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Investigating the Impact of Flipped Teaching on Language Proficiency and Self-efficacy of Iranian Intermediate EFL Learners

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Abstract

This study examines the impact of Flipped teaching on language proficiency and Self-efficacy of Iranian Intermediate EFL Learners. The study uses a quantitative quasi-experimental method employing both experimental approaches and analyses of quantitative data. The data were gathered by comparing scores obtained from participants in two groups. A pre-test and post-test equivalent group design, one of the quasi-experimental research design sub-branches, was used to collect data from several 60 EFL learners from a language institute in Scrabble, Iran. Thirty participants were male, and 30 others were female. A Quick Oxford Placement Test (QOPT) was distributed among this number of learners, and based on their scores, 60 EFL learners whose level of proficiency was pre-intermediate were chosen. The participants were randomly assigned to experimental and control groups, with 30 in each group. The QOPT was administered to both classes to exclude students not at the pre-intermediate level. The results of the first part of the study demonstrated a significant difference between the general proficiency of the participants in the two groups when they were exposed to the flipped teaching method. In addition, it was found that flipped instruction significantly influences Iranian pre-intermediate level EFL learners' academic self-efficacy. The outcomes will encourage the EFL instructors to integrate flipped teaching into traditional classes.

Keywords:

Flipped teaching, Self-efficacy, Iranian Intermediate EFL Learners, Quantitative quasi-experimental method, Academic Self-Efficacy Scale, Edmodo Platform

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Introduction

The authors Mellati and Khademi (2019) suggest that social network systems can assist teacher-learner interaction in the classroom. Anglin and Anglin (2008) note that many teachers are still teaching their students the same way they were taught without paying attention to new technology-based methods. The flipped classroom concept is an excellent educational method where the position of homework and classroom activities is reversed. In this method, instructional materials are presented online before the class, and L2 learners get engaged in an interactive process of critical problem-solving activities and learning conducted under L2 teachers' supervision during the class (Herreid & Schiller, 2013). Flipped learning is a teaching approach that reverses the traditional classroom model. Jon Bergmann and Aaron Sams were American high school teachers who began 'flipping' their chemistry classes in 2007.

Flipped learning typically (but not necessarily) involves watching videos online before students come to class. Therefore, it may also be considered a form of blended learning. Utilizing various approaches and modes of instruction, such as flipped language instruction, may influence some psychological factors, such as motivation and self-efficacy. Regarding the impact of flipped classrooms on learning language skills and sub-skills, several investigations have studied this topic. Li and Suwanthep (2017), Khodabandeh and Tahririan (2020), Riza and Setyarini (2019), and Sidky (2019) are some of the researchers who have studied the influence of flipped classrooms on language skills and sub-skills. In addition, Khosravani et al. (2010) and Namaziandost et al. (2020) investigated the flipped model's influence on psychological variables such as autonomy, self-efficacy, and motivation.

However, to the best of the researchers' knowledge, no study has examined the influence of flipped instruction on EFL learners' academic self-efficacy. Regarding the impact of flipped classrooms on learning language skills and sub-skills, several investigations have studied this topic. Li and Suwanthep (2017), Khodabandeh and Tahririan (2020), Riza and Setyarini (2019), and Sidky (2019) are some of the researchers who have studied the influence of flipped classrooms on language skills and sub-skills. In addition, Nazaripour and Laei (2020) also investigated the effect of flipped learning on academic self-efficacy and mathematics of students with learning disabilities. The research questions that the study set out to address are:

- Does flipped instruction significantly influence Iranian pre-intermediate level EFL learners' general proficiency?
- Does flipped instruction significantly influence Iranian pre-intermediate level EFL learners' academic self-efficacy?

Literature review

This paper discusses the role of information and communication technology (ICT) in education, particularly in L2 teaching and learning. ICT, including computers, software, and hardware, has been shown to improve pedagogical performance and promote learning for teachers and learners. It is applied to various aspects of teaching and learning, such as data network management, lesson planning, record-keeping, and commercial control. The chapter emphasizes the importance of equipping educational centers with electronic equipment and employing ICT in schools to help L2 teachers manage classes more successfully and assist learners in learning L2 more efficiently. ICT-mediated instruction can be presented synchronously or asynchronously, depending on the time and location of the interaction. ICT integration in education can potentially improve academic performance, motivation, and L2 learning. Factors affecting its implementation include ICT-mediated instruction, interactivity, and the need for continuous innovation and change in the education sector.

E-learning, a modern approach to interactive L2 learning environments, includes educational methods presented through the Internet, intranets, audio/video tapes, interactive TV, and wireless learning applications. There are two types of e-learning: synchronous and asynchronous. Synchronous e-learning requires simultaneous online interaction between L2 learners and teachers, while asynchronous e-learning allows learners to select the appropriate time and learn at their own pace. The flipped classroom is an educational approach that reverses the status of homework and classroom activities by presenting instructional materials online before class and engaging learners in critical problem-solving activities under the teacher's supervision. Flipped classrooms provide numerous benefits for L2 learners, including personalized learning, improved student-teacher interactions, increased motivation, improved learning engagement, and academic performance. They also enhance student-oriented learning situations, allowing learners to actively engage in discussions, self-evaluate, and develop high-order thinking skills. However, the flipped classroom model has limitations, such as low motivation or negative learning habits, unclear separation between in-class and out-of-class activities, and challenges in feedback and assessment. To address these issues, educators suggest assigning pre-class quizzes on video materials and clearly describing different learning activities.

Additionally, creative assessment methods are required to measure performance in individual tasks and group projects. Albert Bandura introduced the concept of self-efficacy in 1977, linking relationships to people, behaviors, and attainments. Self-efficacy is measurable, impactful, and successful in tasks related to endurance and motivation. It develops in the individual's first weeks of life and is influenced by factors like intimacy, skin touch, and protective physical and emotional situations. Wilson (2011) investigated how student academic performance influences self-efficacy, arguing that it is a thought-

based skill rather than a physical skill. Perceived self-efficacy may differ significantly at different ages and learning environments. Research has shown that flipped classroom instruction can significantly improve learners' self-efficacy and academic motivation. This approach can be employed to develop academic motivation and self-efficacy and reduce academic deficiency among learners. Studies have shown that blended online and face-to-face classrooms can lead to more real-life language contexts for Iranian L2 learners. Flipped classroom instruction has been found to outperform traditional methods in reading self-efficacy and achievement. Furthermore, flipped learning has been found to improve EFL learners' pragmatic knowledge and oral proficiency. Flipped teaching based on a MOOC has also improved oral proficiency. The flipped model has been found to enhance cooperation and engagement, oral skills, and attitudes. So, flipped classrooms can make the teaching process more individualized, meeting the needs of learners at various levels. For example, flipped classrooms have improved students' reading comprehension, listening comprehension, cooperation and engagement, oral skills, and attitudes. Furthermore, the flipped model has been found to make the teaching process more individualized, meeting the needs of learners at various levels.

In conclusion, flipped classrooms have shown promising results in improving self-efficacy and academic motivation among learners. Context, strategies, causal conditions, and confusing conditions can enhance classroom outcomes. The flipped model in teaching is more individualized, effective in meeting learners' needs at different proficiency levels, and beneficial for students' academic performance, attitudes, and participation. However, previous research has shown mixed results, and the study aims to provide a comprehensive understanding of the potential benefits of this teaching model, particularly in English as a Foreign Language (EFL) learners' self-efficacy and general proficiency level.

Methodology

Design

The study aimed to investigate the impact of flipped language teaching on Iranian EFL learners' self-efficacy and general proficiency levels. It used a quantitative research design, quasi-experimental method, and primary source data collection. The study employed a pre-test, and post-test equivalent group design, comparing scores from two experimental groups. The dependent variables were EFL learners' general proficiency and self-efficacy, while the independent variables were flipped and traditional learning modes. This study aimed to explore the effects of flipped language teaching on learners' self-efficacy and general proficiency.

Participants

The study involved 60 EFL learners from a Scrabble, Iran language institute, selected through simple random sampling. A Quick Oxford Placement Test (QOPT) was administered, and 60 pre-intermediate learners were chosen based on their scores. The participants were randomly assigned to experimental and control groups, with 30 in each group. The QOPT excluded students who were not at the pre-intermediate level. The target participants were pre-intermediate learners aged 16-20, with a mean age of 26. Participation was voluntary, and participants were informed about the study and data confidentiality.

Instruments

This research utilized QOPT, the Academic Self-Efficacy Scale, a general proficiency test, the Edmodo Platform, and SPSS to answer research questions.

Quick Oxford Placement Test (QOPT)

The researcher used the QOPT (Operational Quality Test) to assess the proficiency of 96 EFL learners at a Language institute in Sarabele, Iran. The 60 participants were chosen as the sample for the research due to their familiarity with the test's structure, ability to include participants with identical proficiency levels, and acceptable reliability and validity. The test consisted of 60 items with various question types, including item matching, cloze test type, and multiple-choice items. Participants had to choose the correct item from a set of missing words and four options. The test was designed to measure students' proficiency.

Academic Self-Efficacy Scale

The academic self-efficacy scale, developed by Jinks & Morgan (1999), was used to measure EFL students' English language self-efficacy. The scale, consisting of 30 items, measures four subscales and has a 4-point Likert scale. The study found the scale fit and reliable, with Cronbach's Alphas Internal consistencies of .81. The questionnaire is included in Appendix B.

Edmodo Platform (Flipped-Based Educational Program)

Edmodo is a student-friendly platform where teachers and students can share ideas, content, and homework. It requires no personal information from students and requires invitations. This research used Edmodo to present content to experimental group participants. Users can create groups, invite others, send and receive messages, and create folders. Media shared is automatically saved in a My Library section.

Procedure

This study used a quasi-experimental design to investigate the impact of a flipped learning model on Iranian pre-intermediate L2 learners' general proficiency and self-efficacy. The study involved 60 pre-intermediate learners selected through random assignment and divided into flipped and control groups. The experimental group was taught online using the Edmodo network, while the control group was taught in a traditional classroom. The experimental group was taught Top Notch 1 during the program, while the control group was taught in a traditional classroom. The self-efficacy scale was run to compare the scores of both groups. The study aimed to understand the effects of flipped learning on language proficiency and the impact of online platforms on learners' performance.

Results

The study looked at how flipped instruction affected the academic self-efficacy and general proficiency of Iranian pre-intermediate level EFL learners. One-Sample Kolmogorov-Smirnov analysis of the results showed a significant influence.

Table 1.

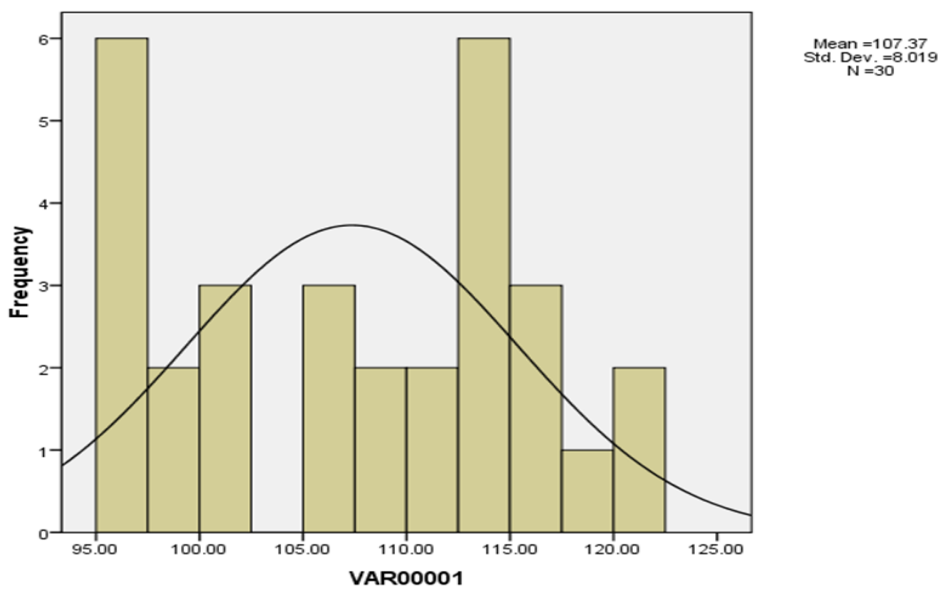
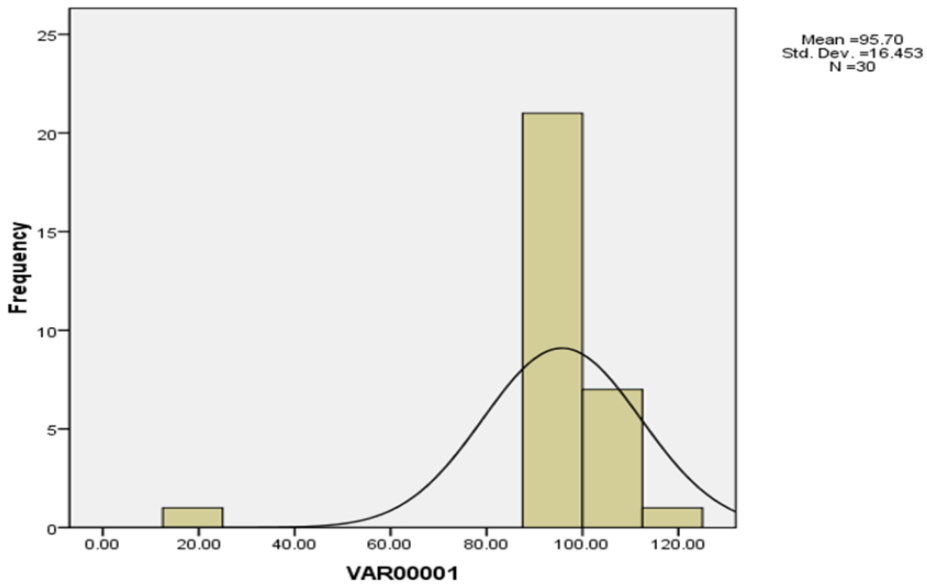
One-Sample Kolmogorov-Smirnov Test for Normality Distribution of Experimental Group Scores

		Pre-test	Post-test
	N	30	30
Normal Parameters	Mean	95.7000	107.3667
	Std. Deviation	16.45296	8.01930
Most Extreme Differences	Absolute	.354	.159
	Positive	.199	.145
	Negative	-.354	-.159
Kolmogorov-Smirnov Z		1.940	.870
Asymp. Sig. (2-tailed)		.213	.436
a. Test distribution is Normal.			

Table 1 shows Asymp significance levels.213 and.436 for pre and post-test scores, indicating normal distribution, as shown in Figure 1, with $p > .05$.

Figure 1.

Normality Curve of Pre and Post-Test Scores of Experimental Group



As shown in the two figures, the bell-shaped form of the curves showed the normality distribution of the scores. The same procedure was carried out with the post-test scores. The results are presented in Table 2.

Table 2.

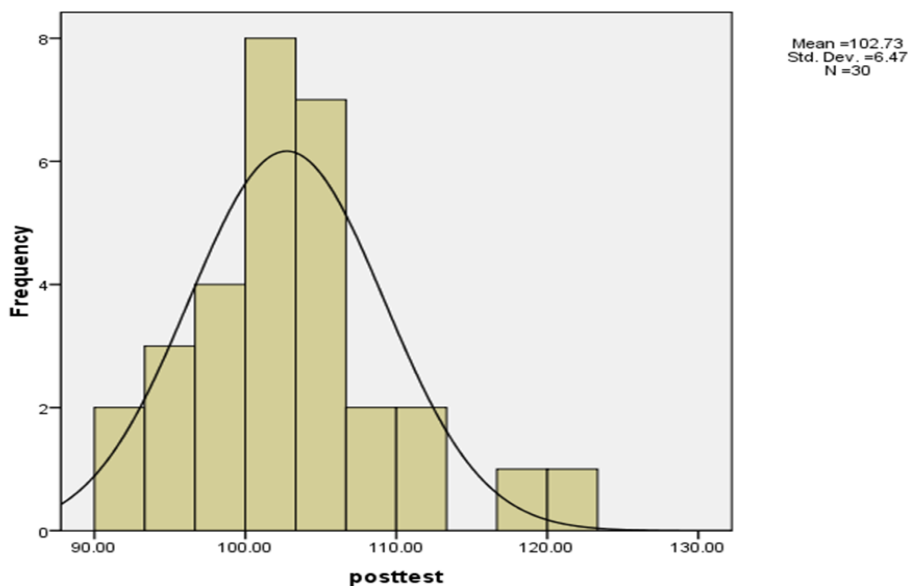
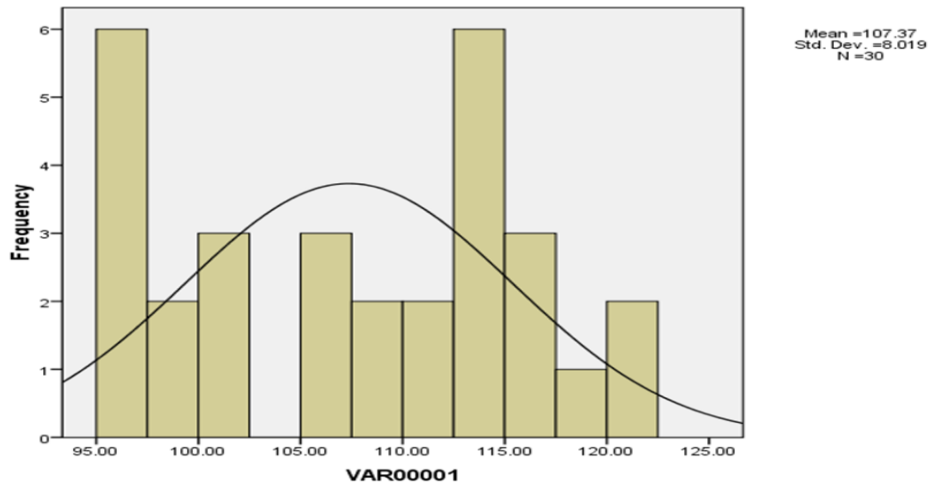
One-Sample Kolmogorov-Smirnov Test for Normality Distribution of Control Group Scores

		Pre-test	Post-test
N		30	30
Normal Parameters	Mean	100.1333	102.7333
	Std. Deviation	7.95562	6.46974
Most Extreme Differences	Absolute	.223	.107
	Positive	.223	.107
	Negative	-.125	-.082
Kolmogorov-Smirnov Z		1.223	.585
Asymp. Sig. (2-tailed)		.100	.883
a. Test distribution is Normal.			

As shown in Table 2, the Asymp significance level for the pre and post-test scores was identified to be higher than the alpha level of significance for the experimental group; therefore, the assumptions for running the parametric test of independent samples t-test were met. Figure 2 presents the distribution normality curve for the pre and post-test scores gained by the participants in the control group.

Figure 2.

Normality Curves of Post-test Scores Obtained by the Control Group



As shown, the scores were normally distributed. This led to positive conclusions for using parametric statistics.

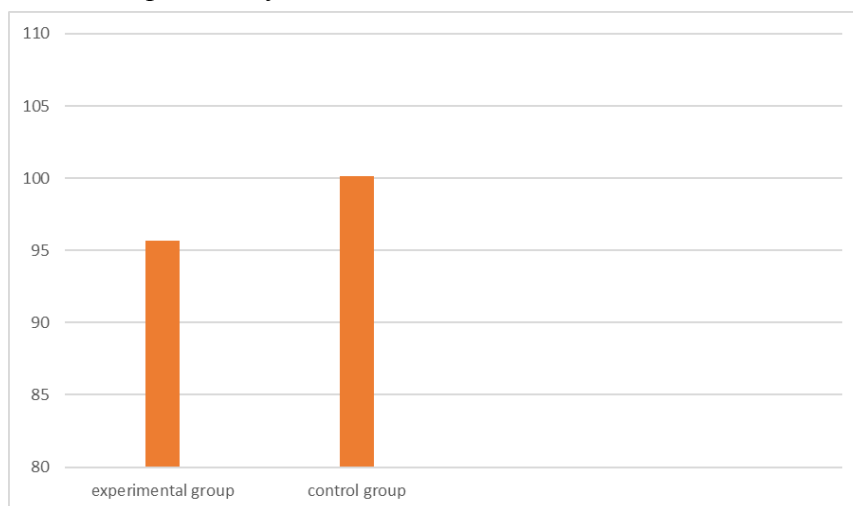
Addressing the First Research Question

The primary research inquiry of this thesis sought to determine whether or not shifted instruction significantly affected the overall proficiency of Iranian pre-intermediate level EFL learners. A general proficiency test was administered to answer this research question, and then the participants were exposed to flipped instruction. Following that, the general proficiency test was conducted as the post-test. In this section, the scores of the participants in the pre and post-tests are compared. Table 3 presents the descriptive statistics of the comparison of pre and post-test scores.

Table 3.*Descriptive Statistics of Pre-test Scores*

	Groups	N	Mean	Std. Deviation	Std. Error Mean
scores	experimental group	30	95.7000	16.45296	3.00389
	control group	30	100.13	7.95562	1.45249

Table 3 gives the mean scores of the pre and post-test scores. As shown, the mean score of the control group participants was 100.13 and that of the other group was 95.7. Figure 3 depicts the results.

Figure 3.*Mean Comparison of Pre-test Scores*

For the two groups, an independent samples t-test was administered to identify the (in)significance of the mean difference between, and the results are presented in Table 4.

Table 4.*Independent Samples Test Results for Pre-test Scores*

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
score	Equal variances assumed	.049	.826	-1.329	58	.189	-4.43333	3.33662	-11.11231	2.24565
	Equal variances not assumed			-1.329	41.85	.191	-4.43333	3.33662	-11.16759	2.30093

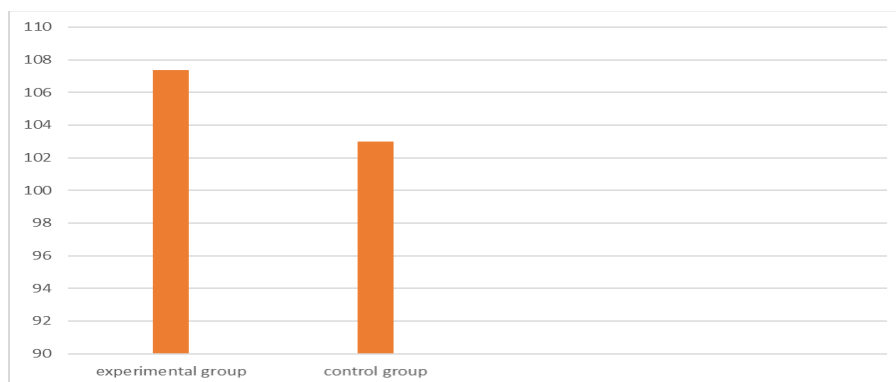
Based on the results, the significance level is .189, which is higher than the identified level of significance ($.05 < .189$). Therefore, it was identified that there was no significant difference between the participants' performance in both groups at the beginning of the study. As mentioned earlier, the participants were exposed to the treatment, and after that, the post-test was administered. The following section is the analysis of the gathered data. Table 5 presents the descriptive statistics of the findings.

Table 5.
Descriptive Statistics of Post-test Scores

groups		N	Mean	Std. Deviation	Std. Error Mean
scores	experimental group	30	107.372	8.01930	1.46412
	control group	30	102.972	6.15032	1.12289

According to the results presented in Table 5, the mean difference between the experimental and control group test scores is 6.4 (the experimental group's mean score is 107.37, and that of the control group is 102.97). Figure 4 presents the results.

Figure 4.
Mean Comparison of Post-test Scores



An *independent samples t-test* was administered to check the (in)significance, Table 6 presents the results.

Table 6.
Independent Samples Test Results for Post-test Scores

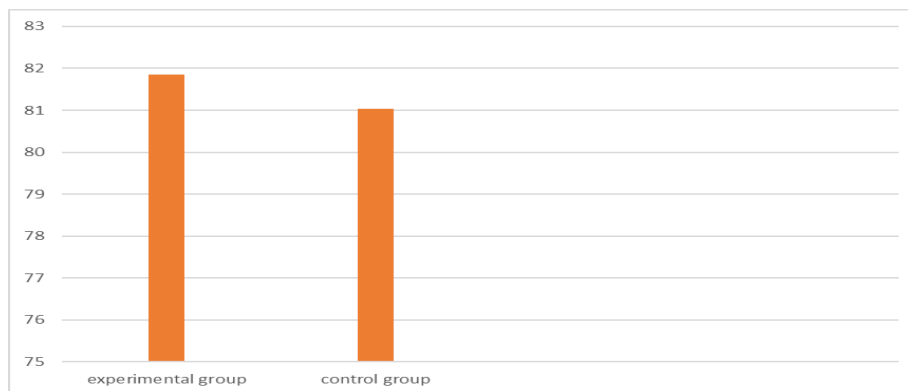
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
Scores	Equal variances assumed	5.625	.021	2.385	58	.017	4.40000	1.84513	.70656	8.09344	
	Equal variances not assumed			2.385	54.346	.017	4.40000	1.84513	.70127	8.09873	

The identified significance level is smaller than .05 ($.020 < .05$). This shows that the difference between the participants' performance in the two groups was statistically significant after the treatment. This led to the rejection of the first null hypothesis of the research, stating that flipped instruction does not significantly influence Iranian pre-intermediate level EFL learners' general proficiency. The study examined the impact of flipped instruction on Iranian pre-intermediate level EFL learners' academic self-efficacy using the Academic self-efficacy scale, with results provided in the analysis section.

Table 7.*Descriptive Statistics of Self-Efficacy Scores Before Treatment*

	groups	N	Mean	Std. Deviation	Std. Error Mean
scores	experimental group	30	81.8667	16.72853	3.05420
	control group	30	85.0333	15.86904	2.89728

As shown in Table 7, the mean difference in self-efficacy scores was found to be 4.77 (the mean for the experimental group scores being 81.86 and that of the control group post-test scores being 85.03), which is not statistically significant. The mean difference in the performance of the two groups is shown in Figure 5.

Figure 5.*Mean Comparison of Self-efficacy Scores Before Treatment*

As depicted in Figure 5, the two columns showing the mean scores were approximately the same length. To make sure that the difference was the (in)significance, an *independent samples t-test* was administered, however. Table 8 presents the results.

Table 8.*Independent Samples Test Results for Self-efficacy Scores Before Treatment*

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
Scores	Equal variances assumed	.000	.986	-.752	58	.455	-3.16667	4.20979	-11.59348	5.26014
	Equal variances not assumed			-.752	57.839	.455	-3.16667	4.20979	-11.59398	5.26064

The significance level is .455, which is higher than the identified significance level 05 ($.05 < .45$). This shows that the difference between the level of self-efficacy was not statistically significant. After the treatment, the self-efficacy scale was administered once more, the statistical results of which are presented in Table 9.

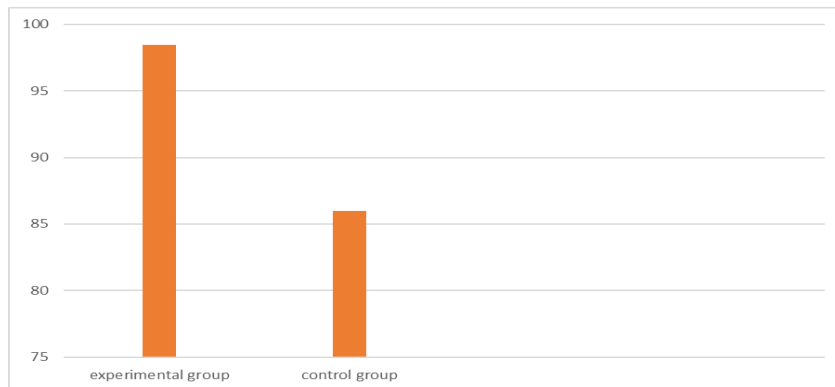
Table 9.*Descriptive Statistics of Self-Efficacy Scores After Treatment*

groups		N	Mean	Std. Deviation	Std. Error Mean
scores	experimental group	30	98.4767	17.34186	3.16618
	control group	30	85.9667	16.93900	3.09263

Table 9 reveals that the mean scores of the experiential group participants in their level of self-efficacy were higher than that of the control group; thus, the mean difference between the two groups seems to be significant. Figure 6 depicts the mean difference.

Figure 6.

Mean Comparison of Self-efficacy Scores After Treatment



As depicted in Figure 6, the experimental group’s mean self-efficacy score was higher than that of the control group; however, to ensure the (in)significance of the difference, the independent samples t-test results are presented in Table 10.

Table 10.

Independent Samples Test Results for Self-efficacy Scores After Treatment

		Levene’s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
Scores	Equal variances assumed	.000	.986	2.824	58	.006	12.50000	4.42595	3.64051	21.35949
	Equal variances not assumed			2.824	57.968	.006	12.50000	4.42595	3.64040	21.35960

According to Table 10, the level of significance is .006 which is smaller than the identified level of significance (.006 < .05). This shows that the differences between the mean scores of the two groups were significant. This led to the rejection of the second null hypothesis stating that the flipped model does not significantly influence Iranian pre-intermediate level EFL learners’ academic self-efficacy.

Discussions

The study investigates the impact of flipped learning on Iranian pre-intermediate level EFL learners' general proficiency. Results show a significant effect of the flipped model on learners' general proficiency and self-efficacy levels. The study attributed the effectiveness of flipped instruction to Krashen's affective filter hypothesis, which suggests that language learning can be influenced by factors such as self-efficacy, anxiety, motivation, and stress.

Flipped learning provides a flexible learning environment, allowing learners to match their time with the course content and receive immediate feedback. The flipped classroom model also allows for different communication methods, better collaboration, and access to materials and feedback. The study's findings align with previous studies proving the advantages of flipped classrooms, such as personalized learning, student-teacher interactions, increased motivation, improved learning engagement, and academic performance. Additionally, flipped learning can improve active learning habits and student-oriented learning situations. Flipped instruction is more effective than traditional face-to-face classes in improving general proficiency and self-efficacy levels in English as a Foreign Language (EFL) learners.

This approach offers flexibility, student-centered learning, and scaffolding, allowing learners to meet their needs outside the classroom. The flipped model also facilitates learning in small groups, with L2 teachers helping learners find necessary tools. The findings align with previous studies on flipped classrooms, such as those by Hsieh, Wu, and Marek (2016), Webb and Doman (2019), Haghghi et al. (2018), Wanga, An, and Wright (2018), and Mellati and Khademi (2018). Previous studies have also shown the effectiveness of flipped classrooms on different language skills, such as reading comprehension, grammar, listening comprehension, and vocabulary knowledge.

Conclusion

According to Agarwal (2013), the pioneers of flipped classrooms are moving towards adapting large and small classrooms to create a blended learning model. The new flipped design can solve some problems of other language teaching tools and procedures to address flipped challenges (Bruff et al., 2013). This model can integrate interactions into the flipped environment, support the interactive design of the online lectures, replace the student-centered process, provide assessment and feedback, and consider the different patterns of participants in flipped models (Yousef et al., 2015). Overall, flipped instruction is a more effective method for improving EFL learners' language proficiency

The current paper researched the effects of flipped learning on developing general proficiency and self-efficacy in Iranian L2 settings. The findings affirmed the benefit of this learning over regular face-to-face learning settings. The outcomes revealed that the

students in the experimental group performed better than those in the control group. The outcomes will encourage the EFL instructors to integrate flipped teaching into traditional classrooms.

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