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## ‘NEW TRICKS TO OLD DOGS’ THE USE OF INFOGRAPHIC FOR TEACHING GRAMMAR TO EFL LEARNERS; A CASE STUDY

**Abstract:** Technology is an indispensable part of our daily lives nowadays and it has a huge impact on educational fields. The case is valid for English language education in which language teachers teach digital natives with a variety of developing technological tools, software, and aids. Visual aids are also transforming with the developing technology and infographics are one of the technological tools which have been developed by them in recent years. Grammar teaching with traditional teaching materials does not appeal to language learners anymore and it requires innovation as well. For this purpose, current research aims to investigate infographics’ effectiveness and utilization to teach grammar topics. The research was designed as experimental research. Pre-test, treatment, and post-test were administered to the experimental group while the control group traditionally received instruction. At the end of the post-test administration, an interview with five open-ended questions was administered to collect qualitative data. Results of the study show that infographics are effective technological tools to develop language learners’ grammatical knowledge. Moreover, students have positive perceptions of using these technological visual aids to teach grammar topics.

**Keywords:** English as a foreign language, EFL learners, infographics, teaching grammar.

### Introduction

Developing Technologies have been impacting education deeply in terms of accessing knowledge through various platforms such as online learning platforms, podcasts, digital degree programs, and web tools. That is to say, technology’s adaptation and integration are more fruitful than the classical teaching and learning method. While communication and collaboration opportunities are quite limited in traditional classrooms, online classrooms provide an undreamt learning opportunity for communication and collaboration with a rich source of teaching materials. Moreover, traditional classroom interactions are not the sole way of learning anymore (Khan, 2021). Despite recent approaches such as communicative language teaching (CLT) assuming grammar teaching without appropriate context is meaningless, the necessity and resurgence of grammar teaching cannot be disregarded. Pienemann (1984) suggests that L2 learners pass through developmental sequences in the teachability hypothesis. Lightbown (2000) supported the idea that grammar instruction is meaningful if it coincides with learners’ developmental stage of language proficiency. In addition, researchers criticize some approaches that ignore grammar rules and focus only on the use of language which results from the lack of accuracy in language use (Mitchell, 2000; Swain, 1985). From this perspective, it can be said that grammar is like the backbone of a language and its effect on the accurate usage of skills is vital. Grammar is one of the key aspects in both the language teaching and learning process which clarifies both how to make sentences

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from vocabulary and how they are transmitted to another person (Nhan & Yen, 2021). Scholars state that a lack of grammatical knowledge limits the development of the language learning process because students generally have difficulty understanding and producing language properly without sufficient grammar knowledge (Batstone & Ellis, 2009, Nham & Yen, 2021). Thus, teaching the target language without grammar looks like a batch of words that consists of pattern presentation through skills (Azar, 2007). For this reason, English language teachers and lecturers should heavily pay attention to teaching the target language's grammar in their curriculum via innovative and novel teaching materials and tools. Infographics can be counted as one of the innovative teaching materials to present both information and visuals in a combined way to today's language learners who are technologically skilled in comparison to older generations. The idea of infographics should include a process, an idea, and a story which should be presented in a suitable way (Lamb and Johnson, 2014). According to Smiciklas (2012), infographics can be described as data or ideas visualization to make the content easily understandable and quickly consumable by the learners. Related literature suggests three types of infographics which are static infographics, animation infographics, and interactive infographics. The static infographic does not include any audio or animated concepts in it. The static infographic can be accepted as the simplest version of all three kinds and can be used for all purposes. The animation infographic contains animated content in 2D or 3D format and it can be used either in television or digital media. The interactive infographic includes interactive features and users of this type should interact with the information which is presented through the infographics. These three types of infographics have various positive impacts on the learning process. According to Lamb and Johnson (2014), five main impacts are; infographics are useful to organize ideas and let people understand the content in a meaningful way, can be used to illustrate any information, regardless of its field, in a visual way, it makes data more comprehensible and meaningful, it enables learners to compare the data easily, and it is used to present data in a more interesting and appealing way. Cote Parra (2015) mentions that technology's integration into educational environments leads to more engaging and fruitful learning opportunities for learners through which their interaction with each other is boosted and target language is used in an authentic context. In such learning environments, the utilization of infographics to teach grammar will be one of the most efficient ways (Nham & Yen, 2021). Despite infographics being novel teaching materials, related research about their effectiveness in teaching grammar is quite scarce and there is a research gap. For this purpose, the present research aims to investigate the effects of the infographic on EFL learners' grammar learning process. Besides, the present research aims to find out EFL learners' perceptions towards to use of infographics in foreign language classrooms. The study aims to seek answers to the following research questions:

- 1) To what extent are infographics effective for grammar learning after the treatment?
- 2) What are the students' perceptions to learn English grammar with infographics?

### Review of literature

Making use of a variety of computer-based sources, practitioners attempt to integrate a variety of implementations to engage and motivate learners in the educational context. As 21st-century skills are at the centre of teaching and learning, computer-based designations have become popular. To perform as digital natives, both learners and teachers are required to be apt at using their skills in visual literacy. Within the framework of information literacy, visual literacy emerges as an essential part of deciphering the process of incorporating image search and selection, analysis, making evaluations, and proper usage (Conner & Browne, 2013).

Furthermore, such a digital approach demands users to analyze, make evaluations, and understand what they see and read in the figures or descriptions (Bicen & Beheshti, 2022). An important aspect of infographics highlighted by Chong (2012) is that it aids comprehension of a particular theme of the pedagogical field and improves engagement and learner motivation. By using text and graphics, infographics are the visual representation of information, data, and knowledge (Nhan & Yen, 2021) and are designed to explain complex units of knowledge in a more comprehensible and lucid way (Tarkhova & Tarkhov, 2020). In this sense, infographics have been adopted in a variety of disciplines to clarify a specific theme with illustrations and particular explanations in a more visual form than traditional

teaching tools (Cifci, 2016; Kimsesiz & Tas, 2022; Martix & Hodson, 2014, Taspolat, et al., 2017). Infographics which can be integrated into several teaching disciplines can be a fruitful pedagogical tool for improving learning and teaching (Matrix & Hodson, 2014). To sum up, the designation of infographics should cover the visualization of data, designing, and organization of information in a more cognizable and comprehensible way (Kimsesiz & Tas, 2022).

Infographics have taken place in foreign language classrooms with various purposes such as teaching reading skills, teaching grammar skills, or teaching vocabulary in recent years. However, very few studies have been carried out to find out the use of infographics in developing EFL students' grammar knowledge development. When the related literature is examined, it is seen that Nhan and Yen (2021) carried out experimental research to explore EFL learners' motivation in learning grammar. In their study, sixty high school students participated in the research, one group was treated as a control group whose number was thirty, and the other group was treated as an experimental group whose number was thirty. The results show that the participants' motivation in learning grammar English significantly increased after the treatment. They found out infographics' instruction used in the experimental group significantly enhanced students' motivation in learning English grammar (Nhan & Yen, 2021). The research shows that utilizing infographics to teach grammar to EFL learners brings innovation to language classrooms. Moreover, it enhances EFL learners' motivation level toward learning grammar topics. Another study was carried out by Bicer and Baheshti (2022). The researchers aim to investigate ESL learners' perceptions on the use of infographics in a flipped classroom. In this mixed method research, they find out ESL learners have positive perceptions towards using infographics in a technology-enhanced learning context. Moreover, they find out using infographics as teaching material in flipped classrooms fostered ESL learners' comprehension of the target language (Bicen & Beheshti, 2022). Like Nhan and Yen's (2021) research, ESL learners have positive perceptions of using these tools in language classrooms. Another similarity between these two researchs is that students' comprehension and understanding of the topic are empowered through infographics. Another study was carried out by Khan (2021). In this mixed-method experimental study, the researcher aims to figure out students' learning performance through infographics usage. The results indicate that there is a significant difference between the experimental group and the control group. Moreover, the results show that infographics are informative and appealing teaching materials according to the participants of the study. Another finding of the study is that language teachers find preparing infographics challenging and time-requiring. Another study was carried out in Iran to explore the impact of infographics on grammar learning. The results of this experimental study reveal that using infographics affected participants' grammar learning process in a fundamentally affirmative way (Rezaei & Sayadian, 2015). Related research indicates that utilizing infographics in foreign language classrooms, especially for grammar teaching, is quite effective. Moreover, the results of various studies confirmed that EFL/ESL learners have positive perceptions of using infographics in language classrooms. As Cote Parra (2015) states that implementing technology into language classrooms brings innovation, engagement, and more collaboration opportunities, infographics as novel tools should be a part of technologically enhanced classrooms. Thus, technologically enhanced visuals are effective to teach both grammar and vocabulary in language classrooms (Adriana, 2017). It was also implicated that infographics yield important speed advantages when designed for improving the literary and language skills of learners of English (Dipa, Utami, & Santosa, 2022; Kornius, 2019). Fadhil (2018) found that infographics helped learners to remember the related materials easily.

### **Methodology**

This study employs a mixed method design in which both qualitative and quantitative procedures are followed (Creswell, 1999). The quantitative procedure involves pre-test/ post-test without a control group training evaluation design. The qualitative procedure involves semi-structured interviews with six participants administered to attain descriptive analysis.

## **Participants**

Totally 35 learners of English (F= 22; M=13) voluntarily participated in the study. The participants were A2 level English learners who learn English as a foreign language in a non-native context, namely in Türkiye. They were all 1st-grade students at the department of Turkish Language Teaching at a state university in Türkiye. Their age ranged between 19-21. Totally, six participants were interviewed (3 males and 3 females) from the same group and they voluntarily consented to be interviewed about the use of infographics in English classes.

## **Instruments**

### **Test**

An achievement test was administered as pre-test in the study to predetermine the prior knowledge of the learners on the topic of 'quantifiers' in English. The test involved 20 items designed in a multiple-choice form. Two field experts' opinions were consulted to provide internal validity of the test. After consultation the test was created. The same test was re-applied to the participants as the post-test after four weeks of treatment.

### **Interview**

An interview involved 5 questions administered to the participants of the study with the aim of gathering participants' perceptions and evaluations about using infographics for studying grammar. The participants were assigned numerical labels to verify reliability during the analysis.

## **Data analysis**

The quantitative data were analysed through a statistical package program (SPSS 21.). The learner scores of both the pre-test and the post-test were examined through paired samples t-test that statistically compares "the mean of the differences between two sets of dependent scores to some population mean" (Coughlin, 2022). The analysis of the qualitative data involved a descriptive analysis of the participants concerning each interview question.

## **The procedure**

Firstly, four different infographics were prepared by the researchers on an online software program covering each quantifier in the English language. Later, participants applied a pre-test that aimed to identify their prior knowledge about 'quantifiers' in English. After they had taken the test, the participants were sent infographics during 4 weeks of implementation on the same topic, involving the use of 'some', 'any' (week 1), 'a lot of', 'a few', 'a little' (week 2), 'much', 'many' (week 3), 'how much', 'how many' (week 4) successively. These infographics were uploaded to an officially used distance education program operated by 'Big Blue Button'. The related infographics were uploaded to the program each week in succession. Students were asked to download the files and study them as the course notes on which they supposed to later take a post-test. After a week of the last submission of the infographics, the post-test was administered to the participants. Both tests were applied face-to-face in a classroom environment.

After the post-test, 6 participants who were previously invited for an interview, consented to take part in the interviews about their perceptions and evaluations on the use of infographics for learning a grammar topic. The interviews consisted of 5 questions interrogating the perceptions and evaluations of the participants. The interviews were recorded with the consent of each participant. Later, descriptive analysis was maintained to reveal findings from the interviews. In reporting the replies, all the responses to the interview questions were translated and transcribed in this study.

## Findings & Discussion

### Quantitative Results

Regarding the first research question that asked to what extent infographics were effective for grammar learning after the treatment, the pre-test and post-test results of learners' performance were analysed. As displayed by the findings in Table 1, learners' total mean score (M=72) was quite high with respect to their results with the pre-test (M=33.8). This result shows a significant development and hence, infographics can be treated as having a positive impact on the development of the related topic.

**Table 1.** The correlations between test scores before and after the training with infographics.

		N	Correlation	Sig.
Pair 1	Pre-test & Post-test	35	,379	,025

The correlation coefficient shows that there is a significant positive relationship between pre-test score before the training and post-test score after the training, [ $r(35) = .379, p = .025$ ].

**Table 2.** The results of the paired samples t-test

	Paired Differences		Std. Error	95% Confidence Interval of the Difference		T	df	Sig. (2-tailed)
	Mean	Std. Deviation		Lower	Upper			
Pair 1 Pre-test - Post-test	-38,14286	21,45740	3,62696	-45,51373	-30,77198	-10,516	34	,000

The results indicate a significant difference between the pre-test score before training (M=33.8; SD=17.32) and post-test score after training (M=72; SD=20.83). These data were subjected to the t-test for paired samples, with results showing a statistically significant gain ( $t=10.5; n=35; p=.00$ ). Considered as a high effect size, the effect size is 1.83, which means that the post-test scores are slightly more than a standard deviation better than the pre-test score. The 95% confidence interval of the difference between the means ranged from [-45.51 to -30.77] and indicated a difference between the means of the samples. Hence, it is found that there is an effect of training on a test score with the infographics. Moreover, the statistical assumptions of the analysis refer to the difference scores based on the outcome measures of the pre-test and post-test are independent of each other and the difference scores have a univariate normal distribution in the underlying population.

### Qualitative Results

Regarding the second research question that asked about learners' perceptions to learn English grammar with infographics, the findings from the interviews commonly show that participants favor infographics as a useful and beneficial learning tool even for complicated grammatical functions. Regarding the first question in the interview that asked the ideas of participants on the use of infographics in learning grammar topics, all the participants reported positive evaluations ( $n=6$ ). As stated by P1, "I think that infographics were efficient in learning the topic and they were useful and effective for distance education".

On the same issue, P3 commented that "Grammar is not something that you can read and learn. When I studied infographics, it was easier for me to understand the rules and usage. I can understand easily, and I think that they are beneficial". Furthermore, P5 expressed that "I find infographics effective and simple to understand the given topic thanks to the visuals reflected".

Another participant (P4) emphasized the usefulness of visuals in the infographics claiming that *“It was more effective when I study on the infographics. The visuals also reinforced me to understand the topic. They were also beneficial before the exam”*.

For the second question in the interview that asked about the kind of materials, learners tend to prefer, traditional materials such as course books or innovative materials such as infographics, all the participants (n=6) remarked that they prefer innovative materials as they provide more plausible and miscellaneous information on a specific topic. On this issue, P2 explained that *“Studying a grammar topic was more lucid to understand than the information provided in the course books. The examples were more useful also with infographics”*. Regarding infographics as supplementary material, P5 and P6 stated that course books could also involve infographics to reflect grammar topics on a full page declaring that *“I believe that it would be more useful and effective if course books also involved infographics for explaining grammar”* (P 5); and *“it would be more beneficial if our English course books had infographics to teach grammar”* (P6).

For the third question in the interview which asked if there were any negative points about the integration of infographics for teaching grammar, none of the participants expressed any negative ideas and they all (n=6) rejected this notion responding that they find infographics effective with a facilitative role.

For the fourth question that asked about the positive aspects related to infographics, the participants appraised the use of infographics attributing a beneficial role. On this issue, P1 emphasized that *“infographics are useful for those whose visual intelligence is high. When I try to remember the topic, I can visualize the information in the infographics”*. Similarly, P6 pointed out that *“When I study infographics, I don’t find it challenging to remember. They helped me to remember the topic”*. On the same issue, P2 summarized that *“they are satisfactory for me to understand the topic”*. P3 also reported positively *“They were easier and more illustrative for me to understand the topic”*.

For the last question in which participants were asked to suggest any other areas of language skills such as reading, listening, speaking, and writing) to involve infographics, most of the interviewees (n=4) reported they can be useful in teaching vocabulary. In this sense, P5 stated that *“it can be more explanatory for us to learn the vocabulary in English”*. P4 assessed that *“learning vocabulary in an organization of infographics can be plausible and more effective”*.

On the same question, P5 also reflected that *“reading texts may involve infographics or they can be written in the organization of infographics to make us comprehend the text better”*.

RQ 1. To what extent are infographics effective for grammar learning after the treatment?

The statistical findings showed that infographics were effective when used as a treatment in one group of research. As addressed in the literature, teaching grammar through the integration of infographics proved highly advantageous results in EFL teaching (Bicer & Baheshti, 2022; Khan, 2021; Nhan & Yen, 2021; Rezaei & Sayadian, 2015). It was reported that learner motivation significantly increased after the treatment of infographics. This means that the results of the quantitative findings in this study are supplemented with those directing the effectiveness of infographics in teaching English grammar.

RQ 2. What are the students’ perceptions to learn English grammar with infographics?

Findings with reference to the perceptions of learners on the use of infographics to teach a specific grammar topic, the result showed conformity with what was described in the literature. The general perceptions of the participants implied that infographics were efficient, useful, and effective in learning grammar topics. Moreover, they found learning grammar through infographics easier and more understandable. They also reported that visuals in the infographics helped them remember the information given in the descriptions. Another piece of evidence in the study pointed to the usefulness of infographics in learning grammar topics rather than the information reflected in the course books designed for teaching EFL. Moreover, participants did not mention any negative aspects of learning



grammar through infographics. These findings are in line with what was emphasized in the literature regarding the effectiveness of integrating infographics in teaching English grammar (Kimsesiz & Tas, 2022; Nhan & Yen, 2021; Rezaei & Sayadian, 2015).

As depicted by Nhan & Yen (2021), infographics brought innovation to the language classroom and enhanced learners' motivation in learning grammar topics. Furthermore, Tarkhova & Tarkhov (2020) noted that complex units of knowledge are explained in a more lucid and understandable way through infographics. Based on the learners' perceptions, Fadhil (2018) found that learners regarded infographics as advantageous and more sharable compared to regular grammar textbooks.

Another important point directed in the findings was also promising in terms of integrating infographics in using grammar topics. According to the perceptions of participants, infographics were helpful for learners with visual intelligence, and they could remember the topics thanks to the visual illustrations provided in the content of the infographics. Moreover, they stated that these visual illustrations also helped them to understand the topics in a more lucid and easier way. This finding has a parallel association with the usefulness of infographics as they provided a visual exhibition of the related information (Martix & Hodson, 2014; Nhan & Yen, 2021; Taspolat, et al., 2017).

As a final report, the respondents stated that it can be more useful and efficient if vocabulary teaching and improving reading skills involved illustrations and explanations in the form of infographics. With reference to this point, several research studies reported that infographics were useful and motivating in improving the reading skills and reading comprehension of learners of EFL (Cupita & Puerta Franco, 2019; Simiciklas, 2012; Sornkeaw, 2021; Supraba & Silvana, 2020). Moreover, Khan (2021) confirmed that infographics had a positive impact on building EFL learners' vocabulary and motivating them through interesting and colorful visual descriptions. In consideration of all these points, it is possible to disclose that infographics are versatile with their usefulness and promising contributions to language learning and teaching that can cover the instruction of grammar and vocabulary, and improving language skills (Dipa, Utami, & Santosa, 2022; Kornius, 2019).

Last but not least, two of the respondents stated that the course book may involve infographics to clarify a certain topic. Although infographics are assumed as supplementary materials for instruction (Santosa, Purnamika Utami, & Dewantari, 2021), involving infographics in course books as a visual aid for understanding the important points in grammar topics may provide yielding results.

### **Conclusion**

The current study aimed to investigate the effectiveness and utilization of infographics in teaching grammar topics. For this aim, 34 learners of EFL applied a teaching process with infographics consisting of four different patterns of 'quantifiers' in English during 4 weeks of implementation. In addition, 6 of the participants were also interviewed with reference to their perceptions about the use of infographics in learning a specific grammar topic. The results of the pre-test-post-test analysis yielded positive outcomes in terms of using infographics for teaching grammar to EFL learners. Moreover, the results from the interview revealed that learners evaluate infographics as useful and efficient tools that help them understand and remember the topic. Furthermore, learners also remarked that the visual illustrations provided with the infographics helped them to remember the important points. Referring to these results, the findings in this study suggest that using infographics as a supplementary tool for grammar instruction proved to be promising and yielded favourable results in EFL learning and teaching.

As shown by the findings in this research, infographics are beneficial learning tools when specifically designed for grammar topics in English. Moreover, as reported by the respondents, infographics have a facilitative and motivating role in learning grammatical points. Hence, designing infographics for grammar instruction will add a great contribution to the learning process of EFL. In addition, course books may involve descriptive infographics to clarify grammatical points and to provide learners with

more explanatory and simple descriptions of certain grammar topics. By doing so, EFL learners may benefit from visually enhanced teaching materials in a positive way.

This study focused on the usefulness and effectiveness of infographics in teaching a specific grammar topic. More focus can be pointed to different aspects of language learning such as vocabulary instruction and improving language skills. Moreover, this study was conducted as action research focusing on the pre-test and post-test scores of one group of learners. Experimental research can be conducted with a control group and a treatment group with more phases of the experiment. Then more lucrative results can be attained with the integration of infographics in EFL instruction.

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