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## Flipped vs. Micro-flipped Classrooms: Effects on Iranian EFL Learners' Writing Performance and Classroom Engagement

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### ABSTRACT

**Objective:** This study aimed to comparatively examine the effects of the Flipped Classroom (FC) model, the Micro-Flipped Classroom (MFC) model, and the Traditional Lecture-Based Method (TLBM) on the writing performance and classroom engagement of Iranian EFL learners.

**Methods:** Sixty-three female upper-intermediate EFL learners from Zabansara Language Institute in Shabestar, Iran, were selected based on the Oxford Placement Test and randomly assigned to three groups: Flipped Classroom (n=21), Micro-Flipped Classroom (n=21), and Traditional Control Group (n=21). Data were collected using writing pre- and post-tests and a classroom engagement questionnaire. ANCOVA analyses were used to compare the post-test means across the three groups, controlling for pre-test scores.

**Results:** The ANCOVA results revealed statistically significant differences among the three instructional methods in both writing performance and classroom engagement ( $p < .05$ ). Specifically, learners in the Micro-Flipped Classroom group achieved significantly higher mean scores in writing performance and reported greater classroom engagement compared to both the Flipped Classroom group and the Traditional Lecture-Based group.

**Conclusions:** The Micro-Flipped Classroom model (characterized by shorter pre-class video materials and more in-class interactive tasks) was found to be more effective than both the standard Flipped Classroom and the Traditional Method for enhancing EFL writing performance and boosting student engagement. The findings provide strong pedagogical support for EFL teachers and policymakers to adopt the MFC approach in technology-enhanced language instruction.

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## Introduction

In recent years, the integration of technology into English as a Foreign Language (EFL) instruction has transformed conventional pedagogical practices worldwide. Among various technology-enhanced models, *flipped* and *micro-flipped* classrooms have drawn increasing attention for their capacity to promote learner engagement, autonomy, and higher-order thinking skills. In a typical flipped classroom, input materials—usually pre-recorded video lectures—are delivered before class, allowing in-class time to be devoted to collaborative and communicative tasks (Bergmann & Sams, 2012; Chen et al., 2014). However, several scholars have cautioned that the full-scale flipped model can create excessive cognitive load and time pressure for learners, especially in contexts where technological access or language proficiency is limited (Abeysekera & Dawson, 2015; Hung, 2017). To mitigate these challenges, the *micro-flipped* model has emerged as a more flexible alternative, offering shorter pre-class segments integrated with brief interactive tasks within class sessions (Zainuddin et al., 2020; Lo & Hew, 2017).

Although empirical findings have confirmed the pedagogical value of flipped learning in EFL settings (e.g., Han, 2018; Mehring, 2017; Teng, 2021), comparative research examining *flipped* and *micro-flipped* approaches in writing instruction remains limited. Most prior studies have focused on learners' overall academic achievement or attitudes in general English courses, leaving gaps regarding their influence on writing performance and classroom engagement, which are essential components of successful language learning (Fredricks et al., 2004; Philp & Duchesne, 2016). Writing, as a productive skill, requires sustained motivation and cognitive involvement; thus, classroom engagement can mediate the impact of instructional design on performance outcomes.

Guided by the principles of active learning (Prince, 2004) and self-determination theory (Deci & Ryan, 1985), the present study investigates whether micro-flipped instruction produces higher writing performance and greater engagement than flipped or traditional lecture-based teaching among Iranian EFL learners. It was hypothesized that students in the micro-flipped classroom would achieve superior writing performance and exhibit stronger behavioral, emotional, and cognitive engagement compared with those in the flipped and control groups. By employing a quasi-experimental design, this research aims to clarify the relative efficacy of these technology-

mediated instructional approaches and contribute to the broader understanding of digital pedagogy in EFL contexts.

These findings align with Self-Determination Theory (Ryan & Deci, 2000), suggesting that the flipped approach fulfills learners' needs for autonomy, competence, and relatedness—key psychological factors that foster engagement and persistence.

Another crucial construct intertwined with flipped learning is learner engagement, a multidimensional concept encompassing behavioral, emotional, and cognitive involvement (Fredricks et al., 2004). Engagement has been identified as a strong predictor of academic success and language proficiency (Reeve, 2012). In EFL contexts, engagement often suffers due to teacher-centered practices and limited interaction. The flipped model counteracts this issue by encouraging pre-class preparation and in-class collaboration, thereby redistributing responsibility for learning from teacher to learner. Studies such as Zainuddin (2018) and Lin and Hwang (2019) show that flipped classrooms significantly increase behavioral and emotional engagement through cooperative learning and peer support. Moreover, when technology is integrated effectively, learners perceive greater control over their learning process and show higher motivation (Chilingaryan & Zvereva, 2017).

Building on the theoretical foundations of flipped learning, the micro-flipped classroom has emerged as a pedagogical refinement that addresses practical and motivational limitations of the fully flipped model. Unlike a traditional flip, in which entire lessons are moved online, the micro-flipped approach selectively inverts small portions of content, typically in five-to-ten-minute microlearning segments (Shafiee Rad, 2023). This modular design capitalizes on the principles of cognitive load theory (Sweller, 2010) and chunking (Miller, 1956), suggesting that learning in shorter, focused bursts facilitates comprehension and retention. Furthermore, micro-flipping allows teachers to integrate just-in-time instruction—delivering the right amount of input at the right moment—thereby enhancing learners' readiness for in-class collaboration. In EFL settings, micro-flipped approaches are particularly valuable because they mitigate two common barriers: low student preparation and unequal access to technology. When only a small component of a lesson is flipped, students who fail to prepare before class are less likely to fall behind, as the remaining in-class structure provides opportunities to catch up (Garcia-Peñalvo et al., 2016). Moreover, the brevity of pre-class materials increases students' willingness to engage,

aligning with findings that shorter digital tasks improve compliance and satisfaction (Guo et al., 2014). Shafiee Rad (2023) found that Iranian learners exposed to micro-flipped grammar instruction demonstrated significantly higher motivation and achievement than those taught through conventional methods, emphasizing the model's effectiveness in contexts where attention spans and external demands are challenging.

Both flipped and micro-flipped classrooms are theoretically anchored in constructivist and socio-cultural learning theories (Vygotsky, 1978; Bruner, 1996). These frameworks posit that learners actively construct knowledge through interaction, collaboration, and scaffolding. In flipped environments, the pre-class phase fosters individual constructivism, where learners engage with input materials independently, while in-class phase promotes social constructivism through peer discussions and joint problem-solving (Zainuddin & Perera, 2019). This dual-phase learning cycle enhances higher-order thinking skills, encourages reflection, and cultivates learner autonomy—an outcome essential in ELT, writing development (Benson, 2013). In micro-flipped contexts, this interaction becomes more iterative, as each micro-unit alternates between self-study and guided collaboration reinforcing learning continuity and reflection.

A central issue in EFL pedagogy is fostering learner autonomy, defined as the ability to take charge of one's own learning (Holec, 1981). Autonomous learners demonstrate greater self-regulation, goal setting, and reflective practices (Zimmerman, 2000). The flipped and micro-flipped models inherently promote autonomy by shifting responsibility from teacher to student, requiring learners to engage with materials before class and apply knowledge during interactive sessions. Studies have shown that students in flipped classrooms report increased confidence in managing their learning and seeking resources independently (Lee & Wallace, 2018; Zainuddin, 2018). In Iranian contexts, where teacher authority and rote learning often predominate (Riazi, 2007), flipped designs can gradually cultivate self-regulated learning habits that traditional setting rarely achieve. With respect to writing performance, multiple studies have confirmed the efficacy of flipped learning across diverse EFL populations. Qader and Yalcin Arslan (2019) observed that Iraqi EFL students who participated in flipped writing classes produced essays with higher syntactic complexity and better organization compared to control groups. Similarly, Zhang (2020) found that Chinese university students in a flipped academic writing course demonstrated improved writing quality and self-efficacy. Zhao et al. (2023) extended this line of inquiry by integrating

social-media-supported flipped instruction; learners not only achieved higher writing scores but also reported reduced writing anxiety and stronger engagement. Although empirical data on micro-flipped writing instruction remain limited, preliminary evidence suggests comparable benefits. For example, Nourinezhad et al. (2022) applied a partially flipped model to Iranian medical students' writing and found significant gains in both writing performance and self-efficacy.

Engagement in flipped and micro-flipped contexts is multifaceted. Behavioral engagement manifests through participation and task persistence; emotional engagement involves enjoyment, interest, and a sense of belonging; and cognitive engagement reflects effortful thinking and self-regulation (Fredricks et al., 2004). Research consistently highlights that flipped models enhance all three dimensions. For instance, Lin and Hwang (2019) reported that students in technology-enhanced flipped environments displayed higher levels of interaction and positive emotions during writing activities. Similarly, a meta-analysis by Qi (2024) concluded that flipped instruction significantly enhances cognitive engagement by promoting active meaning-making. In micro-flipped classrooms, engagement tends to be even more sustained because tasks are shorter, more frequent, and contextually integrated (Fidalgo-Blanco et al., 2016). This rhythm of "micro-cycles" prevents cognitive fatigue and fosters a sense of progress, thereby maintaining students' motivation throughout the semester.

Despite encouraging evidence, several research gaps remain. First, comparative investigations of flipped versus micro-flipped classrooms are scarce; most existing studies explore only one model in isolation. Second, few studies have examined the effects of these models specifically on writing performance and classroom engagement simultaneously, and even fewer have done so in the Iranian EFL context. Third, engagement is often treated as a unidimensional construct, ignoring its cognitive and emotional facets. Fourth, methodological limitations persist, including small sample sizes, short treatment durations, and reliance on self-report measures. Finally, the literature provides limited insight into the design quality of instructional materials—for example, how video length, interactivity, and feedback mechanisms influence outcomes.

The present study responds to these gaps by directly comparing flipped and micro-flipped classrooms in terms of Iranian EFL learners' writing performance and classroom engagement. By combining quantitative measures of writing achievement with qualitative insights into learner perceptions, it aims to provide a more nuanced understanding of how micro-level instructional

design decisions affect macro-level learning outcomes. This investigation contributes not only to the growing body of research on flipped learning in TEFL but also to broader applied linguistics discussions about technology-mediated autonomy, engagement, and process-based writing instruction.

In summary, the literature indicates that both flipped and micro-flipped approaches hold significant pedagogical promise for enhancing EFL writing instruction. They align with constructivist and socio-cultural theories, encourage learner autonomy, and improve engagement. However, the relative effectiveness of these models, particularly in non-Western EFL contexts such as Iran, remains underexplored. Given the importance of writing proficiency for academic and professional success, and the central role of engagement in sustaining language learning, further research comparing these two instructional designs is warranted.

The evolution of educational paradigms in recent decades has brought remarkable changes to the field of English language teaching (ELT), particularly in contexts where English is learned as a foreign language (EFL). Among the emerging instructional innovations, the flipped classroom model has been widely acknowledged for its capacity to transform teacher-centered environments into learner-centered ones (Bergmann & Sams, 2012; Chen Hsieh et al., 2017). Within this model, the delivery of content occurs primarily before class, typically through teacher-recorded videos or other multimedia materials, while classroom time is devoted to active learning tasks such as collaborative problem-solving, discussions, and peer feedback. This pedagogical reversal aims to foster deeper learning, student engagement, and autonomy (Davies et al., 2013). In the Iranian EFL context—where traditional lecture-based teaching often dominates classrooms and students tend to be passive recipients of knowledge—the flipped model offers a potential remedy to enhance participation, motivation, and writing proficiency.

More recently, a variant of the flipped approach, known as the micro-flipped classroom, has been introduced to address limitations of the full flip model (Fidalgo-Blanco et al., 2016). While traditional flipping demands that students watch lengthy video lectures before class, the micro-flipped approach incorporates shorter, modular “micro” learning segments that connect pre-class and in-class activities through a “link activity.” This modification seeks to accommodate students who may not have completed all pre-class tasks while maintaining the active learning focus of flipped instruction. As Garcia-Peñalvo et al. (2016) argue, micro-flipping can make

implementation easier, more flexible, and more inclusive by allowing partial flipping of selected course components rather than the entire syllabus. In language education, such flexibility can be critical, as learners' access to technology, motivation, and learning pace vary widely.

In EFL writing instruction, both flipped and micro-flipped models promise to address long-standing challenges. Writing in a second or foreign language is widely recognized as one of the most complex skills to master (Hyland, 2016). It requires not only linguistic competence but also cognitive and metacognitive strategies, as well as affective engagement (Weigle, 2014). Traditional writing classes, particularly in Iranian institutes, often emphasize accuracy and grammatical correctness over process-oriented learning (Rahimi & Fathi, 2021). Students typically receive feedback at the end of the writing task, leaving little opportunity for revision and interaction. The flipped model, by relocating input delivery to pre-class phases, enables instructors to dedicate class time to process-based writing activities such as brainstorming, drafting, peer review, and revision (Lee & Wallace, 2018). In this environment, learners become active participants in their own writing development rather than passive recipients of teacher feedback. Empirical studies on flipped writing instruction generally confirm its positive effects. For example, Al-Harbi and Alshumaimeri (2016) found that Saudi EFL learners in flipped writing classes significantly improved their writing scores and reported higher motivation compared to those in traditional classrooms. Similarly, Ahmad (2020) demonstrated that flipped instruction enhanced coherence, cohesion, and lexical richness in students' essays. In an Iranian study, Shirvani and Karimi (2023) examined the impact of metacognitive strategy instruction through a flipped design and observed substantial gains in students' writing achievement and reduced writing anxiety.

## Material and Methods

### Participants

The participants of this study consisted of 63 females Iranian EFL learners studying at *Zabansara Language Institute* in Shabestar, East Azerbaijan Province, Iran. Their ages ranged from 15 to 22 years ( $M = 23.4$ ,  $SD = 2.1$ ). The participants were selected based on the results of the Oxford Placement Test (OPT), which ensured a relatively homogeneous proficiency level at the upper-intermediate stage. All participants were native speakers of Azari Turkish with no extended exposure to English-speaking countries.

They were randomly assigned to three groups:

Flipped classroom group (n = 21)

Micro-flipped classroom group (n = 21)

Traditional classroom (control) group (n = 21)

None of the participants had prior experience with flipped or micro-flipped learning. Participation was voluntary, and all participants provided informed consent before the study began. The research followed the ethical guidelines of Islamic Azad University, Tabriz Branch, and received departmental approval.

## **Instruments**

### **1. Oxford Placement Test (OPT)**

The Oxford Placement Test (Allan, 2004) was used to determine participants' proficiency levels and ensure group homogeneity. Only learners scoring within one standard deviation of the mean (upper-intermediate range) were included in the study.

### **2. Writing Performance Test**

Participants' writing performance was measured using pre- and post-tests adapted from *IELTS Writing Task 2* prompts. Each participant wrote a 200–250-word essay on a general topic (e.g., education, technology, environment). The essays were scored by two experienced raters based on the IELTS Writing Band Descriptors (Task Achievement, Coherence and Cohesion, Lexical Resource, and Grammatical Range and Accuracy). The inter-rater reliability was established at  $r = .89$ , indicating a high level of scoring consistency.

### **3. Classroom Engagement Questionnaire**

Learners' classroom engagement was assessed through the Student Engagement Instrument (SEI) adapted from *Fredricks, Blumenfeld, and Paris (2004)* and revised for EFL contexts. The questionnaire included 30 items on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) measuring three components of engagement: behavioral, emotional, and cognitive. The Cronbach's alpha coefficient for the overall instrument was .91, confirming internal consistency reliability.

## Procedure

The study lasted for 15 instructional sessions over a period of eight weeks, with two 90-minute sessions per week. Each group received the same instructional content (writing strategies, essay organization, and grammar), but the delivery method differed:

**Flipped Classroom Group:** Learners received video lectures and digital materials before class through an online platform (Google Classroom). Class time was devoted to peer review, collaborative writing, and feedback activities guided by the instructor.

**Micro-flipped Classroom Group:** Participants viewed short (7–10 minute) video clips and mini tasks at the beginning of each session. The remainder of class time was spent on in-class guided writing practice, pair work, and immediate feedback.

**Traditional Classroom Group:** Learners received direct instruction during class without any pre-class materials. Writing instruction followed a teacher-centered format with limited peer interaction.

Before the intervention, a pre-test of writing performance and engagement was administered. After completing the treatment sessions, participants took the post-test using parallel writing prompts and the same engagement questionnaire.

## Research Design

The study employed a quasi-experimental, pre-test–post-test design with three groups (two experimental and one control). The independent variable was the type of instruction (flipped, micro-flipped, traditional), while the dependent variables were writing performance and classroom engagement.

To control for initial differences, ANCOVA (Analysis of Covariance) was applied to compare post-test scores across groups, using pre-test scores as covariates.

The assumptions of normality, homogeneity of variance, and homogeneity of regression slopes were tested and met prior to analysis. Effect sizes were calculated using partial eta squared ( $\eta^2$ ) to determine the magnitude of differences.

## Results

Data screening indicated no violations of normality, homogeneity of variance, or homogeneity of regression slopes for the dependent variables. Levene's tests were nonsignificant ( $p > .05$ ). Pretest scores for writing performance and classroom engagement did not differ significantly among the flipped, micro-flipped, and traditional groups, supporting initial equivalence.

**Table 1.** Analysis of Covariance (ANCOVA) for Writing Scores

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	12170.196	3	4056.732	2359.159	.000	.992
Intercept	972.023	1	972.023	565.272	.000	.905
Writing Pre-Test	1350.546	1	1350.546	785.399	.000	.930
Groups	11235.229	2	5617.614	3266.878	.000	.991
Error	101.454	59	1.720			
Total	199670.000	63				
Corrected Total	12271.651	62				

Note. Dependent Variable: Writing Post-Test. R Squared = .992 (Adjusted R Squared = .991).

An ANCOVA was conducted on writing post-test scores with writing pre-test as the covariate. The effect of instructional group was significant,  $F(2, 59) = 3266.878$ ,  $p < .001$ , partial  $\eta^2 = .991$ . The covariate (writing pre-test) was also significant,  $F(1, 59) = 785.399$ ,  $p < .001$ , partial  $\eta^2 = .930$ .

**Table 2.** Analysis of Covariance (ANCOVA) for Engagement Scores

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5872.823	3	1957.608	776.552	.000	.975
Intercept	297.541	1	297.541	118.030	.000	.667
Engagement Pre-Test	1387.648	1	1387.648	550.458	.000	.903
Groups	4327.837	2	2163.919	858.392	.000	.967
Error	148.733	59	2.521			
Total	131089.000	63				
Corrected Total	6021.556	62				

Note. Dependent Variable: Engagement Post-Test. R Squared = .975 (Adjusted R Squared = .974).

An ANCOVA was conducted on engagement post-test scores with engagement pre-test as the covariate. The effect of instructional group was significant,  $F(2, 59) = 858.392$ ,  $p < .001$ , partial  $\eta^2 = .967$ . The covariate (engagement pre-test) was also significant,  $F(1, 59) = 550.458$ ,  $p < .001$ , partial  $\eta^2 = .903$ .

## Discussion

The results of the present study supported all research hypotheses. Significant differences were observed among the flipped, micro-flipped, and traditional instruction groups in both writing

performance and classroom engagement. Learners in the micro-flipped classroom achieved the highest writing scores and engagement levels, followed by those in the flipped and traditional groups. These findings confirm the hypothesis that the micro-flipped approach, with its concise pre-class input and frequent interactive practice, can enhance learners' cognitive and emotional involvement more effectively than the conventional flipped or lecture-based models.

### **Interpretation of Findings**

The superior performance of the micro-flipped group aligns with previous research emphasizing the efficiency of short, focused, and cognitively manageable pre-class materials (Zainuddin et al., 2020; Lo & Hew, 2017). In contrast to the full flipped model, which may overburden learners with lengthy preparatory videos, the micro-flipped format maintains attention and encourages immediate application in class. This result also supports *active learning theory* (Prince, 2004), which asserts that learners' active participation during instruction enhances comprehension and retention.

Similarly, the higher engagement levels observed in both flipped and micro-flipped classrooms are consistent with the *self-determination theory* (Deci & Ryan, 1985), suggesting that autonomy, competence, and relatedness foster intrinsic motivation and classroom involvement. The EFL learners in these technology-enhanced environments had more opportunities to make independent decisions, interact with peers, and receive timely feedback—all of which may have contributed to elevated engagement and writing performance (Han, 2018; Teng, 2021).

### **Comparison With Previous Studies**

The current findings corroborate earlier studies reporting the positive impact of flipped instruction on writing achievement (Mehring, 2017; Hung, 2017) but extend prior knowledge by demonstrating that a micro-flipped adaptation can produce even greater benefits. While most prior research has compared flipped versus traditional methods, few studies have directly contrasted flipped and micro-flipped models within an EFL context. This study thus fills an empirical gap by showing that instructional efficiency and balance between pre-class and in-class activities are crucial for optimizing outcomes.

### **Theoretical and Practical Implications**

From a theoretical perspective, these results reinforce the proposition that instructional load management and learner engagement are interdependent. By distributing cognitive processing

across shorter pre-class inputs and guided in-class practice, the micro-flipped model may enhance both working memory utilization and motivation.

Practically, the findings highlight the potential of the micro-flipped method as a cost-effective and pedagogically sound strategy for EFL writing courses. Teachers can implement this approach even in contexts with limited technological infrastructure by creating short video segments and integrating interactive group writing tasks during class. Curriculum designers should also consider incorporating micro-flipped elements into EFL syllabi to support learner-centered pedagogy and sustainable engagement.

### **Limitations and Future Research**

Despite its promising results, this study had several limitations. The participants were limited to female upper-intermediate EFL learners from a single institute, which may restrict the generalizability of the findings. The study also relied on self-reported engagement data, which could be influenced by social desirability bias. Future research should involve mixed-gender samples, multiple proficiency levels, and longitudinal designs to examine the persistence of micro-flipped learning effects. Moreover, future studies might employ qualitative observations or interviews to explore learners' perceptions of engagement and autonomy more deeply.

### **Conclusion**

This study demonstrated that the micro-flipped instructional approach significantly improves both writing performance and classroom engagement among Iranian EFL learners compared with traditional and flipped models. The findings provide empirical evidence for the pedagogical value of concise, technology-mediated, and interaction-rich instruction. This work contributes to the growing body of research on digital learning innovation and underscores the importance of adapting flipped learning principles to suit the cognitive and contextual needs of EFL students.

### Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

### Ethics statement

The studies involving human participants were reviewed and approved by the ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

### Author contributions

All authors contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

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### Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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