



P-ISSN 2355-2794
E-ISSN 2461-0275

The Impact of Traditional and Holistic Flipped Classrooms on Undergraduate Students' Academic Writing and Autonomy

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Abstract

This study investigated the effects of two approaches in flipped classrooms, including the traditional model, in which the learners were exposed to blended learning in-class and online, and the holistic model, in which the learners' participation was fully online through the specified platforms, on academic writing skills and autonomy. To this end, 60 Omani undergraduates with intermediate English proficiency levels were randomly selected as the sample of the study. They were divided equally into one control group and two experimental groups. Researchers designed pretests and posttests in multiple-choice format, which were used to collect data on writing skills. All the tests were validated, and their reliabilities were measured. A questionnaire from Zhang and Li (2004) was adapted to measure the degree of autonomy among the students during treatment. This questionnaire was piloted before the main study and demonstrated high reliability. The findings of the one-month study revealed that the two experimental groups performed significantly better than the control group, with the blended learning group outperforming the fully online group. These results were consistent for the autonomy questionnaire, confirming that flipping the classes, either fully or partially, helps learners become more independent. The study findings are significant for students, instructors, and institutions.

Keywords: Academic writing skills, blended learning, flipped classrooms, fully online learning, learner autonomy.

1. INTRODUCTION

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Citation in APA style: Behforouz, B., & Al Ghaithi, A. (2025). The impact of traditional and holistic flipped classrooms on undergraduate students' academic writing and autonomy. *Studies in English Language and Education*, 12(1), 201-215.

Received June 19, 2024; Revised August 2, 2024; Accepted December 21, 2024; Published Online January 31, 2025

<https://doi.org/10.24815/siele.v12i1.39458>

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Language learners often consider writing one of the most problematic skills (Fathi & Rahimi, 2020; Xu & Qi, 2017). Ebadi and Rahimi (2018) stated that writing is a complex task requiring a range of linguistic abilities, including coherence, organization, and vocabulary. Consequently, it can give rise to obstacles such as dissatisfaction, anxiety, and difficulty (Fareed et al., 2016; Xu & Qi, 2017). Chen (2002) noticed that learners struggle with writing due to an inadequate grasp of grammar and vocabulary, unfamiliarity with different types of writing, and a lack of understanding of organizational structures. Insufficient writing support might significantly and negatively affect academic achievement. Writing is essential not only for enhancing academic performance but also for fostering social and emotional growth. A lack of proficiency in writing may hinder learners' prospects of obtaining future employment. Hence, efficiently addressing this matter is imperative (Moses & Mohamad, 2019).

Buitrago and Diaz (2018) argued that student motivation cannot be maintained or improved in conventional, teacher-driven writing classrooms. Therefore, language instructors, academicians, and researchers have explored novel approaches to create more engaging learning contexts (Ekmekci, 2017). The flipped classroom is considered a successful method for developing writing skills and addressing writing challenges through useful features such as adaptability. This method allows students to learn at their own pace before the lesson, ensuring they are prepared for class activities without feeling overwhelmed (Fathi & Rahimi, 2020; Leis et al., 2015).

The flipped classroom model (FCM) is an educational framework that shifts educational tasks traditionally completed in the classroom to the home setting via reviewing the previous teaching materials. Conversely, activities typically done at home could also be finished in the classroom, allowing students to discuss and report on the materials they reviewed. This approach fosters meaningful learning (Bergmann & Sams, 2015; Joy et al., 2023; Lundin et al., 2018). This learning model is a type of blended learning that delivers teaching and learning materials online and beyond the classroom. In addition, this model enables students to complete their homework in class (Chaeruman et al., 2018). The flipped classroom approach comprises four components summarized by the acronym 'FLIP'. 'F' stands for a flexible environment, offering learning flexibility regarding time and location. 'L' represents a learning culture where instructors adopt a conventional, teacher-driven technique to providing information. 'I' denotes intentional content, emphasizing the use of education to enhance students' fluency and cognitive understanding. Finally, 'P' refers to professional educators who monitor students consistently, assess their academic performance, and provide feedback ("Definition of flipped learning", 2014).

Bajunury (2014) discussed two models of flipped classroom approaches: the Traditional Flipped Classroom (TFC) and the Holistic Flipped Classroom (HFC). In the TFC model, learners watch the video lectures before attending class. During class, they discuss what they still do not understand with the teacher to improve comprehension. Additionally, the teacher provides activities to support their understanding. In TFC, the instructor does not provide materials directly to the learners (Bergmann & Sams, 2015). The Holistic Flipped Classroom is a model that integrates physical, mobile, and residential classrooms. In HFC, all educational environments are treated as learning settings that are actively monitored and endorsed. Students can preview or review course seminars, participate in synchronous lessons, debate the material with instructors and peers, and provide feedback to the online portal. These tasks can be completed effortlessly, with the system's server recording their educational activities. Lessons to be viewed and resources to be reviewed before each session can be accessed through one of the following educational platforms: mobile, cloud-based, or asynchronous environments. To participate in the synchronous class, students must opt into the educational system and complete concurrent instructional tasks under the teacher's supervision. The teacher may assign various practical tasks in the synchronous classroom, such as searching the Cloud, submitting reports to the asynchronous classroom, or taking online tests (Ozdamli & Asiksoy, 2016).

Su Ping et al. (2020) observed that students in flipped writing learning environments prepare before class by gaining a basic understanding of academic writing. During class, they have ample opportunities to enhance their knowledge through discussions with peers and instructors, exchanging ideas, collaborative writing, and receiving feedback. Ekmekci (2017)

asserted that flipped classrooms can shift students' adverse perceptions of writing skills and increase their motivation to write paragraphs.

Furthermore, flipped instruction has significantly impacted educational technology by shifting the learning responsibility from instructors to learners (Sohrabi & Iraj, 2016). This approach empowers students and encourages the development of independent thinking. With this approach, students can engage in collaborative projects, presentations, and discussions during class, allowing more time for them to work in pairs or groups. Moreover, it enhances students' ability to think critically, solve problems creatively, and actively participate in collaboration (Baepler et al., 2014).

Wu et al. (2019) found that incorporating digital resources and the flipped method in writing lessons improves students' writing abilities, specifically in word selection, coherence of ideas, and grammar. Egbert et al. (2014) argued that students benefit from learning grammar principles, lexical terms, and other linguistic characteristics through digital resources and teaching materials before class in computer-supported language acquisition settings with flexible classroom practices. Moreover, Dellatola et al. (2020) discovered that integrating inquiry-based instruction, modified classrooms, and cooperative education in a computer-aided collaborative learning (CSCL) environment was advantageous for language acquisition and instruction.

Although there have been several studies investigating the effects of the flipped classroom approach on language acquisition, this strategy is still in its nascent phase. The available literature on the efficacy of during-class and out-of-class assets, particular approaches to executing the flipped procedure, educational concepts and techniques, and adequate studies remain limited (Adnan, 2017; Hung, 2017; Köroglu & Çakir, 2017; Lin & Hwang, 2018; Shyr & Chen, 2018; Sun et al., 2016; Turan & Gökteş, 2018). Similarly, Zou et al. (2020) contended that researchers still have ambiguity on the most effective approach to adopting the flipped model. They further proposed that the flipped classroom concept is still developing and requires further research. Nevertheless, most research has concentrated on examining the effects of flipped classrooms on students' writing abilities. At the same time, there is a lack of studies investigating the impact of flipped classrooms on the report writing skills of English as a Foreign Language (EFL) students.

The purpose of this study is to examine the effects of two different models of flipped learning, namely the conventional flipped classroom system and the holistic flipped classroom approach, on the academic success of Omani undergraduates in developing report writing skills and enhancing learner autonomy in a flipped learning environment. The following research questions were formulated in this study:

1. Does the traditional flipped classroom model affect Omani undergraduate students' performance in writing small-scale reports?
2. Does the holistic flipped classroom model affect Omani undergraduate students' performance in writing small-scale reports?
3. Does the traditional flipped classroom model enhance Omani undergraduates' autonomy in learning?
4. Does the holistic flipped classroom model enhance Omani undergraduates' autonomy in learning?

2. LITERATURE REVIEW

2.1 Flipped Classroom and Writing Skills

Integrating digital learning is essential for promoting self-directed learning in pupils. Numerous digital media channels, including Google Classroom, Zoom Meetings, and social media, incentivize students to participate fully in their academic pursuits (Ariani et al., 2024). For example, in A study by Mohammad and Khan (2023) to enhance learners' writing abilities by focusing on the proper application of topic sentences, supporting sentences, adjectival phrases, and sentence structures through a flipped classroom strategy, the findings indicated a statistically significant improvement in the learners' writing proficiency across all parameters. The study

concluded that the modified classroom method significantly enhanced EFL students' writing skills.

Similarly, [Huang et al. \(2023\)](#) investigated the impact of a flipped teaching approach on stress levels, perspectives, and writing accomplishments among undergraduates. The results demonstrated that the flipped classroom improved learners' writing quality, engagement, and encouragement by facilitating group discussions. Furthermore, students' writing capabilities showed substantial enhancements from the pretest to the posttest in the flipped model context.

In another study conducted by [Fathi and Rahimi \(2020\)](#), the influence of flipped classrooms on the global writing ability of EFL learners was measured, and the results revealed that the flipped classroom substantially enhanced writing proficiency. However, its impact on writing complexity and accuracy was minimal. These findings suggest the flipped method can significantly improve specific aspects of L2 writing for EFL students.

As reported in another investigation by [Wu et al. \(2019\)](#), the effects of flipped classrooms on EFL students' writing competence, discouragement, and perspectives were measured. The methodology included pre-task exercises (pretests and tool familiarization), a primary task stage with flipped instruction (reviewing materials, watching videos, and peer feedback), and post-task exercises (posttests, questionnaires, and interviews). Findings indicated that flipped learning improved writing skills on both global and local scales.

In further research to explore whether a flipped approach with technology-enhanced immediate teaching and peer instruction to improve English writing abilities, encouragement, and analytical skills compared to the traditional flipped classroom, [Zou and Xie \(2019\)](#) utilized Google Docs for collaborative writing, the Padlet app for group information recording, and ED puzzles for multimedia content. The results indicated superior writing abilities, encouragement, and critical thinking performance in the treatment group compared to the control group.

2.2 Flipped Classrooms and Learners' Autonomy

Some studies confirmed the positive effect of flipping the classes and the improvements in learners' autonomy. For instance, [Tully \(2014\)](#) stated that a flipped classroom is a versatile paradigm suitable for a wide range of courses, enabling students to learn English more efficiently and independently. In a similar study, [Khosravani et al. \(2020\)](#) examined the impact of flipped classrooms on the autonomy of intermediate Iranian EFL learners, and the findings indicated that flipped classrooms substantially enhanced learners' autonomy.

Similarly, [Farrah and Qawasmeh \(2018\)](#) investigated students' attitudes toward learning English in flipped classrooms using a mixed-method research design, and the findings revealed that flipped classrooms enhanced learners' autonomy, self-direction, and engagement. Ultimately, the study concluded that adopting flipped classroom technology provided learners with more learning opportunities, leading to superior educational outcomes.

In a different study by [Zainuddin and Perera \(2017\)](#), they explored the effects of traditional teaching versus flipped classroom models (FCM) on student autonomy. Their study revealed that students in FCM programs demonstrated excellent proficiency in handling online assignments and tasks, improving their ability to learn independently and collaborate with peers.

In a study by [Kömeç \(2018\)](#), the perspectives of using FCM for self-directed learning, language skill development, motivation, and technology use were investigated. The research revealed that learners had favorable attitudes toward this language-learning approach, successfully developing autonomous language-learning skills. These results aligned with the findings of [Zainuddin and Perera \(2017\)](#) and [Farrah and Qawasmeh \(2018\)](#).

Finally, [Tsai \(2019\)](#) examined whether FCM influenced the autonomy of EFL learners in a content-based teaching environment. The findings suggested a significant increase in learners' autonomy in method use, behavior, engagement with teaching resources, utilization of social resources, and learning self-management. These results echoed the conclusions of previous studies, further validating the effectiveness of FCM in fostering autonomy.

3. METHODS

3.1 Participants

Sixty Omani undergraduate students enrolled in the General Foundation Program (GFP) at a higher education institution in Oman were randomly selected for this study. Their participation in this research was voluntary. The English proficiency of the selected learners was at an intermediate level. The study included both male and female students aged 19 to 20 years whose mother tongue was Arabic. These students were assigned to three groups—two experimental groups and one control group—with 20 participants in each group.

3.2 Instruments

3.2.1 Pre- and post-writing report skills tests

To assess the impact of the treatment on participants' report-writing abilities, the researchers developed a custom skills test. This test measured students' academic writing skills, specifically their ability to effectively use reliable resources for report-writing projects. The test consisted of 20 multiple-choice questions focused on various aspects of academic writing, such as differentiating between broad and specific topics, using direct and indirect in-text citations, organizing paragraphs (introduction, body 1, body 2, and conclusion), distinguishing between paraphrasing and summarizing, and applying APA 7th edition referencing. Each correct answer was worth one mark. The tests were piloted with 20 Omani students to ensure reliability and resulted in Cronbach's alpha of 0.870 and 0.890, indicating a high reliability rate. The test was also validated by an experienced English lecturer with over 10 years of teaching report writing at the foundation level in an EFL setting.

3.2.2 Autonomy questionnaire

The study employed a student autonomy questionnaire developed by [Zhang and Li \(2004\)](#), which consisted of 21 items rated on a five-point Likert scale (1 = never, 2 = seldom, 3 = occasionally, 4 = often, 5 = always). The original questionnaire had a reliability coefficient of 0.80, as determined by Cronbach's alpha. For this study, the questionnaire was piloted with 20 Omani undergraduate students of similar English proficiency levels, resulting in a reliability coefficient of 0.91, which is considered outstanding.

The high-reliability coefficient indicates strong internal consistency, meaning the survey items consistently measured the same underlying concept. The questionnaire was reviewed by a doctoral degree holder in Applied Linguistics to ensure the Arabic translation of the questionnaire aligned with the student's proficiency levels and cultural context. An external reviewer then evaluated the translated version for cultural and educational appropriateness, making necessary adjustments for accuracy.

3.3 Procedure

The study was conducted over one month during the third semester of 2024 in Oman. A pretest was administered to measure the participants' initial proficiency in report writing. All participants were required to write a 550-word essay comprising five parts: introduction, body 1, body 2, conclusion, and a reference section.

The control group received traditional in-class instruction on report-writing skills over two 90-minute sessions. Feedback was provided during these sessions. The first experimental group participated in a traditional flipped classroom (TFC) approach. This group watched 30- to 40-minute videos created by the researcher, covering topics such as writing an introduction, developing arguments, paraphrasing, in-text citations, and referencing. These videos were uploaded to Microsoft Teams before class. During class, students discussed the video content,

received instruction, and engaged in feedback and further explanations. Two 90-minute sessions per week were held for one month.

The second experimental group used a holistic flipped classroom (HFC) approach. This group followed the same procedure for video materials but did not attend in-person classes. Instead, online sessions were conducted via Zoom twice a week, allowing students to discuss materials with teachers and peers. Students uploaded their work to a Google Drive folder shared by the teacher, who provided feedback through the same platform and during online sessions.

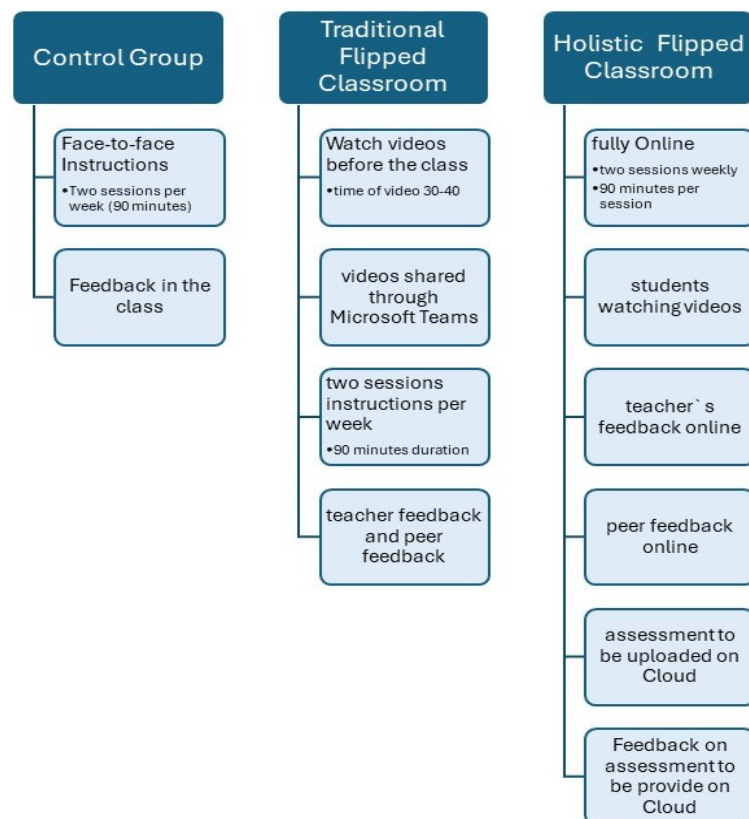


Figure 1. A visual summary of the learning process for various groups (The Authors, 2025).

After the treatment sessions, a posttest assessed participants' report-writing skills. Additionally, the two experimental groups completed a questionnaire to evaluate their autonomy in the learning process.

3.4 Data Analysis

Data analysis began with the Shapiro-Wilk test to evaluate the normality of pretest and posttest writing scores for the control HFM and TFM groups. A One-Way ANOVA was used to compare pretest scores. For posttest scores, repeated-measures ANOVA was conducted. Since the control group's posttest scores were not normally distributed, a Kruskal-Wallis test was performed, followed by Dunn's tests for further analysis. A one-way ANOVA was conducted to evaluate learners' autonomy, followed by Turkey HSD post hoc analysis.

4. RESULTS

Before conducting the comparison test among the groups, it was necessary to perform a normality test to determine whether parametric or nonparametric tests would be appropriate. The Shapiro-Wilk normality test was applied to measure data distributions for the pretests and posttests of writing scores of the groups. The results are presented in Table 1.

Table 1. Results of the Shapiro-Wilk test of normality.

	Groups	Shapiro-Wilk		
		Statistic	df	Sig.
Pretest	Control	.962	20	.585
	HFM	.959	20	.522
	TFM	.929	20	.151
Posttest	Control	.767	20	.000
	HFM	.946	20	.310
	TFM	.922	20	.109

Table 1 shows that the pretest writing scores for all groups were normally distributed. Specifically, the control group ($W = 0.962$, $p = 0.585$), HFM group ($W = 0.959$, $p = 0.522$), and TFM group ($W = 0.929$, $p = 0.151$) all had p -values greater than 0.05. In the posttest, the control group showed deviations from normality ($p = 0.000$), whereas the HFM group ($p = 0.310$) and TFM group ($p = 0.109$) exhibited a normal distribution.

4.1 Flipped Classroom and Writing Skills

Based on the normality results, a parametric test, specifically a one-way ANOVA, was deemed suitable for comparing students' pretest scores. Table 2 presents the results of the one-way ANOVA:

Table 2. Results of the one-way ANOVA for pretest comparison among groups.

	Sum of Squares	df	Mean Square	F	Sig.
Between groups	.933	2	.467	.157	.855
Within groups	169.000	57	2.965		
Total	169.933	59			

As shown in Table 2, the one-way ANOVA analysis of pretest writing scores revealed no significant differences between the control, HFM, and TFM groups ($p = 0.855$). The result suggests that the variations in pretest scores among these groups were likely due to a random chance rather than intrinsic differences in initial writing proficiency before the interventions.

A repeated measure ANOVA was subsequently conducted to evaluate changes in writing scores from pretests to posttests within the groups. Table 3 and Table 4 provide detailed information regarding these group differences.

Table 3. Results of repeated measures ANOVA within groups.

Source	Difference	Sum of squares	Df	Mean square	F	Sig.	Partial eta squared
Difference	Linear	1840.833	1	1840.833	549.502	.000	.906
Difference * groups	Linear	218.217	2	109.108	32.570	.000	.533
Error(difference)	Linear	190.950	57	3.350			

Table 4. Descriptive statistics for all groups in pretests and posttests.

Group	Pretest Mean (SD)	Posttest Mean (SD)
Control	4.80 (1.542)	9.25 (2.381)
HFM	5.10 (1.518)	13.10 (1.744)
TFM	5.00 (2.052)	16.05 (1.504)
Total	4.97 (1.697)	12.80 (3.379)

Table 3 shows that all three groups demonstrated considerable improvement in their writing scores from the pretest to the posttest, with notable variations. Table 4 highlights that the mean score for the HFM group increased from 5.10 ($SD = 1.518$) to 13.10 ($SD = 1.744$), while the mean score for the TFM group improved from 5.00 ($SD = 2.052$) to 16.05 ($SD = 1.504$). In contrast, the mean score for the control group rose from 4.80 ($SD = 1.542$) to 9.25 ($SD = 2.381$). The repeated measures ANOVA revealed substantial overall improvement ($p < .001$, $\eta^2 = .906$) and

significant variations in improvement across the groups ($p < .001$, $\eta^2 = .533$). Furthermore, between-subjects effects analysis demonstrated significant differences between the groups ($F(2, 57) = 37.860$, $p < .001$, $\eta^2 = .571$).

The Shapiro-Wilk test results for posttest writing scores (Table 1) showed differences in normality across groups. The control group had a statistic of 0.767 and a p-value of 0.000, indicating that the scores were not normally distributed. In contrast, the HFM group ($W = 0.946$, $p = 0.310$) and the TFM group ($W = 0.922$, $p = 0.109$) displayed normal distribution, as their p-values exceeded 0.05. This difference in normality between the experimental groups (HFM and TFM) and the control group may be attributed to factors affecting the writing score distribution post-intervention. Consequently, the nonparametric Kruskal-Wallis test was used to compare posttest scores across all groups. Table 5 presents the results of this analysis:

Table 5. Results of the Kruskal-Wallis test of posttest comparisons across groups.

Kruskal-Wallis H	44.535
df	2
Asymp. Sig.	.000

The Kruskal-Wallis test findings in Table 5 indicate statistically significant differences in posttest writing scores among the control, HFM, and TFM groups. These results align with previous observations based on mean rankings, which highlighted performance differences among the groups. Post-hoc pairwise comparisons using Dunn's test were conducted to pinpoint the specific groups with substantial differences in posttest scores. The results are shown in Table 6.

Table 6. Results of post-hoc Dunn's test for effect size comparisons among groups.

(I) groups	(J) groups	Mean difference (I-J)	Std. error	95% Confidence interval	
				Lower bound	Upper bound
control	HFM	-3.850*	.660	-5.53	-2.17
	TFM	-6.800*	.630	-8.40	-5.20
HFM	control	3.850*	.660	2.17	5.53
	TFM	-2.950*	.515	-4.26	-1.64
TFM	control	6.800*	.630	5.20	8.40
	HFM	2.950*	.515	1.64	4.26

Table 6 reveals that post-hoc comparisons identified significant disparities in posttest scores among the groups. The HFM group achieved an average score of 3.850 points higher than the control group, with a 95% confidence interval of [-5.53, -2.17]. Similarly, the TFM group scored an average of 6.800 points higher than the control group, with a 95% confidence interval of [-8.40, -5.20]. Additionally, the TFM group outperformed the HFM group with an average difference of 2.950 points (95% confidence interval: [-4.26, -1.64]). All observed differences were statistically significant at $p < .001$.

4.2 Flipped Classrooms and Learners' Autonomy

A one-way ANOVA was conducted to measure the degree of autonomy among the groups. The results are presented in Table 7.

Table 7. Results of one-way ANOVA for comparing learners' autonomy.

	Sum of squares	df	Mean square	F	Sig.
Between groups	32257.600	2	16128.800	3767.793	.000
Within groups	244.000	57	4.281		
Total	32501.600	59			

As shown in Table 7, the ANOVA results indicate a significantly high F-value of 3767.793 with a p-value of less than .001, confirming significant differences in autonomy levels among the

groups. To further explore these differences, a post-hoc analysis was conducted, and the results are shown in Table 8.

Table 8. Multiple group comparisons based on autonomy.

(I) groups	(J) groups	Mean difference (I-J)	Std. error	Sig.	95% Confidence interval	
					Lower bound	Upper bound
Control	TFM	-54.20*	.65427	.000	-55.774	-52.625
	HFM	-41.80*	.65427	.000	-43.374	-40.225
TFM	Control	54.20*	.65427	.000	52.625	55.774
	HFM	12.40*	.65427	.000	10.825	13.974
HFM	Control	41.80*	.65427	.000	40.225	43.374
	TFM	-12.40*	.65427	.000	-13.974	-10.825

The Tukey HSD analysis of multiple group comparisons reveals significant differences between all pairs of groups. The control group exhibits a significantly lower level of autonomy compared to both the TFM group (mean difference: -54.20, $p < .001$, 95% confidence interval: -55.774 to -52.625) and the HFM group (mean difference: -41.80, $p < .001$, 95% confidence interval: -43.374 to -40.225).

The TFM group demonstrates a significantly higher level of autonomy compared to both the control group (mean difference: 54.20, $p < .001$, 95% confidence interval: 52.625 to 55.774) and the HFM group (mean difference: 12.40, $p < .001$, 95% confidence interval: 10.825 to 13.974). Similarly, the HFM group shows a substantially higher autonomy level than the control group (mean difference: 41.80, $p < .001$, 95% confidence interval: 40.225 to 43.374). However, the HFM group demonstrates a lower autonomy level than the TFM group (mean difference: -12.40, $p < .001$, 95% confidence interval: -13.974 to -10.825). All discrepancies are statistically significant at the significance level of 0.05.

5. DISCUSSION

The primary objective of this study was to establish and evaluate two models of flipped classrooms to measure their impact on the development of academic writing skills and student autonomy among Omani undergraduates. Sixty students were divided equally into one control group and two experimental groups. The first experimental group used the holistic flipped classroom (HFC), which was entirely online. In contrast, the second experimental group followed the traditional flipped classroom (TFC) model, combining online and in-class training. The control group received conventional in-person instruction.

The findings reveal that all groups showed progress in their ability to prepare the final draft of an academic report from the pretest and the posttest. However, statistical analysis indicates that the TFC group performed significantly better than the HFC and control group. The HFC group also outperformed the control group, showing notable improvements in writing skills.

5.1 Flipped Classroom and Writing Skills

The superior performance of the TFC group can be attributed to its effective combination of online flexibility and in-class support. The online aspect allowed learners to engage with course materials at their own pace, review materials as necessary, and develop greater independence and comprehension. In-class sessions provided immediate feedback and personalized guidance from instructors, enabling learners to address challenges promptly. The combination of self-directed learning and direct interaction fostered an ideal setting for enhancing academic writing proficiency and learner independence, resulting in exceptional achievement.

The success of the HFC group could be justified by the accessibility and convenience of access to online resources, which enabled learners to engage with the curriculum at their preferred pace and revisit topics as necessary. The online learning environment facilitated increased autonomy and self-regulation as students managed their study timetables and actively sought

learning materials. The heightened level of accountability and independent learning contributed significantly to the HFC group's progress. In contrast, while the control group demonstrated improvement, its performance did not match that of the flipped classroom groups. Conventional in-person instruction facilitated direct interaction with instructors and peers, providing immediate support and explanations. However, lack of flexibility and limited opportunities for self-paced learning hindered the development of independence and self-control, leading to less significant progress than the experimental groups.

The results of this study align with previous research. For example, [Ariani et al. \(2024\)](#) evaluated the Flipped Digital Classroom (FDC) approach. They found that students in the FDC group had an 18-point improvement in English writing scores compared to the control group. Their study also highlighted the positive relationship between flipped learning approaches and student engagement, mirroring the results of the present study. Similarly, [Pamuk and Alagözlü \(2024\)](#) examined the impact of flipped classrooms on self-regulation abilities in academic writing skill modules at an educational institution in Turkey. Their study revealed that students in the experimental group achieved significantly higher levels of autonomy than the control group, which is consistent with the current findings.

[Roohani and Rad \(2022\)](#) examined the effectiveness of a hybrid-flipped classroom approach in enhancing EFL learners' argumentative writing proficiency. Their findings demonstrated that the hybrid-flipped approach significantly enhanced writing skills and provided additional benefits, such as improved communication, learner accountability, and flexibility in addressing absences. Finally, [Zou and Xie \(2019\)](#) introduced a flipped learning approach that incorporated advanced technology for collaborative learning and timely instruction. Their research showed that this method was more effective than conventional flipped classrooms in improving both writing skills and learner motivation.

5.2 Flipped Classrooms and Learners' Autonomy

The analysis of learner autonomy, measured using a questionnaire, revealed that the TFC model, which integrated blended learning, outperformed both the HFC and control groups. The HFC group ranked second in autonomy, while the control group exhibited the least progress.

The TFC model's exceptional performance can be attributed to its structured yet adaptable learning environment. This approach empowered students to manage their study schedules while benefitting from direct supervision by instructors. The online component fostered students' self-reliance by requiring students to navigate and maintain their learning resources independently. Meanwhile, in-class sessions facilitated collaborative learning and peer assistance, significantly enhancing students' autonomy. Autonomy-supportive practices further promoted self-directed learning and accountability, enabling TFC participants to excel in this area.

The HFC group also demonstrated substantial enhancement in learner autonomy. The exclusively digital format required students to independently manage their time and learning activities, fostering self-regulation and autonomy. The absence of physical classroom limitations allowed students to access and engage with materials anytime, creating a highly personalized learning experience. Regular engagement with the subject matter and the need to guide their studies independently enabled the HFC group to develop strong autonomous learning skills, though not to the same extent as the TFC group.

The control group, which followed conventional in-person teaching, demonstrated the lowest improvement in self-directed learning. While direct interaction with instructors and classmates provided valuable immediate feedback and encouragement, the inflexible framework of predetermined class schedules and dependence on instructor-led activities restricted students' ability to assume responsibility for their learning process. Consequently, the control group had fewer autonomous learning skills than the two experimental groups.

These results align with those of [Tsai \(2019\)](#), who examined the effect of the flipped classroom approach on EFL learners' self-directed learning. In Tsai's study, linguistics students were divided into experimental and control groups, with the former using a flipped classroom model within a Moodle course management system, such as video lectures, online quizzes,

resources, and e-journals. Data analysis revealed no significant references in autonomy before the intervention. However, post-intervention results showed notable statistical improvement in autonomous strategies, behaviors, and confidence among the experimental group. The CMS log analysis also highlighted substantial relationships between online learning activities and the perception of learner autonomy.

Similarly, [Izadpanah \(2022\)](#) explored the effect of flipped teaching (FT) on academic resilience (AR), self-directed learning (SDL), and learner autonomy (LA) among EFL students. Using two-stage cluster sampling, researchers studied 354 participants. Covariance analysis indicated a significant impact of FT on AR, SDL, and LA ($p < 0.05$). Furthermore, there was a considerable disparity in students' average scores in the pretest and posttest within the experimental group. The average scores of EFL students Active Reading (AR), Self-Directed Learning (SDL), and Language Acquisition (LA) were elevated while utilizing the Full-Time (FT) approach. The study findings indicated a considerable rise in the average academic performance of students in the experimental group's posttest, comparing their pretest and the control group. The research findings suggested that the flipped class benefits self-directed learning (SDL) levels. The flipped lesson class strategy substantially impacted English language learners' language acquisition (LA) when English was taught as a foreign language.

[Tran and Tran \(2024\)](#) also investigated the flipped classroom model's impact on college students' self-directed learning. Before attending the lecture, students were instructed to do computer-based tasks focusing on specific grammatical issues and terminology. At the same time, professors would guide additional educational tasks and support discussions during the lesson. The data were collected via semi-structured interviews with 19 students who were not majoring in English and were between the ages of 20 and 21. These students belonged to the same institution in Ho Chi Minh City. The findings indicated that this approach significantly enhances participants' autonomy before and during the class sessions because it fosters an engaging and dynamic learning environment.

[Bouderbala \(2021\)](#) examined the role of flipped learning in promoting students' autonomy. A survey of 26 English professors at Batna 2 University revealed favorable views toward the flipped classroom. The current study suggested adopting the flipped educational setting as a participatory educational paradigm to enhance students' independence and readiness for lifetime autonomous learning.

6. CONCLUSION

The findings of this research are significant for learners, teachers, and educational organizations. The results revealed that the students, particularly Omani undergraduates, could significantly enhance their academic writing skills through flipped classrooms, especially blended models. These improvements are likely to assist students in future professional endeavors requiring proficient academic writing skills. Additionally, the study revealed an increase in autonomy promotes self-directed learning, improves problem-solving skills, and fosters critical thinking abilities, which are essential for lifelong learning. The integration of flipped classrooms and technology into the learning process also increases student engagement, motivation, and interaction.

For teachers, flipped classrooms offer substantial benefits by reshaping their roles and optimizing classroom dynamics. This paradigm shifts direct instruction outside the classroom—typically through pre-recorded lectures or online resources—allowing educators to dedicate in-class time to interactive and cooperative activities. Teachers can focus on facilitating discussions, addressing individual student needs, and engaging in practical problem-solving activities instead of delivering traditional lectures. This approach enables educators to better tailor their teaching to diverse learning preferences, provide timely and personalized feedback, and foster a more interactive and engaging learning environment. Moreover, the flipped classroom approach promotes integrating and customizing new technology, fostering professional development and

creativity. Teachers can achieve greater job satisfaction and a more fulfilling educational experience as they improve their capacity to support and engage students effectively.

Educational institutions also benefit from flipped classrooms by maximizing resource utilization, improving student achievements, and aligning with institutional objectives. Shifting direct instruction outside of class optimizes in-class time for interactive and collaborative learning, resulting in more efficient and captivating educational experiences. This strategy leverages technological investments, such as digital platforms, to enhance teaching quality. Flipped classroom frequently leads to enhanced student achievement and contentment, positively influencing institutional indicators like retention and graduation rates. Additionally, this approach supports institutional goals related to innovation and modernization, enabling institutions to remain competitive in a changing educational environment.

This study was subject to several constraints that limit its generalizability and scope. Conducted at a higher education institution in Oman, the research involved undergraduate students with intermediate English proficiency. As such, the findings may not apply to other educational settings or student populations. The narrow focus on a specific department and proficiency level restricts the applicability of the results to other institutions and departments in Oman. Moreover, the study employed a quantitative methodology that assessed students' writing proficiency and autonomy but did not explore other critical skills, such as grammar, reading, or listening. The exclusive focus on learners also overlooked the significant contributions of instructors and institutions in implementing flipped classrooms. Thus, future research should address these limitations by including a more diverse range of students from multiple universities and departments in Oman, with varying ability levels. Additionally, it would be valuable to examine other skills and incorporate qualitative research to explore students' perspectives on the flipped classroom approach. Investigating the attitudes, motivations, and perspectives of instructors and institutional managers involved in flipped classrooms could provide a more comprehensive understanding of its impact and effectiveness.

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