

«مقاله پژوهشی»

یک پژوهش آمیخته‌روش درباره‌ی تأثیر آموزش ترکیبی بر یادگیری واژگان، یادگیری خودتنظیم زبان، و اضطراب زبان آموزان انگلیسی به‌عنوان زبان خارجی

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چکیده

آموزش تلفیقی زبان (BLI) رویکردی است که مواد آموزشی آنلاین را با دوره‌های حضوری ترکیب می‌کند و از آنجا که فرصت‌های یادگیری زبان شخصی‌سازی شده‌ای را فراهم می‌آورد، می‌تواند موجب بهبود مشارکت و انگیزش زبان‌آموزان شود. پژوهش حاضر به بررسی تأثیر آموزش تلفیقی زبان بر دانش واژگان، یادگیری زبان خودتنظیم (SRLL) و اضطراب کلاسی زبان خارجی (FLCA) زبان‌آموزان انگلیسی به‌عنوان زبان خارجی پرداخت. بدین منظور، پژوهشگران از طرح آمیخته‌روش تبیینی برای اجرای مطالعه استفاده کردند. به همین ترتیب، ۴۴ زبان‌آموز زن انگلیسی در دو کلاس موجود در یک مؤسسه زبان به عنوان شرکت‌کنندگان انتخاب شدند و برای گردآوری داده‌های کمی از پیش‌آزمون‌ها، جلسات آموزش تلفیقی و پس‌آزمون‌ها بهره گرفته شد. همچنین، برای گردآوری داده‌های کیفی، از مصاحبه‌های نیمه‌ساختاریافته جهت بررسی دیدگاه‌های شرکت‌کنندگان درباره آموزش تلفیقی استفاده شد. در تحلیل داده‌های کمی از آزمون‌های t مستقل و زوجی و نیز آزمون تحلیل واریانس چندمتغیری (MANOVA) استفاده شد. افزون بر این، داده‌های مصاحبه با بهره‌گیری از تحلیل تماتیک مورد بررسی قرار گرفتند. یافته‌ها نشان داد که آموزش تلفیقی موجب بهبود یادگیری واژگان و یادگیری خودتنظیم شرکت‌کنندگان شده و اضطراب زبانی آنان را کاهش داده است. افزون بر آن، شرکت‌کنندگان نگرش مثبتی نسبت به این رویکرد داشتند. در پایان، پژوهش حاضر دلالت‌های کاربردی یافته‌ها را در بافت‌های آموزش زبان خارجی تبیین می‌کند.

واژه‌های کلیدی

آموزش تلفیقی زبان (BLI)، زبان‌آموزان انگلیسی به‌عنوان زبان خارجی (EFL)، کلاس‌های وارونه، اضطراب کلاسی زبان خارجی (FLCA)، یادگیری زبان خودتنظیم (SRLL).

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تاریخ دریافت: ۱۴۰۴/۰۸/۲۱

تاریخ پذیرش: ۱۴۰۴/۱۰/۱۱

استناد به این مقاله:

تندرست، رويا؛ آهنگران، فرنوش و پویان، آرام (۱۴۰۵). یک پژوهش آمیخته‌روش درباره‌ی تأثیر آموزش ترکیبی بر یادگیری واژگان، یادگیری خودتنظیم زبان، و اضطراب زبان‌آموزان انگلیسی به‌عنوان زبان خارجی. دوفصلنامه ایرانی آموزش از دور، ۱۴۲-۱۴۳، (۱)، ۸.

(DOI: 10.30473/IDEJ.2026.76463.1262)



ORIGINAL ARTICLE

A Mixed-Methods Study of the Effects of Blended Learning Instruction on EFL Learners' Vocabulary Learning, Self-Regulated Language Learning, and Anxiety

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Received: 12 Nov 2025
Accepted: 01 Jan 2026

How to cite

Tandorost, R., Ahangaran, F. & Pouyan, A. (2026). A Mixed-Methods Study of the Effects of Blended Learning Instruction on EFL Learners' Vocabulary Learning, Self-Regulated Language Learning, and Anxiety. Iranian Distance Education Journal, 8(1), 123-142.
(DOI:[10.30473/IDEJ.2026.76463.1262](https://doi.org/10.30473/IDEJ.2026.76463.1262))

ABSTRACT

Blended language instruction (BLI) constitutes an approach that integrates online materials into in-person courses and is likely to ameliorate learners' engagement and motivation owing to its provision of personalized language learning opportunities. The present study examined the impacts of BLI on EFL learners' vocabulary knowledge, Self-Regulated Language Learning (SRLL), and Foreign Language Classroom Anxiety (FLCA). To this end, the researchers used an explanatory mixed-methods design to conduct the study. More specifically, in the quantitative phase, the research method was a semi-experimental type with a pre-test-post-test with a control group design. Accordingly, the researchers selected 44 female EFL learners in two intact classes of a language institute as the participants and took advantage of pretests, BLI treatment sessions, and posttests to gather the quantitative data. In addition, in the quantitative phase, semi-structured interviews were used to collect qualitative interview data on the participants' perspectives on BLI. Moreover, the researchers used Cronbach's Alpha measure of internal reliability to ensure the reliability in data analysis. Besides, they examined the validity by making sure that diagnostic testing procedures including the pretests were applied equally to each group. Independent and paired-samples t-tests along with MANOVA test were used in quantitative data analysis. Moreover, thematic analysis was used to analyze the interview data. The results indicated that BLI ameliorated the participants' vocabulary acquisition and SRLL and relived their FLCA. Additionally, the participants' had favorable perspectives on this approach. The study expounds on the implications of the results in foreign language contexts.

KEYWORDS

Blended Language Instruction, English as a Foreign Language learners, flipped classrooms, Foreign Language Classroom Anxiety, Self-Regulated Language Learning.

1. Introduction

Recent advancements in educational technology have facilitated the integration of diverse resources and applications into structural courses in different academic settings (Li & Li, 2022; Zolfaghari et al., 2023). Among these applications, Learning Management Systems (LMSs) have attracted considerable attention in the field of language teaching (Lee & Wallace, 2018). LMSs encompass the software applications that empower teachers to administer language courses to learners and empower them to track and document the learners' performance in a systematic way (Qiu et al., 2022). The interest in LMSs stems from the fact that they constitute cost-effective instruments for that streamline language learning process and constitute accessible applications that enable the learners to access educational content on various devices without any time or place-related restrictions (Zou et al., 2020). LMSs have been used in BLI that encompasses an approach to language instruction that integrates online instructional materials into in-person courses using LMSs (Yick et al., 2019). It is considered as a viable instructional approaches owing to the fact that it expedites learners personalized language acquisition and ameliorates their engagement via interactive and collaborative learning tasks and formative teacher and peer feedback (Yang & Kuo, 2021).

The scrutiny of the empirical studies of BLI highlights the fact that they have disregarded certain research lines. First, most of the relied studies (Shafiee Rad et al., 2021; Zolfaghari et al. 2023) have focused on the impacts of BLI on language skill development and have paid scant attention to language aspects including vocabulary among the others. Second, a few studies (e.g. Izadpanah, 2022) have focused on the utility of BLI for ameliorating learner factors

such as self-directed language learning and have disregarded other factors including learners' SRL and FLCA among the others. Lastly, several studies (e.g. Khodabandeh & Naseri, 2021; Nabilou & Zarei, 2023) have adopted quantitative approaches to the examination of the efficacy of BLI in language classrooms and have not delved into the learners' attitudes towards BLI.

The present study strived to deal with these issues in the research on BLI in EFL Iranian context by using a mixed-methods design to examine the impacts of BLI on EFL learners' vocabulary learning, SRL, and FLCA and by specifying these learners' perspectives on BLI in their language courses. The selection of vocabulary, SRL, and FLCA is justifiable based on the reciprocal determinism principle of Bandura's (1986) social cognitive theory that states that individuals' beliefs and attitudes towards various phenomenon influence their actions and behaviors. Accordingly, the study examined the role of EFL learners' attitudes towards BLI in their engagement in vocabulary learning tasks and their SRL and FLCA. The need for the present study stemmed from the fact that it provided information on the possibility and utility of integration of BLI into language courses in foreign language contexts. Moreover, it specified the degree to which BLI simultaneously influenced language aspects and learner factors in the context of the classroom. Considering these issues, the study made an endeavor to answer the following questions:

1. Does BLI have significant effects in EFL learners' vocabulary knowledge, SRL, and FLCA?
2. What are EFL learners' perspectives on BLI?

2. Literature Review

2.1. Blended Language Instruction (BLI)

The perusal of the related literature (e.g. Abbasi et al., 2021; Alipour, 2020; Katsila & Poonpon, 2022) heights the fact that the researchers have scrutinized on the utility of BLI for teaching various aspects of the second languages in recent years. BLI encompasses an approach to language teaching that integrates online language teaching materials, tasks, and tests into in-person language courses in order to facilitate and expedite learners' target language learning (Qiu et al., 2022). This approach is likely to provide the learners with a more engaging language learning experience owing ti the fact that it leverages the strengths of both virtual and traditional learning environments (Albiladi & Alshareef, 2019; Yang & Kuo, 2021).

The interest in BLI predominantly stems from its favorable characteristics in educational settings (Al-Qatawneh et al., 2020). More specifically, this approach is considered as a viable approach to language teaching in the era of technological advancement since it incorporates asynchronous online materials into synchronous (i.e. in-person) tasks (Krishnan & Yunus, 2019) and empowers the learners to develop all of the language skills and aspects effectively (Lee & Wallace, 2018). In addition, the flexible nature of this approach enables the teachers to provide their learners with individualized language instruction and allows the learners to focus on different language aspics at their own pace (Yick et al., 2019). Additionally, the integration of online learning into in-person tasks in BLI can have a beneficial effect on learners' engagement and motivation for learning the target language (Yousofi & Bashiri, 2023).

The above-mentioned characteristics of BLI have motivate the researchers to itemize its

models. In this regard, Zou et al. (2020) itemized four main models of BLI including a la carte model, flex, enriched virtual, and rotation models. As they explained, in a la cate model the learners are provide with the opportunity to select a number of online materials and tasks that can support their in-person learning. In the flex model, learners are allowed to exert control over their language learning in online language instruction that is supported by in-person sessions. In enriched virtual model, learners' occasional in-person meetings with the teacher enable them to deal with their learning difficulties of online language learning. Lastly, in rotation model, learners rotate between online and in-person language learning modalities.

Zou et al. (2020) identified four main types of the rotation model including individual rotation, lab rotation, station rotation, and flipped classroom. As they pointed out, in individual rotation the learners work on both online and in-person tasks at their own pace. The lab rotation type of this model prompts the learners to rotate to a computer laboratory to perform online learning tasks. The station rotation prompts the learners to rotate between learning stations (including online stations) that refer to the specific areas in education settings in which learners engage in certain focused activities. Lastly, in the flipped classroom type of rotation model the learners use online materials including audio-visual files and tutorials to learn the materials and take advantage of the class time in order to performance collaborative and interactive learning tasks. Zou et al. (2020) concluded that BLI models including flipped classroom are likely to influence learners' acquisition of language aspects including vocabulary ad their affective factors such as their SRL and FLCA among the others.

2.2. Second Language Vocabulary

Second language researchers have always been concerned with the teaching of second language vocabulary items owing to their consequential role in the process of communications (Coxhead et al., 2015). Vocabulary encompasses all of the words and collocations that make up a certain language (Lu & Zhang, 2015). In language teaching, vocabulary refers to the meanings, nuances, and appropriate contexts of diverse lexical items including single words and phrasal vocabulary (Yanagisawa & Webb, 2022).

The interest in the pedagogical intervention that ameliorate vocabulary learning stems from the fact that vocabulary constitutes the foundation of communication and enhances learners' development of language skills including the reading skill (Pérez & Alvira, 2017). In addition, a satisfactory knowledge of vocabulary enables the learners to develop a better understanding of the cultural nuances and references of the target language and ameliorates their academic success (Lu & Zhang, 2015). Lastly, learners' satisfactory vocabulary knowledge is likely to increase their motivation and self-confidence and to encourage them to actively engage in second language interactions (Coxhead et al., 2015).

The consequential role of vocabulary in language learning underscores the fact that its teaching has to be integrated into technology informed approaches including BLI (Li. & Li, 2022). It is argued that BLI can have advantageous impact on learners' vocabulary acquisition since its flexibility expedites learners' access to vocabulary learning materials (Mandasari & Wahyudin, 2021). In addition, it allows the teachers to provide their learners with immediate feedback on their vocabulary uses and ameliorates the learners' engagement in collaborative vocabulary tasks (Krishnan & Yunus, 2019). Lastly, the online platforms of

BLI help the teachers to provide their learners with personalized instruction based on their needs (Li. & Li, 2022). As Yang and Kuo, (2021) pointed out, vocabulary learning is likely to be associated with the learners' affective factors including their SRL and FLCA.

2.3. Self-Regulated Language Learning (SRL) and Foreign Language Classroom Anxiety (FLCA)

The recent studies of learner factors (e.g. Yang et al., 2024; Zhu et al., 2020) have highlighted the significant role of learners' SRL in the process of their language learning. SRL encompasses language learners' capability to control, manage and direct their process of their language acquisition in an active way (Teng & Zhang, 2022). This affective factor determines the learners' capability to set language-learning goals, to develop and implement efficacious learning strategies, to monitor progress, and to evaluate the effectiveness of learning practices to deal with learning difficulties in an effective way (Shen & Bai, 2024).

The significant role of SRL in language acquisition has motivated the researchers to develop its model. Regarding this line of research Tseng et al. (2017) developed a model SRL and itemized its four main sub-components including emotion, goal, boredom, and awareness. As they explained, emotion refers to the learners' capability to suppress their negative emotions that interfere with their language learning. Goal encompasses learners' ownership of their language learning in classroom context. Boredom determines the extent to which the learners are able to deal with their lack of motivation that may result in their task disengagement. Finally, awareness refers to the learners' conscious understanding and control over their language acquisition.

In addition to SRLL, FLCA has been a recurrent learner factors in recent studies (e.g. Mobini et al. 2024). FLCA encompasses the learners' stress and nervousness that stem from learning a foreign language in the context of the classroom (Young, 1990). This type of anxiety is closely associated with the challenges of communication in the target language and is intensified due mainly to fear of making mistakes in second language interactions (Young, 1991). It has been argued that FLCA is likely to interfere with language learning owing to the fact that it hinders' learners retention of language knowledge, negatively influences their effective learning strategy use and academic performance, and decreases their motivation for learning the target language (MacIntyre & Gardner, 1991).

In light of the above-mentioned discussions of FLCA, Horwitz et al. (1986) developed a model of this affective factors and particularized its three underlying components including communication apprehension, test anxiety, and fear of negative evaluation. As Horwitz et al. (1986) explained, communication apprehension encompasses learners' fear when they communicate with the other language users in real or anticipated situations. In addition, test anxiety is a type of performance anxiety that stems from learners' fear of taking second language tests. Lastly, fear of negative evaluation refers to the learners' fear of being negatively judged due to their unsatisfactory second language skills.

2.4. Empirical Background

The examination of the studies of BLI indicates that a large number of them have focused on its impacts on language learners' skill development. For instance, Shafiee Rad et al. (2021) scrutinized the utility of BLI for

improving Iranian EFL learners' writing ability and reported that it constituted an effective approach to writing instructing. Likewise, Zolfaghari et al. (2023) strived to determine the extent to which BLI influenced language learners' reading and listening skills. Based on the results, BLI had significant positive effects on learners' reading and listening performance.

In addition, a few studies have tried to determine the role of BLI in language aspect instruction. Regarding this line of research, Bulut and Kocoglu (2020) investigated the effects of BLI on EFL learners' grammar acquisition. The results of the study indicated that BLI significantly improved the learners' capability to use complex grammatical structures in appropriate contexts. Similarly, Zarrinfard et al. (2021) examined the degree to which BLI improved EFL learners' grammar and vocabulary learning and reported that it resulted in significant improvements in learners' uses of grammatical structures and second language words in their learning tasks.

Lastly, certain studies of BLI have made an effort to determine its impacts on learner factors. For instance, Chen and Hwang (2019) made an effort to determine the role of BLI in language learners' critical thinking and speaking anxiety. The results of their study showed that BLI significantly ameliorated the learners' critical thinking and reduced their speaking anxiety in their relevant settings. Likewise, Izadpanah (2022) investigated the role of BLI in learners' self-directed learning and reported that it positively influenced the learners' capability to manage the process of their language learning.

3. Method

3.1. Participants

In light of the objectives, the researchers focused on the population of EFL learners at language

institute settings. Accordingly, they utilized convenience sampling to select their participants since the use of random sampling was not possible in Iranian language institute settings. The language institute settings were chosen as the research setting of the study owing to the presence of the infrastructure of the main research variable or the experimental BLI intervention in them. Accordingly, the researchers selected 44 intermediate-level female EFL learners from among 498 language learners of a language institute in Urmia (Iran) as the participants using convenience sampling. These learners were in two intact classes (i.e. 22 learners in each class). They were native speakers of Azeri, Persian, or Kurdish and were in the age range of 16 to 21. The selected participants had two years of language learning experiences in the general language courses of the pertinent institute. The researchers took advantage of a proficiency test to ensure the homogeneity of the learners in terms of their language ability. All of the participants gave written informed consent to the study before the onset of the data collection.

3.2. Materials and Instruments

The researchers employed the following materials and instruments in order to gather the data:

3.2.1. Oxford Placement Test

Considering the aims, the researchers used Allan's (2004) Oxford Placement Test (OPT) to examine the participants' language proficiency level and to ensure their homogeneity. This test encompasses three main sections including vocabulary, cloze test, and grammar. Each of the pertinent section involves 20 multiple-choice items. To ensure test reliability, the researchers conducted a pilot study and recruited 20 intermediate-level female EFL learners as its

participants. The Cronbach's alpha (α) measure was used to examine the reliability index of OPT in the pilot study. The results showed that the reliability of OPT ($\alpha=.85$) was acceptable and the test could be used in the present study.

3.2.2. Vocabulary Pretest and Posttest

The researchers developed a 30-item vocabulary test using the text in Gundersen and Lee's (2011) general English textbook entitled *Intermediate Select Readings* and used it as the vocabulary pretest and posttest of the study. The reliability analysis results in the pilot study highlighted the acceptable reliability index ($\alpha=.85$) of the test and assured the researchers that they could use the test to gather the required data.

3.2.3. General English Textbook

In this study, the researchers used the textbook entitled *Intermediate Select Readings* (Gundersen & Lee, 2011) to develop the vocabulary pretest and posttest of the study. This textbook encompasses texts about riveting topics that have been developed to facilitate and expedite intermediate-level learners' reading skill development and vocabulary acquisition (Gundersen & Lee, 2011).

3.2.4. SRLI Pretest and Posttest

The researchers utilized Tseng et al.'s (2017) SRLI questionnaire as the SRLI pretest and posttest of the study. This self-report instrument comprises 20 Likert-scale items that address four main sub-components of SRLI including emotion, goal, boredom, and awareness. The relevant items are rated on a 4-point scale ranging from *strongly agree* to *strongly disagree*. Based on reliability analysis results, the questionnaire had a satisfactory reliability index ($\alpha=.89$) and could be employed in the EFL context of Iran.

3.2.5. FLCA Pretest and Posttest

Given the main purposes, the researchers took advantage of Horwitz et al.'s (1986) FLCA questionnaire as the FLCA pretest and posttest. This questionnaire addresses three underlying components of FLCA including communication apprehension, test anxiety, and fear of negative evaluation. It comprises 33 items that are rated on a 5-point Likert-scale in the range of *strongly agree* to *strongly disagree*. The reliability analysis indicated that the reliability index of FLCA questionnaire ($\alpha=.81$) was acceptable and it could be used in the present study.

3.2.6. Semi-Structured BLI Interview Protocol

In the present study, the researchers developed an interview protocol that comprised three semi-structured items in order to delve deeply into the EFL learners' perspectives on BLI in their academic setting. To develop this instrument, the researchers followed Tanggaard's (2008) focus-group interview qualitative research procedure.

Accordingly, first, they invited 6 professors of Applied Linguistics at two universities in Urmia to take part in a 60-minute focus-group interview session. Second, the researchers assumed the role of session facilitators. That is, they guided the professors through the planned discussion of the role of BLI in EFL courses and ensured that the pertinent discussion stayed on track and achieved its main objectives. The interview session was recorded. Third, the researchers followed the thematic data analysis procedure (Braun & Clarke, 2021) to develop the interview protocol items based in the recorded interview file. To this end, they transcribed the interview file, identified its main patterns and extracted the codes, and integrated the related codes with each other and itemized

the main themes in the data. Fourth, the researchers developed the items based on the relevant themes and used expert checking (Tanggaard, 2008) qualitative research method to ensure its content validity. Accordingly, they provided the above-mentioned professors with the primary items and asked them to evaluate their appropriateness. Finally, the researchers made a number of modifications to the items and developed the final interview protocol.

3.3. Procedure

In the present study, first, the researchers selected 44 intermediate-level female EFL learners in two intact classes (i.e. 22 learners in each class) of a private language institute in Urmia as the participants using convenience sampling. In light of the aims, the researchers randomly assigned one of the classes to the experimental group or Blended Group (BG) and the other one to the Control Group (CG). Second, the researchers administered the vocabulary, SRL, and FLCA pretests to both of the groups to ensure their homogeneity regarding their homogeneity before the beginning of the treatment sessions.

Third, in the treatment sessions, the researcher used the Adobe Connect LMS of the relevant institute in order to provide BG with the flipped classroom instruction type of BLI (Zou et al., 2020) in 16 sessions in an eight-week period (i.e. two sessions per week). Accordingly, they provided BG with this instruction in two main stages including pre-class stage and the in-class stage. In the pre-class stage, the researchers selected certain words from Gundersen and Lee's (2011) textbook entitled *Intermediate Select Readings* and developed a number of the audio-visual files in the forms of the lectures that provided the learners with the definitions of the relevant words along with the example sentences

and paragraphs that involved the relevant words. Furthermore, the researchers selected a number of reading materials such as journal articles and short stories that exposed the learners to the contextualized uses of the pertinent words. Additionally, they used the relevant LMS to administer online vocabulary test to the participants that made them aware of their weaknesses and enabled them to review the online materials in a purposeful way before their in-class sessions.

In addition, in the in-class stage, the researcher strived to facilitate the participants' active learning and practice of the vocabulary items that were introduced in the pre-class stage. Accordingly, they took advantage of collaborative learning tasks and contextualized practice. That is, they assigned learners to small groups and prompted them to discuss the meaning of the selected words with each other and to create sentences for each of the relevant words. Moreover, the researchers provided the learners with real-life scenarios and prompted them to engage in role-plays that required them to use the pertinent vocabulary items in a different situational context. Furthermore, the researchers assigned the learners to pairs and asked them to teach each other the words and phrases in the audio-visual files of the pre-class stage that they found engaging and interesting. In the process of all of the above-mentioned group and pair tasks, the researchers observed the learners' performance and provided them with constructive and formative feedback on their uses of the relevant words. Lastly, the researchers utilized self-assessment procedures and prompted the learners in BG to complete self-reflection questionnaires in order to make them aware of their understanding of the meanings and uses of the examined words. Notwithstanding, CG was taught the words using the traditional focus on forms approach.

That is, in this group, the researchers provided the learners with the selected vocabulary items and explained their meanings using definitions.

Fourth, the researchers administered the vocabulary, SRLL, and FLCA posttests to BG and CG in order to examine the efficacy of BLI treatment. Fifth, the researchers conducted 20-minute semi-structured interviews with the participants in BG to delve into their perspectives on BMI. Data saturation qualitative research method (Braun & Clarke, 2021) was used to determine the number of interviewees in the qualitative phase. Accordingly, the researchers interviewed 14 participants in BG in order to gather the qualitative data of the study. Lastly, the researchers performed the quantitative and qualitative data analyses.

3.4. Design

The researchers conducted their study using an explanatory sequential mixed-methods design. Creswell and Creswell (2017) pointed out that in this design, the researchers gather quantitative data on the examined variables and make an effort to expound on them using qualitative data analysis findings. According, in the present study, first, the researchers used semi-experimental research method type with a pre-test-post-test with a control group design to collect quantitative data on the impacts of BLI on the participants' vocabulary knowledge, SLRR, and FLCA using three questioners. Next, they explained the results of their quantitative data analysis using the findings of the qualitative interview data analysis of the present study.

3.5. Data Analysis

Considering the objectives, the researchers used Mean and Standard Deviation values as the descriptive statistics in the quantitative data analysis. In addition, they used inferential statistics including independent-samples-test to

ensure the homogeneity of BG and CG prior to the treatment. Additionally, they utilized paired-samples t-test along with MANOVA test (Pallant, 2020) in order to examine the utility of BLI treatment for improving the participants' vocabulary knowledge and SLRR, and reducing their FLCA. The researchers used Cronbach's Alpha measure of internal reliability to ensure the reliability in data analysis. Besides, they examined the validity by making sure that diagnostic testing procedures including the pretests were applied equally to each group.

Additionally, the researchers used thematic analysis (Braun & Clarke, 2021) in order to analyze the obtained interview data. Accordingly, first, they scrutinized the transcripts of the interview sessions multiple times to familiarize themselves with the data. Second, they itemized the patterns in the transcripts and extracted the codes of the study. Third, they integrated the interrelated codes with each other and developed the main themes. To examine the inter-rater reliability of interview data, the researchers used Cohen's kappa measure. Based on the results, this measure (.83) was acceptable and indicated the reliability of the data coding process.

4. Results

4.1. Quantitative Results

The researchers analyze the characteristics of the data to determine the statistical tests that had to be used to perform quantitative data analysis. The results of preliminary analysis indicated that the data were compatible with parametric test assumptions owing to the fact that they were independently-collected interval data that were normally distributed based on the results of Kolmogorov–Smirnov and Shapiro–Wilk tests ($p > .05$). Accordingly, three tests including independent-samples t-test, paired-samples t-test, and MANOVA test were used to analyze the data. The following section answers the raised questions based on the results of the analysis:

1. Does BLI have significant effects in EFL learners' vocabulary knowledge, SRL, and FLCA?

To answer this question, first, the researchers had to ensure the homogeneity of BG and CG in terms of their vocabulary knowledge, SRL, and FLCA prior to the beginning of the treatment sessions. Accordingly, they used three independent-samples t-tests. Table 1 shows the descriptive statistics on vocabulary pretest of BG and CF:

Table 1: *Descriptive Statistics on Vocabulary Pretest*

Groups	N	M	SD	SEM
BG	22	12.14	2.054	.438
CG	22	12.45	1.896	.404

Table 2 provides the results of the independent-samples t-test of the vocabulary pretest:

Table 2: *Independent Samples t-test of Vocabulary Pretest*

	Levene's Test		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	MD	SED	95% CI	
								Lower	Upper
Equal variances assumed	.013	.911	-.534	42	.596	-.318	.596	-1.521	.884
Equal variances not assumed			-.534	41.732	.596	-.318	.596	-1.521	.885

As shown in Table 2, BG and CG were homogeneous in regard to their vocabulary pretest results ($p>.05$).

In addition, Table 3 shows the descriptive statistics on the SRLl pretest results of BG and CG:

Table 3: *Descriptive Statistics on SRLl Pretest*

Groups	N	M	SD	SEM
BG	22	40.14	4.201	.896
CG	22	41.50	2.632	.561

Table 4 shows the results of the independent-samples t-test of the SRLl pretest:

Table 4: *Independent Samples t-test of SRLl Pretest*

	Levene's Test		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	MD	SED	95% CI	
								Lower	Upper
Equal variances assumed	12.064	.001	-1.290	42	.204	-1.364	1.057	-3.497	.769
Equal variances not assumed			-1.290	35.287	.205	-1.364	1.057	-3.509	.781

According to Table 4, the groups were homogenous regarding their SRLl pretest results ($p>.05$).

Additionally, Table 5 provides the descriptive statistics on the FLCA pretest results of BG and CG:

Table 5: *Descriptive Statistics on FLCA Pretest*

Groups	N	M	SD	SEM
BG	22	122.05	8.092	1.725
CG	22	123.45	8.900	1.898

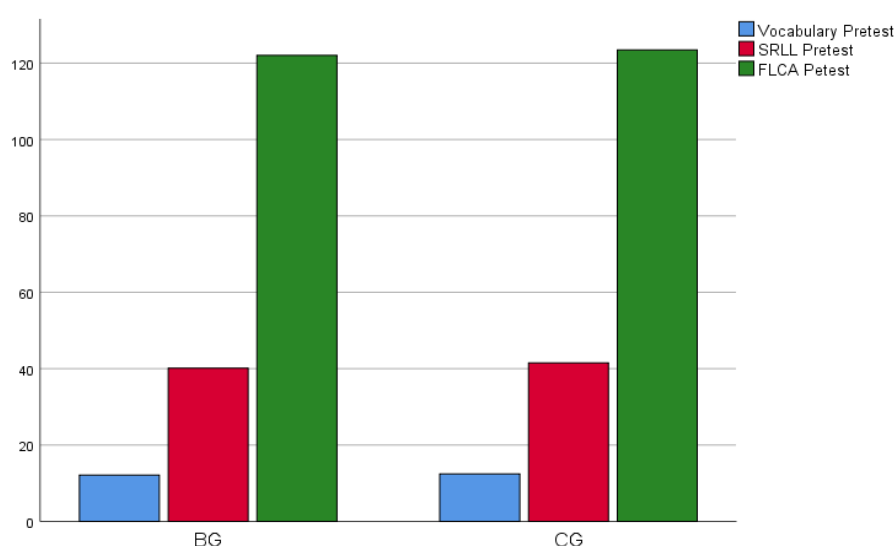
Table 6 indicates the results of the independent-samples t-test of the FLCA pretest:

Table 6: *Independent Samples t-test of FLCA Pretest*

	Levene's Test		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	MD	SED	95% CI	
								Lower	Upper
Equal variances assumed	1.464	.233	-.549	42	.586	-1.409	2.564	-6.584	3.766
Equal variances not assumed			-.549	41.625	.586	-1.409	2.564	-6.586	3.768

As shown in Table 6, the groups were homogenous regarding their FLCA pretest results ($p > .05$). Figure 1 shows the comparisons

between the vocabulary, SRLL, and FLCA pretest performances of BG and CG:

**Figure 1:** *Pretest Performances of BG and CG*

Considering the above-mentioned results, the researchers used paired-samples t-test to compare the performances of BG on vocabulary,

SRLL, and FLCA pretest and posttest. Table 7 provides the relevant descriptive statistics:

Table 7: *Descriptive Statistics on Pretest and Posttest Results of BG*

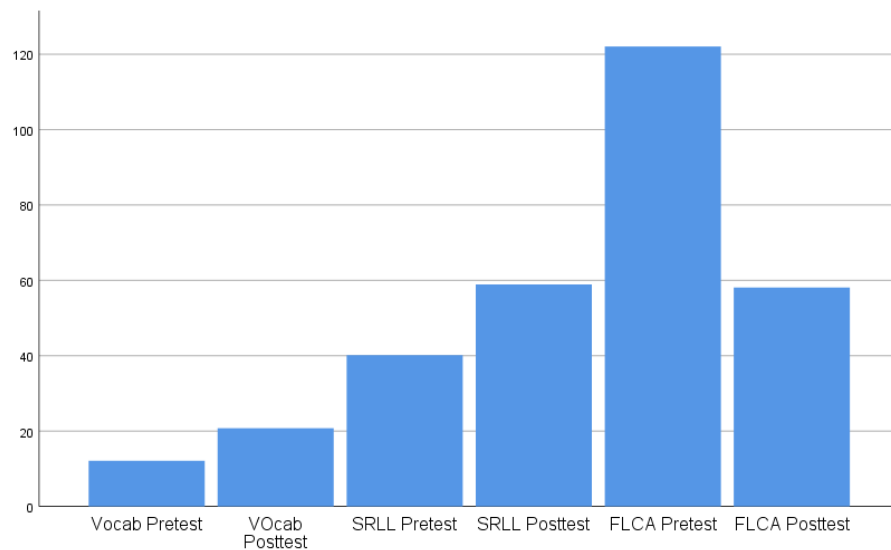
		Mean	N	SD	SEM
Pair 1	Vocabulary Pretest	12.14	22	2.054	.438
	Vocabulary Posttest	20.77	22	2.069	.441
Pair 2	SRLL Pretest	40.14	22	4.201	1.896
	SRLL Posttest	58.91	22	5.756	1.227
Pair 3	FLCA Pretest	122.05	22	8.092	1.725
	FLCA Posttest	58.09	22	8.286	1.767

Table 8 provides the results of the paired-samples t-tests of the pretest and posttest results of BG:

Table 8: Paired-Samples *t*-test of the Pretest and Posttest Results of BG

	Paired Differences					t	df	Sig. (2-tailed)
	M	SD	SEM	95% CI				
				Lower	Upper			
Vocabulary Pretest - Posttest	-8.636	2.937	.626	-9.938	-7.334	-13.794	21	.000
SRLI Pretest –Posttest	-18.773	6.339	1.351	-21.583	-15.962	-13.890	21	.000
FLCA Pretest - Posttest	63.955	11.578	2.468	58.821	69.088	25.909	21	.000

According to Table 8, there were significant differences between the results of BG on the vocabulary, SRLI, and FLCA pretests and posttest ($p < .05$). Figure 2 shows these results:

**Figure 2:** Pretest and Posttest Performances of BG

Lastly, the researchers used MANOVA to ensure that the improvements in the vocabulary knowledge and SRLI along with the reduction in the FLCA of the learners in BG stemmed from

BLI treatment of the study. Table 9 provides the results of multivariate tests:

Table 9: Results of Multivariate Tests

	Value	F	Hypothesis df	Error df	Sig.
Groups	Pillai's Trace	.942	216.109	40.000	.000
	Wilks' Lambda	.058	216.109	40.000	.000
	Hotelling's Trace	16.208	216.109	40.000	.000
	Roy's Largest Root	16.208	216.109	40.000	.000

According to the results of Wilks' Lambda multivariate test in Table 9, there were significant differences between the posttest performances of BG and CG ($p < .05$). As a result,

the researchers examined the results of the tests of between-subjects effects. Table 10 shows these results:

Table 10: *Results of Tests of Between-Subjects Effects*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Groups	Vocabulary	445.455	1	445.455	122.136	.000
	SRLI	5773.091	1	5773.091	290.795	.000
	FLCA	25248.091	1	25248.091	340.772	.000

As shown in Table 10, the results of BG on vocabulary, SRLI, and FLCA posttests were significantly better than that of CG ($p < .05$).

Figure 3, Figure 4 and Figure 5 show these results:

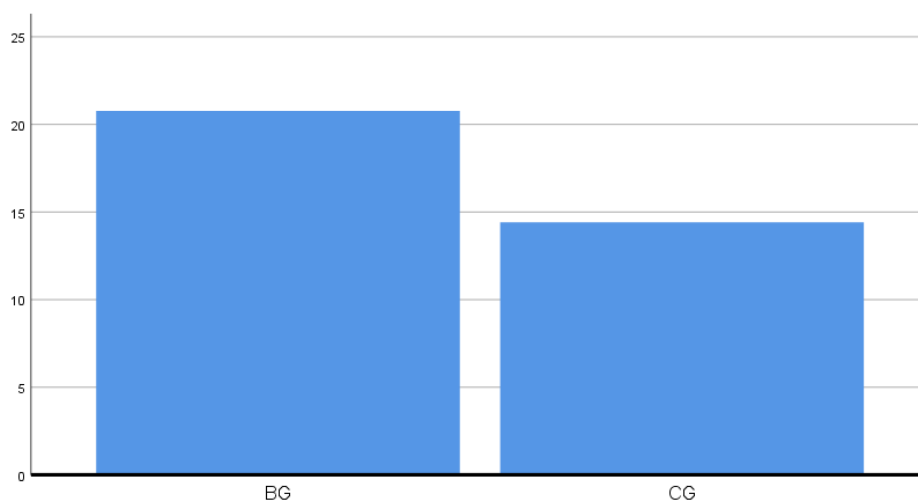


Figure 3: *Vocabulary Posttest Performances of BG and CG*

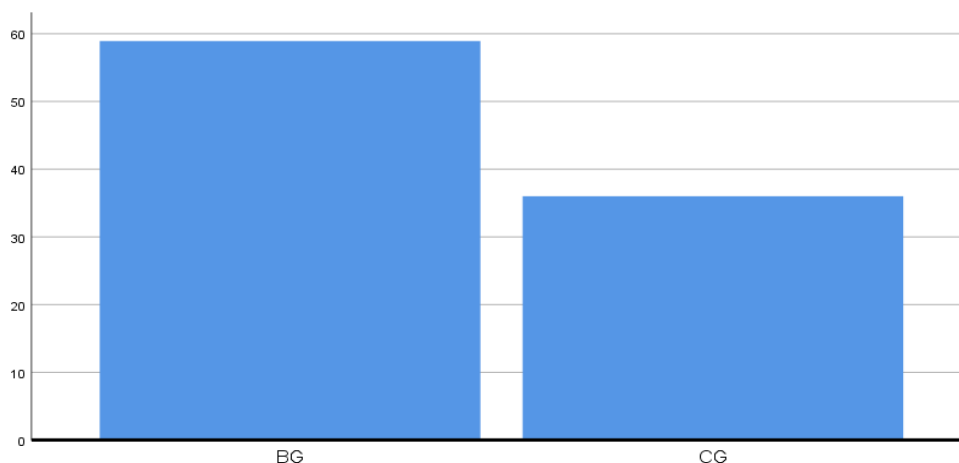


Figure 4: *SRLI Posttest Performances of BG and CG*

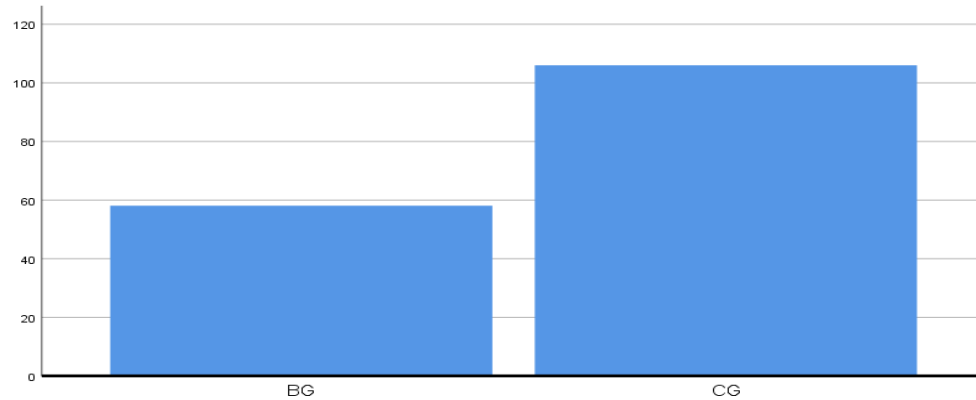


Figure 5: *FLCA Posttest Performances of BG and CG*

4.2. Qualitative Findings

The researchers used thematic analysis in order to perform qualitative interview data analysis and to answer the second research question:

2. What are EFL learners' perspectives on BLI?

Table 11 provides the codes and themes in the interview data on BG:

Table 11: *Participants' perspectives on BLI*

Codes	Themes
Paying attention to word meanings in audio-visual files Becoming aware of the uses of words in different contexts Identifying word learning difficulties	Enhanced vocabulary acquisition
Taking ownership of the language learning process Being able to set learning goals and to monitor progress Becoming confident about the ability to manage the language learning	Improvements in autonomous and self-regulated learning
Being able to prepare for in-person classes in advance using the online files Taking advantage of formative feedback in in-person classes Using peer feedback in peer teaching tasks Becoming more confident about language learning capabilities using self-reflection questionnaires	Reduced anxiety in language classes

As shown in Table 11, the first theme in the data was enhanced vocabulary acquisition. Twelve of the participants stated that BLI constituted a viable approach to vocabulary teaching. In this regard, participant 2 noted that:

“The definitions of the files and the relevant example sentences and paragraphs that depicted the use of the words were really informative. First, I tried to understand the meaning of the words by watching the files multiple times.

Next, I tried to create sentences that using the vocabulary items”.

Likewise, participant 6 stated that:

“I believe that the online tests and quizzes were really effective. I want to say that they helped me to determine my learning weakness and motivated me to review the inline files many times to learner to use the words in an effective way”.

In addition, the second major theme in the data on BG was *improvements in autonomous and self-regulated learning*. Eleven of the

participants stated that BLI ameliorated their autonomy in language acquisition. In this regard, participant 14 noted that:

“The possibility of studying the lesson before the class helped me to develop and implement effective language learning plans. I realized that I could manage the acquisition process of the target language including its words in an independent way”.

Similarly, participant 5 stated that:

“The instruction enabled me to deal with vocabulary learning in a more independent way. I was able to learn a large number of words with the help of our files and online lectures. In addition, I could practice the relevant words before our in-person classes and to complete the group learning tasks of our class in a more effective way”.

Finally, the last theme in the interview data was *reduced anxiety in language classes*. Twelve of the participants pointed out that BLI was effective in relieving their anxiety in their classes. Regarding this theme, participant 7 noted that:

“The most interesting aspect of the instruction of our class was the possibility of examining the classroom instructional materials. In this way, I was not afraid of the tasks anymore since I could study the words and review them as many times as I needed. As a result, I was prepared for everything in our classes”.

Likewise, participant 9 pointed out that:

“I was certain that my teacher could help me to complete the tasks when I faced language use difficulties. Our teacher’s feedback relieved my anxiety and helped me to focus on vocabulary learning in our group tasks”.

5. Discussion

Research question one scrutinized the extent to which BLI influenced EFL learners’ vocabulary acquisition, SRLL, and FLCA. Based on the

obtained results, BLI significantly ameliorated the learners’ vocabulary knowledge and SRLL. In addition, BLI significantly reduced the participants’ FLCA. In regard to the vocabulary knowledge, the results are in line with the results of Alnuhayt. (2018), Khodabandeh and Naseri (2021), and Nabilou and Zarei (2023). Alnuhayt (2018) pointed out that in his study BMI significantly improved the learners’ vocabulary learning since it access the instructional materials at their own pace. As he explained, the flexibility of access to the materials empowered the learners to review the words multiple times, to develop a better understanding of their meanings, and to retain them in their long-term memory. Moreover, Khodabandeh and Naseri (2021) ascribed the efficacy of BLI to its role in learners’ active engagement in learning tasks. AS they noted, in their study, the in-person class time was dedicated to interactive and collaborative tasks that reinforced the learners’ vocabulary learning by engaging them in discussions of the meaning of new words and enabled them to internalize the relevant words. Additionally, Nabilou and Zarei (2023) argued that BLI was effective in vocabulary teaching since it prompted them to take the responsibility for their word acquisition, resulted in their ownership of vocabulary learning and ameliorated their word learning motivation. As a result, it can be averred that the positive effect of BLI on participants’ vocabulary learning in this study stemmed from the fact that it facilitated their personalized learning, improved their engagement in vocabulary learning tasks in in-person classes, and increased their motivation for learning new words.

Additionally, regarding SRLL, in general, the results of this study support the results of Ghufon and Nurdianingsih (2019) and Izadpanah (2022). Ghufon and Nurdianingsih

(2019) argued that in their study BLI was efficacious for improving the learners' autonomy as man factor in their SRL due to the fact that it provided them with self-reflection and self-assessment opportunities. As they explained, the learners' self-reflection after studying the online materials helped them to evaluate their strengths and weaknesses and to determine the vocabulary learning areas that needed more focus. In addition, Izadpanah (2022) pointed out that BLI significantly improved the learners' self-directed learning owing to the fact that its collaborative tasks enabled the learners to share insights and support each other's learning. As he explained, the learners' interaction with peers empowered them to take initiative in their learning, to seek help when needed, and to develop efficacious study habits. Considering these discussion, it can be argued that in the present study BLI improved the participants' SRL due mainly to the fact that it expedited their self-reflection and provided them with self-assessment opportunities in the process of vocabulary learning.

Moreover, in regard to FLCA, generally, the results corroborate the results of Chen and Hwang (2019) and Amini et al. (2022). Chen and Hwang (2019) attributed the efficacy of BLI for reducing learners' speaking anxiety to the lack of pressure on learners in its online environment. As they explained, in their study, the learners' ability to engage with the materials at their own pace relieved them from the pressure that they felt in in-person classes and reduced their anxiety in the speaking tasks of the in-person sessions. Likewise, Amini et al. (2022) stated that in their study BLI significantly reduced their learners' speaking anxiety owing to the fact that its digital platform provided the learners with more varied and frequent opportunities for speaking practice and ameliorated their self-confidence. Consequently, it can be argued that, in this study, the efficacy of BLI for reducing the learners'

FLCA stemmed from its role in learners' individualized language learning at their own pace and their capability to practice vocabulary items multiple times before their in-person classes.

Research question two examined the participants' perspectives on BLI. The findings indicated that the learners had favorable perspectives on this approach. More specifically, they believed that BLI ameliorated their vocabulary learning and SRL and reduced their FLCA. These results are in line with the results of Steen and Foldnes (2018), and Webb and Doman (2019). Steen and Foldnes (2018) argued that learners' positive views on BLI in their study was related to its flexibility and convenience. As they explained, in their study, learners' ability to study the online materials of BLI empowered them balance language learning with their other responsibilities. As a result, learners preferred BLI to their traditional courses. Similarly, Webb and Doman (2019) pointed out that the learners' favorable perspectives on BLI stemmed from the variety of its resources. According to them, the various multimedia resources including videos, interactive language exercises, and online tests engaged the learners in learning tasks, increased their motivation, and resulted in their positive attitudes towards BLI. Accordingly, it can be argued that in the present study the participants' positive perspectives on BLI stemmed from its flexible nature and engaging and riveting online resources among the other factors.

6. Conclusion

The present study strived to determine the impacts of BLI on Iranian EFL learners' vocabulary knowledge, SRL, and FLCA. Moreover, it strived to specify these learners' perspectives on this approach to language teaching. The results indicated that BLI

significantly ameliorated the learners' vocabulary learning and SRL and reduced their FLCA. In addition, the learners had favorable views on BLI.

The results have certain implications for teacher education courses in foreign language contexts. They highlight the fact that it is essential to integrate a BLI-based module in the relevant courses to provide the teachers with a satisfactory understanding of technology-informed language teaching approaches and to capacitate them to teach the relevant courses effectively. Additionally, it is necessary to facilitate the teacher educators' participation in empowerment courses that provide them with information about state-of-the-art technology-mediated approaches to language teaching including BLI. These courses can help the teacher educators to incorporate the discussions of BLI in their courses in a satisfactory way.

In addition, the results underline the need for the development of BLI courses in various academic settings in foreign language contexts including Iranian EFL context. Currently, various factors such as lack of trained teachers and online educational materials prevent syllabus designers from developing and implementing BLI courses. Nonetheless, the uses of these courses are likely to ameliorate learners' acquisition of language skills and aspects (e.g. vocabulary) along with their affective factors (e.g. SRL & FLCA) owing to their personalized instruction, flexibility, and convenience among the others.

Lastly, results indicated that EFL teachers can improve the instruction of various language aspects and learner factors using BLI. Accordingly, it is recommended that teachers integrate certain principles of BLI including exposure to online learning materials, self-reflection opportunities, self-assessment, and in-

person collaborative tasks into their classes. These features may have an advantageous impact on learners' autonomous and self-directed language learning and may relieve them from their inhibition and the pressure of task performance in in-person classes in an effective way.

This study suffered from certain limitations that may limit the generalizability of its findings. These limitations stemmed from the fact that the study was not able to take advantage of random sampling and random assignment of the participants. Moreover, it could not determine the effects of certain factors such as learners' age, gender, and first language on the obtained results. In addition, the researchers delimited the study by selecting intermediate-level female EFL learners at language institutes without dealing with male learners at other proficiency levels and settings. The future studies need to deal with these issues. In addition, they need to focus on the impacts of BLI on language aspects including grammar and pronunciation and learner factors such as self-efficacy, self-esteem and foreign language enjoyment that were not examined in this study. Moreover, the relevant studies have to compare the utility of various BLI models such as flex model and enriched virtual in language classes. Finally, these studies have to be conducted in both second and foreign language contexts to ensure the generalizability of the obtained results of the present study.

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