

Teaching English Language Journal

ISSN: 2538-5488 – E-ISSN: 2538-547X – <http://tel.journal.org>

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Please cite this paper as follows:

Taheri, P., Nazmi, R. (2021). Improving EFL learners' argumentative writing ability: Teacher vs. peer scaffolding. *Teaching English Language*, 15(2), 299-333. <https://doi.org/10.22132/TEL.2021.143348>

Research Paper

Improving EFL Learners' Argumentative Writing Ability: Teacher vs. Peer Scaffolding

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Abstract

Scaffolding is a temporary entity which enables the novice to achieve his/her potential and then is eliminated when they enhance their learning. Accordingly, this project aimed to investigate the impact of teacher and peer scaffolding on the participants' argumentative writing ability. To this end, one hundred students at *Imam Khomeini International University* were randomly assigned to four groups: teacher scaffolding, peer scaffolding, teacher and peer scaffolding, and the control group. The treatment lasted for six sessions for each group in three months for the experimental groups. The participants in the control group, however, received no scaffolding treatment. The results of one-way ANOVA conducted on the participants' post-test writings indicated that the total argumentative writing ability of the participants in the three experimental groups significantly improved compared to the control group. The treatment was effective, and the difference between the four groups was statistically significant. The results of the MANOVA also corroborated the ANOVA results. The argumentative writing ability of the participants in terms of the total organization and linguistic accuracy was significantly enhanced through scaffolding, and the difference between the four groups was statistically significant. However, among the three experimental groups, the group receiving teacher scaffolding made the most

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significant improvement. The results of this study imply that teachers should apply more scaffolding strategies while instructing. The materials developers and syllabus designers should also produce materials which entail more teacher and peer scaffolding in class.

Keywords: Scaffolding, Teacher Scaffolding, Peer Scaffolding, Argumentative Writing

Received: October 29, 2021

Accepted: December 27, 2021

1. Introduction

The theory of scaffolding was developed within the zone of proximal development (ZPD) based on Vygotsky's theory of socio-cultural paradigm. According to Schwieter (2010), the core idea underlying this theory is that a more proficient and knowledgeable person promotes the learning development of a less proficient one. In other words, scaffolding as a metaphor can be defined as temporary assistance given to the learners, jointly co-constructed, and then disappeared when learners do not need it (Boblett, 2012). Vygotsky (1978) maintained that human learning is not separated from the social and cultural environment influencing individuals and interaction is inevitable for the learning. Furthermore, he perceived individuals as conscious individuals constantly interacting with people around them. Scaffolding makes the explicit instruction within authentic context possible and enables teachers to suit instruction for students with different needs because scaffolding is a flexible, changeable, and adaptable manner of instruction supporting learners in their acquisition of basic skills (Riazi & Rezaei, 2011). Besides, the kind of support and guidance given to the learners relies on the characteristics of situation, because scaffolding is a dynamic process suited to learners' progress, so it is not applied in the same way on different occasions (Vandepol, Volman, & Beishuizen, 2010).

Teacher and peer scaffolding are the most prominent types of scaffolding. Early studies about scaffolding were concerned with teacher-

student interactions as the main type of scaffolding, but recent studies have broadened the scope of scaffolding to include student-student interactions as another form of scaffolding (Rezaei & Shokrpour, 2012). In other words, both teachers and peers can scaffold learning efficiently within the ZPD (Barbard & Campbell, 2005).

Scaffolding has served an important function in learning different skills and components of language such as vocabulary, grammar, pronunciation, listening, speaking, reading, and writing. However, among all these areas, the writing skill has been one of the least noticed. According to Price and Harkins (2011), "writing is a powerful tool and an essential part of a balanced literacy program" (p. 21). Nowadays, there has been a theoretical and methodological shift in teaching writing. The belief of language as an individual accomplishment has altered to regarding it as a social phenomenon (Khalili-sabet, Tahriri, & Gholami-pasand, 2013). Accompanying writing with pair or group work and considering it as a social activity can accelerate the learners' progress in writing.

There are various genres for writing, including argumentative, descriptive, narrative, and expository. Based on Hyland (2007) genre can be defined as socially and arbitrarily determined ways of communicating a language. In other words, the members of a group could easily determine the similarities in the texts they take advantage of frequently. In this study, the researchers have endeavored to zero in on argumentative writing. Newell, Based on Beach, Smith, and Heide (2011) argumentative writing can be stated as a sort of critical thinking and rhetorical production including the determination of a claim, provision of sufficient evidence, and analysis of warrants matching the evidence and context within which the argument has been produced.

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Argumentative writing, which itself is considered as a significant scientific exercise (Sampson, Enderle, Grooms, & Witte, 2013), is hardly used in the curriculum, even though "argument" is crucial for traditional thinking systems. The main reason for this phenomenon is that argumentative texts demand simultaneous managing of various rhetorical, linguistic, and pragmatic factors (Papoulia-Tzelepi, 2004).

Operationalizing writing as a social skill in nature instead of an individualized activity is more achievable through scaffolding (Fawcett & Garton, 2005; Reed, 2014). Based on Reed (2014), scaffolding is a technique that permits instructors to plan a writing activity systematically to satisfy the needs and demands of all students. Cognitive development can be achieved only when two participants, with different levels of competence, scaffold each other through working collaboratively and cooperatively on a task to attain a shared understanding (Fawcett & Garton, 2005). According to Vygotsky (1978), scaffolding writing enables the less proficient person to amend the misconceptions, fill in the gaps in comprehension, enhance the links between new information and previously learned material, and create new problem-solving skills.

2. Literature Review

2.1 Scaffolding

The theme of scaffolding developed within the ZPD is the most prominent notion of socio-cultural theory, which affords an opportunity for individuals to enhance their abilities (Amerian, Ahmadian, & Mehri, 2014). A scaffold is a temporary entity which can be applied to achieve one's potential and then is eliminated when learners enhance their learning; in other words, scaffolds are offered when and where necessary, but they are also omitted when evidence of learning exists (Lajoie, 2005). Nunan (2001) assumed scaffolding as the guide provided for language learners facilitating task performance and

making communications beyond their abilities. Scaffolding is presented as the teaching-and-learning process, whereby the scaffolder presents mental scaffolds through talk, offering a vicarious form of consciousness, in order for the child to be able to move into his/her ZPD and progress from the dependent performance to the independent performance (Panselinas & Komis, 2009). Lidz (1991) identified scaffolding learning as the instructors' adjustment of the teaching complexity to facilitate the learners' task dexterity and encouraging them to move ahead when ready. Based on Van de Pol, Mercer, and Volman (2018), offering continuous and adaptive support (i.e., scaffolding) can be determinative.

During the scaffolding process, the careful and thorough examination of an expert or a (more capable) peer determines what is easy or challenging and demanding for the learner then the guidance is provided by a longitudinal and continuous plan of action (Van Lier, 1996). Concerning the notion of scaffolding, Donato (1994) explained that in social interaction some facilitative conditions could be created by a knowledgeable person whereby the novice can participate in, and develop current skills, potentialities, and knowledge to higher levels of competence.

As an example of research in the field of scaffolding, Shuib, Ismail, and Abdul Manaf (2020) strived to find the types of scaffolds used by the peers through video blogging. Based on the results, participants used scaffolding techniques to facilitate their learning. Two main scaffolding techniques employed by learners in this study were sensory and interactive scaffolding.

In another study, Jafari, Talebinejad, Ketabi (2021) examined the impact of metacognitive-, motivational-, technology-based scaffolds of EFL learners' speaking. On the basis of the results, there was a great deal of enhancement in learners' speaking. Among three scaffolding methods in this research, the motivational based scaffolding was more effective.

2.1.1 Teacher scaffolding

The teachers' role in providing the appropriate learning environment for learners' social interactions is acknowledged (Allwright, 2005). Teachers serve a profound function in developing the quality of their pupils' intellectual and social experiences (Davis, 2003). Teachers as scaffolders must lead learners to become responsible for their learning and adjust support in terms of the students' needs (Wang & Sneed, 2019). In other words, the students' needs must be analyzed and determined before presenting support (Martín, 2018). Furthermore, teachers' reflections, ideologies, and teaching methods may deliberately or inadvertently affect learners' independent learning in all contexts (Lamb, 2008). According to Bruner (1985), the scaffolds suggested by a scaffolder do not make the task itself easier, but instead make the culmination of the task possible with support. Reed (2004, as cited in Meyer, 2005) alleged that a teacher following Vygotsky's school of thought should make a balance by providing scaffolds and supports to enhance the learner's development on the basis of drawing the learner into the world of adult moves. Vygotsky's (1987) idea about the teachers' role suggested that the learners' yesterday's development should not be central to the teacher but the main focus should be on tomorrow's progress. Only in this way the teachers would be able to bring out those processes of development that lie in the zone of proximal development.

Teachers as the dominant side of scaffolding process, must hold a great deal of pedagogical and content knowledge. So as to achieve such an understanding, they should be capable of predicting students' responses and solving and construing tasks (Hunter, Anthony, & Burghes, 2018). They establish instructional decisions on the basis of the ideas and reflections expressed by the pupils; as a result, analysis of students' ideas leads to the

determination of what to do next (Bywater, Chiu, Hong, & Sankaranarayanan, 2019).

Pertinent to the teachers' challenges with scaffolding, Palincsar (1986) assumed the difficulty of sufficient and profound diagnosis of the learners' requirements as being crucial for eliciting contingent responses. Teachers' scaffolding is not only individualized for different students with varying degrees of previous knowledge and skills, but it is also adapted and modified for each student during the course of the task. This ongoing "dynamic assessment" and adaptation of assistance enables teachers to monitor progress, and supply appropriate support and feedback (Azevedo, Cromley, Moos, Greene & Winters, 2011). From Bodrova and Leong's (1998) perspective, scaffolding is successful only when, teachers enable learners to develop strategies for themselves so that they can operationalize them to the problems they will encounter in the future, not just responses to certain questions.

2.1.2 Peer Scaffolding

Peer scaffolding is a balanced and leveled process which is the result of an endeavor to build and maintain a common understanding of a problem (Rochelle & Teasley, 1995). Peer scaffolding refers to learners who learn by interacting and negotiating with each other, rather than only with the teacher (Webb, 1989). These kinds of interactions extremely enhance learners' awareness of what they need to learn; in fact, cognitive conflict, which is not always noticed by learners when they are working alone, can be facilitated during interactions among peers (Brown, 1989, as cited in Choi, Land, & Turgeon, 2005). In other words, peer scaffolding takes place within small groups of learners who are provided with materials to learn, or a problem or set of problems to solve. The peers themselves can be determinative in the process of scaffolding in that the selection of the task and the means of

operating them can be indicated by them. Besides, the amount of support, the ways it has been presented, and its timing can be ascertained by them (Lefstein, Vedder-Weiss, Tabak, & Segal, 2017). Not only are the students in the groups expected to master the material, but also, they are required to guide each other to learn the material or solve the problem (Ge, Chen, & Davis, 2005). Empirical evidence witnesses the social interactions among peers have merits over the interactions between adults and students.

Ge (2001) claimed that peer interaction provides a context for the learners to pose questions, commit explanations, receive elaboration, and construct argumentation. Choi et al. (2005) represented that when learners are exposed to different perspectives or personalized questions from peers about their explanations, they are inclined to justify their positions or revise their original understanding. Accordingly, multiple perspectives may cause learners to notice the nuances and subtleties among their understandings and to determine deficiencies and weaknesses in their explanations.

2.2 Argumentative Writing

Argumentative writing can be defined as a problem-solving process that entails the use of a goal-directed self-regulatory process to handle task demands (Ferretti, Lewis, & Weckerly, 2009). In argumentative writing, some specific features like nominalization, high lexical density, and low grammatical intricacy are considered essential (Promwinal, 2010). Argumentative writing is text generated to persuade and convince the readers to see the world from their own perspective (Klein & Kirkpatrick, 2010). It is language specific in that L2 writers are responsible to generate argumentative composition in the target language, which is entirely different from the one composed in L1 in terms of the syntactic or discourse features (Neff, Martinez & Rica, 2001). Argumentation as a crucial type of informal reasoning is an indispensable requirement for the intellectual ability engaged

in problem solving, making judgments and decisions, and generating ideas and beliefs (Kuhn, 1991). Usually, the two terms of argument and argumentation are applied interchangeably. Andrews (2010) strived to make a distinction between these two terms. He assumes argument as products or manifestations of argumentation, like debates, essays, position papers, research papers, and dissertations. Furthermore, argument encompasses a variety of forms in spoken, written, and other (e.g., visual, spatial) modes. On the contrary, argumentation which is a component part of argument and has a more technical nature compared to argument which is somehow general refers to the process of arguing, i.e., a sequence or exchange of arguments.

Elborosoly and Almujaali (2020) analysed the impact of adaptive learning on the enhancement of argumentative writing. The results manifested that the participants of experimental group outperformed the participants' of control group. Not only was the adaptive learning beneficial for EFL learners' writing, but also learners themselves preferred adaptive learning to traditional one.

In a more recent study, Rodriguez-Hernandez and Silva-Maceda (2021) examined the possibility of devising fine methodologies for presenting argumentative writing to students who lack any knowledge about this genre. The core method used in this study was opinion article instructional sequence. Based on the results, the opinion article method extremely affected the performance of beginners in argumentative writing.

2.3 Studies conducted on Scaffolding

Papoulia-Tzelepi (2004) intended to see whether the quality of argumentative writing ability of 4th or 6th grade students differed before and after the indirect instruction of argumentative writing as scaffolding procedure. According to the results, the ability of writing argumentative text was improved because of scaffolding. Furthermore, Storch (2005) inspected the process, product, and

the participants' reflections on collaborative writing. Some students wrote in pairs and other students wrote individually. The documents produced by pairs were compared with those produced by individuals. According to the results, pairs generated shorter texts with a high level of grammatical accuracy, complexity, and task fulfillment. Wigglesworth and Storch (2009) in another study revealed that writing in pair work had positive influences on accuracy but did not influence fluency and complexity. Furthermore, Riazi and Rezaei (2011) showed that teacher scaffolding is more effective than peer scaffolding.

Khalili-sabet et al. (2013) conducted research in which there was an experimental group in which the more proficient person provided scaffolding to the peers, while the participants in control group wrote individually. Again, peer scaffolding did not approve a significant impact on the writing fluency of participants and the experimental group did not outperform the control group. Shooshtari and Mir (2014) examined the effect of teacher and peer scaffolding on the writing ability of learners. The results showed that peer and tutor scaffolding made remarkable developments in the writing of participants. Amerian et al. (2014) carried out a research on the effectiveness of teacher, peer, and class scaffolding on the writing development of EFL learners. The experimental group was assigned teacher, class, and peer scaffolding consecutively, while the control group was required to write in individual techniques. According to the results, teacher scaffolding positively influenced the participants' writing in experimental group, but peer and class scaffolding were not effective. Unexpectedly, the control group outperformed the experimental groups.

Nourinezhad, Hadipourfard, and Bavali (2021) analysed medical students' writings in terms of procrastination in their writing. They applied audio-visual feedback instead of traditional one. On the basis of the results,

audio-visual feedback positively affected the participants' writing procrastination. As a result, using more creative methods in instruction can enhance learners' engagement in writing. Vadipoor, Shabani, and Esfandiary (2021) investigated the writing proficiency of Iranian EFL learners so as to make a shift from traditional writing system to a more cognitive based approach. To this end they mainly focused on making a link between learners' natural experiences and conceptual system. Based on the results, the writing style of cognitive group was extremely changed. Members of cognitive group produced more natural and native like documents. Furthermore, there was a great deal of decrease in their negative feelings toward writing.

The review of the related literature makes it clear that still research needs to be conducted to consolidate the basis of scaffolding and reveal its advantages. In this regard, Massing (2018), contended despite much emphasis on the role of scaffolding in instruction, there is a shortage of research on scaffolding in education. Besides, to date no other study has investigated the effectiveness of teacher and peer scaffolding in boosting the learners' argumentative writing ability with regard to total organization and linguistic accuracy. Along the same lines, the researchers strive to investigate how teacher and peer scaffolding can affect EFL students' argumentative writing. More specifically, the study strives to answer the following research questions:

1. Are there any differences between the argumentative writings of learners exposed to teacher and/or peer scaffolding?
2. To what extent do teacher and peer scaffolding improve the learners' argumentative writing ability in terms of the total organization and linguistic accuracy?

3. Method

3.1 Participants

This study was conducted at Imam Khomeini International University in Qazvin, Iran. The participants were selected through convenience sampling. Initially, 120 students concurred to take part in this study, but after the standardized Michigan Test was administered, only 100 intermediate-level BA students (67 females and 33 males) remained in the study. Twenty participants whose scores were one standard deviation above and below the mean were excluded from the study. The participants' age ranged from 19 to 26. The pre-experimental design was applied in the study. To this end, four English classes in English Language Teaching and English Language Translation were identified. The study was comprised of four groups, three as the experimental groups and one as the control group. One of the experimental groups was randomly assigned to the *peer scaffolding* condition, and the second was assigned to the *teacher scaffolding* condition, and the *teacher and peer scaffolding* condition was practiced in the third experimental group. In addition to the student participants, two raters were asked to cooperate in this study. Both raters were males and MA graduates of English Language Teaching. Prior to rating the participants' drafts, the raters were informed on how to score the participants' essays.

3.2 Materials

A standardized Michigan Test (MT) was applied to determine the participants' level of proficiency. Since the participants were required to write argumentative texts, their proficiency was measured. In other words, the researchers had to make sure that the participants' proficiency was at the intermediate level. The test comprised of 100 items, and the reliability was estimated to be .83 indicated in Table 1.

The participants were asked to write about a topic (*writing a passage in response to the neighbors' complaint about noise*) in 150 words. As the

pretest, a topic (*Is global climate change man-made?*) was provided for the participants. They were requested to write an argumentative text in about 160 words about the topic.

Table 1

Reliability estimate of the Michigan Test

Number of items	Cronbach' alpha
100	.83

An argumentative print text (under the title of *arranged marriages*) was selected from a textbook to be used by the participants for practice. *A PowerPoint presentation* was prepared to be used during the process of instruction by the researchers. During the PowerPoint presentation, there were guidelines and hints on writing argumentative texts; furthermore, the steps in this kind of writing were clearly and explicitly explained. Besides, another argumentative text (under the title of *eating insects*) was used as an example for further elaboration on those steps in the PowerPoint file. Both texts were on a par with the participants' level of competence (i.e., intermediate level).

As the posttest, the participants were given another topic (*if college students should have complete freedom to choose their courses*) to write an argumentative text in about 250 words about it.

Two rating rubrics (the first one pertinent to linguistic accuracy and the second related to the structure of argumentative writing) were designed to score the participants' writings. The scoring scale of writing on linguistic accuracy was downloaded from the site *www.thecurriculumcorner.com*. Only some specific elements compatible with our purposes were chosen from this rubric.

Regarding the second rating scale, the scoring scale of organization of argumentative writing designed by Papoulia-tzelepi (2004) was used as a

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guide for designing the rating rubric for scoring the structure of the participants' argumentative texts.

3.3 Procedure

The research consisted of four groups (three experimental groups and only one control group) and the implementation of the research followed six stages in 6 sessions for each group. Before carrying out the treatment, in the first stage of the study, the teacher (one of the researchers) administered the MT to check the participants' proficiency level. One hundred participants at the intermediate level remained in the study and twenty participants whose scores were one standard deviation above and below the mean were excluded from the study.

In the second stage, as the pre-test, the participants were requested to write a short argumentative essay (*Is global climate change man-made?*) about 160 words to make sure about the initial level of the four groups. In the third stage of the study, the researchers taught the structure and organization of argumentative writing. The teacher applied a powerpoint presentation for explaining the characteristics, format, and organization of the argumentative text explicitly. The language used for teaching was a combination of both Persian and English. Then the teacher supplied the participants with an argumentative text chosen from among different texts from their textbook. Some participants voluntarily read the text loudly, and explained the characteristics of argumentative writing used in the text. The time constraint of 60 minutes was allocated to this stage.

In the fourth stage of the study which took about 70 minutes for each group, the teacher posed the topic (*Are there benefits for single-sex schools?*) for the participants in the four groups. All the participants were asked to write a short argumentative text (of about 180 words) about the topic while regarding the principles of argumentative text. The participants in the control

group wrote on their own without any assistance from the teacher or peers. In peer scaffolding group, the participants formed four groups of five, in which the more proficient and adroit participants scaffolded their peers. Prior to the process, the teacher informed and explained to the more proficient participants how to scaffold their peers. The more proficient peers in each group explained the topic concisely in order to familiarize the participants with the topic; then, during the process they frequently draw their peers' attention to the stages and processes of argumentative writing through asking clarification questions and declarative statements. Furthermore, while writing, the more proficient participants observed their peers' writing and raised their consciousness whenever they went wrong in both grammatical points and the structure of the text.

In the teacher scaffolding group, the teacher explained the topic briefly to familiarize the participants with the topic; then, during the process, the teacher frequently drew the learners' attention to the stages and processes of argumentative writing through asking clarification questions and declarative statements. Moreover, while writing, the teacher circulated behind the participants one by one to check their writing and raise their awareness whenever they went wrong both in grammatical points and the structure of the text. She obliged the participants to revise the mistaken parts and whenever participants faced a problem, they benefited from the teacher's help and assistance.

In the teacher and peer scaffolding group, the participants benefited from both teacher and peer scaffolding simultaneously and concurrently. There were five groups of five and one group of four members. The teacher passed behind the groups and explained the topic to the participants. Both the teacher and the more proficient peers in each group occasionally afforded clarification questions on the stages of argumentative writing. Then, the more

proficient peer observed the other peers' writing to inform them of their mistakes during the writing process whenever necessary. The participants were free to make use of both the teacher and the proficient peer's guidance when they confronted a problem. There was no strict line between the teacher and peer's roles here, sometimes they reversed their roles.

The fifth stage of the study was dedicated to providing feedback on the participants' drafts committed in the fourth stage. The students' drafts in the fourth stage of the study were not scored and they were exclusively generated to receive feedback. After analyzing the drafts, the teacher diagnosed the areas that all the 100 participants had problems in producing argumentative text. She provided narrower and more specific explanations and clarifications about those areas of problem to all the participants. The teacher also allowed some time for students to revise their writings and implement the feedbacks and comments made. This phase had the time constraint of 40 minutes for each group.

In the sixth stage, the teacher proposed another topic (*College students should have complete freedom to choose their own courses*). In order to avoid practice effect different topics were used for the pretest, practice and posttests. This time the participants were asked to write a longer argumentative text about 250 words. This stage which took 40 minutes for each group was the most determining stage because the participants' drafts in this stage were scored and used as their posttests.

4. Results and Discussion

4.1 Descriptive Statistics on the MT

Prior to the treatment sessions, the MT was carried out. Table 2 represents the descriptive statistics pertinent to the proficiency test. The table provides information about the number of the participants, the mean scores, and standard deviations.

Table 2

Descriptive Statistics for Proficiency Test of the Participants

Groups	N	Mean	Std. Deviation
Teacher Scaffolding	25	62.80	5.31
Teacher/Peer Scaffolding	29	62.21	6.95
Peer Scaffolding	20	67.05	5.24
Control Group	26	66.42	4.04

4.2 Reliability of Ratings on Pre-tests and Post-tests

To ensure the reliability of ratings, the researchers and two other raters scored the participants' drafts in both pre-tests and post-tests. The reliability of the ratings of the raters turned out to be .76.

4.3 One-way ANOVA on Pre-tests

In order to make sure that the participants were approximately at the same level and there was no significant difference between them regarding argumentative writing, a one-way ANOVA was run on the participants' pre-test drafts. Table 3 indicates the descriptive statistics related to the participants' pre-test essays like mean, and standard deviation. As can be seen, the means are comparatively within the same range.

Table 3

Descriptive Statistics for the Participants' Pre-test Writings

groups	N	Mean	Std. Deviation
Teacher and Peer Scaffolding	29	21.58	2.67
Teacher Scaffolding	25	20.91	1.30
Peer Scaffolding	20	21.14	1.66
No Scaffolding	26	21.15	1.52

The results of the ANOVA are presented in Table 4. Since the level of significance is larger than .05, $F_{(3, 96)} = .269$, $p > .05$, it can be claimed that there is no statistically significant difference between the four groups. Aside from the personal anecdotes as well as what was observed in the students' drafts, and considering the low mean scores, one could project these intermediate-level subjects to possess scant knowledge of how to approach this genre of writing.

Table 4

Results of One-way ANOVA on the Participants' Pre-test Writings

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.935	3	5.312	1.331	.269
Within Groups	382.970	96	3.989		

4.4 Investigation of the First Research Question

The first research question posed in this study investigated the effects of teacher and/or peer scaffolding on the EFL learners' argumentative writing ability to. To this end, a one-way ANOVA was run. Table 4 illustrates the descriptive statistics of the participants' general post-test writings including mean, standard deviation, and standard error of means.

As can be seen from Table 5, the mean of the participants' general post-test writings in the teacher scaffolding group ($M= 36.27$, $SD= 2.45$) is higher than the other three groups. The peer scaffolding group possesses the second highest mean ($M= 35.91$, $SD= 1.00$), the teacher and peer scaffolding the third ($M= 33.59$, $SD= 2.26$), and the control group is the lowest ($M= 32.36$, $SD= 2.26$).

Table 5

Descriptive Statistics of the Participants' General Post-test Writings

Groups	N	Mean	Std. Deviation
Teacher and Peer Scaffolding	29	33.59	2.26
Teacher	25	36.27	2.45
Peer Scaffolding	20	35.91	1.00
No Scaffolding	26	32.36	2.26

Table 6 represents the results of test of homogeneity of variances. Here the obtained level of significance should be larger than .05 so that the assumption of equal variance can be observed. It can be seen from Table 5 that the level of significance is larger than .05 suggesting that the assumption of equal variances is not violated.

Table 6

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
2.143	3	96	.07

Table 7 indicates the results of one-way ANOVA on the participants' post-test writings. As can be seen, the level of significance is lower than .05, $F_{(3, 96)} = 19.029$, $p < .05$. This explicates that the four groups are statistically different and the treatment has been effective. Merely the existence of a statistically significant difference between groups does not suffice, the amount of difference is also determining. The results of the estimation of omega squared turned out to be .37 ($\omega^2 = .37$), which is a relatively large effect size.

Table 7

Results of the One-way ANOVA on the Participants' Post-test Writings

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	259.391	3	86.464	19.029	.000
Within Groups	436.212	96	4.544		

So as to determine where the difference lies, the results of post hoc test are observed. Table 8 shows that the comparisons between the teacher and peer scaffolding group and teacher scaffolding group $p < .05$, the teacher and peer scaffolding group and peer scaffolding group $p < .05$, the teacher scaffolding group and no scaffolding group $p < .05$, and peer scaffolding group and no scaffolding group $p < .05$ are statistically significant; hence, these groups are different in terms of their argumentative writing ability. The group with teacher scaffolding has performed better than the other two experimental groups and the control group. The group with peer scaffolding has performed better than the group with teacher and peer scaffolding and the control group. Finally, the control group possesses the weakest performance among the four groups.

Table 8
Results of Tukey's HSD on the Participants' Post-test Writings

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.
Teacher and Peer Scaffolding	Teacher scaffolding	-2.67*	.58	.000
	Peer scaffolding	-2.31*	.61	.004
	No scaffolding	1.22	.57	.216
Teacher Scaffolding	Peer scaffolding	.35	.63	.957
	No scaffolding	3.90*	.59	.000
Peer Scaffolding	No scaffolding	3.54*	.63	.000

4.5 Investigation of the Second Research Question

The second research question in this study examined whether teacher and/or peer scaffolding improved the learners' argumentative writing ability in terms of both total organization and linguistic accuracy. To answer this question, a one-way MANOVA was conducted. The descriptive statistics of the two dependent variables of total organization and linguistic accuracy are presented in Table 9.

Table 9
Descriptive Statistics of the Two Dependent Variables in the Posttest

variables	Group	Mean	Std. Deviation	N
Total Organization	Teacher and Peer Scaffolding	16.81	1.71	29
	Teacher Scaffolding	18.44	1.72	25
	Peer Scaffolding			
	No Scaffolding	18.36	.73	20
		16.24	1.62	26

	Teacher and Peer Scaffolding	16.75	.74	29
Linguistic Accuracy	Teacher Scaffolding	17.75	.92	25
	Peer Scaffolding	17.53	.47	20
	No Scaffolding	16.13	.81	26

As can be understood from Table 9, in terms of the mean, in both dependent variables of total organization and linguistic accuracy, while the teacher scaffolding group holds the first position in the rank and the peer scaffolding group labels the second position, the teacher and peer scaffolding group is at the third position. The last position in the rank belongs to the control group.

After checking the assumptions of homogeneity of variance-covariance matrices and equality of variances, it was safe to run the MANOVA. Table 10 shows the Multivariate tests.

Table 10
Multivariate Tests

Effect	Value	F	Hypothesis df	Sig.	Partial eta Squared
Intercept Pillai's Trace	.998		2.000	.000	.998
Wilks' Lambda	.002	25779.141 ^b	2.000	.000	.998
	542.719	25779.141 ^b	2.000	.000	.998
Hotelling's Trace	542.719	25779.141 ^b	2.000	.000	.998
Roy's Largest Root					
Group Pillai's Trace	.440	9.013	6.000	.000	.220
Wilks' Lambda	.570	10.282 ^b	6.000	.000	.245
	.738	11.567	6.000	.000	.270
Hotelling's Trace	.715	22.891 ^c	3.000	.000	.417
Roy's Largest Root					

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Table 10 presents whether there is a statistically significant difference between the four levels of independent variables. The second section containing the independent variable of group is analyzed. Among the four statistics mentioned, the Wilk's Lambda is taken into account. Since the level of significance associated with it is lower than the .05, $F_{(6, 190)} = 10.282$, $p = .000$, it can be claimed that there is a statistically significant difference between the four levels. Also, the partial eta squared of .25 shows a great effect size.

Table 11 aims to determine if the four levels of independent variables are different, and whether they are different in terms of both dependent variables. In order to acknowledge this, the Bonferroni adjustment was applied. This meant that instead of comparing the obtained level of significance with .05, the obtained level of significance was compared with .025 which is gained through dividing .05 into the number of levels of the dependent variable which is two in this study.

Table 11

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	F	Sig.	Partial Eta Squared
Corrected Model	Total Organization	90.736 ^b	3	12.62	.000	.283
	Linguistic Accuracy	40.983 ^a	3	22.88	.000	.417
Intercept	Total Organization	29952.222	1	12504.257	.000	.992
	Linguistic Accuracy	28526.991	1	47785.918	.000	.998

Group	Total Organization	90.736	3	12.627	.000	.283
	Linguistic Accuracy	40.983	3	22.883	.000	.417
Error	Total Organization	229.955	96			
	Linguistic Accuracy	57.310	96			
Total	Total Organization	30534.083	100			
	Linguistic Accuracy	28997.272	100			
Corrected Total	Total Organization	98.292	99			
	Linguistic Accuracy	320.690	99			

To this end, the row containing the variable of group is analyzed. Taking the level of total organization into account, since the level of significance is smaller than .025, $F = 12.627$, $p < .0005$, it is alleged that the four groups are different in terms of total accuracy. Regarding the linguistic accuracy level, analogous to the level of total organization, the level of significance is again smaller than .025, $F = 22.883$, $p < .0005$, indicating that the four groups are different not only in terms of total organization, but also in terms of linguistic accuracy. The amount of partial eta squared for the variables of total organization and linguistic accuracy reported as approximately .28 and .42 respectively suggests a relatively large effect size.

4.6 Discussion

In this study, the technique of teacher and peer scaffolding, in the form of four conditions of teacher scaffolding, peer scaffolding, teacher and peer

scaffolding, and no scaffolding were applied to analyze their effectiveness on the total structure of argumentative writing, linguistic accuracy, and the total argumentative writing ability. In order to find the answer to the first research question, a one-way ANOVA was operated. The results of one-way ANOVA showed that the four groups were statistically different from each other and the treatment had been effective. The teacher scaffolding group carried the highest meanwhile the control group obtained the lowest mean score. The peer scaffolding and teacher and peer scaffolding groups were sequentially the second and third groups.

The second research question of this study aimed to investigate the effect of teacher and peer scaffolding on the learners' argumentative writing ability in terms of the total organization and linguistic accuracy. A MANOVA was carried out. In terms of total organization and linguistic accuracy, the teacher scaffolding group obtained the highest mean score while the control group possessed the lowest mean score, the peer scaffolding group had the second position and the teacher and peer scaffolding group had the third position. The four groups were different in terms of total organization and they had improved their performance in the total organization of argumentative writing. Furthermore, the four groups were also different in terms of linguistic accuracy.

As clarified in the results of both one-way ANOVA and MANOVA, the teacher scaffolding condition was the most effective technique. The probable reasons for this finding can be attributed to the fact that the learners might have trusted the teacher's knowledge more than that of peers'. They might have speculated that the teacher is the most knowledgeable person in that situation. In support of this idea, Lantolf (2000) posited that in spite of its merits, peer feedback and scaffolding may not be a sufficient and reliable resource for the second language development. Besides, Howe (2013)

asserted that peer scaffolding alone may not be capable of delivering curricula. Danli (2011) acknowledged that "peer scaffolding alone may not always or necessarily lead to correcting target forms due to the students' limited mastery of linguistic knowledge and ability to use the scaffolding functions" (p. 108). For example, during the process of scaffolding, sometimes learners' questions on some specific vocabularies, grammatical structures, and steps of argumentative writing remained unanswered because of the peers' limited knowledge. Another possible reason can be due to the fact that some of the learners had more inclination towards the teacher's feedback and scaffolding compared to those offered by their peers. That is why they might have resisted to ask their peers for help since they may imagine that if their peers guided them, they would look stupid and weaker in terms of competence or they would lose their face.

Furthermore, the kind of interaction between the teacher and the participants was more formal than that of the peers; that is why, the participants in the teacher scaffolding group might have taken the process more seriously, and consequently, had put more attention and concentration on their writing and use of scaffolding. When the participants were set in groups, they were mostly spending time in fun, so this might have had impact on their writing and the quality and quantity of their use of peer scaffolding. As another reason, the teacher was more active in providing feedback and guidance compared to the peers. She explained the steps of argumentative writing and its principles frequently, and asked them if they had problems, while peers were only responding in the time of need.

The findings of this study are acknowledged and supported by some other studies. For instance, in the studies by Storch (2005) and Wigglesworth and Storch (2009), the impact of writing via peers' help was inspected in comparison with writing alone. They acknowledged that those benefitting

from the pairs' help produced better texts than those who received no help. The study of Schwieter (2010) confirmed that peer and teacher editing as a form of scaffolding enhanced the learners' writing skill. Besides, Riazi and Rezaei (2011) in a study striving to analyze the impact of teacher and peer scaffolding on the learners' writing stipulated that the teacher scaffolding had been effective in improving the participants' writing ability. Furthermore, Rezaei and Shokrpour (2011) endorsed the positive effects of teacher and peer scaffolding on writing, in that study both teacher and peers applied a variety of scaffolding behaviors and in this way facilitated the learners' task completion process. Moreover, Shehadeh (2011) in his study, accentuated the advantages of writing through collaboration with peers. Shoshtari and Mir's (2014) study was also in line with the results of this study. They approved the positive impacts of teacher and peer nonrandom scaffolding on the learners' writing quality and strategies. Tremmel (1990) posited that "the zone of proximal development is not a sparsely populated territory inhabited by isolated struggling individuals, but ideally at least, a convivial community inhabited collaboratively by writer, teacher, peers and other readers" (p. 81). This theoretical statement about the ZPD legitimizes and authorizes the effectiveness of scaffolding in these studies. However, it does not warrant the perfect impact of scaffolding in all studies.

Albeit the findings of this study confirmed most of the studies in this field, Khalili-sabet et al.'s (2013) findings contradicted with those of this study. They examined the impact of peer scaffolding on the learners' writing fluency. Even though some signs of improvement were noticed in some aspects of their writing, generally the control group had outperformed the experimental group, suggesting that scaffolding did not improve all aspects of writing. In addition, Amerian et al. (2014) strove to inspect the effectiveness of teacher and peer scaffolding on the development of the

learners' writing. Surprisingly, the control group had outperformed the experimental group receiving teacher, peer, and class scaffolding consecutively. Hence, these two studies confirmed that even though the scaffolding techniques entirely enhance the scaffoldees' performance, they do not necessarily help the students in all aspects of writing. According to these contradictory results, the researchers believe that in contexts like Iran where writing has always been regarded as an individual skill, learners can produce better texts alone rather than in collaboration with others. This is because they have the freedom to decide on what to write and how to write without being affected by others' ideas whether positively or negatively, and they will have better concentration and more time for writing.

5. Conclusions and Implications

As already mentioned, scaffolding has been affirmed to be beneficial for learners in different fields like listening, speaking, reading, writing, vocabulary, and grammar. In this study, the researchers were determined to analyze the effectiveness of scaffolding in the area of argumentative writing. The purpose of this study was to examine the effect of teacher and peer scaffolding on the EFL learners' argumentative writing. The technique of teacher scaffolding turned out to be the most effective compared to the peer scaffolding and teacher and peer scaffolding; however, the impact of peer scaffolding and teacher and peer scaffolding on improving the participants' grammatical accuracy, total organization of argumentative writing, and total argumentative writing ability of the learners cannot be overlooked. The participants in the control group were able to outperform none of the three experimental groups. Therefore, the techniques of teacher scaffolding, peer scaffolding, and teacher and peer scaffolding were found to be useful and effective in the total organization of argumentative writing, linguistic accuracy, and the argumentative writing ability of the learners.

The theoretical implication drawn from this study is that Vygotsky's theoretical ideas about the benefits of scaffolding are confirmed in this study. One possible pedagogical implication for this study is that teachers and authorities should be more careful about the concept of scaffolding. They should provide more opportunities for group work and allocate a good deal of time on teacher scaffolding during class time. The next pedagogical implication is for curriculum developers, syllabus designers, and materials developers. They should try to produce instructional books which lead the learners to more group work and make them need peer scaffolding. The educational materials should also force the teachers to apply more teacher scaffolding.

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