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RESUMEN
El presente estudio intentó evaluar el efecto del andamiaje mediado por la tecnología en el desarrollo de los componentes del habla de un segundo idioma (fluidez, coherencia, recursos léxicos, rango gramatical, precisión y pronunciación) entre los estudiantes adultos iraníes de EFL intermedio. Para ello, se seleccionaron 60 alumnas de nivel intermedio con un rango de edad de 18 a 25 años en el centro de investigación EFL en Teherán de entre 90 estudiantes intermedios de acuerdo con su desempeño en una versión estándar del Preliminary English Test (PET). Los participantes seleccionados se dividieron en dos grupos, a saber, el grupo experimental (GE) en el que los alumnos recibieron enseñanza mediada por tecnología a través de la aplicación Telegram, y el grupo de control (CG), que siguió los métodos convencionales de enseñanza/aprendizaje del habla L2. Los participantes pasaron por el proceso de pre-test, intervención y post-test. Luego, los datos recopilados se analizaron y se ejecutó ANOVA multivariado (MANOVA) para probar las hipótesis nulas. El resultado de los análisis de datos posteriores a la prueba aclaró que el andamiaje mediado por la tecnología tuvo un efecto estadísticamente significativo en las subdestrezas del habla, como la fluidez, el recurso léxico, el rango y la precisión gramaticales, y la pronunciación de los estudiantes iraníes de EFL.

PALABRAS CLAVE
ANDAMIAJE MEDIADO POR TECNOLOGÍA, DESARROLLO DEL HABLA, ESTUDIANTES DE EFL IRANÍES

ABSTRACT
The present study attempted to survey the effect of technology-mediated scaffolding on the development of second language speaking components (fluency, coherence, lexical resources, grammatical range, and accuracy, and pronunciation) among Iranian intermediate EFL adult learners. To do so, 60 intermediate level female students with the age range of 18 to 25 in the EFL research center in Tehran were selected from among 90 intermediate students according to their performance in a standard version of the Preliminary English Test (PET). The selected participants were divided into two groups, namely the experimental group (EG) in which the learners received technology-mediated teaching through Telegram application, and the control group

(CG), who followed the conventional teaching/learning methods of L2 speaking. The participants went through the process of pre-testing, intervention, and post-testing. Then, the data collected were analyzed, and multivariate ANOVA (MANOVA) was run to probe the null-hypotheses. The outcome of the post-test data analyses clarified that technology-mediated scaffolding had a statistically significant effect on the speaking sub-skills such as fluency, lexical resource, grammatical range and accuracy, and pronunciation of Iranian EFL learners.

KEYWORDS
TECHNOLOGY-MEDIATED SCAFFOLDING, SPEAKING DEVELOPMENT, IRANIAN EFL LEARNERS

INTRODUCTION

Developing second language speaking has always been a priority for a good number of English as a Foreign Language (EFL) learners in the Iranian context. Consequently, learners' evaluation of their second language (L2) development is mainly done on the basis of their improvement in L2 speaking. Oral skills have barely been deserted in EFL/ESL (English as a Foreign/Second Language) context through how best to approach the teaching of oral skills has long been the focus of methodological debate (Mirahmadi & Alavi, 2016).

Foreign Language (FL) educators are interested in finding ways to solve the problems of L2 learners. Hence, "Great attention has been paid to teaching EFL students the literacy skills they will need to succeed in tertiary institutions abroad" (Ferris & Tagg, 1996, as cited in Baker, 2015, p. 479). Though such studies have been beneficial to EFL teachers, few have looked beyond reading and writing skills (Baker, 2015; Kim et al., 2015; Kozulin, 2002). It is noted that listening and speaking skills are most problematic for EFL students even if they study in English-speaking countries (Kung, 2013). Moreover, EFL learners are typically perceived as reticent in class (Sadeghi & Maleki, 2015).

Many research has been done by educational stakeholders to help students gain the required skills. However, we cannot rely on some methodologies entirely, or more specifically talking, as Kumaravadivelu (2003) acknowledged, "there is no best method there ready and waiting to be discovered". He went further to believe that it is futile to look for one best method. Accordingly, in the pursuit of the research, the researcher is determined to keep as far away from the old established and prescribed methodologies as he can and resort to more interactionist theories.

Nowadays, the teaching and learning mechanism of the L2 classroom should concentrate on the oral intake of the learners through their active negotiation of meaning with their peers. This mutual negotiation of meaning between the interlocutors triggers the cognitive and socio-cognitive processes required for language acquisition to occur (Pica & Doughty, 1985). A plethora of L2 research backs the importance of listening-speaking and how comprehensible input facilitates learning a second language (Ellis, 2008; Long, 1985; Long & Porter, 1985). In this vein, Yang et al. (2013) argue that developing proficiency in listening is the key to achieving mastery in speaking.

Although many studies have examined developing the EFL students' speaking skills and sub-skills, the studies focusing on the effect of technology-mediated scaffolding on the L2 speaking development are just a few. Different specialists have made endeavors to categorize the types of uses of scaffolding that might be utilized as a part

of technology-mediated learning contexts. As indicated by Winnips and McLoughlin (2000), for instance, scaffolding uses can be classified based on who manages the scaffolding, the technology utilized, the teaching method utilized, or the planned learning result.

As indicated by Oliver and Herrington (2003), along with the shift to technology-mediated acquisition conditions as the World Wide Web, this type of instruction has proceeded, and numerous cases of web-based courses share these attributes (e.g., Burbules & Callister, 2000; Dehoney & Reeves, 1999; Mioduser et al., 1999). The standards of instructional scaffoldings design have guided a significant part of the instructional plan that has been connected to Web-based learning situations, an approach broadly utilized for the advancement of learning materials arranged for correspondence and print-based types of adaptable delivery (Ragan & Smith, 1996). Ragan and Smith additionally assert that these methodologies depend on the idea that learning happens principally through the results of internal and external conditions identified with the student and the guideline.

According to Groff et al. (2009), some innovation devices give the opportunity to the teacher to use different instructions and adjust classroom exercises and homework tasks; thus, improving the language learning experience. These scholars also believe that distance-learning projects can enable language instructors to develop language learning chances for all learners, regardless of where they live, the human and material assets accessible to them, or their language background and requirements. Groff et al. (2009) concluded that technology keeps developing in significance as a device to help instructors of foreign languages encourage and facilitate language learning for their learners.

Though technology can have a noteworthy influence in creating and upgrading language acquisition, the successful consequences of any technological tool rely upon the information and ability of the qualified language instructor who uses, controls, and encourages the language learning condition (Patel, 2011). Technology adjusted to learning styles has been utilized to connect with learners and bolster learning (Larsen, 1992). Technology devices serve to empower learners through the making of learning objects and broaden learning by offering learning by doing or by observing experiences (Bruner & Olson, 1973). They also influence how learners react to, contribute to, and show comprehension of materials (Chen et al., 2005).

In this study, the researchers took a resort in a Vygotskyan approach to learning and teaching embedded and extended in interactionist and sociocultural theories focusing on Zone of Proximal Development (ZPD). Consequently, this research is focused on examining technology-mediated scaffolding and finding its possible effects on generating speaking strategies and improving speaking abilities in EFL learners. Technology-mediated scaffolding activities pertained to learning English as a foreign language are different instruction mechanisms that may impact how students learn. Thus, due to the importance of technology-mediated scaffolding in the EFL/ESL context (Nguyen, 2013), and the significant role of speaking among other language skills (Carte & Nunan, 2001; Celce-Murcia, 2001), the following research questions were formulated:

1. Does technology-mediated scaffolding have any effect on the fluency and coherence of Iranian EFL learners in speaking?
2. Does technology-mediated scaffolding have any effect on the lexical resource of Iranian EFL learners in speaking?

METHODOLOGY

Research Design

The present study enjoyed a quasi-experimental design in which quantitative measures of data analysis were accounted for. The participants' selection in this study was non-random, but dividing them into the experimental and control groups was random; therefore, the design was a quasi-experimental one. Having pre and post-test also proved the quasi-experimental nature of this research. According to Bechhofer & Paterson (2012), "the most valid of these quasi-experiments is where the treatment group and the control group are both measured before and after the experiment" (p. 24). Accordingly, in the present study for each group, there were both a pre-test and a post-test. Therefore, there were four measurements: a measurement on each group beforehand and a measurement on each group after the treatment. In the present research, the researchers had focused on both the experimental and control groups, and the learners' speaking ability before any intervention happens was taken into consideration. Then the intervention and treatment were placed, and the post-test rechecked the learners' command at the end of the experiment.

In addition, this study used the control group design to experiment: both the control and experimental groups received the same pre-test and the post-test. However, the control group did not receive the same treatment between the tests (Mackey & Gass, 2015).

Technology-mediated scaffolding as the independent variable and development in components of speaking skill as the dependent variable were the variables in the study. The components of speaking were fluency and coherence and lexical resource.

Participants

The participants of the study were 60 intermediate-level female students with the age range of 18 to 25 in one of the language institutes in Tehran, Iran. These participants were chosen from 90 intermediate students according to their performance in a sample Preliminary English Test (PET) which was first piloted with 30 students with similar characteristics to check the test's reliability. It should be mentioned that the pilot sample included female students of the same (intermediate) level of English language proficiency studying at the same institute in which the study was conducted. The selected participants were divided into two an experimental group (EG) and a control group (CG).

Instrumentation

The data for the present study were collected by means of three tests: a PET test, a pre-test of speaking, and a speaking post-test.

Preliminary English Test (PET)

To homogenize students at the intermediate level, a standard copy of the piloted PET which was administered to check the skills of listening, speaking, reading, and writing was used. This test was arranged in four parts of reading (35 items), writing (7 items), listening (25 items), and speaking. The four parts of the exam had the same value - 25% each. The total mark was made by adding all the results together. The administration of the whole test took 120 minutes. The rating scale that was used to

rate the writing section of PET in this study was the one provided by Cambridge under General Mark Schemes for Writing. The rating was done on the basis of the criteria stated in the rating scales, including the rating scale of 0-6 for PET.

Pre- and post-test instruments

The second instrument in the research was a speaking test based on the level of the learners and the concepts presented in their coursebook, which was developed in an interview mode. Before the treatments, all participants were invited to an oral performance test. The questions and topics aimed for this purpose were developed and prepared by the first author based on the materials of the textbook and the test included 16 items in the form of an interview. Fluency and coherence, and lexical resource of the students as the sub-categories of speaking were taken into consideration. This test was given to the participants selected after the pre-test of language proficiency.

The validity and reliability of all the implemented instruments were examined, and the results showed that the instruments were valid and reliable. A factor analysis through varimax rotation was run to probe the underlying constructs of the PET and pre-tests and post-test of speaking. Factor analysis has two main assumptions; sampling adequacy and lack of singularity. In this study, the KMO index of .781 was higher than the minimum acceptable criterion of .50 (Field, 2013). Moreover, Bartlett's test of sphericity was significant (χ^2 (36) = 489.86, p = .000), indicating that the correlation matrix was not an identity one (i.e., zero correlation among all variables). The SPSS extracted two factors which accounted for 77.02 percent of the total variance. The Pearson correlations were computed to probe the inter-rater reliability indices for the two raters on the pre- and post-tests of speaking.

Teaching materials

The main source of the teaching was the intermediate-level book of 'Touch Stone Series' published by Cambridge University Press.

Procedure

The first phase of this study was the pilot phase, during which 30 intermediate students with similar features to the target sample took the sample PET, which shall be used for homogenizing the participants. In this way, the reliability of the test was checked.

In the second phase of this study, the participants were selected. First, the piloted PET was administered to 90 intermediate students to homogenize them regarding their general English proficiency. Out of 90 students, the 60 students whose scores fell one standard deviation above and below the mean shaped the main participants of the study. The selected participants were randomly assigned to the two experimental and control groups, with 30 students in each. Due to the nature of the convenient non-random selection of the samples, the discarded students also attended the classes, but their scores on the pre-test and post-test were not included in the study.

In the third phase, the study participants in both groups took part in the researcher-made speaking pre-test (the interview) and to assure their homogeneity regarding their L2 speaking knowledge. It is worth mentioning that the inter-rater scoring model was also used to score the learners' performance in the speaking test, and then the inter-rater reliability of the scores was taken into consideration as well.

It is worth mentioning that the classes of both experimental and control groups received the same hours of instruction and practice. In addition, the first author herself taught both groups. The treatment period continued for 20 sessions. The whole semester included eight weeks, and the learners attended the class three days a week, each session lasting for ninety minutes in both groups.

Considering that the syllabus of the language institute had to be covered during this semester, 20 sessions of 20 minutes were allocated to the experiment in the experimental group. The allocated time was devoted to presenting the learners with the initial training in terms of using the applications in the virtual world, developing a group in the applications to be used, and the feedback required throughout the semester while the students in this group were highly active in the virtual world practicing speaking, covering materials and receiving online feedback as well.

The teaching materials were posted to the group by the teacher (the first author). Though various materials pertained to all the four skills were posted, the focus was on the speaking skill. The materials were mainly selected from the same source teaching material. The participants were to listen to the materials, read the texts, speak about the topics presented, and receive feedback from both In the experimental group (technology-mediated scaffolding group), the teacher (the first author) continuously diagnosed the understandings of learners and provided timely support based on student responses. As to the technology-mediated scaffolding experiment, precautions had to be taken to select the media and materials, and candidates had to be under constant supervision as they were communicating via technological tools. Among the possible social networking applications, the Telegram application, which is one of the most popular ones in Iran, was selected as the leading social network based on which the training to the experimental group was followed. However, the control group focused on the schedule and program presented by the coursebook.

After the treatment, the participants in both the experimental and control groups received the speaking post-test, a new test developed based on the course book's content covered in the study treatment. The test was run to measure the learners' ability and development in speaking following the experiment. More specifically, this test checked the students' fluency and coherence and lexical resources as the sub-categories of speaking following the treatment.

RESULTS

The parametric statistical analyses of multivariate ANOVA (MANOVA) and independent-samples t-test were run to probe the hypotheses. These statistical techniques assume the normality of the data and homogeneity of the variances of the groups. The assumption of normality was met. As displayed in Table 1, skewness and kurtosis ratios over their standard errors were lower than the absolute value of 1.96, hence the normality of the data.

Table 1
Descriptive Statistics; Testing Normality Assumption

		N	Skewness			Kurtosis		
	Group	Statistic	Statistic	Std. Error	Ratio	Statistic	Std. Error	Ratio
CG	PET	30	-.104	.427	-0.24	-.475	.833	-0.57
	Pre-Fluency	30	-.544	.427	-1.27	-.701	.833	-0.84

	Pre-Lexicon	30	-.188	.427	-0.44	-1.009	.833	-1.21
	Pretest	30	-.392	.427	-0.92	-.870	.833	-1.04
	Post-Fluency	30	-.296	.427	-0.69	.566	.833	0.68
	Post-Lexicon	30	-.341	.427	-0.80	-1.062	.833	-1.27
	Post-test	30	-.345	.427	-0.81	-.748	.833	-0.90
	PET	30	.082	.427	0.19	-.892	.833	-1.07
	Pre-Fluency	30	-.693	.427	-1.62	.005	.833	0.01
	Pre-Lexicon	30	-.420	.427	-0.98	-.966	.833	-1.16
EG	Pretest	30	-.495	.427	-1.16	-.833	.833	-1.00
	Post-Fluency	30	.581	.427	1.36	-.656	.833	-0.79
	Post-Lexicon	30	.313	.427	0.73	-.676	.833	-0.81
	Post-test	30	-.121	.427	-0.28	-1.220	.833	-1.46

The assumption of homogeneity of variances will be discussed when reporting the main results; although, there is no need to worry about the violation of this assumption when sample sizes are equal (Bachman, 2005; Field, 2013; Pallant, 2011); as is the case in this study.

PET General Language Proficiency Test

An independent-samples t-test was run to compare the technology-mediated scaffolding and control groups' means on the PET general language proficiency test in order to prove that the two groups were homogenous regarding their language proficiency prior to the main study. Before discussing the results, it should be mentioned that the PET test was piloted on a sample of 30 subjects. The KR-21 reliability index was .84 (Table 2).

Table 2

Descriptive Statistics; Piloting PET

	N	Mean	Std. Deviation	Variance
PET	30	32.40	11.407	130.110
KR-21	.84			

As displayed in Table 3, the technology-mediated scaffolding (M = 54.47, SD = 10.60) and the control (M = 52.23, SD = 8.67) groups had close means on the PET proficiency test.

Table 3

Descriptive Statistics; PET Proficiency Test by Groups

	Groups	N	Mean	Std. Deviation	Std. Error Mean
PET	Experimental	30	54.47	10.605	1.936
	Control	30	52.23	8.677	1.584

The results of independent-samples t-tests (t (58) = .893, p = .374, r = .116 representing a weak effect size, 95 % CI [-2.77, 7.24]) (Table 4) indicated that there was not any significant difference between the technology-mediated scaffolding and

control groups' means on the PET proficiency test. Thus, it can be claimed that the two groups were homogenous in terms of their language proficiency prior to the main study.

Table 4
Independent-Samples T-Test; Pet Proficiency Test by Groups

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	3.238	.077	.893	58	.376	2.233	2.502	-2.774	7.241
Equal variances not assumed			.893	55.81	.376	2.233	2.502	-2.779	7.245

It should be noted that the negative lower bound of 95 percent confidence interval of -2.77 indicated that the two groups' mean difference on the PET test might have been zero. That is to say, the above-mentioned conclusion as no significant difference between the two groups was correctly made.

Pre-test of speaking

An independent-samples t-test was run to compare the technology-mediated scaffolding and control groups' means on the pre-test of speaking to prove that the two groups were homogenous regarding their speaking ability before the administration of the treatment. As displayed in Table 5, the technology-mediated scaffolding (M = 25.03, SD = 4.76) and the control (M = 25.10, SD = 4.52) groups held almost the same mean on the pre-test of speaking.

Table 5
Descriptive Statistics; Pre-Test Of Speaking by Groups

	Groups	N	Mean	Std. Deviation	Std. Error Mean
Pre-Speaking	EG	30	25.03	4.760	.869
	CG	30	25.10	4.528	.827

The results of independent-samples t-tests (t (58) = .056, p = .956, r = .007 representing a weak effect size, 95 % CI [-2.33, 2.46]) (Table 6) indicated that there was not any significant difference between the technology-mediated scaffolding and control groups' means on pre-test of speaking. Thus, it can be claimed that the two groups were homogenous in terms of their speaking ability prior to the main study.

Table 6
Independent-Samples T-Test; Pre-Test of Speaking by Groups

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.087	.769	.056	58	.956	.067	1.199	-2.334	2.468
Equal variances not assumed			.056	57.85	.956	.067	1.199	-2.334	2.468

It should be noted that the negative lower bound of 95 percent confidence interval of -2.33 indicated that the two groups' mean difference on pre-test of speaking might have been zero. That is to say, the above-mentioned conclusion as no significant difference between the two groups was correctly made.

Pre-Tests of Sub-Scales of Speaking

A multivariate analysis of variances (MANOVA) was run to compare the technology-mediated scaffolding and control groups' means on the two components of the pre-test of speaking (i.e., fluency/coherence and lexical resources) in order to prove that they were homogeneous in terms of their speaking abilities on the above-mentioned sub-scales. Before discussing the results, it should be mentioned that the assumption of homogeneity of covariance matrices was met (Box' M = 8.33, p = .657) (Table 7).

Table 7
Box's Test of Equality of Covariance Matrices

Box's M	8.332
F	.771
df1	10
df2	16082.869
Sig.	.657

Based on the results displayed in Table 8, it can be claimed that the assumption of homogeneity of variances was met (p > .05).

Table 8
Levene's Test of Equality of Error Variances

	F	df1	df2	Sig.
Pre-Fluency	.003	1	58	.955
Pre-Lexicon	.746	1	58	.391

Based on the results displayed in Table 9, (F (4, 55) = .808, p = .526, Partial η^2 = .055 representing a weak effect size), it can be concluded that there were not any significant differences between the technology-mediated and control groups' means on the components of pre-test of speaking.

Table 9
Multivariate Tests; Components of Pre-Tests of Speaking by Groups

	Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.970	440.722	4	55	.000	.970
	Wilks' Lambda	.030	440.722	4	55	.000	.970
	Hotelling's Trace	32.053	440.722	4	55	.000	.970
	Roy's Largest Root	32.053	440.722	4	55	.000	.970
Group	Pillai's Trace	.055	.808	4	55	.526	.055
	Wilks' Lambda	.945	.808	4	55	.526	.055
	Hotelling's Trace	.059	.808	4	55	.526	.055
	Roy's Largest Root	.059	.808	4	55	.526	.055

Based on the results displayed in Table 10 and Table 11 it can be claimed that; (1) There was not any significant difference between the technology-mediated scaffolding (M = 6.03) and the control (M = 6.26) groups' means on the pretest of fluency and coherence (F (1, 58) = .479, p = .492, Partial η^2 = .008 representing a weak effect size). (2) There was not any significant difference between the technology-mediated scaffolding (M = 6.20) and the control (M = 6.33) groups' means on the pretest of lexical resources (F (1, 58) = .129, p = .720, Partial η^2 = .002 representing a weak effect size).

Table 10
Tests of Between-Subjects Effects; Components of Pre-Tests of Speaking by Groups

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group	Pre-Fluency	.817	1	.817	.479	.492	.008
	Pre-Lexicon	.267	1	.267	.129	.720	.002
Error	Pre-Fluency	98.833	58	1.704			
	Pre-Lexicon	119.467	58	2.060			
Total	Pre-Fluency	2369.000	60				
	Pre-Lexicon	2476.000	60				

Table 11
Descriptive Statistics; Components of Pre-Tests of Speaking by Groups

	Group	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Pre-Fluency	CG	6.267	.238	5.790	6.744
	EG	6.033	.238	5.556	6.510
Pre-Lexicon	CG	6.333	.262	5.809	6.858
	EG	6.200	.262	5.675	6.725

The First and Second Null-Hypotheses

A multivariate analysis of variances (MANOVA) was run to compare the technology-mediated scaffolding and control groups' means on the four components of the post-test of speaking (i.e., fluency/coherence and lexical resources) in order to probe the first and second null-hypotheses. Also, the assumption of homogeneity of covariance matrices was met (Box' M = 31.49, p = .001) (Table 12).

Table 12

Box's Test of Equality of Covariance Matrices

Box's M	31.499
F	2.914
df1	10
df2	16082.869
Sig.	.001

Note. Box's M should be tested at .001 levels (Field, 2013)

Based on the results displayed in Table 13, it can be claimed that the assumption of homogeneity of variances was met (p > .05).

Table 13

Levene's Test of Equality of Error Variances

	F	df1	df2	Sig.
Post-Fluency	1.550	1	58	.218
Post-Lexicon	.003	1	58	.960

Based on the results displayed in Table 14, (F (4, 55) = 77.58, p = .000, Partial η^2 = .849 representing a large effect size) it can be concluded that there were significant differences between the technology-mediated scaffolding and control groups' means on the components of post-test of speaking.

Table 14

Multivariate Tests; Components of Post-Tests of Speaking by Groups

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.989	1269.791	4	55	.000	.989
	Wilks' Lambda	.011	1269.791	4	55	.000	.989
	Hotelling's Trace	92.348	1269.791	4	55	.000	.989
	Roy's Largest Root	92.348	1269.791	4	55	.000	.989
Group	Pillai's Trace	.849	77.588	4	55	.000	.849
	Wilks' Lambda	.151	77.588	4	55	.000	.849
	Hotelling's Trace	5.643	77.588	4	55	.000	.849
	Roy's Largest Root	5.643	77.588	4	55	.000	.849

Based on the results displayed in Table 15 and Table 16 it can be claimed that; (1) The technology-mediated scaffolding (M = 11.13) group significantly outperformed the control (M = 7) group on the post-test of fluency and coherence (F (1, 58) = 173.91, p = .000, Partial η^2 = .750 representing a large effect size). Thus, the first null-hypothesis as technology-mediated scaffolding does not have any effect on Iranian EFL learners' fluency and coherence in speaking was rejected.
(2) The technology-mediated scaffolding (M = 11.96) group significantly outperformed the control (M = 8.30) group on the post-test of lexical resources (F (1, 58) = 93.37, p = .000, Partial η^2 = .617 representing a large effect size). Thus, the second null-hypothesis as technology-mediated scaffolding does not have any effect on the lexical resources of Iranian EFL learners in speaking was rejected.

Table 15
Tests of Between-Subjects Effects; Components of Post-Tests of Speaking by Groups

Source	Dependent Variable	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Group	Post-Fluency	256.267	1	256.267	173.910	.000	.750
	Post-Lexicon	201.667	1	201.667	93.374	.000	.617
Error	Post-Fluency	85.467	58	1.474			
	Post-Lexicon	125.267	58	2.160			
Total	Post-Fluency	5274.000	60				
	Post-Lexicon	6488.000	60				

Table 16
Descriptive Statistics; Components of Post-Tests of Speaking by Groups

	Group	Mean	Std. Error	95% Confidence Interval Lower Bound	Upper Bound
Post-Fluency	CG	7.000	.222	6.556	7.444
	EG	11.133	.222	10.690	11.577
Post-Lexicon	CG	8.300	.268	7.763	8.837
	EG	11.967	.268	11.430	12.504

CONCLUSION

The present study data analyses revealed that technology-mediated scaffolding had a statistically significant effect on the fluency and coherence, and lexical resource of Iranian EFL learners in speaking. It can be concluded that the devised treatment (i.e., the application of technology-mediated scaffolding) to the English language speaking program of Iranian EFL learners have helped the participants in the experimental group to perform better than the control group in which the learners relied on the conventional methods of training and without emphasis on the technology-mediated scaffolding. When EFL learners are exposed to different types of technology-mediated feedback and scaffolding, they can learn various sub-skills of speaking better and, therefore, could promote their second language learning development in general and their L2 speaking and its related sub-skills in particular.

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