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Construct Validation of a Writing Autonomy Questionnaire for Iranian Learners of English as a Foreign Language: Application in Flipped and Micro-Flipped Learning Environments

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ABSTRACT

Objective: This study investigated the effects of flipped instruction (FI) and micro-flipped instruction (MFI) on Iranian EFL learners' writing performance, engagement, and autonomy.

Methods: Using the Oxford Placement Test (OPT), 63 female EFL learners from Zabansara Language Institute in Shabestar, Iran, were selected as a homogeneous sample and randomly assigned to three groups: FI, MFI, and a control group receiving traditional lecture-based instruction. All groups completed a writing pre-test and engagement and autonomy questionnaires before the treatment. After the instructional period, the same instruments were administered as post-tests.

Results: While no significant differences were found among the groups at the pre-test stage, significant differences emerged in the post-tests. Both FI and MFI improved learners' writing performance, engagement, and autonomy compared with traditional instruction, with MFI showing the greatest improvement.

Conclusions: Micro-flipped instruction appears to be the most effective approach for enhancing EFL learners' writing performance, engagement, and autonomy. These findings suggest that integrating flipped learning strategies, particularly micro-flipped instruction, can improve writing instruction in EFL contexts.

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Introduction

Autonomy in language learning, particularly in the context of teaching English as a Foreign Language (EFL), has increasingly garnered attention from researchers and educators (Smith, 2018; Jones et al., 2019). Autonomy refers to the ability and willingness of learners to take responsibility for their own learning process, which includes setting goals, choosing resources, deciding on strategies, and evaluating their own progress (Holliday, 2003; Wiggins, 2010). In recent years, research has indicated that autonomy is associated with positive learning outcomes, including higher motivation, increased engagement, and better academic performance (Castillo et al., 2017; Lee et al., 2020). Within the domain of language learning, writing autonomy holds particular significance. Writing is a complex language skill that requires knowledge of vocabulary, grammar, and structure, as well as the ability to organize thoughts and express ideas coherently and cohesively (Hartman, 2015). EFL learners often face challenges in developing their writing skills, partly due to insufficient autonomy in the learning process (Chen, 2016; Wang, 2019). Therefore, instruments capable of measuring learners' writing autonomy are essential for a better understanding of their difficulties and for designing effective instructional interventions. Finally, this research investigates the impact of these learning environments on students' writing autonomy, striving to provide practical findings for educators and researchers in this field.

The aim of the present study was to investigate and compare the effects of flipped 43.and micro-flipped instruction on Iranian EFL learners' writing performance engagement and autonomy. In order to fulfill the aim of the study, the researcher used Oxford Placement Test (OPT) to select female EFL learners as homogeneous sample from Zabansara Language Institute in Shabestar, Iran, and assigned them randomly to three groups. One of the groups was considered as the control group and the other two as the experimental groups. At first, the writing 49.pre-test and engagement and autonomy questionnaires were distributed to all groups.

Then, one of the experimental groups was trained to write argumentative essays using flipped instruction (FI), the second one was trained using micro-flipped 53.instruction (MFI), and the control group was trained using tradition lecture-based 54.instruction Through application of flipped instruction approach, teachers shift course introduction to the out of classroom and change the class environment to an interactive place in which students actively engage in content of the course and related information (Bergmann & Sams, 2012). This type of class and instructional approach is called 'flipped' due to the reverse structure of homework assignments and classroom lectures. According to Davis (2013), in inverted learning approach, students are provided with a heavy content load at home and they become engaged in the concepts in the class times. Flipped instruction is supposed to be effective in language classes due to the extensive nature

of language courses and their difficulty based in the level of foreign language learners. However, flipped classes have also some shortcomings. The most important of which is that they have nothing to do with the students who did not do the out-of-class assignments (i.e., watching videos or lectures).

On the other hand, the results of investigations have given proof that autonomy is the most common issue for EFL/ESL learners (Dafei, 2007; Zhang & Li, 2004). Since lack of learner autonomy may cause numerous problems in foreign language learning, in recent times, the patterns in language instruction have pushed toward making students more independent and directing the accountability of learning toward the students themselves (Benson & Voller, 2014). The rapid development of technology in recent days has contributed to the raise of new methods of teaching such as flipped instruction. However, the research on the effect of flipped instruction on learner autonomy in language classes is rare. As Reinders and White (2016) claimed, this gap in the literature is not limited to language teaching classes and technology has not widely been implemented to develop autonomy in practice.

In addition to the mentioned problems, the approach to completely flip language classes itself suffers some disadvantages. The researcher based on her own experience in several years of teaching in language classes and implementation of flipped instruction in teaching writing during these years had found that when the instruction is flipped, the students who had not watched the instructional videos at home have nothing to do in the classroom and could not take part in discussions and responding to exercises. Micro-flipped instruction as a solution to this drawback of flipped instruction was developed by educational researchers, but a few empirical studies have been undertaken using this method (e.g., Borchardt & Bozer, 2017; Fidalgo-Blanco et al., 2016) none of which are in the field of language teaching and learning.

To the mentioned gaps in the literature, the lack of research on micro-flipped instruction in the realm of language teaching and learning should be added. Micro-flipped instruction is a recently developed method of teaching which has not received much attention in teaching different skills of language. Therefore, in the present study the researcher attempted to implement micro-flipped teaching in writing and compare its effects with that of flipped instruction on the participants' writing performance. Moreover, the other aim of the study was to investigate the differential effects of micro-flipped and flipped instruction on EFL learners' engagement and autonomy.

Significance and Justification for the Study

The problems affecting the writing ability of EFL learners as well as the learners' low engagement in language classes, the lack of autonomy in out-of-class independent performance and the

mentioned gaps in the literature necessitate devising new methods of teaching to reduce such shortcomings. As mentioned above, the implementation of flipped instruction in language classes can lead to the active role of students in their own instruction. Having such an active role can be significant at least in three aspects of their education: first, it encourages them to practice and enhance their writing skills and accordingly get engaged in learning process. Second, since learners have to study the course content using technology-supported instruments at home, they will be able to stand on their own feet and their sense of autonomy will develop. Third, engagement and autonomy are among the most important factors affecting language learners' skill development (Hiver, Al-Hoorie, & Vitta, 2021; Lamb, 2017). Thus, the writing skill of EFL learners can be affected both directly by extensive amount of time devoted to learning this skill through flipped instruction and indirectly through raising their engagement and autonomy in language learning.

Although much research has already been done on the effects of technology-based instruction on student engagement (e.g., Henrie, Halverson, & Graham, 2015; Schindler, Burkholder, Morad, & Marsh, 2017), studies focusing on the effect of flipped instruction, especially micro flipped instruction on student engagement is rare in the literature. The results of this study not only can cover the mentioned gap, but also can broaden language teachers' familiarity with the efficiency of these types of instructions for engaging language learners since it is a self-directed learning approach and is based on constructivism (Xu & Shi, 2018).

There is a bunch of research that has revealed the availability, universality, and amenity of technology-based education could have significant effects on the autonomy of learners (Chen Hsieh, Wu, & Marek, 2017; Murdock & Williams, 2011). Flipped instruction as a language teaching approach which depends on technology (Kostaris, Sergis, Sampson, Giannakos, & Pelliccione, 2017) may prove useful in developing learner autonomy. The findings of the present study can be useful in highlighting the role of flipped instruction, especially micro flipped type, as a technology-based approach to language teaching in EFL learners' autonomy development since flipping the instruction makes learners more active and enhances their self-regulation (Galway, Berry, & Takaro, 2015).

Language teaching and learning researchers provided evidence on the way flipped instruction can be effective in language classes. For example, in such classes, learners have the opportunity to use authentic material which is only available in the class and also have more time to do pair and group

works (Herreid & Schiller, 2013). In such activities which were already being done at home, the learners did not have access to their teachers and the teacher had no observation on their performance. Teachers' supervision on classroom projects is another advantage that learners can benefit when flipping of the instruction happens.

Furthermore, in traditional classes, when a learner was absent, he/she did not have the opportunity to have access the instruction presented by the teacher. Flipped instruction gives such students the opportunity to have access to course content every time everywhere (Mihai, 2016). However, flipped instruction itself has nothing to do with the students who do not watch the videos supplied by the teachers. In the present study, the researcher attempts to solve this shortcoming of the flipped instruction by conducting a specific type of it called micro-flipped instruction. Of course, micro-flipped instruction as a newly developed and adjusted approach of teaching has not already been implemented in language teaching classes and there is no prior mentality toward its role in this area. Hence, another significance of the present study is to compensate the inadequacies of flipped instruction through applying micro-flipped instruction to language teaching and especially teaching writing.

The findings of the present study can be illuminating in writing classes in terms of creating more time in the classroom for interactive accomplishment of writing assignment by providing more opportunities for the learners to get the basic concepts and principles of writing at home through presentation of the teacher using multimedia and elaborating on them by having hand on experiences of the writing collaboratively and doing exercises in the classroom. This will be achieved while creating a link between the presentation through the multimedia and mini presentation in the class in the micro flipped learning and without this linking activity in the flipped instruction. This might also affect learners' engagement and autonomy as the learners' ownership of learning can happen in these types of instructions.

Flipped Instruction (FI): Honeycutt and Garrett (2014) define flipped instruction as a particular type of blended learning in which students are supplied with technology-based presentation of course content at home and the so-called homework is performed in the classroom. Due to this inversion in the course content presentation and homework assignments, Lage and Platt (2000) gave the name of 'inverted classroom' to the class in which the instruction is flipped. In the present study, the course content in a writing class was delivered through multimedia to the language

learners and the exercises provided in the textbook and discussions over their answers were done in the class time.

Micro-flipped Instruction (MFI): Sharing many features with flipped instruction, MFI focuses on the delivery of only some parts of the course content through multimedia out of the class context. Micro flipped instruction also includes a mini lecture in the classroom, creating a linkage between the presentation out of the class and the mini presentation in the class. In other words, through this method, the teacher is able to continue teaching in the class while making use of various interactive approaches both inside and outside of the classroom (Sen-Eshaluce, Fidalgo-Blanco, & Alves, 2017). In fact, a micro-flipped classroom integrates the traditional lecture-based content delivery and the flipped instruction (Borchardt & Bozer, 2017). In this study, some parts of the instructional materials were offered through recorded videos to the learners and some other parts of them were presented in the classroom while reversing the home and class activities by introducing the basic concepts and principles of writing through video recordings delivered through multimedia and doing the exercises and homework in the classroom collaboratively and interactively.

The Partial or Micro Flipped Classroom

The ‘partial flip’ classroom structure is necessarily a less precise version of the traditional flip model. In this type of classroom, the teacher motivates his/her learners to look at videos at home as improvement tasks and she therefore took into consideration her class as „flip“ (Springen, 2013). The teacher does not need nor punish learners who do not watch the videos, nevertheless, since he/she is attentive that not all learners possess video streaming tools (Springen, 2013).

Fidalgo-Blanco et al. (2016) developed another variation of flipped teaching and called it micro-flipped teaching. In micro version of flipped instruction, a link between in-class and out-of-the-class activities is established. According to Fidalgo-Blanco et al. (2016), MFT model is so named because one of its features is that it can be applied to only part of a course. Another feature is its ease of application. According to Garcia-Penalvo, Fidalgo-Blanco, Sein-Echaluce, and Conde (2016), micro-flipped instruction has three stages: Outside the classroom activity, b) Binding or Link activity, and c) Inside the classroom activity. Figure 2.3 displays these stages and interplay between them. This section analyses and justifies the model.

The aim of out of classroom activity module (Fig. 1(b)) is usually to take the lecture outside the classroom. The model takes into account the length of video and includes controls to ensure that

participants have seen the video and to ensure that it provides the same functionality that students have in a lecture. This includes opportunities to ask the teacher questions, to have a dialogue between the audience and the teacher and for teachers to recommend additional material.

The video length idea here is not to include the entire lecture, but only the most significant parts of it and to start applying concepts. The video used in the model is about 10 min in duration because cognitive studies show that the novelty of any stimulus tends to disappear within 10 min. After that length of time, humans tend to look for new content (Medina, 2008). Each video has an associated mandatory questionnaire that students must answer in order to verifying that participants have seen the video. In this way, it can be established that participants have seen the video and understood the most important parts.

In most research work, questions are resolved in the classroom session (Nwosisi, Ferreira, & Rosenberg Walsh, 2016; Strayer, 2012; Lage et al., 2000; Yoshida, 2016). In the micro-flipped method, the decision is made to add a doubts forum along with the video session, since this is a time when students have less guidance (Strayer, 2012). Both teachers and students can participate in the forum. The forum has two objectives: (1) to respond in the shortest time possible to any questions that arise when viewing the video and to give instant feedback; and (2) to promote student-student interaction as it has been shown that such interaction improves learning (Fidalgo-Blanco, Sein- Echaluze, García-Pen~alvo, & Conde, 2015). The student is provided with additional material that can extend, supplement or reflect on what is presented in the video. The teachers themselves may provide such material or it may be provided as an external resource. Link activity (Fig. 2.3(c)) is important as it allows the student to make a connection between the lesson at home and classroom activities (Strayer, 2012). A common mistake in FT models relates to the use of switch activities that occur in traditional methods. An example is when lectures are videoed verbatim for use outside the classroom. FT is more than this and requires the student to be an active subject in his or her learning (Galway et al., 2014), to have greater involvement in learning and to have an opportunity to apply what he or she has learned (Bachnak & Maldonado, 2014). This activity is a task that students must perform individually, applying concepts demonstrated in the video. Therefore, in this activity students generate learning resources, which have three objectives: (1) to check the degree of assimilation of the concepts in activities outside the classroom; (2) to generate educational resources for use in classroom activities; and (3) to get

students to be active subjects and to be more involved in the learning process, including home activities, where students are usually more passive. In addition, this activity enhances the usability of the knowledge generated by students as a learning resource (Sein-Echaluze, Fidalgo-Blanco, & García-Pen~alvo, 2016). Link activity is carried out online, using a forum of doubts, reflections and comments available in the previous section of the course. In this way students can interact with other students and teachers. In classroom activity, students and teachers meet in person. The objective is that interaction, participation and cooperation occur among the people present. For this reason, it is important to use the results of the work carried out by the students in the previous session. In our case, the students presented the results of their work. The teacher uses these results to trigger debate with other students (for example, a student with different results shares his/her opinion establishing a discussion to see which results are more valid). Again, two modes are proposed: one in which teachers have previously chosen an activity to use in the classroom and another in which the student can choose to present their work voluntarily. This study used both systems at each session.

Once there has been debate, interaction and participation, pooling is carried out. The objective of this sharing is to link what has been discussed with the following topics. The usual format for this activity is a brief lecture. After the lecture, cooperative work begins where learning resources from outside the classroom sessions and those in the classroom are put into practice, promoting active learning by students.

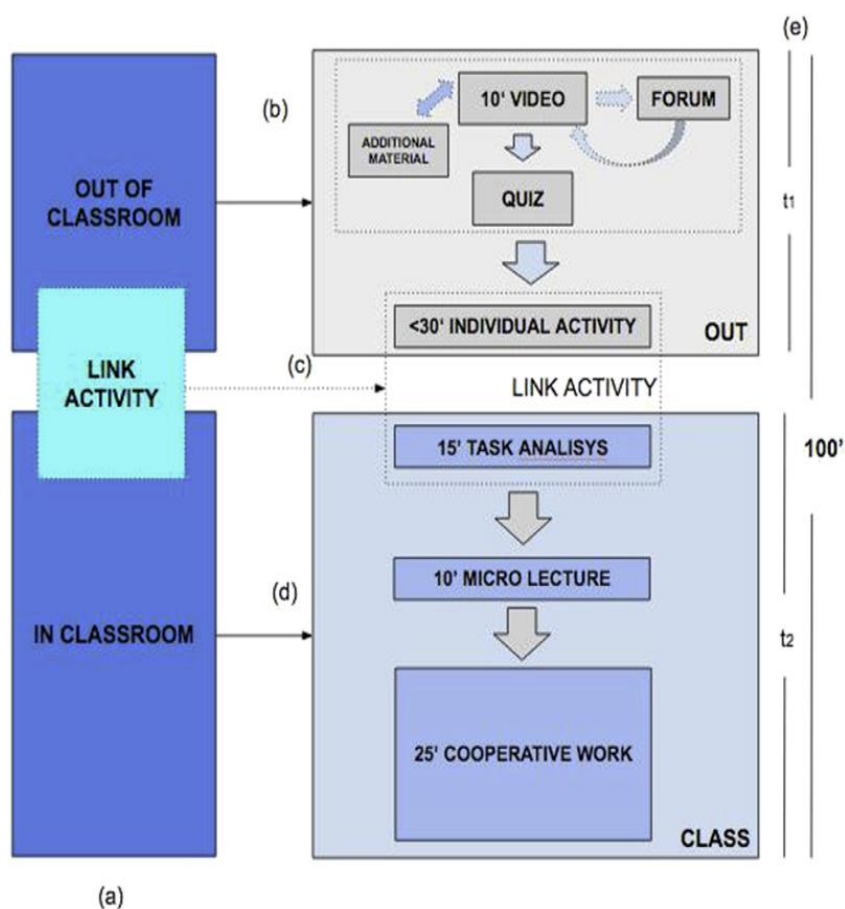


Figure 1. Micro-flipped instruction (adapted from Fidalgo-Blanco et al. (2016))

A flipped English content-based class was examined by Sung (2015) in a case study titled “a case study on a flipped classroom in an EFL content course”, in which 12 participating college students were enrolled and successfully completed all course requirements in the spring of 2014. The course was English Curriculum and Evaluation. The students were instructed to examine texts and videos for each subject before class, as well as to participate in a variety of online activities on an LMS flat form. After that, they engaged in group projects in class including sharing their Thought Papers, debating the online discussion topics based on the weekly readings, and creating an assessment plan for their final project. The review of student work and informal and official course assessments revealed that, despite initial adaptation problems, students had a favorable impression of flipped learning. They also believed that, despite drawbacks like test-oriented teaching methods and student differences in earlier learning experiences, flipped teaching may be a suitable catalyst

for change in the existing ELT. As should be clear, the majority of studies done to date on the flipped learning method's impact on learning have found that it is beneficial. Even though the flipped teaching approach is so successful, in Iran, no research has been conducted on examining its efficacy in writing classes, let alone the effect of micro flipped instruction on language learning, in particular, in writing skill development. Thus, the present study addresses the effect of this new method of teaching.

Yousefzadeh and Salimi (2015) looked at the impact of flipped (revised) learning on the learning outcomes of students. A sample of 250 pupils and five instructors from an Ardabil secondary school took part in this study. On the basis of their results from the previous year, homogenous pupils were chosen. The inquiry was considered for ten classes. Each class included 25 pupils, and each instructor led two lessons, one of which was a flipped class and the other a conventional lesson. To compare the overall results of two courses in each topic and ascertain the impact of flipped learning on students' learning outcomes, a t-test was utilized. The results of this study showed that there were notable changes in students' learning outcomes between flipped and traditional classrooms.

Introduction

As mentioned in the previous chapters, the aim of the present study was the implementation of micro-flipped teaching in writing and comparing its effects with that of flipped instruction on the participants' writing performance, classroom engagement, and autonomy. To reach to the aim of the study, the researcher had to take a certain methodology. The information regarding the participants of the study, the instruments which would be used for data collection, the data collection procedure, and the design of the study are elaborated.

Material and Methods

In order to conduct the present study, the researcher selected three groups of EFL learners at the high-intermediate level of proficiency at Zabansara Language Institute in Shabestar, Iran. All the language learners in this institute were females and their mother tongue was Azeri Turkish. However, since the official language of Islamic Republic of Iran is Farsi, they also were considered masters of Farsi language. Since random selection of the participants from the whole population (i.e., Iranian EFL learners) was not possible, the researcher decided to select the sample based on

convenience non-probability design. Before the main study, the Oxford Placement Test (OPT) was distributed to the 107 high-intermediate-level EFL learners in the institute to select a homogeneous sample for the study. Finally, 63 EFL learners whose scores fell between one standard deviation below and above the mean were selected and randomly assigned into two experimental and one control groups. All the participants were in the age range of 15 to 22.

In addition, the adapted version of the Learner Writing Autonomy Questionnaire was administered to an initial sample of 230 EFL learners to examine its construct validity. These participants were drawn from several language institutes at different proficiency levels across East Azerbaijan Province, Iran, and shared similar linguistic and educational backgrounds with those in the main phase of the study. All participants were female learners whose first language was Azeri Turkish and who were also fluent in Farsi, the official language of Iran. Prior to conducting the Exploratory Factor Analysis (EFA), the collected questionnaires were carefully screened for incomplete responses and missing data. As a result of this data-cleaning process, 17 questionnaires were excluded, and the final sample for the validation phase was reduced to 213 participants. This refined dataset was then used solely for validation purposes, particularly to perform EFA and to examine the underlying factor structure of the adapted instrument.

Instruments

Oxford Placement Test (OPT, V. 1.1): This test was originally published by Oxford University Press and evaluates a test taker's capability to understand grammatical forms and the meanings they convey in various contexts. However, it has undergone very many changes from its first publication (see Appendix A). The test was distributed to the participants to draw a homogeneous sample out of them for the study. OPT measures the test takers' ability in understanding grammatical structures and their use. The test is composed of 60 multiple choice items and the participants were supposed to finish the test in 50 minutes. The items in the test are designed in multiple-choice format with three or four options.

Writing Tests: Two topics in argumentative genre were given to the participants to determine their writing performance before and after the instruction (i.e., pre-test and post-test). The topics were selected from the textbook used in the class. However, for the post-test, the topics that were not used in the classroom were applied. The students' pre- and post-tests were assessed based on the Jacob et al.'s scoring profile (taken from Weigle, 2002) out of 100. They were scored by two

independent raters and the inter-rater reliability was calculated for the writing scores. The time devoted to the completion of each test was 40 minutes. The writing topics selected for the pre- and post-tests were: Medical research on animals should be discontinued; College tuition should be lowered and paid for by increases in taxes.

School Engagement Scale: The questionnaire was developed by Fredericks et al. (2005) to measure the students' engagement in the classroom in self-report bases (see Appendix B). The developers of the questionnaire have designed it in three different sections to measure the students' cognitive, behavioral, and emotional engagement. Each section of the questionnaire consists of five items. The items were responded by the participants in a five-point Likert-scale ranging from 1 to 5. Scoring 1 is the indicator of lower amount of engagement in the subject and 5 is the indicator of higher engagement in that. The reliability of the scores was checked by Cronbach's Alpha in a pilot study which returned 0.82 for Alpha and considered reliable as the amount of the reliability index was higher than 0.7. The questionnaire was filled in 15 minutes both before and after the study.

Learner Writing Autonomy Questionnaire: For this study, the Zhang and Li Autonomy Questionnaire was adapted to better assess English learners' autonomy in writing. While the original questionnaire focused on general language learning autonomy, the revised version was tailored specifically to capture aspects related to writing. This involved adding new items and modifying existing ones to emphasize goal-setting in writing, monitoring progress, using appropriate resources, and incorporating feedback. The adapted questionnaire included a total of 24 items, each rated on a 5-point Likert scale. To ensure that the revised questionnaire accurately measured writing autonomy, several steps were taken. A panel of experts in language acquisition and assessment reviewed the changes to confirm that the items were relevant and aligned with the theoretical framework of writing autonomy. Their evaluation confirmed that the modifications were consistent with the construct being studied. Furthermore, exploratory factor analysis (EFA) was conducted to validate the measurement properties of the adapted instrument. The analysis showed that all items, except three, loaded onto the expected factors, confirming that the questionnaire effectively captures the distinct dimensions of writing autonomy. Hence, the number of the items in the final version of this questionnaire was reduced to 21. Among the three exceptions, item 13 did not load on any factor, while items 11 and 18 loaded onto an additional

factor that was later removed due to having fewer than three items. This process supports the construct validity of the instrument, demonstrating that it reliably measures the intended aspects of writing autonomy. Overall, the adaptations enhanced the questionnaire's ability to assess writing autonomy across various contexts. By focusing specifically on writing-related skills and behaviors, the revised instrument aligns more closely with the study's objectives and provides a more accurate understanding of learners' autonomy in writing.

The first step in conducting the main study was the distribution of the Oxford Placement Test to the students. On the basis of the results of this test, the participants (consisting of both pilot and main study) whose scores fell between one standard deviation below and above the mean were selected to take part in the study.

In the next step, after validating the instruments in the pilot study, the argumentative writing pre-test, School Engagement Scale, and Learner Autonomy Questionnaire were given to the participants in both groups in the main study. The time devoted to data collection in this stage was mostly determined based on the performance of the participants in the pilot study, but roughly speaking 40, 15, and 20 minutes for writing performance, engagement, and autonomy, respectively, were devoted.

The treatment sessions started after administration of pre-tests. The researcher trained the first experimental group based on the premises of flipped instruction (FI) and the second experimental group on the basis of the principles of micro-flipped instruction (MFI). In the control group (CG), flipped teaching was not applied.

The treatment process lasted for 15 sessions in all groups. Duration of each session was 75 minutes and they were held out of the institute's regular classes (i.e., extra online class) since the online education system of the institute was always ready for use. These sessions were only held for the aim of the present study and the researcher just focused on the implementation of treatment in the classes. At the end of the treatment, the researcher administered argumentative writing post-test, School Engagement Scale, and Learner Autonomy Questionnaire for the second time.

The participants' performance in the writing pre- and post-tests was scored based on the Jacob et al.'s scoring profile (taken from Weigle, 2002) out of 100 by two different raters and the inter-rater reliability for the two sets of scores was calculated. The final writing scores for each participant were the mean of the scores given by the two raters for each test.

Results

Table1. The Results of the Participants' Pre-test and Post-test Scores in the Flipped Instruction Group (FIG)

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Writing Pre-Test in FIG	21	17	37	30.05	5.482
Writing Post-Test in FIG	21	43	60	53.48	5.016
Engagement Pre-Test in FIG	21	21	36	27.67	4.476
Engagement Post-Test in FIG	21	36	58	44.43	5.644
Autonomy Pre-Test in FIG	21	50	77	60.10	7.293
Autonomy Post-Test in FIG	21	70	91	78.62	5.661
Valid N (listwise)	21				

As Table 1 shows, it has been revealed that the participants' mean score in writing pre-test in the FIG was 30.05 with the standard deviation of 5.482, and their mean score in writing post-test was 53.48 with the standard deviation of 5.016. In the engagement questionnaire, the participants' pre-test mean score was 27.67 with the standard deviation of 4.476 and their post-test mean score was 44.43 with the standard deviation of 5.644. Considering the results from autonomy survey, the participants' pre-test mean score was 60.10 with the standard deviation of 7.293 and their post-test mean score was 78.62 with the standard deviation of 5.661.

Descriptive Statistics for the Second Experimental Group

Table displays the descriptive statistics for the participants' writing, engagement, and autonomy scores in the second experimental group which was tried through micro-flipped instruction.

Table 2. The Results of the Participants' Pre-test and Post-test Scores in the Micro Flipped Instruction Group (MFIG)

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Writing Pre-Test in MFIG	21	20	38	30.10	5.186
Writing Post-Test in MFIG	21	61	80	71.10	4.867
Engagement Pre-Test in MFIG	21	20	38	28.38	4.631
Engagement Post-Test in MFIG	21	48	63	54.95	4.189
Autonomy Pre-Test in MFIG	21	46	68	57.95	7.145
Autonomy Post-Test in MFIG	21	88	105	98.24	4.614
Valid N (listwise)	21				

As Table 2 indicates, it has been revealed that the participants' mean score in writing pre-test in the MFIG was 30.10 with the standard deviation of 5.186, and their mean score in writing post-test was 71.10 with the standard deviation of 4.867. Regarding the engagement questionnaire, the participants' pre-test mean score was 28.38 with the standard deviation of 4.631 and their post-test

mean score was 54.95 with the standard deviation of 4.189. In the autonomy questionnaire, the participants' pre-test mean score was 57.95 with the standard deviation of 7.145 and their post-test mean score was 98.24 with the standard deviation of 4.614.

Discussion

The three research questions addressed in the present study investigated the effect of flipped instruction on Iranian EFL learners' writing performance, engagement, and autonomy. As mentioned earlier, in order to investigate the research hypotheses, the pre-test and post-test scores of the participants in the control and experimental groups were compared and it was revealed that the implementation of MFI was more effective than FI and traditional teaching on the writing performance, engagement, and autonomy of the participants. Moreover, FI also indicated a higher amount of effect on the writing performance, engagement, and autonomy of the participants in comparison to traditional lecture-based method of teaching.

Due to the fact that the MFI group outperformed the other two groups in all three study dependent variables, it can be claimed that micro-flipped instruction enhances traditional teaching by putting a strong emphasis on the importance of critical thinking and classroom engagement for student learning. It also provides teachers with a structure that allows them to systematically and intentionally add activities to their repertoire of lessons and update it on a regular basis. Because students in the MFI group interacted with the background material more actively than those in the FI and traditional groups, it is possible that this contributed to the increase in engagement of the individuals who encountered MFI. For instance, during the presentation of the topic in class, they were able to listen to and answer each other's questions. Engagement in the MFI group may have grown as a result.

The dedication that the fully flipped class demands of the participants may be the reason why the MFI group has made more progress than the FI group. In a lecture style, it is feasible to be a more passive student, but in a flipped setting, active participation in the pre-class activities and engagement with the in-class activities are required. Despite their appreciation of the material and their better exam scores, some EFL learners may find the increased degree of engagement in FI frightening. This confirms the results from Butt (2014) and implies that learners may be more cautious about enrolling in a fully flipped course after having experience in a flipped setting.

Having discussed the theoretical justifications for the findings of the present study, we need to compare and contrast the findings with the results of similar studies. However, the literature on the micro-flipped instruction is rare, not to say missing. Thus, in the comparison of the findings with the previous empirical

studies, we had to only consider the flipped and traditional instructions and their effects on various related variables.

The study's findings demonstrated that the learners' writing performance was much enhanced via flipped instruction. The present findings are consistent with research by Leis, Cooke, and Tohei (2015), who flipped an English writing class to examine the efficacy of this kind of instruction. The study was done in Japan. All things considered; research has shown that learners' writing skills grow more when they get flipped instruction. This outcome concurs with Halwani's (2017) findings as well. According to him, learners might engage in class without worrying about facing challenges because of their shyness and enhance their reading and writing abilities with the use of multimedia. This result corroborates that of Elia and Hamaidi (2018), who discovered that flipped instruction greatly improved learners' academic performance. When comparing the research results to the writing performance of the participants, Ozkurdus and Bumen's (2019) study is also relevant. They realized that the flipped instructed group had much more receivers than the control group.

Considering the effect of FI on learners' engagement, Amiryousefi (2019) and Tran and Nguyen (2020) find similar results to the present study, indicating that the participants' engagement in the flipped class was significantly higher than the engagement of the participants in the non-flipped traditional class after a treatment. However, Li and Li's (2022) results were in conflict with the findings of the current research, as they had not discovered a statistically significant difference in learner engagement between the flipped and non-flipped classrooms. In addition, according to research by Lee and Wallace (2018), the effectiveness of flipped instruction implementation depends on the teacher, who is required to provide learners timely help, perform online tutorials prior to the class, and give learners with simple access to the Internet. All of the studies used very small samples, which prevented their findings from being generalized, which might be one explanation for the inconsistent outcomes. The disparity in teaching and learning situations is likely another factor contributing to the inconsistent results. This suggests that all the contextual aspects must be taken into account before drawing any conclusions about how much flipped instruction may really increase learner engagement. This opinion was shared by Turan and Akdag-Cimen (2019), who looked at 43 publications concerning flipped EFL classes. The authors discover that despite the majority of flipped EFL classrooms having excellent outcomes overall, some researchers claim that certain learners experience anxiety and anxiousness related to learning because of the participatory nature of flipped learning and the increased workload, which may be a source of the lack of engagement in flipped classes and accordingly a reason for contradictory results with the present study.

The study's findings also showed that the participants were capable of independent learning, assumed responsibility for their education, made decisions, and had the necessary confidence in their ability to learn. They were also keen to expand their knowledge of English writing outside of the classroom and to study and practice writing argumentative essays. These data unmistakably showed that students had made progress in learning English writing, both in terms of autonomy and engagement. Students were given a lot of possibilities for self-learning thanks to the flipped education, particularly micro-flipped instruction, which generated a welcoming learning atmosphere. Because they felt they had already acquired the language and writing skills necessary for writing argumentative essays, these opportunities for self-learning combined with a relaxed learning environment allowed learners to overcome their fear of writing and work with confidence in their writing classes. They believed that they are capable of writing on their own when it is necessary for them to do so. As several of them confided in private to the researcher, these good attitudes about writing even strengthened their drive to expand their understanding of English writing outside of the classroom and practice writing other kinds of essays.

The present research adds a great deal to the body of knowledge in the area of EFL practice. In EFL classes in Iran and other comparable educational environments, where teachers' goals are to inspire their students' interest in various courses, involve them actively in the learning process, help them become self-sufficient, and improve their learning outcomes, flipping in its micro or macro forms may be implemented as an instructional model. First of all, the research offers a comprehensive grasp of how flipped and micro-flipped instructions improve students' argumentative writing abilities. It provides advancement in the field of EFL writing teaching. It increases the understanding of both instructors and students of the value of using technology into conventional English writing programs in order to support students' long-term language acquisition of the language. Furthermore, it makes EFL students aware of the benefits of flipped and micro-flipped instruction in enhancing their English writing self-learning. It also makes English language instructors more aware of the need to carefully consider using internet technology into their English writing instruction in order to get the best possible learning results. Both cognitive apprenticeship and scaffolding happened by flipping the instruction in micro or macro forms since the participants in these groups were, as Nyikos and Hashimoto (1997) argued, engaged in reflective thinking. Learning was primarily the responsibility of the student, but the teacher also bore the responsibility of providing support to help the student learn because, as Benko (2012) noted, scaffolding is necessary for tasks that go beyond the students' level of independent language proficiency. Furthermore, learners may be able to restructure their interlanguages and become more engaged and independent in the learning process thanks to the various roles of interactional modifications, which include setting conditions for them to receive understandable input, produce modified output, and identify knowledge gaps (Mackey, 2012).

Important methodological implications from this work are also raised, and they might be used in related future research. In Iran's EFL teaching setting, research on blended learning (BL) is mostly carried out employing flipped instruction in an effort to look into and comprehend the efficacy of these teaching approaches. By comparing changes seen in the sample groups after the application of the micro and macro flipped processes, the present research overcome this methodological restriction by using an innovative variant of FI known as micro-flipped instruction. The novel approach to teaching writing, which this method brought out, yielded new insights by offering fresh perspectives on the state of affairs. This methodology made it possible to thoroughly examine phenomena across a variety of characteristics, such as writing performance, engagement, and autonomy. After that, the data from the two experimental groups were combined to provide a comprehensive picture of the situation, taking into account both the group differences and similarities to provide further context for the outcomes. If it has been employed at all in EFL research, it has done so rarely. Hence, future studies may choose to use the MFI method more extensively.

Another important implication relates to the differentiation between macro-flipped and micro-flipped instructional designs. The comparative nature of this study highlights that flipped instruction should not be treated as a monolithic pedagogical approach. Instead, variations in the degree, timing, and granularity of content flipping may lead to qualitatively different learning processes and outcomes. This distinction has implications for both theory building and instructional design in blended and flipped learning research

Another implication of the present research pertains to classroom interaction and time reallocation. The findings suggest that flipped and micro-flipped instruction can fundamentally transform how classroom time is utilized, shifting the focus from information transmission to higher-order cognitive and collaborative activities. This shift has implications for how interactional opportunities are structured in EFL writing classrooms and how instructional time can be optimized to support deeper learning.

The study also has implications for institutional policy and instructional innovation in higher education. Given the positive outcomes associated with flipped and micro-flipped instruction, educational policymakers and administrators may consider supporting these approaches through institutional infrastructure, such as technological resources, instructional design support units, and incentives for pedagogical innovation. Institutional endorsement may play a crucial role in the sustainable adoption of flipped models.

Another noteworthy implication involves learner resistance and pedagogical change management. The findings indicate that successful implementation of flipped and micro-flipped instruction requires careful attention to learners' expectations, beliefs, and prior learning experiences. This highlights the importance

of managing pedagogical change gradually and transparently, particularly in traditionally teacher-centered EFL contexts, where sudden shifts toward learner autonomy may initially generate resistance.

To show how the different language abilities may be taught utilizing the MFI and FI methods, further practice-based research studies are needed. Research on how flipped instruction affects EFL learners' engagement and autonomy in other language skills – specifically reading, speaking, listening, grammar, and vocabulary – is just as crucial. In addition, it is important to investigate several facets of students' education concerning flipped teaching, such as test pass rates and academic performance.

Future studies may explore the role of learner-related variables as potential mediating or moderating factors in the effectiveness of flipped and micro-flipped instruction. Variables such as language proficiency level, learning styles, motivation, digital literacy, self-efficacy, and writing anxiety may significantly influence learners' engagement with instructional materials and their responsiveness to innovative teaching approaches. Examining these factors could explain individual differences in learning outcomes and inform more personalized instructional practices.

Future research could compare the effects of flipped and micro-flipped instruction across different proficiency levels, including beginner, intermediate, and advanced EFL learners. Such comparisons would provide insight into whether certain instructional formats are more suitable for specific proficiency levels and help educators tailor instructional strategies to learners' linguistic needs.

Future investigation may examine the impact of different types of feedback within flipped and micro-flipped learning environment. Comparing teacher feedback, peer feedback, and automated or AI-assisted feedback could shed light on how feedback mechanisms interact with instructional design to influence learners' writing development, engagement, and autonomy.

Future studies may also explore the role of various educational technologies and digital platforms in implementation of flipped and micro-flipped instruction. Examining the effectiveness of learning management systems, mobile applications, interactive video tools, and online collaborative writing platforms may provide practical insights into how technology selection affects learners' participation and instructional success.

Future research is recommended to include delayed post-tests to assess the long-term retention and durability of learning outcomes. Investigating whether the effects of flipped and micro-flipped instructional period would contribute to a more comprehensive evaluation of their educational value.

Future studies could compare flipped and micro-flipped instruction with other contemporary pedagogical approaches, such as task-based language teaching, blended learning, or gamified instruction. Such comparative investigations would further clarify the relative effectiveness of flipped and micro-flipped models and provide empirical evidence to guide instructional decision-making in EFL contexts.

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 ethics committee of Islamic Azad University.

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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