

Original Article

Students' Attitudes Toward Using Infographics on Learning Vocabulary in the EFL Classes

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Abstract

Infographics are visual representations of information intended to be presented quickly and clearly. The present study aimed to investigate students' attitudes toward using infographics in learning vocabulary in EFL classes. To this end, the participants were selected through available sampling and the study was conducted at Pand Institute in Abadan, Khuzestan, Iran during the summer of 2022. All of them were females and their ages ranged from 20 to 30. In this quantitative descriptive study, a questionnaire (Alrwele, 2017) was given to the learners to determine their attitudes toward using infographics as teaching tools in the educational context. The participants were asked to answer the questions to indicate to what extent they agreed or disagreed with each statement on a five-point Likert Scale. The content and face validity of the questionnaire were confirmed by two experts at the Ph.D. level. The collected data were computed through descriptive statistics and one sample *t*-test. Most learners agreed with all 19 statements, all of which were positive comments about using infographics. Thus, a general trend of a positive attitude could be observed in the responses provided by the learners in the EFL class. Most students enjoyed the use of infographics within EFL contexts. Therefore, incorporating infographics into teaching could be a dynamic way for learners and engage in learning more. This finding could help language developers, syllabus designers, and teachers to develop programs and create books based on infographics.

Keywords: Attitude, EFL Learners, Infographics, Multimodal, Visualization

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1. Introduction

Vocabulary is the center of learning any second language, so at first, students try to learn vocabulary but studying, memorizing, and understanding how to use the words are very hard for learners, so teachers are trying to find the best methods to help students. With the development of technology in human life, especially in educational contexts, using multimodal instruction has increased in diverse learning contexts, especially in North America, Australia, and Asia (Jiang et al., 2020; Mills, 2016). Since the advent of technology, learning especially language learning is not just paper-based content and this respect has been employed in every language skill even vocabulary.

Multimodal instruction which includes various modes such as textual, verbal, linguistic, and visual motivates students and increases learner autonomy (Hafner, 2015), and communicates meaning in more than one aspect. Therefore, it stimulates different senses of students for learning. Kohnke et al. (2021) mentioned that multimodal instruction helps EFL learners to communicate freely through various sources such as texts, images, and videos. Multimodal instruction motivates EFL learners, improves learning skills, and boosts awareness and autonomy of EFL learners (Kim & Belcher, 2020; Yi et al., 2019). In conventional classes, the instructor teaches vocabulary monotonously which is wearisome for most students and they are not able to recall them effortlessly. Due to the importance of multimodal instruction, this research examined the students' attitudes toward using infographics in learning vocabulary in EFL classes.

Infographics as a visual aid of data could be comprehended comfortably. Creative teachers try to use various tools to promote the interest and motivation of learners (Ozdmali et al., 2016). Infographics contain numerous elements including texts and graphics. According to Afify (2018), infographics represent data efficiently and are a preference to paper-based textbooks. Recently, infographics have been utilized to depict complex information to facilitate students' comprehension (Krum, 2013). Visual aids make learning easier and help to gain and recall more meaning, create an environment of interest for learners, and can provide examples. It could be claimed that they are the best tool for the teaching and learning process (Shabiralyani et al., 2015).

Using infographics as a visualization tool enhances information transfer and applies data quickly and effectively. Rahim et al. (2016) claimed that infographics as the most effective stimulant of visual representation cause an efficient flow of data. As infographics

integrated various modes of representation such as language, graphs, images, and charts, they are effective tools for facilitating learning (Dunlap & Lowenthal, 2016). One advantage of using infographics is that the instructor for saving time can present lots of information in the shortest period. Creative teachers by combining images, graphs, and charts, could provide new vocabulary which belongs to the same category. One of the main objectives of the studies in the field of language learning is to find a way to facilitate language learning and the present study was to test one of the ways, namely infographics. Accordingly, the purpose of the study was to find out students' attitudes toward using infographics in learning vocabulary in EFL classes.

2. Literature Review

Vocabulary significantly affects English language acquisition, particularly for second-language learners. Knowing vocabulary is one of the most important factors for learning a new language; it is the core ingredient for improving learners' language. Folse (2004) claimed that vocabulary learning is essential for acquiring a new language. Additionally, Wilkins (1974) states nothing can be conveyed without vocabulary. As vocabulary is an open set of many thousands of items, most EFL/ESL learners experience significant obstacles during the learning process (Sweet, 1899).

It has conclusively been shown that EFL learners recall more information if a text is with images and graphics (Mayer, 2005). Moreover, several studies have found that learners retain information for the long term when a text is followed by pictures (Mayer et al., 1996). A theory was suggested by Sweller (2017), which is called cognitive load theory (CLT). According to this theory, using graphics with text decreases the cognitive load, and learners can easily focus on the content and reduce the effort needed to decode the materials (Quiroga et al., 2004). Additionally, Mol (2011) and Hart (2013) point out that infographics are helpful and effective in critical thinking, analyzing, and creating structural design skills. The flexible structure and visualization of information in alternative forms are two main characteristics of infographics (Schroeder, 2004).

It should be mentioned that there has recently been an essential change from traditional to innovative approaches. For instance, visualization is a kind of instructional material and practical metacognitive strategy that paves the way for beneficial language learning. An infographic visualizes data that conveys complex information to the learners to

be easily understood. Infographics are a graphic visual representation of data (Smiciklas, 2012). There are similarities between infographics and data visualizations, but some use them interchangeably. Both infographics and data visualizations are visual representations of data; however, they are not the same. One of the main differences between the infographic and data visualization is that the former largely contains multiple data visualizations. In contrast, the latter is just one (e.g., a map, graph, chart, or diagram). Besides, the infographic expresses a certain topic in a story-like presentation using different graphical elements and texts, while data visualization presents only a single moment of the story (Dur, 2014).

Recently, visual literacy, which is dominant in the online world, presents the visual culture (Matrix et al., 2014). Fu (2009) conducted a study in China that reported that most EFL learners are visual and teaching through visual learning aids could facilitate the learning process. Creative teachers by presenting information in visualized forms simplify new input for learners. Some benefits of using infographics were summarized as (a) helping learners to comprehend the concept easily, (b) developing critical thinking and organization of ideas, and (c) enhancing retention and recalling of information.

In recent years, there has been an increasing amount of literature (Al-Mohammadi, 2017; Dahmash et al., 2017; Ismaeel & Al Mulhim, 2021; Locoro et al., 2017; Tavanapour et al., 2022) on using infographics in ESP classes. Dahmash et al. (2017) examined the impact of using infographics in teaching linguistics. The infographics created by the students were the instruments to collect data in the current study. The second instrument was a questionnaire filled out by the students at the end of the semester to examine their attitudes after designing their infographics. Analyzing the collected data revealed the students' positive attitudes toward using infographics. Most of them were motivated to use infographics in their teaching and learning. They benefited from higher thinking skills and collaborative learning during designing infographics.

Several attempts (Alrewele, 2017; Kabooha & Elyas, 2018; Noh et al., 2014; Yildirim, 2016) have been made to consider the attitudes of EFL learners toward using infographics in the EFL class. Alrewele (2017) conducted a study to evaluate whether using infographics results in significant differences in the university female students' achievement and examined the students' attitudes towards utilizing infographics in the EFL class. The collected data showed about 90 % of the learners in the EG had a positive attitude toward using infographics in the EFL class. Additionally, Yildirim (2016) conducted a study to

determine the effects of using infographics for educational purposes. The participants were given some tasks during the semester and asked each student to prepare five presentations. Then, an Infographics Reader Survey was used to collect the participants' preferences regarding using infographics. The current study found that the infographics were more instructive than the text materials and facilitated learning.

Another study was conducted by Noh et al. (2014) to examine the effect of infographics on facilitating EFL learners. To this end, 99 EFL learners were asked to complete questionnaires about their experiences with infographics. The researchers found that infographics design significantly influenced their learning rate. A good infographic design includes attractive colors, concise texts, and relevant diagrams to facilitate learning. Bicen and Beheshti (2017) investigated the psychological impact of infographics in education. The study was conducted at Near East University, N. Cyprus. The design of the study was quantitative. The participants were 163 undergraduate students from four different departments of Education faculty at Near East University. The data were collected through a questionnaire that measures the students' perceptions and attitudes toward utilizing infographics in educational contexts. The results specified that most students had positive attitudes about using infographics in the classes because most students preferred to learn with visual material rather than traditional books and materials.

Although several studies (Bicen & Beheshti, 2017; Locoro et al., 2017; Noh et al., 2014) have been conducted on using infographics in the process of learning English as a foreign language, very few studies have been conducted to investigate students' attitudes toward using infographics in learning vocabulary in EFL classes in Iran. Accordingly, the present study aimed to investigate students' attitudes toward using infographics in learning vocabulary in EFL classes. Based on the objective, the following research question was posed:

1. What are the Iranian EFL learners' attitudes toward using infographics in EFL classes?

3. Methodology

3.1. Design and Context of the Study

The design of this study was quantitative descriptive to investigate students' attitudes toward using infographics in learning vocabulary in EFL classes. As descriptive methods are classified into various groups, in this study survey method was utilized through a

questionnaire (Alrweler, 2017) to consider the learners' attitudes toward using infographics in EFL classes. The participants were selected through available sampling and the study was conducted at Pand Institute in Abadan, Khuzestan, Iran during the summer of 2022.

3.2. Participants

The participants in this study were 90 Arabic and Persian-speaking EFL students, who had a similar background in the English language and majoring in different fields at universities in Abadan. All of them were females and their ages ranged from 20 to 30. The reason for selecting these students was based on availability. Most of the students were locals but there were some of them from other cities. Table 1 presents the demographic characteristics of all participants.

Table1.

Demographic Background of the Participants

No of the students	90
Age	20-30 years old
Gender	Females
Major	different fields
Institute	Pand, Abadan
Years	2022-2023

3.3. Instrument

The instrument was a questionnaire (Alrwele, 2017) to determine the learners' attitudes toward using infographics as a teaching tool in education. It can be mentioned that utilizing a questionnaire is a practical way of collecting the attitudes and opinions of participants. As there are different types of questionnaires, a closed-form (structured) questionnaire was used for this study. They consist of a set of questions, each with certain responses. A significant advantage of using this type of questionnaire over an open-ended one is that the choices are uniform and consistent. To ensure the reliability of the questionnaire, a pilot study was conducted. To do so, 25 students were selected randomly from the target population. They were asked to answer the questions and did not participate in the study. Cronbach's Alpha was used to assess the reliability of the questionnaire ($r= 0.87$). Furthermore, the content and face validity of the questionnaire was confirmed by two experts (at the Ph.D. level) from

Abadan language institutes.

3.4. Data Collection Procedure

The questionnaire was given to the learners to determine their attitudes toward using infographics as teaching tools in the educational context. The participants were asked to answer the questions to indicate to what extent they agreed or disagreed with each statement on a five-point Likert Scale. They were asked to select one among the possible choices. The questionnaire was based on 5-point Likert-type items, and participants were required to choose one of the alternatives: 1= strongly disagree, 2= disagree, 3= no idea, 4= agree, and 5= strongly agree.

All the questionnaires were treated anonymously. The questionnaire was administered in English, but the students were permitted to ask some questions in Persian or English if there have any problems regarding the comprehension of the items. They were asked to complete the questionnaire which consisted of 19 items to show the students' attitudes, and motivation toward utilizing infographics in learning and teaching. The participants were required to answer all 19 items completely and honestly. The allocated time to fill out the questionnaire was 20 minutes. Participants were informed that no names would be given, and the information would be confidential.

3.5. Data Analysis Procedure

The present study was conducted to investigate students' attitudes toward using infographics in learning vocabulary in EFL classes. To this end, the frequencies of the participant's responses to the questionnaire were analyzed, and then the mean score of each questionnaire item was determined to show to what extent each learner agreed with that question. Finally, to see if this degree of positive attitude reached statistical significance or not, a one-sample *t*-test table was computed.

4. Results

The research question of the study was intended to seek the Iranian EFL learners' attitudes toward using infographics in EFL classes. To achieve this end, an attitude questionnaire was distributed among learners, and their responses were tallied and tabulated in Table 2. In this Likert-scale questionnaire, the choices ranged from *strongly disagree* (1.00) to *strongly*

agree (5.00). For each questionnaire item, a mean score was calculated, and it was compared with the average value of the choices (3.00), so that a mean less than 3.00 represented the learners' disagreement with a statement and a larger-than-average mean score indicated their agreement with the statement in focus. Then, a one-sample *t*-test was used to compare all the questionnaire item mean scores with the average value of the choices to see if they differed significantly from 3.00. The analyses for the *t*-test were presented in Table 3.

Table 2.

Results of the Attitude Questionnaire

No.	Items	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Mean
1	I think that infographics capture my attention and keep me engaged.	0	2	3	20	35	4.46
2	I believe that infographics help me easily understand complex information.	0	2	6	12	40	4.50
3	I think that infographics enable me to determine keywords and concepts in a text.	0	6	11	21	22	3.98
4	I believe that infographics help me filter out irrelevant data.	1	5	6	18	30	4.18
5	I feel that infographics help me organize information into logical groups.	2	2	7	22	27	4.16
6	I think that infographics help me to understand hidden relationships.	2	7	10	21	20	3.83
7	I believe that infographics help me to easily connect new and old information.	7	8	10	17	18	3.51
8	I think that infographics improve my critical thinking.	3	9	24	15	9	3.30
9	I believe that infographics make it easier for me to recall information.	3	5	5	20	27	4.05
10	I think that infographics inform me about the responsible use of images.	0	6	10	20	24	4.03

11	I feel that infographics help me to communicate what I have learned to others.	0	4	10	34	12	3.90
12	I believe that infographics motivate me to search the web for appropriate images.	2	8	25	15	10	3.83
13	I feel that infographics improve my presentation skills.	2	3	5	32	18	4.01
14	I believe that infographics teach me to choose and apply principles of design.	3	5	8	29	15	3.80
15	I feel that infographics help me acquire teamwork skills.	1	3	10	29	17	3.96
16	I believe that infographics improve my ability to give and receive feedback.	2	5	15	28	10	3.65
17	I feel that infographics make me appreciate teamwork.	2	5	8	24	21	3.95
18	I think that infographics improve my motivation to learn.	0	0	5	25	30	4.41
19	I think that infographics give me more self-confidence regarding my ability to learn and succeed.	0	4	9	19	28	4.18

A quick look at the questionnaire results presented in Table 2 clarifies that all the questionnaire item mean scores were greater than 3.00, which suggests that learners agreed with all 19 statements, all of which were positive comments about using infographics. Thus, a general trend of a positive attitude could be observed in the responses provided by the learners in the EFL class.

Among the 19 questionnaire items, items # 2, 1, 18, 4, 19, and 5 received the highest mean scores. Through these items, the respondents expressed respectively that infographics (a) helped them easily understand complex problems, (b) captured their attention and kept them engaged, (c) improved their motivation to learn, (d) helped them filter out irrelevant data, (e) gave them more self-confidence concerning their abilities to learn and succeed, and (f) helped them organize information into logical groups. Now that the overall attitude of the

learners towards using infographics was found to be positive, it is good to see if this degree of positive attitude reached statistical significance or not. The results of this investigation are presented in the one-sample *t*-test table (Table 3) below:

Table 3.

Results of the One-Sample T-Test for the Attitude Questionnaire

Test Value = 3						
	<i>t</i>	<i>df</i>	Overall Mean	Sig. (2-tailed)	95% Confidence Interval of the Difference	
					Lower	Upper
Attitude	14.02	18	3.98	.000	.83	1.13

Table 3 shows that the overall mean score for the whole questionnaire items was significantly greater than the average value of the choices ($p < .05$), insinuating that the learners had positive opinions about the use of infographics and that the extent to which they held positive attitudes reached statistical significance.

5. Discussion

The research question of the study intended to seek the Iranian younger EFL learners' attitude toward using infographics in EFL classes. To achieve this, an attitude questionnaire was distributed among learners, and then their responses were tallied and tabulated in Table 2. The results indicated that the learners agreed with all 19 statements, all of which were positive comments about using infographics. Therefore, a general trend of a positive attitude could be observed in the responses provided by the learners. Most students enjoyed the use of infographics within EFL contexts. They believed that infographics were exciting, appealing, and fun for them. They mentioned that infographics learning was not burdensome for them and that learning in various ways helped them retain data. Consequently, infographics were more permanent to stay in mind than just the text. Most said infographics were more understandable and better than plain text. Learners felt that infographics presentation had more benefits than other visual elements. In general, it should be noted that the learners were very satisfied with using infographics. It should also be noted that students cited problems such as the lack of high-speed internet, face-to-face connectivity, and not the accessibility of the computers and software.

This study produced results that corroborate the findings of a great deal of the previous work (Alrewele, 2017; Yildirim, 2016) in this field. This also accords with the earlier observation (Bicen & Beheshti, 2019), which showed that infographics effectively present information, help teachers and students learn visually, and increase motivation. The current findings seem consistent with other research (Tavanapour et al., 2022; Yildirm, 2016), which found infographics could be used as a facilitator for learning and are considered further informative and helpful compared to simple text. These findings further support the idea of Noh et al. (2014), who found most learners had a positive view of using infographics, especially visual learners, but infographics must vary according to learners' abilities and needs. Utilizing visual elements for delivering information facilitates the quicker acceptance of information and improves the quality of understanding concepts.

This finding agrees with Kabooha and Elyas' (2018) findings which showed students fully agreed that using multimedia in their class to learn new vocabulary was an effective and engaging learning environment. According to Kabooha and Elyas (2018), the students agreed that integrating multimedia into class activities motivates them to study and sparks their interests and motivation. Moreover, the result of this study is in agreement with Ismaeel and Al Mulhim (2021), who investigated the influence of infographics on the achievement of students. Ismaeel and Al Mulhim (2021) found that infographics attract students' interest and encourage interaction

Bicen and Beheshti (2017) investigated the psychological impact of infographics in education. The data were collected through a questionnaire that measures the students' perceptions and attitudes toward utilizing infographics in educational contexts. The results specified that most students had positive attitudes about using infographics in the classes because most students preferred to learn with visual material rather than traditional books and materials. Furthermore, Bicen and Beheshti (2019) conducted another study at a private university in North Cyprus. The students were interviewed to understand students' opinions and attitudes toward infographics. The results presented that the experimental group had a positive attitude toward using infographics compared to the control group. They could learn faster and become more confident in the educational process.

6. Conclusion

The primary purpose of the present study was to investigate the Iranian EFL learners' attitudes toward using infographics in EFL classes. The result of this study showed that the

Iranian younger EFL learners had positive attitudes toward using infographics in learning English. Therefore, incorporating infographics into teaching could be a dynamic way for learners and engage in learning more. This finding may help language developers, syllabus designers, and teachers to develop programs and create books based on infographics.

Based on the research findings, this study suggests the following implications and suggestions to EFL learners, teachers, and material developers to help them in the EFL setting. The results are helpful for language teachers because this type of study leads to more effective teaching methodologies and better criteria for selecting materials. This research is beneficial for EFL learners since infographics are motivating and attractive for most students. Students in this study preferred to be used infographics in educational contexts. The use of infographics could be a crucial factor in vocabulary knowledge which encourages EFL learners to use infographics to improve their learning process. This study could also have implications for material developers and compilers of instructional books. Material designers might include infographics in the class by taking insights from the present study.

Considering that the infographics are innovative, further studies should be conducted to explore whether teachers, especially less experienced teachers, have difficulty designing and using infographics. As this study was conducted with participants at the intermediate level, succeeding studies can be repeated for advanced and elementary language learners. In this study, the collection of data was through a questionnaire from 90 Arabic and Persian-speaking EFL students and it was a descriptive study not experimental. Therefore, by using different designs (e.g., qualitative, experimental), the findings of the study can be generalized to different contexts. The time allocated to the instructions was very limited, and the role of other variables, such as gender, motivation, and anxiety was not included in this research.

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