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The Study of EFL Learners' Perception of Using E-learning, Self-Regulation and Constructivism in English Classrooms: Teachers, Intermediate and Advanced Learners' [1]Attitude

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ABSTRACT

Introduction: Effective ways of acquiring a second language in an educational context undergo development in teaching and learning through e-learning, self-regulated learning, and constructivism methods of learning that would be practical and useful for EFL learners.

Purpose: To investigate the impact of self-regulated learning, constructivism, and e-learning on English language learning and the attitudes of learners toward them.

Method: The study employs a quantitative research method involving 360 intermediate and advanced EFL learners and 34 teachers. Data were collected over a six-week period in Zanjan English language institutes using the questionnaires. The one-sample T-test compared the means, while ANOVA assessed significant differences among the variable means of E-learning, self-regulation, and constructivism in the study groups. Post-hoc LSD tests were used to compare the means of groups two by two.

Results: The results showed that the participants displayed positive attitudes toward using e-learning, self-regulation, and constructivism in acquiring a second language. Qualitative data analysis revealed EFL learners' autonomy in learning and the potential influence of teachers in shaping learners' attitudes.

Conclusion: This study highlights the importance of considering learners' attitudes and autonomy in designing effective language learning environments. Understanding the learners' perspectives can aid educators in adopting innovative and learner-centered approaches, leading to enhanced language learning outcomes.

KEYWORDS

Constructivism, EFL learners, E-learning, Self-regulated learning, Teachers

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INTRODUCTION

The field of education has witnessed remarkable advancements with the rapid development of information technology (IT). One notable innovation that has emerged in response to these technological advancements is E-learning, a method that utilizes electronic instructional content delivered via the Internet, enabling learners and instructors to participate in remote learning communities (O'Connor et al., 2023; Patrichi et al., 2016). E-learning holds the potential to enhance access to advanced educational experiences, facilitate collaborative learning, and improve the overall quality and effectiveness of education. Its flexibility in terms of time management and learning pace appeals to self-directed and independent learners, accommodating diverse individual needs and preferences (Dubey et al., 2023; Moreira, 2017).

Concurrently, educational researchers and practitioners have recognized the

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significance of self-regulated learning (SRL) as a fundamental aspect of the learning process. Self-regulated learners take an active role in their learning journey, setting goals, identifying resources, and employing appropriate learning strategies to achieve academic success (Cho & Kim, 2013). SRL has been associated with increased motivation, critical thinking, and the ability to transfer skills to real-world contexts, making it a valuable skill for learners across various educational settings, including E-learning environments (Heikkinen et al., 2023; Peeters et al., 2016).

The constructivist approach to teaching and learning has gained prominence as a student-centered paradigm. This approach emphasizes learners' active engagement in the learning process, with teachers adopting the role of facilitators who share knowledge and authority with students. Within constructivist classrooms, learners construct their understanding through meaningful experiences and interactions, promoting deeper comprehension and application of knowledge (Alqahtani et al., 2023; Alt, 2019). Constructivism has demonstrated promising outcomes in fostering students' critical thinking, problem-solving abilities, and autonomy in learning (Gunduz, 2015).

While existing study recognizes the potential of E-learning, SRL, and constructivism as powerful educational tools, it is essential to investigate the perception of EFL (English as a Foreign Language) learners towards these autonomous learning approaches, particularly at intermediate and advanced language proficiency levels. Understanding learners' attitudes and preferences towards these approaches is critical for designing learner-centric and effective language learning environments that cater to their specific needs and motivations (Maphoto & Suliman, 2024).

The primary objective of this study is to examine the perceptions of EFL learners concerning the integration of E-learning, self-regulated learning (SRL), and constructivism in English classrooms, with particular emphasis on intermediate and advanced learners and their teachers. By gaining insights into the perspectives of learners, this research aims to fill the existing gap in the literature and advocate for the adoption of evidence-based, learner-centered strategies that enhance language learning success in EFL contexts. Furthermore, by investigating the interplay among E-learning, SRL, and constructivism, this study intends to contribute to the ongoing discourse on autonomous learning approaches in language education (Fitria, 2024).

A crucial aspect of this research is to understand the perceptions and comprehension of autonomous learning approaches among EFL learners and their teachers. This understanding is essential for developing a more effective and personalized language learning environment, ultimately improving language learning outcomes for intermediate and advanced EFL learners.

Research Questions

(1) Is the EFL learners' perception of using self-regulation in English classrooms desirable?

(2) Is the EFL learners' perception of the advantages and disadvantages of using e-learning in English classrooms desirable?

(3) Is the EFL learners' perception of using constructivism in English classrooms desirable?

(4) Is the EFL learners' and teachers' perception of using self-regulation in English classrooms desirable?

(5) Is the EFL learners' and teachers' perception of using e-learning in English classrooms desirable?

(6) Is the EFL learners' and teachers' perception of using constructivism in English classrooms desirable?

LITERATURE REVIEW

Constructivism

Constructivism is a prominent learning theory that emphasizes active student participation in the learning process, with teachers playing a facilitative role to help students master and achieve the learning objectives. Classroom assessment is utilized to foster effective teaching practices (Bell, 2020; Khaliq et al., 2023). Fernando and Marikar (2017) conducted a research study with a target population of 41 students to explore the application of constructivist learning theory and participatory teaching methods. The students were provided with a questionnaire related to constructivist learning theory and participatory teaching methods. The findings of the survey provided strong support for the effectiveness of constructivist teaching/learning theory and participatory teaching methods in the educational context. The survey revealed that participatory teaching methods, such as 'question and answer' and 'group discussion,' were highly popular among undergraduate students, indicating that students responded positively to these interactive approaches. Furthermore, the study established the utility of these participatory teaching methods in enhancing the overall learning experience for the students (Omodan, 2022; Shah & Kumar, 2019).

Self-Regulation

Self-regulated learning theory refers to the process, a learner involves in when takes responsibility for acquisition in learning. It happens in three steps: planning, monitoring, and reflection. A new algorithm called Inductive Miner (Cerezo et al.,2020; Yossatorn et al., 2023) was applied

in the educational domain over the interaction traces from 101 university students in a course given over one semester on the Moodle 2.0 platform. Data were extracted from the platform's event logs with 21,629 traces in order to discover students' self-regulation models that contribute to improving the instructional process. It concluded that although students who passed did not follow the instructors' suggestions exactly, they did follow the logic of a successful self-regulated learning process as opposed to their failing classmates.

A mixed-methods study was conducted to examine the effects of self-regulated learning (SRL) strategy training on learners' achievement, motivation, and strategy use in a web-enhanced College Success course at a community college in the southeast US. The participants in this study were 21 (8 treatment vs. 13 control) undergraduate students enrolled in 2 sections of the course. The participants were freshmen (N=18) and sophomores (N=3), whose ages ranged from 17 to 24 (M=18.9). Fifteen (71%) of the participants were female and 6 (29%) were male. They were made up of 7 (33%) African Americans, 13 (62%) Caucasians, and 1 (5%) Hispanic. Five (62.5%) participants in the treatment and seven (53.8%) in the control condition were required to take this College Success course because of deficiency on the College Placement Test. Only students who completed all the intervention procedures constituted the participants in this study, and comparisons between the pre-and post-intervention results were made on exactly the same set of individuals. The findings of this study suggested that the training on SRL strategies might be beneficial to learners' persistence (Hu & Discroll, 2013; Li et al., 2022; Hsu et al., 2023).

E-learning

E-learning, or electronic learning, refers to the delivery of learning and training through digital resources and has transformed educational practices. It introduces new opportunities in education (Bai, 2023; Sadapotto et al., 2022) and also presents significant challenges for students, who must determine what, when, how, and for how long to learn (Ampa, 2021; Cerezo et al., 2016). Self-regulated learning (SRL) and constructivism are crucial theoretical frameworks for understanding these dynamics in E-learning environments. Self-regulated learning involves learners taking control of their own learning processes, setting goals, and monitoring their progress. This approach is particularly relevant in E-learning, where students often work independently and must manage their own learning activities. The ability to self-regulate is essential for success in these environments, as highlighted by Aparicio et al. (2017), who proposed a theoretical model examining grit as a determinant of E-learning system success. Their study, which validated the model using structural equation modeling (SEM), demonstrated that grit positively affects student satisfaction and individual performance.

Constructivism, on the other hand, emphasizes the active role of learners in constructing their own understanding and knowledge through experiences and interactions. In the context of E-learning, constructivist approaches can facilitate deeper engagement and understanding by encouraging learners to interact with content, peers, and instructors in meaningful ways. Dashtestani (2014) investigated the perceptions of EFL learners and teachers regarding the use of online instruction, underscoring the role of teachers as mediators who facilitate these interactive and constructive learning processes.

Combining these theoretical perspectives, it is evident that both self-regulation and constructivist principles are integral to maximizing the effectiveness of E-learning. Understanding how these elements interact can inform the development of more effective and personalized learning environments, ultimately enhancing educational outcomes.

Relationship Between Variables

The relationship between constructivism, self-regulated learning, and E-learning is a fundamental aspect of this study, as it sheds light on the interconnectedness and collective impact of these concepts on EFL learners' attitudes and perceptions in intermediate and advanced language proficiency levels. Understanding how these three autonomous learning approaches work together is crucial in creating an effective and learner-centered language learning environment (Heikkinen et al., 2023)

Constructivism, as a learning theory, emphasizes the active role of students in constructing their understanding and knowledge through meaningful experiences and interactions with the learning materials and their peers (Ying, 2016). This student-centered approach promotes critical thinking, problem-solving, and a deeper comprehension of the subject matter. By encouraging students to take responsibility for their learning and explore various perspectives, constructivism fosters a sense of ownership and engagement in the learning process.

Self-regulated learning complements constructivism by empowering students to become active and independent learners (Cho & Kim, 2013). Through SRL, learners are encouraged to set specific learning goals, monitor their progress, and regulate their learning strategies to achieve those goals. When students apply self-regulation techniques within the constructivist learning environment, they are better equipped to adapt their learning strategies to suit their individual needs and learning styles, further enhancing their learning outcomes (Peeters et al., 2016).

Both constructivism and SRL are well-aligned with the principles of E-learning, which leverages electronic instructional content delivered via the Internet to create remote learn-

ing communities (Patrichi et al., 2016). E-learning provides students with the flexibility to manage their learning pace and access educational resources from any location, making it an attractive option for learners seeking personalized and self-directed learning experiences (Moreira, 2017). In E-learning environments, students are encouraged to take an active role in their learning, engage in collaborative online discussions, and participate in interactive learning activities. This aligns with the constructivist notion of student engagement and empowerment.

By exploring the interplay between constructivism, SRL, and E-learning, this study seeks to uncover valuable insights into how these autonomous learning approaches collectively influence EFL learners' attitudes and perceptions in English classrooms. Understanding how these concepts complement and reinforce each other can lead to the design and implementation of more effective instructional strategies that cater to the unique needs and motivations of intermediate and advanced EFL learners. Moreover, it can inform educators and policymakers on how to create dynamic and interactive language learning environments that foster learner autonomy, motivation, and overall language learning excellence (Mejeh et al., 2024).

The potential of constructivism, SRL, and E-learning to create learner-centric language learning environments is particularly significant in the context of language education. By embracing these principles and practices, language educators can empower their students to become more proficient, confident, and self-directed language learners, equipped with the essential skills to continue their language learning journey beyond the classroom (Ampa, 2021). By uncovering the relationship between these autonomous learning approaches, this study aims to contribute to the existing body of knowledge in EFL education and provide practical implications for language educators and policymakers seeking to create empowering and innovative language learning experiences for intermediate and advanced EFL learners.

METHOD

This quantitative study used a descriptive and inferential statistical method, one sample T-test, pre-test and post-test, and parametric test to test the EFL learners' perception of using e-learning, self-regulation, and constructivism in English classrooms. This study collected quantitative and correlational information through questionnaires and a quick placement test to investigate the learners' proficiency level. The participants were selected through a multistage cluster random sampling method. To guarantee the homogeneity of the participants, the Quick Placement test (QPT) was used to test the learners' proficiency level.

Learner Participants

The participants of this study were Iranian EFL learners in intermediate and advanced-level institutions in Zanjan province (n=7000). According to the Cochran formula size, 360 learners were needed as the sample size of the study. Because of the limitation of easy access to institutions, four institutes were chosen as the target of this study between the total institutions (n=116) in Zanjan province. The learners were chosen from Melal Language Institute, Safir Institute, and Omid Language Institute, Goldi's Institute for these stages. We used questionnaires to investigate the e-learning, self-regulation, and constructivism of the learners. The type of sampling in this study was multi-stage random sampling. The participant's age ranges were 13 to 14 and 15 to 16, and they were about 20 learners in each class. We used a multi-stage sampling method for selecting the learners.

Teacher Participants

The other group constituted the teachers who were selected according to the convenience sampling method (n=34). The teachers, both male and female, were from Zanjan institutes. They responded to the questionnaires in self-regulation, e-learning, and constructivism. During one term the data were collected through questionnaires for the learners and the teachers too. A descriptive research method was chosen for this study. A Likert scale was used to investigate this study through questionnaires. It is the most widely used approach to scaling responses in this study.

Instruments

In this study, we used three questionnaires containing 10 items on a 5-point Likert scale to collect the required data. So, the questionnaires included the participants' perceptions of self-regulation, constructivism, and the advantages and disadvantages of using e-learning.

Pilot Study

The participants' perceptions of Self-Regulation and constructivism capabilities, e-learning (ICTs) advantages, and disadvantages sections of questionnaires were piloted on 30 intermediate and advanced students with similar educational backgrounds to obtain the test's reliability. The internal consistency and reliability were acceptable. The test-retest reliability of these tests with the one-week interval was (α =.84) which showed an acceptable reliability value.

Backward and Forward Translation

To ascertain that the participants had no difficulty in understanding all the items in the questionnaires, the ques-

tionnaires were translated into Persian. First, two expert translators were given the English version to translate into Persian, and then two other expert translators were asked to translate the Persian versions of the questionnaires back into English, and these versions were compared by two other English-language experts with the original English questionnaires, and eventually, one of the Persian versions of the most suitable translated questionnaires was chosen as the current study questionnaire.

Procedure

In this study, two levels of students (n=360) in English classrooms in intermediate, and advanced levels (Melal Institute, Iranzamin, Roozbeh & etc,) were chosen, and in each level, self-regulated learning, constructivism, and e-learning were investigated with a questionnaire that contained 10 items, for each one. During one term the data were collected through questionnaires for the learners, and the teachers too. Descriptive and inferential research methods were chosen for this study. A Likert scale was used to investigate this study through questionnaires. It is the most widely used approach to scaling responses in this study.

Data Analysis

In this study, descriptive and inferential statistical methods were used to analyze the collected data and test the research questions. In descriptive methods, the research data were presented via Tables and statistical tools such as central indicators and dispersion to clarify the subject. We also used inferential statistical methods to test hypotheses.

RESULTS

Descriptive Findings

To become more familiar with the nature of research variables, it is necessary to describe them before analyzing the data because statistical description of data precedes statistical inference and helps to identify patterns governing the data. In this section, we used some central indicators and dispersion. Accordingly, the descriptive features of research variables were examined separately for each research question.

Descriptive indices are related to research variables of self-regulation, e-learning, and constructivism in three groups of Teachers, Intermediate learners, and Advanced learners. The results are presented in Table 1. Also, in Figure 1, the means of pre-test and post-test were compared.

Inferential Findings

In this section, the normality of the study samples was initially investigated. Based on the normality of the samples, parametric tests were employed to test the research hypotheses. A T-test was used to compare the sample means with the theoretical mean to determine whether to accept or reject the hypotheses.

The sample sizes in all three groups were sufficiently large, with each exceeding 30 participants. According to the central limit theorem, normality can be assumed for large samples; hence, the hypothesis of normality for the study

Table 1

Descriptive Statistics of E-learning, Self-regulation, and Constructivism

Group		N	Minimum	Maximum	Mean	Std. Deviation
Self-Regulation	Teachers	34	2.20	4.10	3.3500	.43641
	Intermediate Learners	180	2.70	4.50	3.8822	.50629
	Advanced Learners	180	2.70	4.50	3.9128	.48150
Constructivism	Teachers	34	1.80	5.00	3.5706	.58596
	Intermediate Learners	180	2.70	4.90	4.0406	.64424
	Advanced Learners	180	2.70	4.90	4.0422	.65134
E-learning	Teachers	34	2.50	4.30	3.2706	.47580
	Intermediate Learners	180	1.60	4.60	3.5894	.66058
	Advanced Learners	180	1.60	4.60	3.7011	.59137

Figure 1

The Mean ofGgroups of Study

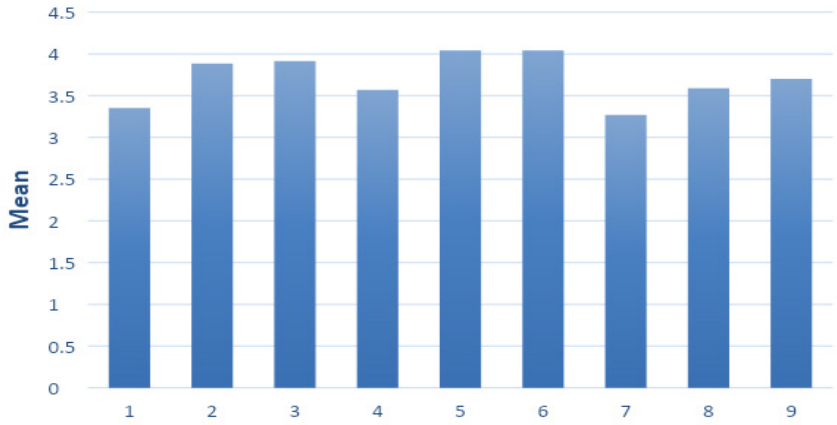

Table 2

One-Sample Test of Self-regulation

Group t		Test Value = 3		
		df	Sig	
Teachers	Self-regulation	4.676	33	.000
Intermediate Learners	Self-regulation	23.378	179	.000
Advanced Learners	Self-regulation	25.433	179	.000

samples was deemed acceptable. Consequently, parametric tests were utilized to test the research hypotheses.

First Hypothesis

The EFL learners' and teachers' perception of using self-regulated learning in English language classrooms is desirable.

A One-Sample T-test was conducted to test this hypothesis. The related hypothesis for the comparison of practical and theoretical means was as follows:

H_0: The mean is less than or equal to 3 (The perception of EFL learners and teachers on using self-regulated learning in English language classrooms is not desirable).

H_1: The mean is greater than 3 (The perception of EFL learners and teachers on using self-regulated learning in English language classrooms is desirable).

Mathematically, this can be expressed as:

H_0: μ≤3
H_1: μ>3

where μ represents the population mean. The results of the One-Sample T-test are presented in Table 2.

As seen in all three groups of the study, a significance level (Sig) of 0.000 was obtained. Therefore, the null hypothesis is rejected at the 0.01 error level. In other words, the mean of the sample is significantly greater than 3. This indicates that EFL learners' and teachers' perception of using self-regulated learning in English classrooms is desirable.

Second Hypothesis

The perception of EFL learners and teachers on the advantages and disadvantages of using e-learning in English classrooms is desirable.

One-Sample Test used to test the above hypothesis. related hypothesis to the comparison of practical and theoretical means showed:

H_0: The mean is less than or equal to 3. EFL learners and teachers' perception on the advantages and disadvantages of using e-learning in English classrooms is not desirable.

H_1: The mean is more than 3. EFL learners and teachers' perception on the advantages and disadvantages of using e-learning in English classrooms are desirable.

Mathematically, this can be expressed as:

H0: μ≤3
H1: μ>3

where μ represents the population mean. The results of the One-Sample T-test are recorded in the Table 3.

In the group of teachers, a significance level (Sig) of 0.002 was obtained, while in the group of language learners, the significance level was 0.000. Therefore, the null hypothesis is rejected at the 0.01 error level. This indicates that the mean for the community is significantly greater than 3. Consequently, the perception of EFL learners and teachers regarding the advantages and disadvantages of using E-learning in English classrooms is positive.

Third Hypothesis

EFL learners' and teachers' perceptions of using constructivist learning are desirable.

A one-sample test was used to test the above hypothesis related to the comparison of practical and theoretical means showed:

H_0: The mean is less than or equal to 3. (EFL learners' and teachers' perceptions of using constructivist learning in English classrooms are not sufficiently positive).

H_1: The mean is greater than 3. (EFL learners' and teachers' perceptions of using constructivist learning in English classrooms are desirable).

$$\begin{cases} H_0: \mu \leq 3 \\ H_1: \mu > 3 \end{cases}$$

Where μ is the mean of the population. The results of the One-Sample T-test are recorded in Table 4.

In all three study groups, a significance level (Sig) of 0.000 was obtained. Consequently, the null hypothesis is rejected at the 0.01 error level. This indicates that the population mean is significantly greater than 3. Therefore, EFL learners' and teachers' perceptions of using constructivist learning in English classrooms are favorable.

Fourth Hypothesis

There is a significant difference between the EFL learners of intermediate level, advanced level, and teachers of using self-regulated learning in the English language classes.

H0: The variable mean of Self-regulation in the three groups of study is the same.

H1: There is a significant difference between the variable mean of Self-regulation in the two groups.

To test the hypothesis, the means of three independent populations were compared. Since the samples from all three communities exhibited a normal distribution, a one-way analysis of variance (ANOVA) was employed. Descriptive indicators for the self-regulation variable across the three study groups are detailed in Table 5.

There is a significant difference in the self-regulation means among the three groups.

Considering the value of null hypothesis Sig = 0.000, the hypothesis of equality of the means of the three groups of study, was rejected at the error level of 0.01 and it was concluded that there is a significant difference between the means of at least two of the three groups. The post-hoc LSD test was used to identify the significant difference between groups.

Table 3

One-Sample Test of E-learning

Group	t	Test Value = 3		
		df	Sig	
Teachers	E-learning	3.316	33	.002
Intermediate Learners	E-learning	11.972	179	.000
Advanced Learners	E-learning	15.906	179	.000

Table 4

One-Sample Test of Constructivism

Group	t	Test Value = 3		
		df	Sig	
Teachers	Constructivism	5.678	33	.000
Intermediate Learners	Constructivism	21.670	179	.000
Advanced Learners	Constructivism	21.468	179	.000

Table 5

Self-Regulation Descriptives

	N	Mean	Std. Deviation
Teachers	34	3.3500	.43641
Intermediate Learners	180	3.8822	.50629
Advanced Learners	180	3.9128	.48150
Total	394	3.8503	.51211

Table 6

Self-Regulation ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.396	2	4.698	19.611	.000
Within Groups	93.669	391	.240		
Total	103.065	393			

Table 7

Multiple Comparisons Dependent Variable: Self-Regulation LSD

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	Result
Teachers	Intermediate Learners	-.53222*	.09153	.000	Significant
	Advanced Learners	-.56278*	.09153	.000	Significant
Intermediate Learners	Teachers	.53222*	.09153	.000	Significant
	Advanced Learners	-.03056	.05159	.554	Not Significant
Advanced Learners	Teachers	.56278*	.09153	.000	Significant
	Intermediate Learners	.03056	.05159	.554	Not Significant

*Note. *The mean difference is significant at the 0.05 level.*

The results of the post-hoc test revealed no significant difference in self-regulation means between the Intermediate Learners and Advanced Learners groups, but there was a significant difference in the self-regulation means in the Teachers group.

Fifth Hypothesis

There is a significant difference between the EFL learners of intermediate level and advanced level, and teachers on the advantages and disadvantages of using e-learning in English classrooms.

H_0: The variable mean of e-learning is the same in the three groups of study.

H_1: There is a significant difference between the variable means of e-learning in the two groups.

To test the above hypothesis, the objective was to compare the means of three independent populations. Given that the samples from all three communities displayed a normal distribution, a one-way analysis of variance (ANOVA) was utilized. The results of the variance analysis are documented in Table 8, which includes the descriptive indicators of e-learning variables across the three study groups.

There is a significant difference among the variable means of e-learning in the three study groups. The significant differences identified by the variance analysis test are presented in Table 9.

Given the significance level (Sig) of 0.001, the null hypothesis of equal means among the three study groups was rejected at the 0.01 error level. This indicates a significant difference between the means of at least two of the three groups in Table 10. The LSD post-hoc test was subsequently used to identify the specific group differences.

The results of the post-hoc test showed that there was no significant difference between the means of e-learning in two groups of advanced Learners and intermediate Learners, but there is a significant difference between the variable means of the self-regulation in teachers' group.

Sixth Hypothesis

There is a significant difference in the use of constructivist learning between intermediate-level EFL learners, advanced-level EFL learners, and teachers in English classrooms.

H_0: The variable mean of constructivism is the same across the three study groups.

H_1: There is a significant difference between the variable means of constructivism in the two groups.

To test this hypothesis, the objective was to compare the means of three independent populations. Since the samples from all three communities exhibited a normal distribution, a one-way analysis of variance (ANOVA) was used. The descriptive indicators of constructivist learning across the three study groups are detailed in Table 11.

There was a significant difference among the variable means of constructivism in the three study groups. According to Table 12, the significant differences are documented in the results of the variance analysis test.

Given the significance level (Sig) of 0.000, the null hypothesis of equal means among the three study groups was rejected at the 0.01 error level. This indicates a significant difference between the means of at least two groups. The LSD post-hoc test was used to identify these significant differences among the groups. The results of this test are presented in Table 13.

Based on Table 13, the results of the post-hoc test showed that there was no significant difference between the means of constructivism in the advanced learners and intermediate learners' groups. However, there was a significant difference between the variable means of constructivism in the teachers' group.

DISCUSSION

The research questions put forward sought to assess the perception of EFL learners and teachers of using e-learning, SRL, and constructivism in English classrooms. Quantitative findings revealed that the intermediate and advanced EFL learners were highly positive with autonomous learning methods. Also, the teachers might be controlled by the

Table 8

E-learning Descriptives

	N	Mean	Std. Deviation
Teachers	34	3.2706	.47580
Intermediate Learners	180	3.5894	.66058
Advanced Learners	180	3.7011	.59137
Total	394	3.6129	.62530

Table 9

E-learning ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.484	2	2.742	7.235	.001
Within Groups	148.180	391	.379		
Total	153.664	393			

Table 10

Multiple Comparisons Dependent Variable: E-learning LSD

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	Result
Teachers	Intermediate Learners	-.31886*	.11512	.006	Significant
	Advanced Learners	-.43052*	.11512	.000	Significant
Intermediate Learners	Teachers	.31886*	.11512	.006	Significant
	Advanced Learners	-.11167	.06489	.086	Not Significant
Advanced Learners	Teachers	.43052*	.11512	.000	Significant
	Intermediate Learners	.11167	.06489	.086	Not Significant

*Note. *The mean difference is significant at the 0.05 level.*

learning process. Furthermore, the mindset among participants perceived positive attitudes through using e-learning, SRL, and constructivism. Our investigation on e-learning is motivated by the study conducted by Dashtestani (2014). Motivational beliefs of student who use SRL strategies facilitate their online English learning (Crezo, 2020). Fernando and Marikar (2017) investigated constructivist classrooms that emphasize critical thinking and problem-solving skills, which resonate with those who acknowledge the importance of such cognitive abilities for language proficiency. Despite the barriers and challenges of students and teachers in e-learning, SRL, and constructivism, our study adds other groups of participants for comparison in these three factors. Therefore, this study provided a positive attitude and motivation toward using e-learning, SRL, and constructivism for EFL learners and teachers.

The impact on the perception of the SRL method in this study showed the learners' motivation and perception in the learning process empowering them to actively participate in achieving their learning objectives; the results of qualitative data indicated the compatibility of SRL with previous research results (Crezo et al., 2020). Also, the adaptability and flexibility inherent in self-regulation enable learners to adjust their strategies to different language contexts, promoting language proficiency. The development of self-regulation skills, including time management and self-assessment, aligns with the broader educational goal of equipping learners with skills that extend beyond the classroom. Moreover, our findings on teachers' and EFL learners' attitudes and motivation on using SRL theory confirmed the findings of Yossatorn (2023) and Hu and Discroll (2013) that learners' persistence often positively exhibits heightened motivation and engagement and so, active participation in setting goals and tracking progress leads to a sense of achievement, fostering effective learning outcomes. However, challenges must be considered. Cultural norms can influence learners' perception of self-regulation, especially in contexts where teacher-centered approaches are customary (Li et al., 2022). Surprisingly, this discussion examines the potential advan-

Table 11

Constructivism Descriptives

	N	Mean	Std. Deviation
Teachers	34	3.5706	.58596
Intermediate Learners	180	4.0406	.64424
Advanced Learners	180	4.0422	.65134
Total	394	4.0008	.65469

Table 12

Constructivism ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.886	2	3.443	8.333	.000
Within Groups	161.564	391	.413		
Total	168.450	393			

Table 13

Multiple Comparisons Dependent Variable: Constructivism LSD

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	Result
Teachers	Intermediate Learners	-.46997*	.12020	.000	Significant
	Advanced Learners	-.47163*	.12020	.000	Significant
Intermediate Learners	Teachers	.46997*	.12020	.000	Significant
	Advanced Learners	-.00167	.06776	.980	Not Significant
Advanced Learners	Teachers	.47163*	.12020	.000	Significant
	Intermediate Learners	.00167	.06776	.980	Not Significant

*Note. *The mean difference is significant at the 0.05 level.*

tages and challenges associated with both learners' and teachers' viewpoints on incorporating self-regulation into the EFL context. Accordingly, our study considered (Hsu et al., 2023) that supported learners monitor and evaluate their learning process through SRL with greater development and lower learning anxiety. Therefore, our study revealed that teachers can play a pivotal role in helping learners identify effective study methods and enable learners to tailor their learning strategies to suit their unique strengths and needs. In conclusion, the desirability of EFL learners and teachers' perception of using self-regulation in English classrooms revolves around empowerment, individualized learning, lifelong skill development, and motivation.

This study explored EFL learners' perceptions of the advantages and disadvantages of e-learning in English classrooms which brought to light essential considerations in modern education. The discussion revolves around the desirability of these perceptions, considering both potential benefits and challenges related to e-learning. It should be noted that the studies of Dashtestani (2014) and Bai (2023) investigated EFL learners' and teachers' perceptions of the use of online instructions and the teachers known as the mediators. Therefore, our study confirmed by those researches that the learners can engage with learning materials at their convenience, tailoring their study schedules to individual preferences. Additionally, Crezo (2016) and Ampa (2021) investigated adaptive technologies often embedded in e-learning platforms to personalize learning journeys, catering to individual performance levels and preferences. On the other hand, the findings of Sadapotto (2022) showed that both teachers and learners responded to e-learning limitations by their anxiety about online learning and the limited competence of teachers in the use of learning applications, limited resources, and definitely learners' lack of focus into learning and other network problems. Therefore, these findings contradicted our findings of using e-learning. Surprisingly, Apricio, Bacao, and Oliveira (2017) maintained self-discipline and motivation without direct teacher and peer presence which can be demanding, potentially impacting learning progress with satisfactory individual learning performance. According to previous studies, our study has most in common with online learning methods. When EFL learners and teachers hold positive perceptions of e-learning they can leverage digital platforms to deliver content in innovative ways through multimedia content, online dictionaries, language learning apps, and interactive materials to enhance the learning experience. In conclusion, the desirability of EFL learners' and teachers' perception of using e-learning in English classrooms was comprehensive with the potential advantages of e-learning, ensuring effective and enriched learning for both learners and teachers.

Our investigation on EFL learners and teachers' perception of using constructivism was motivated and confirmed by the study conducted by Fernando and Marikar (2017), who investigated the constructivist teaching and learning theory on undergraduate students that supported a high level of popularity of using this method. Furthermore, they found that constructivism incorporated constructive teaching and learning methods for teachers and educators to create a dynamic and interactive learning environment, and this does not mean that the same paper does not value the traditional methods of teaching and learning. A few years later, Shah and Kumar (2019) investigated effective constructivist teaching and learning in the classroom empowering learners to take charge of their learning, fostering autonomy and self-directed learning. Not all EFL learners may respond equally well to constructivist methods. Individual preferences for more structured, teacher-guided approaches can impact perceptions of constructivism's desirability. Effective constructivist teaching involves guiding learners through student-centered learning, requiring proper training for teachers to facilitate such experiences. The results of the same study showed that constructivism should be used correctly to reach a useful goal and is in line with the findings of our study. Surprisingly, the studies of Bell (2020) and Omodan (2022) achieved positive viewpoints with our study on constructivism's benefits, including active learning, real-world relevance, critical thinking, and autonomy, that must be weighed against challenges linked to learning preferences, time constraints, teacher roles, and cultural contexts. In addition, the desirability of EFL learners and teachers' perception of constructivism can promote classroom productivity in different contexts. Accordingly, the results of our study on constructivist learning theory on the EFL learners were commensurate with the results of Khaliq (2023). In conclusion, by finding common ground and adapting constructivist principles to meet diverse needs, educators can maximize the potential advantages of constructivist approaches, ensuring an enriching and effective language learning experience for both learners and teachers.

The limitation of the study is due to time constraints, where the participants received questionnaires, and the difficulty of generalizability to other levels of EFL learners and teachers in another context. These shortcomings can be the subject of future studies, and where possible, new computer software can practically be used to achieve a better goal. Undoubtedly, all these effects lead to innovation in teaching and autonomous learning.

CONCLUSION

This study explored the perceptions of EFL learners regarding the integration of E-learning, self-regulated learning (SRL), and constructivism in English classrooms, specifically focusing on intermediate and advanced proficiency levels within the Iranian EFL context. By examining the interplay between these three autonomous learning approaches, we

aimed to gain valuable insights into how they collectively influence EFL learners' attitudes and perceptions.

While the findings provide significant insights, their generalizability to other contexts may be limited. It would be beneficial to replicate this study with students majoring in different fields to verify its applicability both within and outside the country. Furthermore, future research could examine the performance of EFL or ESL learners and teachers across various teaching methods, including group discussions and question-answer sessions. Participatory teaching methods such as 'question and answer' and 'group discussion' were particularly popular among the participants.

In conclusion, this study underscores the potential of integrating constructivism, self-regulated learning, and E-learning in the English language classrooms to enhance learners' attitudes and perceptions. The results suggest that these approaches can significantly contribute to creating a more effective and engaging learning environment.

DECLARATION OF COMPETITING INTEREST

None declared.

AUTHORS' CONTRIBUTION

Marzie Faridi: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Writing – original draft; Writing – review & editing.

Siros Izadpanah: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Validation; Visualization; Writing – original draft.

REFERENCES

Akugizibwe, E., & Ahn, J. Y. (2020). Perspectives for effective integration of e-learning tools in university mathematics instruction for developing countries. *Education and Information Technologies*, *25*(2), 889-903. https://doi.org/10.1007/s10639-019-09995-z

Al-Fraihat, D., Joy, M., & Sinclair, J. (2020). Evaluating E-learning systems success: An empirical study. *Computers in Human Behavior*, *102*, 67-86. https://doi.org/10.1016/j.chb.2019.08.004

Alt, D., & Itzkovich, Y. (2019). The connection between perceived constructivist learning environments and faculty uncivil authoritarian behaviors. *Higher Education*, *77*, 437-454. https://doi.org/10.1007/s10734-018-0281-y

Ampa, A. T. (2021). Innovative learning strategies to increase students' participation and quality of english teaching and learning process. *Technium Social Science Journal*, *26*, 314.

Aparicio, M., Bacao, F., & Oliveira, T. (2017). Grit in the path to e-learning success. *Computers in Human Behavior*, *66*, 388-399. https://doi.org/10.1016/j.chb.2016.10.009

Bai, X. (2023). Exploring the effects of e-learning to maximize EFL students' learning efficiency. *Journal of Education, Humanities and Social Sciences*, *8*, 75-81.

Bdiwi, R., de Runz, C., Faiz, S., & Ali-Cherif, A. (2019). Smart learning environment: Teacher's role in assessing classroom attention. *Research in Learning Technology*, *27*. http://dx.doi.org/10.25304/rlt.v27.2072

Bell, R. (2020). Adapting to constructivist approaches to entrepreneurship education in the Chinese classroom. *Studies in Higher Education*, *45*(8), 1694-1710. https://doi.org/10.1080/03075079.2019.165572

Cerezo, R., Bogarín, A., Esteban, M., & Romero, C. (2020). Process mining for self-regulated learning assessment in e-learning. *Journal of Computing in Higher Education*, *32*(1), 74-88. https://doi.org/10.1007/s12528-019-09225-y

Cerezo, R., Sánchez-Santillán, M., Paule-Ruiz, M. P., & Núñez, J. C. (2016). Students' LMS interaction patterns and their relationship with achievement: A case study in higher education. *Computers & Education*, *96*, 42–54. https://doi.org/10.1016/j.compedu.2016.02.006

Cho, M. H., & Kim, B. J. (2013). Students' self-regulation for interaction with others in online learning environments. *The Internet, and Higher Education*, *17*, 69-75. https://doi.org/10.1016/j.iheduc.2012.11.001

Dashtestani, R. (2014). English as a foreign language teachers' perspective on implementing online instruction in the Iranian EFL context. *Research in Learning Technology*, *22*. https://doi.org/10.3402/rlt.v22.20142

De Medio, C., Limongelli, C., Sciarrone, F., & Temperini, M. (2020). MoodleREC: A recommendation system for creating courses using the moodle e-learning platform. *Computers in Human Behavior*, *104*, 106168. https://doi.org/10.1016/j.chb.2019.106168

De Mooij, S. M., Kirkham, N. Z., Raijmakers, M. E., van der Maas, H. L., & Dumontheil, I. (2020). Should online math learning environments be tailored to individuals' cognitive profiles? *Journal of experimental child psychology*, *191*, 104730. https://doi.org/10.1016/j.jecp.2019.104730

Farhan, M., Jabbar, S., Aslam, M., Hammoudeh, M., Ahmad, M., Khalid, S., Khan, M., & Han, K. (2018). IoT-based students interaction framework using attention-scoring assessment in e-Learning. *Future Generation Computer Systems*, *79*, 909-919. https://doi.org/10.1016/j.future.2017.09.037

Fernando, S. Y., & Marikar, F. M. (2017). Constructivist teaching/learning theory and participatory teaching methods. *Journal of Curriculum and Teaching*, *6*(1), 110-122. https://doi.org/10.5430/jct.v6n1p110

Fitria, T. N. (2024). Using an Institution Platform of E-Learning in English Language Teaching (ELT) Process at ITB AAS Indonesia. *International Journal of Computer and Information System, 5*(1), 22-36. https://doi.org/10.29040/ijcis.v5i1.150

Gu, P., Zhang, Y., & Gu, H. (2020). Creating a technology-enhanced constructivist learning environment for research ability development in a BA thesis writing course. *Computer Assisted Language Learning*, *33*(5-6), 538-566. https://doi.org/10.1080/09588221.2019.1576735

Hsu, T. C., Chang, C., & Jen, T. H. (2023). Artificial Intelligence image recognition using self-regulation learning strategies: Effects on vocabulary acquisition, learning anxiety, and learning behaviors of English language learners. *Interactive Learning Environments*, 1-19. https://doi.org/10.1080/10494820.2023.2165508

Hu, H., & Driscoll, M. P. (2013). Self-regulation in e-learning environments: A remedy for community college? *Journal of Educational Technology & Society*, *16*(4), 171-184.

Khaliq, A., Aziz, S., Akram, M., & Mahmood, W. (2023). The influence of constructivist strategies in writing the foreign language on the learners achievements at higher secondary level. *Voyage Journal of Educational Studies*, *3*(2), 281-289. https://doi.org/10.58622/vjes.v3i2.63

Kulkarni, P. V., Rai, S., & Kale, R. (2020). Recommender system in eLearning: A survey. In *Proceeding of International Conference on Computational Science and Applications* (pp. 119-126). *Springer*. https://doi.org/10.1007/978-981-15-0790-8_13

Li, X., Xia, Q., Chu, S. K. W., & Yang, Y. (2022). Using gamification to facilitate students' self-regulation in e-learning: A case study on students' L2 English learning. *Sustainability*, *14*(12), 7008. https://doi.org/10.3390/su14127008

Maphoto, K. B., & Suliman, Z. (2024). Exploring the Impact of E-Learning strategies on enhancing workplace english competence at an Open Distance E-Learning (ODeL) university in South Africa. *Research in Social Sciences and Technology*, *9*(1), 102-123. https://doi.org/10.46303/ressat.2024.6

Mejeh, M., Sarbach, L., & Hascher, T. (2024). Effects of adaptive feedback through a digital tool – A mixed-methods study on the course of self-regulated learning. *Education and Information Technologies*, 1-43. https://doi.org/10.1007/s10639-024-12510-8

Moreira, F., Ferreira, M. J., Santos, C. P., & Durão, N. (2017). Evolution and use of mobile devices in higher education: A case study in Portuguese higher education institutions between 2009/2010 and 2014/2015. *Telematics and Informatics*, *34*(6), 838-852. https://doi.org/10.1016/j.tele.2016.08.010

Mousavi, A., Mohammadi, A., Mojtahedzadeh, R., Shirazi, M., & Rashidi, H. (2020). E-Learning Educational Atmosphere Measure (EEAM): A new instrument for assessing E-students' perception of educational environment. *Research in Learning Technology*, *28*, 17-35. http://dx.doi.org/10.25304/rlt.v28.2308

Omodan, B. I. (2022). The potency of social constructivism on classroom productivity in universities. *Studies in Learning and Teaching*, *3*(1), 36-45. https://doi.org/10.46627/silet.v3i1.97

Patrichi, B., Prelipceanu, D., Manuc, D., Ravariu, C., & Babarada, F. (2016). Bio and micro-electronics eLearning by online collaborative support. *Procedia Technology*, *22*, 1160-1168. https://doi.org/10.1016/j.protcy.2016.01.163

Peeters, J., De Backer, F., Kindekens, A., Triquet, K., & Lombaerts, K. (2016). Teacher differences in promoting students' self-regulated learning: Exploring the role of student characteristics. *Learning and Individual Differences*, *52*, 88-96. https://doi.org/10.1016/j.lindif.2016.10.014

Sadapotto, A., Syamsu, T., Usman, U., Darmiani, D., & Nadirah, N. (2022). Investigating of lecturers and learners foreign language anxiety in e-learning interaction. *English Language Journal*, *8*(1), 17-24. https://doi.org/10.55678/loj.v8i1.587

Shah Ph, D., & Kumar, R. (2019). Effective constructivist teaching learning in the classroom. Shah, RK (2019). Effective Constructivist Teaching Learning in the Classroom. *Shanlax International Journal of Education*, *7*(4), 1-13. https://doi.org/10.34293/education.v7i4.600

Vershitskaya, E. R., Mikhaylova, A. V., Gilmanshina, S. I., Dorozhkin, E. M., & Epaneshnikov, V. V. (2020). Present-day management of universities in Russia: Prospects and challenges of e-learning. *Education and Information Technologies*, *25*(1), 611-621. https://doi.org/10.1007/s10639-019-09978-0

Wicaksono, A., Florentinus, T. S., & Ahmadi, F. (2020). Development of E-learning in web programming subjects for moodle based vocational students. *Innovative Journal of Curriculum and Educational Technology*, *9*(1), 1-9. https://doi.org/ 10.15294/ijcet.v9i1.33095

Yossatorn, Y., Binali, T., Weng, C., & Awuor, N. O. (2023). Relating university students' online self-regulated English learning to motivational beliefs: A structural equation modelling analysis. *Behaviour & Information Technology*, *42*(7), 888-903. https://doi.org/10.1080/0144929X.2022.2048074

Zheng, B., Ward, A., & Stanulis, R. (2020). Self-regulated learning in a competency-based and flipped learning environment: learning strategies across achievement levels and years. *Medical Education Online*, *25*(1), 1686949. https://doi.org/10.1080/10872981.2019.1686949