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RESEARCH ARTICLE

Teaching Writing to Advanced EFL Learners in Flipped Classes: A Comparative Study of Traditional, Conventional and Inquiry-based Instruction

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Abstract

Aim: Writing instruction holds a fundamental role in language learning across the globe, prompting ongoing exploration of innovative pedagogical approaches to enrich writing proficiency among advanced English as a Foreign Language (EFL) learners.

Methodology: This research scrutinizes the efficacy of three distinct instructional methods: the traditional model, the conventional flipped model, and an integrated model combining inquiry-based learning with computer-supported collaborative learning (CSCL) in flipped classroom environments, focusing on advanced EFL learners. Employing a quasiexperimental research design, the study incorporated a comprehensive literature review, emphasizing the pivotal role of Computer-Assisted Language Learning (CALL) and computer-mediated communication (CMC) in enhancing second language writing skills by providing immediate feedback and opportunities for revision. The impact of the instructional models on writing performance was assessed through pre-test and post-test analyses, utilizing descriptive statistics, normality checks, within-group and between-group analyses, and effect size calculations.

Findings and Conclusion: The findings reveal that the effectiveness of CALL in writing instruction is considerably influenced by factors such as language proficiency and the quality of the platform. This paper offers significant insights into EFL writing instruction, aiding educators and curriculum designers in selecting optimal instructional approaches. It underscores the importance of integrating innovative instructional methodologies to improve fluency, accuracy, and vocabulary in second language writing, ultimately enhancing English language proficiency among advanced EFL learners.

Key words: Writing Instruction, Conventional Flipped Classes, Inquiry-based Flipped Classes, Traditional Classes, CALL.

Introduction

In recent decades, traditional lecturebased instruction has been

increasingly criticized for its limited capacity to engage students in meaningful, practical learning. Boyer (2013) notes that this model often burdens learners with passive content consumption and limited support

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in applying what they have learned, ultimately leading to shallow retention. As the educational landscape evolves due to technological advancements and changing learner expectations (Parsons & Taylor, 2019; Raths, 2020), there is a growing demand for instructional methods that emphasize student autonomy, interaction, and deeper cognitive engagement (Vaughan, 2014).One response to this pedagogical shift is the emergence of the flipped classroom model. This approach reconfigures traditional teaching by delivering instructional content— typically via online videos—outside of class, while in-class time is dedicated to active, collaborative tasks (Bergmann & Sams, 2012; Hashemifardnia et al., 2018). Flipped instruction is grounded in blended learning, student-centered pedagogy, and active learning (Johnson, 2012; Tahmasbi et al., 2019; William & Wuensch, 2016). It has been shown to foster a more participatory learning environment where students engage in real-time application of concepts (Namaziandost et al., 2019; Mirshekaran et al., 2018; Nasri et al., 2018).Despite the advantages of this model, teaching writing—especially in English as a Foreign Language (EFL) contexts— presents unique challenges. Writing is a cognitively demanding skill requiring mastery of grammar, vocabulary, organization, and stylistic conventions (Richards & Renandya, 2002; Farah, 2014). These challenges are even more pronounced at advanced levels, where students must demonstrate high levels of linguistic competence, creativity, and critical thinking. In EFL classrooms, writing instruction is often hampered by large class sizes, mixed-ability learners, and a reliance on static, textbook-based exercises that leave little room for personalization or creative

expression (Jenabagha et al., 2023). Traditional classrooms may emphasize grammatical accuracy and predefined templates over original thinking, making it difficult for students to develop strong writing skills or generate novel ideas (Pratiwi, 2021).Research has identified several effective alternatives to conventional writing instruction. The flipped classroom model, particularly when integrated with inquiry-based learning (IBL) and computer-supported collaborative learning (CSCL), has demonstrated promising results in enhancing writing performance among EFL learners (Chen & Chen, 2020; Wang & Chen, 2020; Zheng & Zheng, 2021). For instance, Lee and Park (2020) and Gong and Lee (2020) found that flipped instruction significantly improved writing outcomes for Chinese and Korean EFL students. Moreover, combining inquiry-based learning—which encourages students to question, explore, and construct knowledge (Fauziati, 2014; Prince & Felder, 2006)—with collaborative technologies has been shown to foster critical thinking and peer interaction, further strengthening writing development (Liu & Liu, 2019).Nevertheless, research on the impact of these instructional strategies on advanced EFL learners—particularly in the Iranian context—remains limited. As Ahmadian (2017) argues, Iranian EFL students often receive inadequate practice in writing and are offered little individualized support. This is compounded by heightened expectations placed on advanced learners, who are required to write with greater sophistication and precision. Challenges include mastering complex grammar, organizing ideas logically, developing original content, and demonstrating creativity and critical analysis—all of which demand targeted instructional support. The lack of differentiated instruction and learner-centered resources in traditional EFL classrooms often hinders the development of these advanced competencies. Furthermore, few studies have compared the effectiveness of various instructional models—such as traditional, flipped, and flipped-inquiry-based instruction—on advanced writing proficiency in a single, integrated framework. There is a pressing need to investigate which models best support the unique needs of advanced EFL writers and how modern pedagogical tools can be leveraged to enhance their performance. Thus, the present study seeks to fill this gap by systematically examining the effects of three instructional approaches on the writing abilities of advanced EFL learners: (1) the traditional lecture-based model, (2) the flipped classroom model, and (3) the flipped classroom integrated with inquirybased and computer-supported collaborative learning. By

evaluating these models side by side, the study aims to provide evidence-based insights into the most effective methods for cultivating high-level writing skills in EFL contexts. The central research question guiding this inquiry is as follows:

To what extent do the traditional model, the conventional flipped model, and the flipped model integrating inquiry-based learning and CSCL influence the advanced EFL writing abilities of students?

Theoretical Framework

Cognitive Constructivism

Cognitive constructivist theory, originating from the pioneering work of Piaget (1954), posits that individuals construct knowledge through their experiences, utilizing their cognitive faculties (Exact, 1998). According to Piaget (1954), a learner's knowledge development is significantly influenced by their personal experiences. This development involves two fundamental processes: assimilation and accommodation. In assimilation, learners initially integrate new experiences into their existing mental structures. Subsequently, through accommodation, they adjust, expand, or modernize these structures. Assimilation and accommodation work in harmony to promote cognitive development and learning in individuals. It's important to note that diverse experiences lead to varying learning speeds (Meyer, 2003). Cognitive constructivism has left a profound mark on EFL (English as a Foreign Language) education. Educators in this context provide learners with "comprehensible input" and opportunities to engage in "meaningful and communicative activities" within the English language (Lamy & Hampel, 2007, p. 20). This approach aligns with Kramsch's (1986) concept of learners negotiating meaning through interaction. Learners gain practical knowledge of English by simplifying, elaborating, confirming, checking comprehension, seeking clarification, and recasting language to enhance comprehensibility. Such efforts ultimately contribute to language proficiency. However, criticisms of this approach exist. Cognitive constructivism doesn't explicitly explain using language in interpersonal communication (Warschauer, 1997). Additionally, effective knowledge construction isn't guaranteed in all learning environments unless learners are highly motivated (Salomon & Perkins, 1996). It's crucial to recognize that teachers, peers, classroom dynamics, student regulations, and sociocultural contexts all play pivotal roles in students' learning (Lave & Wenger, 1991). Unfortunately, the cognitive constructivist perspective tends to overlook these factors. Furthermore, interactions between students themselves impact their cognitive development and future social interactions within sociocultural communities (Rogoff, 2003).

Incorporating Sociocultural Elements

In summary, cognitive constructivism falls short in adequately addressing the intricate relationship between mental activity and social interaction (Lantolf, 2000). A sociocultural constructivist theory of language development offers a more comprehensive explanation, emphasizing the critical

role of culture and the social environment in learners' language development (Wertsch et al., 1995).

Constructivism from a Socio-Cultural Perspective

Socio-cultural constructivism places a strong emphasis on social learning, in contrast to cognitive constructivism, which prioritizes individual learning. Vygotsky (1978) argued that social learning is the "primary" form of learning, with individual learning being "derivative and secondary." According to this perspective, an individual's mental functioning, including learning and perceptual development, is significantly shaped by social interactions. These interactions determine the specific forms and structures that individuals acquire during the learning process (Palincsar, 1998). Key concepts within socio-cultural constructivism include intervention, the Zone of Proximal Development (ZPD), and scaffolded learning (Lantolf, 2000

Socio-cultural Constructivism

In contrast to cognitive constructivism that attributes the learner's development to individual learning, socio-cultural constructivism emphasizes the role of social learning in each learner's development. According to Vygotsky (1978), the social aspect of learning is "primary" and the individual dimension is "derivative and secondary." From this perspective, mental functioning, including learning or perceptual development of individuals, is derived from social interaction in which the specific structures and processes of learning acknowledged by individuals can be traced (Palincsar, 1998). Three important concepts proposed in socio-cultural constructivist theory are mediation, the Zone of Proximal Development (ZPD) and situated learning (Corden, 2000; Lantolf, 2000; Lave & Wenger, 1991).

Mediation

Mediation holds a central position in socio-cultural constructivism. Humans do not directly interact with their physical environment; instead, they transform their surroundings through tools and activities. In essence, social means, tools, and symbols mediate human actions (Wertsch, 2002). From a socio-cultural perspective, human minds are mediated by both mental tools (such as language, numbers, music, and art) and physical tools (such as fabric, labor, and equipment). This mediation leads to the development of higher mental functions, including logical reasoning, problemsolving, and learning (Lantolf, 2000).These physical and mental artifacts adapt to the changing needs of communities and individuals before being passed down to future generations. For example, mainframe computers from the 1950s have evolved into the powerful handheld devices we use today.

Consequently, social and cultural factors play a profound role in the evolution of human cognition (Rogoff, 1990).Learning English as a Foreign Language (EFL), as a form of human mental activity, is also viewed through a socio-cultural lens. Numerous external factors influence

the learning process, including educators, peers, cultural artifacts (such as language, cultural history, social context, and access to digital information), and self-reflection (Lantolf, 2000). One form of mediated learning is collaborative discourse with others (Swain, 2000). Information and Communications Technology (ICT) tools play a significant role in EFL learning, not only mediating artifacts but also aiding self-study and mediated communication, ultimately benefiting EFL learners.

Social Learning

A central tenet of socio-cultural theory is that mental development has its roots in social interactions (Warschauer, 2005). According to Vygotsky, learning primarily occurs at the interpersonal level, where students engage with individuals from diverse cultural and social backgrounds (interpersonal learning). Subsequently, they transition to the intrapersonal level when working independently. Learning, from this perspective, is a social activity that involves becoming part of a community of practice (Lave & Wenger, 1991). As learners move from the periphery to the center within the community, they gain insights into the community's social and cultural practices, while also contributing to their evolution.Social and mental activities are mutually dependent, with social activity driving and facilitating mental activity (Lantolf, 2000; Wertsch et al., 1995). The concept of social learning underpins the integration of Information and Communications Technology (ICT) in EFL education. Through synchronous and asynchronous communication tools, students can connect more effectively with educators, peers, students from different locations, and native English speakers. This authentic communication in English activates various internal language development processes in learners, fostering language acquisition.

EFL educators can overcome the limitations of immediate communicative contexts by incorporating multimedia and simulation programs to immerse students in communities of practice where English is the primary language of communication. It's worth noting that social learning encompasses both individual and collective aspects of identity and identity development in the context of EFL learning (Pavlenko & Norton, 2007). Asynchronous communication, along with the use of pseudonyms during online interactions, creates a relaxed and conducive learning environment.

Zone of Proximal Development

The concept of the Zone of Proximal Development (ZPD) stands as one of the most influential contributions to educational discourse (Daniels, 2001, p. 56). It has profoundly impacted various research domains and is closely intertwined with the idea of social learning, illustrating the dynamic relationship between individuals, language acquisition, and language development. Vygotsky's definition of the ZPD implies that what lies within the zone of proximal development today becomes the

> actual developmental level tomorrow. Put simply, what an individual can achieve with assistance today, they will accomplish independently tomorrow (Vygotsky, 1978, p. 87). In essence, the ZPD represents the gap between an individual's current abilities and their potential with guidance. The quality of interactions with others plays a pivotal role in shaping the development of a new ZPD (Corden, 2000).Interpreting the scope of the ZPD can take two different approaches. Social interaction serves as the primary means through which experts impart knowledge directly to novices. The expert initially offers substantial support and guidance during a specific activity, gradually reducing this support as the learner approaches their potential (Young, 1993). Experts, such as educators or more proficient peers, are considered the primary collaborators in the learning process. Collaboration within the ZPD extends beyond interactions between experts and novices. It includes interactions between experts, novices, and other available resources. Individuals engage in the exchange of ideas, clarifying and validating their understandings, and collectively constructing meanings. This collaborative approach enhances the collective expertise of the group, enabling students to reach greater potential (Jonassen et al., 1995). Therefore, the ZPD is more accurately perceived as the collaborative creation of opportunities for the cognitive growth of learners. Students learn collaboratively with others in intentionally designed learning environments, rather than solely relying on access to experts or more capable peers within the ZPD.

Application to EFL Virtual Learning

This study aims to explore effective instructional strategies for EFL (English as a Foreign Language) virtual learning, taking into consideration the broader interpretation of the ZPD. The ZPD emphasizes the importance of teachers monitoring students' EFL learning progress, gaining insights into their current comprehension levels, and adjusting their instruction accordingly (Murphy, 2008). Educators should design EFL learning tasks that challenge students' existing abilities and target areas where they have not yet achieved mastery. Additionally, educators should offer timely and meaningful support to students' EFL learning, fostering collaborative learning among students to complete tasks. In formal education settings, where teaching time and class size constraints often apply, Information and Communication Technology (ICT) can offer educators significant benefits. These include online assessments and communication tools that facilitate effective EFL instruction and collaboration among students. In promoting the implementation of flipped classrooms, the Flipped Learning Network (FLN) has formulated the Four Pillars of flipped learning, representing fundamental aspects of this instructional approach. The Four Pillars of F-L-I-P™ encompass Flexible Environment, Learning Culture, Intentional Content, and Professional Educator (Hsieh et al., 2017).Flexible Environment: Flipped learning provides various learning activities, and instructors typically adapt their classrooms to support either group work or individual

practice, offering students the flexibility to choose when and where to access videos, thereby allowing for greater flexibility in their learning. This approach results in deeper learning and provides more opportunities for learning (Hamden et al., 2013). In essence, it offers students both an online learning community and traditional classroom instruction. Learning Culture: The concept of learning culture advocates for a learner-centered approach. In traditional classrooms, the teacher often assumes the role of the primary source of information. However, the flipped classroom model shifts the instruction from a teacher-centered approach to a learner-centered approach. As a result, students actively engage in knowledge acquisition as they participate in their own learning, dynamically evaluate their progress, and attain a sense of personal fulfillment.

Intentional Content: The third Pillar of the flipped classroom, intentional content, pertains to the decisions made by educators within this instructional model (Hamden et al., 2013). The approach employed in this study embraced a learner-centered perspective, where students actively engaged with course materials outside the classroom through an online learning community. The instructor-designed videos on English refusals incorporated purposeful content meticulously crafted to facilitate students' comprehension of the specific type of refusals under consideration.

Professional Educator: The role of the instructor in a flipped classroom is perceived as more demanding and crucial compared to traditional classes. Educators maintain continuous vigilance over their students, assess their progress, and provide them with meaningful feedback when necessary (FLN, 2014). This Pillar underscores the pivotal role of educators in flipped classrooms, despite their role potentially being less overt (Hamden et al., 2013). In the current study, the researcher closely monitored the participants' progress through study logs and delivered online and individualized feedback.

Research Design

This study adopted a quasi-experimental design involving three groups of 25 advanced Persian-speaking EFL learners each, selected through purposive sampling based on their performance on the Comprehensive English Placement Test (CEPT). The participants, aged 22– 28, were assigned to one of three instructional models: traditional instruction, conventional flipped classroom, or flipped classroom integrated with inquiry-based learning and computer-supported collaborative learning (CSCL). Informed consent was obtained from all participants. To evaluate writing proficiency, participants completed pretests and posttests consisting of 200-word argumentative essays. Essay topics were reviewed by university experts, and Jacobs et al.'s (1981) scoring rubric was used to assess writing dimensions such as organization, coherence, grammar, and vocabulary. Each essay was evaluated by two raters, with inter-rater reliability confirmed (r = .852 for pretest; r = .769 for posttest).Over eight weeks, each group followed its respective instructional method. In the traditional model, instruction was lecture-based. The conventional flipped classroom had students view pre-recorded writing lectures before class and apply them during in-class writing. The inquiry-based flipped model incorporated pre-class videos

and online collaborative research and writing projects via platforms like Google Docs and discussion forums, aimed at enhancing research, critical thinking, and writing. Data collection included both pre- and post-writing tasks, and performance was evaluated using both descriptive and inferential statistics.

Analyses included ANOVA, MANOVA, t-tests, and non-parametric alternatives such as the Kruskal-Wallis and Wilcoxon tests, depending on data distribution. Effect sizes were computed using Cohen's d, Kendall's W, and Cliff's Delta, following established interpretive conventions. This design allowed for a rigorous comparison of the three instructional models' effectiveness in improving the writing proficiency of advanced EFL learners, while controlling for prior ability and ensuring methodological transparency.

Estimating Reliability Indices of Research Instruments

The reliability of the research instruments was assessed via a preliminary investigation prior to their implementation in the primary study. A sample of 15 English as a Foreign Language (EFL) students, who shared similar characteristics with the main study participants, were randomly selected to partake in the pilot study for this purpose. In Table 4.1, the reliability findings for the research instruments are displayed.

Table 1Reliability Indices of the Research Instruments

	Index
Writing Pretest	0.67
Writing Posttest	0.62

Table 1 presents the reliability indices of the research instruments utilized in this study, specifically for the writing pretest and posttest. The reliability index is a critical value representing the consistency and stability of the instrument.For the writing pretest, the reliability index was calculated to be 0.67, indicating a moderate level of reliability. This suggests that the pretest was reasonably consistent and stable in measuring the writing proficiency of the participants before the intervention.Similarly, the writing posttest had a reliability index of 0.62. This also denotes moderate reliability, asserting that the posttest was comparably consistent and stable in measuring the participants' writing proficiency following the intervention.It is crucial to acknowledge these reliability indices when interpreting the results of the study, as they impact the degree of confidence that can be placed in the findings. A reliability index closer to 1.0 would have indicated higher reliability of the tests. Although the indices are above 0.6, suggesting acceptable reliability, there might still be some variability in the scores that is not related to the constructs being measured. It implies a need for caution in drawing definitive conclusions based on these instruments.

Results

Descriptive Statistics of Groups

The tabulated presentation of the descriptive analysis of the pretest and posttest results of the traditional group (TG) is provided in Table 2

Table2. The descriptive analysis of results for TG

	N	Min.	Max.	M	SD
Pretest	25	8	11	7.35	1.09
Posttest	25	7	12	7.81	1.22
Valid N	25				

As per the data presented in Table 4.2, the pretest mean score for TG is 7.35, with a standard deviation of 1.09. Furthermore, TG's posttest mean score is 7, with a standard deviation of 1. The pretest and posttest outcomes for TG are depicted in figures 1 and 2, correspondingly.

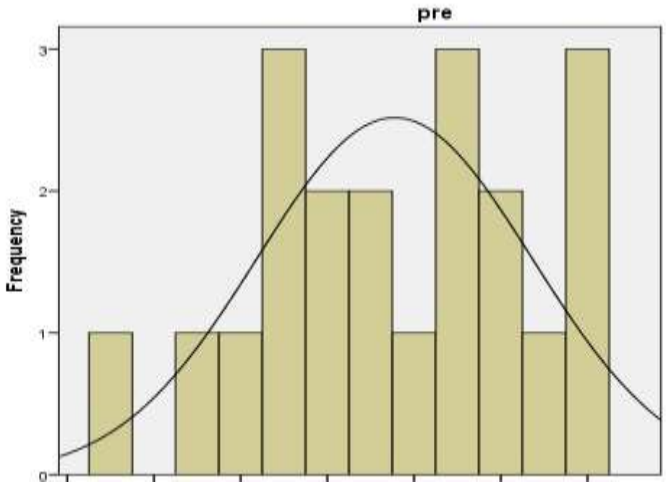

Figure 1. Pretest of TG

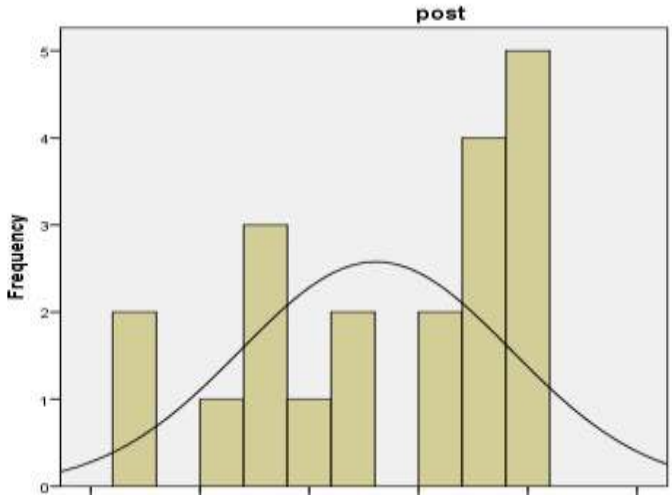

Figure2. Posttest of TG

Additionally, Table 3 provides a descriptive analysis of the pretest and posttest results for the Conventional Flipped (CF) group.

Table.3. The descriptive analysis of results for CF

	N	Min.	Max.	M	SD
Pretest	25	7	13	7.51	1.07
Posttest	25	6	15	8.78	1.23
Valid N	25				

In Table 4.3, the initial assessment reveals an average score of 7.51 for the CF group, with a standard deviation (SD) of 1.07. Furthermore, after the intervention, the CF group's mean score at the posttest stage is 8.78, accompanied by a standard deviation of 1.23. The subsequent visuals illustrate the pretest and posttest outcomes for this particular group.

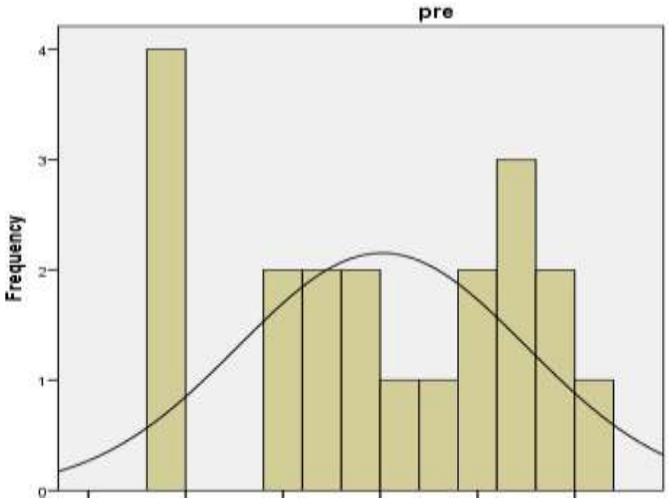

Figure 4.3. The pretest of CF

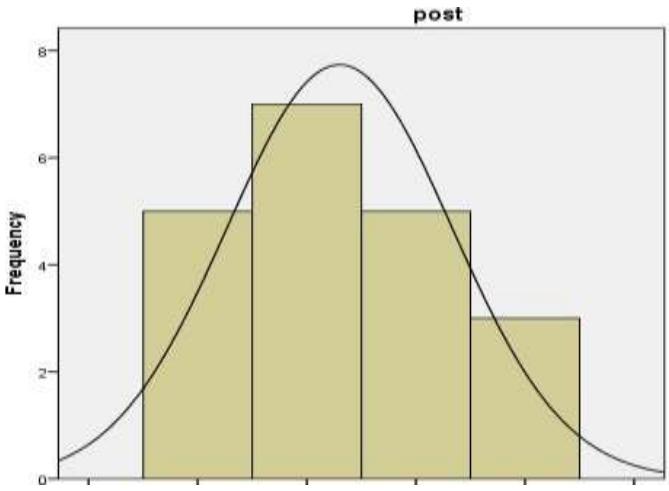

Figure 4.4. The posttest of CF

Furthermore, Table 4.4 displays the descriptive analysis of both the pretest and posttest outcomes for the Integrating Inquiry-Based Learning and Computer-Supported Collaborative Learning Flipped group, referred to as ICG hereafter.

Table 4. The descriptive analysis of results for ICG

	N	Min.	Max.	M	SD
Pretest	25	9	12	7.38	1.05
Posttest	25	8	14	8.49	1.45

Valid N	25

Based on the data presented in Table 4.4, the initial assessment indicates an average score of 7.38 for the ICG group, accompanied by a standard deviation (SD) of 1.05.
Furthermore, following the intervention, the mean score for the ICG group at the posttest stage stands at 8.49, with a corresponding standard deviation of 1.45. Figures 4.5 and 4.6 depict the pretest and posttest scores for the ICG group, respectively.

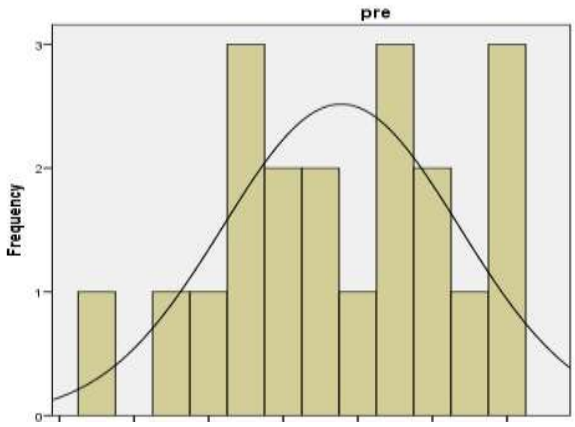

Figure5. Pretest of ICG

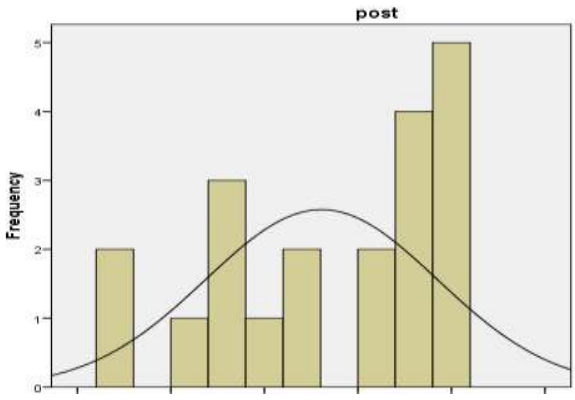

Figure6. Posttest of ICG

Testing the Assumptions

In addition to reporting descriptive statistics, such as mean and standard deviation, we employed inferential statistics, utilizing a one-way ANOVA test to determine the significance of differences between the pretest and posttest scores relating to advanced writing skills across distinct groups. Prior to conducting the ANOVA, we meticulously examined the fundamental assumptions associated with this statistical approach, which are crucial for the reliability of our results. To ensure the accuracy of our findings, we focused on validating the

prerequisites for utilizing parametric statistical tests as outlined by Field (2019), which encompass the normality of distribution, homogeneity of variances, the presence of at least interval variables, and the independence of measurements. For scrutinizing the assumption of normality, we calculated the values of kurtosis and skewness, along with their respective z-scores, for all three groups. Furthermore, Levene's Test was employed to assess the homogeneity of variances among the groups. In cases where the data did not meet the assumptions of normality or homogeneity of variances, we considered implementing appropriate transformations or adopting non-parametric alternatives to address these violations. We committed to treating any violations rigorously to avoid compromising the validity of our conclusions. Our approach was to either transform the data to meet the assumptions better or to consider robust statistical methods that do not rely heavily on these assumptions, ensuring the robustness and integrity of our inferential statistics. By outlining our comprehensive approach to assumption checking and our strategies to address potential violations, we aimed to bolster the credibility of our analysis and subsequent findings related to the advanced writing skills across the evaluated groups. Our meticulous methodology ensured that the derived conclusions were grounded in rigorous statistical examination, providing a reliable basis for interpretation and further discussions.

Table5. Skewness and kurtosis values

	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
Experimental	-0.112	0.328	-0.624	0.749
Control	0.165	0.314	-0.759	0.616

Regarding the experimental groups, the z-score for skewness was Z skewness = -0.112, and the z-score for kurtosis was Z kurtosis = 0.749. For the control group, the z-score for skewness was Z skewness = 0.165, and the z-score for kurtosis was Z kurtosis = 0.616. When comparing these z-scores to the critical value of 1.86, which is significant at $p < .05$, it's evident that none of the z-scores exceeds this threshold. This suggests that the scores follow a normal distribution. Furthermore, to assess the second assumption, which is the homogeneity of variances, we conducted Levene's test, and the results are presented in Table 6

Table6. Levene's Test results

	Levene Statistic	df1	df2	Sig.
Based on Mean	0.084	1	74	0.722
Based on Median	0.078	1	74	0.719

Based on Median and with adjusted df	0.078	1	74.02	0.719
Based on trimmed mean	0.082	1	74	0.720

As demonstrated in Table 4.6, the results of Levene's test are not statistically significant at $p \leq 0.05$. Therefore, we can conclude that the differences in variances between the groups are not significant, and the variances are roughly equal. Consequently, the assumption of homogeneity of variances is satisfied. With this main assumption of the parametric test met, we can proceed to conduct ANOVA as the chosen parametric test.

Testing the Research Hypothesis

To thoroughly investigate this research question, we analyzed the performance of two experimental groups and a control group, comparing both pretest and posttest results using a one-way ANOVA. By doing this, we aimed to discern any significant differences in writing proficiency among advanced EFL students exposed to the different instructional models. The results of the pretest, aimed at comparing the three different instructional models, are concisely illustrated in Table 7. The examination of these results provides insights into whether the varied instructional approaches significantly influence the writing proficiency of advanced EFL students, offering empirical validation or refutation to RQ(H1) based on the derived outcomes.

Table 7 One-way ANOVA results of pretest

Source of Variance	SS	df	MS	F	Sig.
Between groups	511.43	2	260.72		
Within groups	202.66	73	4.83	14.21	0.0178
Total	714.09	75			

Based on the results of the ANOVA test, where $p > 0.05$ and $F(2, 73) = 14.21$, it can be concluded that there is no significant difference among the three groups in terms of advanced writing skills in the pretest. With this determination, we proceeded to compare the performance of the three groups in the posttest.

Table 8. One-way ANOVA results of posttest

Source of Variance	SS	df	MS	F	Sig.
Between Groups	106.133	2	132.067	15.39	.000
Within Groups	520.850	73	90.962		
Total	606.983	75			

According to Table 7 with $F(2, 73) = 15.39$ and $p < 0.05$, there is a significant difference among the three groups in terms of advanced writing skills. This indicates that both experimental groups outperformed the traditional group. However, it's important to note that

the main limitation of ANOVA is its inability to pinpoint the exact source or location of this variance. Therefore, to further elucidate which of the three methods appeared to be more effective and beneficial, a post-hoc Tukey HSD test was conducted. The results of this test are presented in Table9 .

Table9 Tukey HSD of three groups

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
1	2	-2.900*	0.947	0.009	-5.18	-0.62
	3	-3.000*	0.947	0.007	-5.28	-0.72
2	1	2.900*	0.947	0.009	0.62	5.18
	3	-0.100	0.947	0.994	-2.38	2.18
3	1	3.000*	0.947	0.007	0.72	5.28
	2	0.100	0.947	0.994	-2.18	2.38

*. The mean difference is significant at the 0.05 level.
(1)= TG
(2)= CF
(3)= ICG

As illustrated in Table 4.9, a statistically significant disparity was observed between the TG and CF groups, with a p-value of .009. Furthermore, the findings indicated a significant difference between the CF and ICG groups, with a p-value of .007. Therefore, it can be inferred that, in contrast to the TG group, both the ICG and CF groups demonstrated superior performance subsequent to the instructions, resulting in the nullification of the initial hypothesis. The performance of the three groups in the posttest is depicted in Figure 4.8.

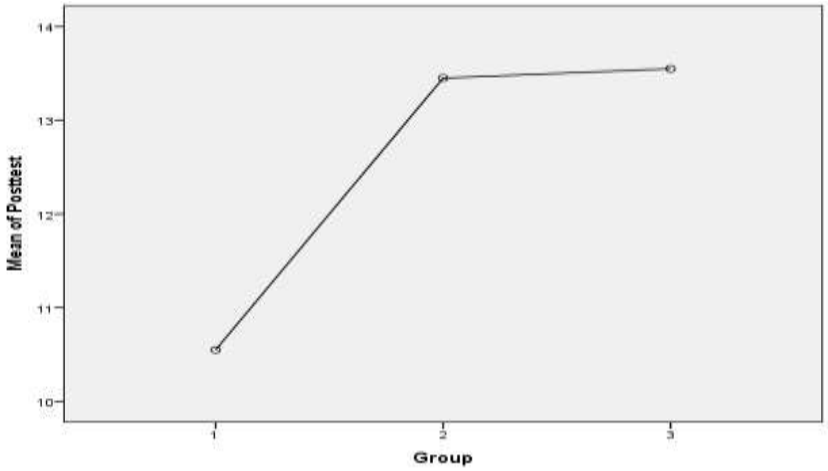

Figure7 . The performance of three groups

Table The rationale for utilizing an independent samples t-test in this study was to determine if there were significant differences in the means between the two experimental groups at both pretest and posttest stages. This test is particularly apt for comparing the means of two independent groups, thereby enabling the researchers to infer whether any observed differences in the test scores can be attributed to the interventions administered. The t-test was imperative to assess whether the specific conditions or instructional models experienced by the two distinct groups had a statistically significant influence on the outcome, which in this context, was their performance on the tests. By analyzing the variations in the means of the two groups, it became possible to discern whether any observed alterations in test scores were a consequence of the interventions, allowing for more robust and validated conclusions to be drawn regarding the impact of the different instructional models on students' writing abilities. This comparative analysis is depicted in Table 4.9, which succinctly presents the descriptive statistical outcomes of the independent samples t-test, providing a clearer understanding of the effectiveness of the instructional strategies deployed in each experimental group.

Table10 . Descriptive statistical results for two experimental groups

	Group	N	Mean	SD	Std. Error Mean
Pretest	CF	25	7.51	1.07	0.235
	ICG	25	7.38	1.05	0.239
Posttest	CF	25	8.78	1.23	0.167
	ICG	25	8.49	1.45	0.242

To compare the performance of two groups in the pretest, an independent samples t-test was run. Table 11 shows the results.

Table. 11. Independent sample t-test results

Groups	N	Mean	SD	Levene's Test for Equality of Variances		t-test for Equality of Means		
				F	Sig.	t	df.	Sig. (2-tailed)
CF	25	7.51	1.07	9.012	0.367	2.304	48	0.000
ICF	25	7.38	1.05					

As evidenced in Table 4.10, the average value of CF is 7.51 (SD=1.07), while that of ICF is 7.38, with a level of significance of .000. Given that the level of Sig. is below the predetermined threshold of 0.05 for the study (F (2, 48) = 9.012, p>.05), it can be inferred that there is generally no significant difference between the two groups in terms of their advanced writing skills in the pretest. Furthermore, to compare the performance of the two groups in the posttest, another independent samples t-test was conducted.

Table12 . Independent sample t-test results

Groups	N	Mean	SD	Levene's Test for Equality of Variances		t-test for Equality of Means		
				F	Sig.	t	df.	Sig. (2-tailed)
CF	25	8.78	1.23	7.226	0.000	2.494	48	0.000
ICF	25	8.49	1.45					

As illustrated in Table 12, the mean score for Conventional Flipped (CF) classroom is 8.78 (SD=1.23), while the Integrated Collaborative Flipped (ICF) classroom exhibits a mean of 8.49, presenting a significance level of .000. Given the established significance level (Sig.) is less than the predetermined alpha level of 0.05 for this study (F (2, 48) = 7.226, p < 0.05), it is conclusive that a significant disparity exists between the two groups concerning students' advanced writing skills. This outcome suggests that the ICF model has demonstrated superior performance in contrast to the CF model. However, to gain a nuanced understanding of the impact of these instructional approaches, it is imperative to dissect the effectiveness of each method on the diverse subscales of writing. This includes analyzing the performance variations in areas like organization, coherence, grammar, and vocabulary amongst others, which will provide more comprehensive insights into the specific realms of writing where the Integrated Collaborative Flipped model holds an edge over the Conventional Flipped model, and vice versa. These detailed analyses on subscales are crucial for educators to refine

instructional strategies and focus on areas that need emphasis to foster advanced writing skills effectively.

Discussion and Conclusion

This study is philosophically anchored in constructivism, which posits that learners actively construct knowledge through interaction, reflection, and experience. The research emphasizes learner engagement, responsibility, and reflective thinking, aligning with the principles of constructivist theorists such as Vygotsky, whose sociocultural theory underlines the significance of social interaction in cognitive development (O'Donoghue & Clarke, 2018). The flipped classroom models employed in this study embody this constructivist ethos, transforming learners from passive recipients into active knowledge constructors who synthesize and apply knowledge in meaningful contexts. The instructional models examined—traditional, standard flipped, and IBL-CSCL flipped—highlight the transformative power of pedagogies grounded in scaffolding and cognitive apprenticeship (Nyikos & Hashimoto, 2018; Benko, 2019). These approaches encourage autonomy while providing strategic support, allowing learners to navigate their own educational paths through structured inquiry and reflection. Moreover, the study aligns with Long's (1996) Interaction Hypothesis, reinforcing the role of interaction as a catalyst for knowledge construction and language acquisition. Empirical findings reveal that both flipped models, especially the inquiry-based and computer-supported collaborative learning (IBL-CSCL) model, significantly enhanced participants' advanced writing skills. This supports earlier research (Ahmed, 2019; Ekmekci, 2020; Farah, 2021) and underscores the effectiveness of blended learning and active learning strategies (Davies, Dean, & Ball, 2019; Muldrow, 2021; O'Flaherty & Phillips, 2022). By allowing learners to co-construct meaning through peer collaboration, platforms like Google Docs and online forums provided environments for shared knowledge construction (Storch, 2013; Elola & Oskoz, 2019; Shehadeh, 2018).The study contributes to the discourse on pedagogical innovation in EFL by demonstrating how theoretical constructs—from Vygotsky's sociocultural perspective to Long's interactional framework—converge in flipped instructional designs to support deeper learning. These models foster learner autonomy, facilitate critical thinking, and promote collaborative engagement, aligning with the pedagogical evolution advocated by Hsieh, Scott, & Marek (2017) and Hwang et al. (2018).Further elaboration on Cockrum's (2014) iteration of the flipped classroom shows how multimedia preloading and in-class practice create spaces for targeted support and individualized learning. This model resonates with scientific, inquiry-based approaches recommended by Ahmad (2014) and Nur & Madkur (2014), supporting reflective practice and continuous learning refinement. In conclusion, this study not only reinforces the philosophical alignment between constructivist theory and flipped instructional models but also offers practical insights into how collaborative, interaction-rich environments enhance advanced EFL writing. It advocates for a shift from knowledge transmission to knowledge construction, providing a strong foundation for future instructional design and educational reform in language education.

The findings of this study underscore the pedagogical value of flipped instruction, particularly when enriched with inquiry-based learning (IBL) and computer-supported collaborative learning (CSCL). These instructional approaches stimulate students to express and document their ideas more effectively, offering enhanced opportunities for interaction, reflection, and collaboration. The teacher assumes a dual role as facilitator and tutor, guiding virtual group discussions, providing feedback, and fostering an interactive learning environment. Empirical evidence showed that group work significantly contributed to improved performance in the experimental groups, aligning with Gharehblagh and Nasri (2020), who found that mobile-assisted collaboration improved writing outcomes. The flipped models also supported sociocultural theory, particularly Vygotsky's emphasis on learning through social interaction (Storch, 2019; Ekmekci, 2018).However, certain sociocultural challenges emerged, including student skepticism about peer feedback, reluctance to embrace flipped learning, and anxiety about evaluation methods (Homma, 2015; Engin, 2014). Students unfamiliar with independent learning often copied teacherprovided models, limiting creative output. Additionally, a lack of motivation, time, and technological infrastructure hindered learners' ability to fully engage with flipped instruction (Alghasab, 2020; Du et al., 2014; Taylor, 2019).The study highlights both theoretical and pedagogical implications. Theoretically, it supports blended learning and learner autonomy, echoing Long’s Interaction Hypothesis and the sociocultural perspective of collaborative learning. Pedagogically, the study recommends gradual implementation, clear expectations, and consideration of individual differences to ease transitions into flipped models. It calls for teacher adaptability, emphasizing trust, respect, and responsiveness to student needs. Several limitations must be noted: limited sample diversity, potential instructor variability, technological constraints, and challenges in objectively assessing writing, a subjective skill. Despite these, the study offers significant insight into the evolving nature of EFL instruction, advocating for flexible, studentcentered, and socially mediated learning environments. In conclusion, while flipped models show promise for developing advanced EFL writing skills, their success depends on contextual sensitivity, thoughtful implementation, and ongoing teacher support.

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