulary learning, EFL learners need to know about their learning preferences and their dominant learning styles which may affect English vocabulary learning. The dominance of a particular learning style indicates that an individual learns well through that style. The current study aims to find out the preferred learning style(s) of Iranian undergraduate EFL learners and their achievement in vocabulary test

2. Materials and methods

2.1. Participants

The participants of the study were 44 undergraduate EFL learners, males and females, mostly about 19–21 years old. They took part in the English for general purposes (EGP) course. The participants were all students of humanities.

2.2. Data collection instruments

Two instruments were used in the current study, namely VARK learning style and the teacher-developed test of vocabulary. The VARK learning style questionnaire consists of 16 statements with 4 options among which individuals select the one(s) that best fit their learning preferences. It covers four learning preferences, namely VARK. An individual may have more than one learning style preferences. The instruction for determining individual's learning style is provided in the questionnaire.

Since the participants of the study were studying EGP in their first academic year, and there was the possibility of not understanding the English statements, the researchers used the translated, Persian, version of the VARK learning style questionnaire. In some previously carried out studies, the reliability of the Persian translated version of the questionnaire has been reported. Amini et al. (2010) reported the reliability (98.6); Peyman et al. (2014) confirmed both validity and reliability ($r = 0.86$) of the VARK learning style for Iranian students. The researchers, however, in this study obtained the reliability of the questionnaire, in a pilot study, and it was found to be $r = 0.81$. Moreover, a teacher developed test of vocabulary was used as the second instrument in this study. There were 24 statements in multiple choice format comprising fill in and synonym statements, all of which had already been covered by the researcher in the classroom.

2.3. Procedures

The researcher used the Persian translated version of the learning style questionnaire. The respondents were asked to select the option(s) that best fit them. They could select more than one option if they think they are appropriate to them. They were asked to write their names on the questionnaire and the English vocabulary test to make it possible, for the researcher, to match them. The two instruments were administered in different sessions. All the used items, in the vocabulary test, had been worked on in the class. That is, all the material had been touched on during the semester by the researcher. The participants were asked to respond to the given items: they were asked to select the options that best fit the given statements or questions. Through a pilot study, reliability and time allocation for the vocabulary test was determined. Adequate time was assigned for responding to both instruments. Moreover, the researcher was present in both sessions for any possible explanation.

2.4. Data analyses

The data were gathered and analysed using appropriate statistical analyses including descriptive statistics and one-way analysis of variance (ANOVA) between groups. Descriptive statistics were run to determine the participants' learning styles.

3. Results

Table 1 represents the number of individuals in each subcategory of the learning style.

Table 1. The preferred learning styles of the participants

Learning styles	Frequency	Percent	Valid percent	Cumulative percent
Visual	3	6.9	6.9	6.8
Auditory	24	54.5	54.5	61.4
Read/write	2	4.5	4.5	65.9
Kinaesthetic	11	25.0	25.0	90.9
Multimodals	4	9.1	9.1	100.0
Total	44	100.0	100.0	

Since some of the participants were shown to have more than one dominant learning style; they were grouped under multimodal subcategory: visual learners (3, 6.9%), auditory learners (24, 54.5%), read and write learners (2, 4.5%), kinaesthetic learners (11, 25%) and multimodals (4, 9.1%).

A one-way between groups ANOVA was run to indicate the participants' performances on the vocabulary test according to their learning style preferences. Table 2 presents the results.

Table 2. One-way ANOVA between groups

	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Min.	Max.
				Lower bound	Upper bound		
Visual	18.00	3.000	1.732	10.55	25.45	15.00	21.00
auditory	12.50	4.587	0.936	10.56	14.44	6.00	21.00
read/write	13.00	1.414	1.000	0.294	25.71	12.00	14.00
kinaesthetic	15.00	4.171	1.257	12.20	17.80	9.00	20.00
Multimodal	17.50	2.886	1.443	12.91	22.09	14.00	21.00
Total	13.80	4.490	0.6769	12.61	15.34	6.00	21.00

Table 2 depicts the mean scores and standard deviations of the vocabulary test by the learners with different learning styles: for visual learners ($M = 18$, $SD = 3.00$), auditory learners ($M = 12.50$, $SD = 4.59$), read and write learners ($M = 13.00$, $SD = 1.41$), kinaesthetic learners ($M = 15$, $SD = 4.17$) and multimodal learners ($M = 17.50$, $SD = 2.89$).

The obtained mean scores on the vocabulary test by the learners with different learning styles are also shown in Figure 1.

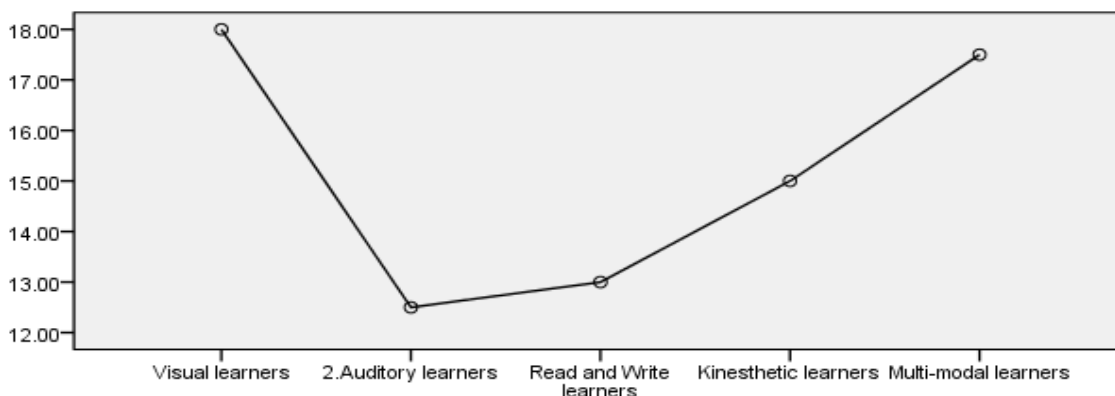


Figure 1. The obtained means scores on the vocabulary test

In order to determine if the differences between the groups were statistically significant, *post-hoc* comparisons, using Tukey’s test, were run.

Table 3. Statistical difference among the mean scores

Learning style	Sum of squares	DF	Mean square	F	Sig.
Between groups	163.977	4	40.994	2.274	0.079
Within groups	703.000	39	18.026		
Total	866.977	43			

The results showed that although the obtained mean scores on the vocabulary test by the learners with different learning style preferences were different, these differences were not statistically significant at the $p > 0.05$ level: $F(4, 39) = 0.2.27, p = 0.079$.

4. Discussion

The participants were mainly auditory learners (24 students), and the lowest number (2) was read and write learners. This may be traced back to their learning styles in previous years at schools. This may somehow be related to the participants' study habit or teachers' tendency to instruct through particular style(s). It is important for students to know their preferred learning styles and to employ other styles, too. Both teachers and students, however, may benefit from the learners' dominant leaning styles. The results indicated that most participants adhere to auditory learning style, and they tended to learn materials through listening to the lectures.

The findings, moreover, revealed that visual learners had good performances on the vocabulary test, with the highest mean score. These learners took advantage of their visual preferences in learning the materials. It may be argued that learners' performances and achievement can be affected by their learning style. It is a wonder that a very small number of the participants were visual learners while the best performances on the given vocabulary test belonged to this group. Perhaps, the learners were not aware of the benefits of this type of learning styles. Therefore, instructors should familiarise learners with the characteristics of different learning styles and provide opportunities to help learners adapt them in the process of learning classroom materials. Small differences between the mean scores of visual learners and those in multimodal style were seen. That is, the participants with multimodal learning styles had good performances on the vocabulary test, too. They were small in number, four participants, but their performances were shown to be higher than the other remaining groups of learners: read/write, kinaesthetic and auditory learners. It may be argued that teachers should help undergraduate students to employ all learning styles to achieve more satisfying results. Students themselves should become aware of their learning style preferences and should take advantages of other styles.

It was also found that auditory learners, the greatest group in number, had the weakest performances on the vocabulary test. It requires great attention on the part of both teachers and students to bear in mind that language learning is different from learning some other material. Just through listening, the chance of learning and, consequently, getting good marks decreases, as the findings of this study indicate. Language learning should be accompanied by employing other learning style(s). Individuals should also practice through other possible ways such as taking notes and writing down while attempting to learn newly taught points. This may help consolidate the newly taught words. It does not imply that activities related to auditory learning styles should be ignored, rather it

means that other styles should be utilised to achieve better results. Instead of just adhering to one or two learning styles, students should also employ other styles to master the taught materials. They may study hard and practice for a relatively long period of time, but since they may adhere to just one style of learning, which may not be very helpful in learning and remembering newly taught words, they may forget them after a while. Therefore, for better achievement, learners should familiarise themselves with other learning styles too. Of course, presentation of materials according to instructors' preferences may play an important role in employing a particular learning style by the learners. When teaching methods and activities match the learners, they learn the best.

The findings of the current study contradict with the results obtained by Zokaei et al. (2012), who found that the visual learning style was the dominant style for the participants. The results also contradict the findings by Espinoza-Poves, Miranda-Vilchez and Chafloque (2019), who found that most of the participants had read and write learning style, followed by multimodal, kinaesthetic, auditory and visual learning styles. The findings, however, are in line with the results of the study by Baykan and Nacar (2007), who found no significant difference between individuals' learning style and first semester grade points. This study indicates that despite the differences among the mean scores of individuals with different learning styles, the differences are not statistically different.

5. Conclusion

Each language learner has his/her own characteristics in the process of language learning, due to individual differences. That is, different individuals learn differently. One of the individual differences is learning style. In this study, it was found that majority of the participants were auditory learners, while their mean score was lower than the other groups of learners. Visual learners obtained the highest mean score, followed by multimodal learners; those with multimodal learning styles might have employed visual style too. Thus, for vocabulary learning, students learn more effectively through seeing than hearing. It is, therefore, concluded that visual style plays a role in vocabulary learning. EFL learners are recommended to pay more attention to their learning styles. It is argued that multimodal learning styles can lead to higher achievement. Teachers are recommended to familiarise language learners with the features of different learning styles and with their impacts on language learning. It is also important that learners become aware of their dominant learning style preferences. Therefore, for vocabulary learning, teachers can present the material via the learning style(s) that are more conducive for EFL learners.

To achieve more reliable results, the researcher suggests another study in which more participants are involved. Another study is also suggested to address the overall performances of EFL learners on the English achievement test according to their learning styles and gender. The relationships between learning styles and EFL learners' performances on other language components, such as reading comprehension and grammar, are also suggested for further research.

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