

## **The Effects of the MOOC-Based Flipped Classroom with Collaborative Writing on Chinese EFL Learners' Argumentative Writing Abilities**

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### **Abstract**

The study employed a single group pre-and post-test experimental research design to respond to two research objectives: 1) to examine the effects of an instruction incorporating MOOC-based flipped classroom and collaborative writing on the argumentative writing abilities of university students, and 2) to explore the students' opinions towards this instructional method. Participants included 30 English majors from a university in China, with the research spanning ten weeks of the second semester in the 2022 academic year. Research instruments included pre- and post-test of argumentative writing, instructional materials and lesson plans, and questionnaire. All the research instruments were verified for their content validity and reliability. Pair-sample t-test and effect size were conducted to compare the difference between the mean scores of the pre-test and post-test scores of the argumentative writing to examine the results of the instruction. Furthermore, the close-ended questionnaire responses were subjected to descriptive analysis and the open-ended questionnaire items underwent content analysis to explore the participants' opinion towards the instruction. The results from the pretest ( $M=5.367$ ;  $SD = 0.49$ ) and post-test ( $M = 6.74$ ,  $SD = 1.11$ ) of students' argumentative writing indicate that the instructional MOOC-based flipped with collaborative writing resulted in an improvement of students' argumentative writing  $t = -9.687$ ,  $p > 0.05$ . The Cohen's  $d$  effect size was calculated and showed a Cohen's  $d$  value of 0.8 confirming the effect of the instruction of a large effect (Cohen, 2013). The closed-ended part of the questionnaire indicated the participants' positive opinions towards the instruction with the total mean score of 4.17,  $S.D. = 1.23$ . It should be noted that although the participants seemed to enjoy the course and their writing practices collaboratively, 70% (21 out of 30 students) have revealed an individual concern based on the open-ended questionnaire discussing their individual obstacles, including starting and organizing the essay as well as using proper language. As for pedagogical implications, it may be concluded from the findings that writing instructors should integrate innovation with writing instruction, foster a supportive and interactive learning environment online that maximizes students' potential for learning how to write argumentative writing, both collaboratively and individually.

**Keywords:** *The MOOC-Based Flipped Classroom with Collaborative Writing Instruction, Argumentative Writing Ability, Chinese EFL Learners*

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## 1. Introduction

Argumentative writing is crucial for students, especially second/foreign language (L2) students as it enables and requires them to articulate their own ideas in academically appropriate patterns and to provide convincing evidence to persuade readers of their positions (Awada & Diab, 2021). Mastering argumentative writing skills is crucial to achieving writing success. However, many L2 students in non-native contexts struggle with the use of complex syntactic structures and argumentation when crafting argumentative essays (Xu & Ding, 2014).

In terms of teaching method, traditional classroom teaching is considered to have drawbacks such as dogmatization, unification, stasis, isolation, and disconnection from students' actual lives (Gong & Zhou, 2022). Moreover, in the traditional classroom, a lower level of information, such as remembering and comprehending, comes first. In contrast, learners are often given assignments requiring a greater degree of learning outside of the classroom (Nazara, 2019). To address the above issues, it may be advantageous to use a teaching strategy that features a combination of online and offline components as well as active engagement of students.

Notwithstanding the role writing has played in education, Chinese students are still struggling to become proficient writers despite their best efforts and extensive writing practice (Qin, 2009). Nunan (1999) argues that even native speakers may have difficulty mastering writing due to issues relating to cohesion and structure. Moreover, Alsamadani (2010) states that writing involves a variety of skills, such as composing supporting details, revising, and editing, thereby making it a difficult process. Several elements contribute to a successful piece of writing, including structure, purpose, content, audience, vocabulary, mechanism, punctuation, grammar, and paragraphing, according to Rass (2001). When it comes to argumentative writing, these elements most likely become even more challenging.

It is widely agreed that student-centered learning theories such as active learning and collaborative learning can be effectively incorporated into flipped classrooms (Lin & Hwang, 2019). Student-centered learning, according to Bishop and Verleger (2013), incorporates several learning theories, including active learning, peer-assisted learning, and collaborative learning. In the argumentative writing context, collaborative writing appears to be particularly productive in helping the learners to become involved in a social procedure to co-construct and critique arguments or negotiate solutions to general problems and promote knowledge, in their attempt to mitigate any conflicts that may arise (Golanics & Nussbaum, 2008). As a result, it might be beneficial for instructors to incorporate peer interaction in their teaching practices.

Given the aforementioned argument, this current research attempts to address two research objectives: 1) to investigate the effect of the MOOC-based flipped classroom model with collaborative argumentative writing on Chinese EFL undergraduate learners' writing abilities ; and 2) to explore students' opinions toward using the MOOC-based flipped classroom model with collaborative argumentative writing instruction to improve their writing abilities

The current research is based on the following conceptual framework.

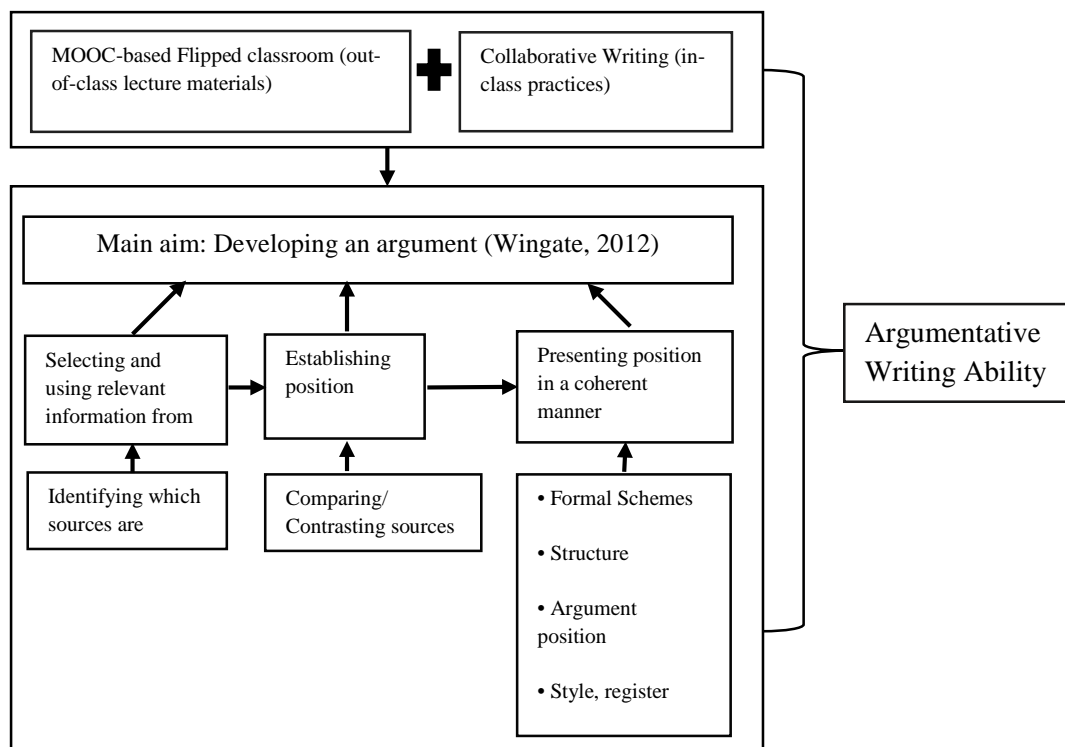


Figure 1: Conceptual framework of the MOOC-based flipped classroom model with collaborative argumentative writing employed in this research.

## 2. Literature Review

As for this part, three topics closely related to the current study are reviewed, i.e. MOOC-based Flipped Classroom, Collaborative Writing and Argumentative Writing.

### 2.1 MOOC-based Flipped Classroom

Considering the notion of blended learning, which involves the integration of face-to-face instruction with online learning practices, researchers and educators worldwide have begun to offer recommendations for instructors on how to incorporate Massive Open Online Course (MOOC) content into traditional classroom teaching. This approach has

gained attention as a new model for structuring educational programs, particularly in higher education institutions (de Jong et al., 2020). MOOCs embody the principles of connectivism theory and promote active learning by facilitating relationships and networks among individuals through the effective utilization of shared resources, open files, and connected users (Cormier, 2008). The accessibility, affordability, openness, and convenience of MOOCs enable messages to circulate globally and elicit responses and comments from numerous participants across borders (Yaşar, 2020).

Likewise, the Flipped Classroom (FC) model aligns with connectivist principles as it combines behavioristic (mostly teacher-centered) and constructivist (mostly student-centered) learning theories. FC involves pre-prepared out-of-class lectures and in-class sessions where direct instruction shifts from the group learning space to the individual learning space. This transformation results in a dynamic and interactive learning environment where educators guide students in the application of concepts and creative engagement with the subject matter.

By combining the FC model, which emphasizes learner-centered environments and active learning processes, with digitally-enhanced MOOCs, the MOOC-based FC model integrates key aspects of online and face-to-face learning (Jitpaisarnwattana et al., 2019). This model is rooted in the principles of connectivism, as it recognizes that in the digital age, learning primarily occurs through learners connecting with diverse sources of knowledge on the internet and engaging in interactions within communities or social networks (Yin, 2016).

Bruff et al. (2013) conducted an experiment in which they blended a Coursera Machine Learning MOOC from Stanford University into a graduate-level machine learning course. Students responded positively to the blended approach, appreciating the flexibility and accessibility of the MOOC, particularly through its concise video format that facilitated self-paced learning. While students valued the instructional design offered by the MOOC and rated the blended approach higher in satisfaction compared to the traditional course, they acknowledged the need for motivation and determination to stay focused and achieve their learning goals.

Another study by Ghadiri et al. (2013) piloted the concept of blending a MOOC at San José State University (SJSU) using the edX platform, specifically the "Circuits and Electronics" course. The results indicated a high success rate, with 90% of participants passing the final exam, compared to 55% in the previous year's traditional course. This outcome demonstrated a significant level of academic achievement. However, some challenges still remain to be addressed, including limited interaction between learners and the video content, as well as inadequate integration between the MOOC platform and the campus Learning Management System (LMS).

The current research (the word research is used here in order to be consistent with the prior use in the previous paragraphs) employs a MOOC-based FC instructional model, which integrates online and face-to-face learning approaches. This instructional model

aligns with the principles of connectivist theory, as it extends learning and content delivery beyond the confines of the physical classroom. It encompasses various modes of learning, including interconnected online communities on the MOOC platform, social networks on the internet, traditional face-to-face classroom instruction, and online/offline interaction with peers and instructors. By leveraging online learning resources and fostering an active online community, the MOOC-based FC approach effectively combines in-class, online, and hybrid delivery formats. It also enhances learner interaction and cooperation, enabling students to become active participants in their learning process, in accordance with connectivist principles. Consequently, the integration of high-quality online content and interactive e-learning modules as supplements to or replacements for certain in-class components has emerged as a crucial consideration.

## **2.2 Collaborative Writing (CW)**

Collaborative writing can be defined as a process in which multiple individuals engage in a collective decision-making and production endeavor to create a unified written piece, resulting in a shared understanding of language acquisition (Storch, 2013). This approach to learning is rooted in Vygotsky's (1978) sociocultural theory, which emphasizes the significance of social interaction as the starting point for the learning process.

Collaborative writing facilitates the interaction and exchange of knowledge and ideas among individuals, enabling learners to identify knowledge gaps and learn from one another (Elola & Oskoz, 2017). Through negotiation of meaning, learners strive to collectively construct a written text (Wigglesworth & Storch, 2012). This collaborative learning environment, which promotes joint efforts in knowledge construction, surpasses individual work (Elola & Oskoz, 2010). Within such a collaborative process, instructors no longer solely serve as knowledge providers, imparting information to passive language learners. Instead, learners actively engage in the construction of new knowledge through processes of negotiation, sharing, discussion, and the utilization of language as a mediating tool (Swain, 2000).

Collaborative writing has gained significant attention and popularity in language teaching and learning as a learner-centered pedagogical activity (Zhai, 2021). This shift towards collaborative approaches has spawned extensive research examining its impact on the development of L2 writing, particularly from a sociocultural perspective that highlights the role of peer interaction and feedback (Zhai, 2021). According to a recent review conducted by Lei and Liu (2019), the level of interest among applied linguists in collaborative writing experienced a substantial increase of more than seven fold between the years 2005 and 2016.

Shehadeh (2011) conducted a study investigating the effectiveness and student perceptions of collaborative writing in two writing classes at a university in the United Arab Emirates. The study analyzed various writing tasks, including quizzes, exams, and

assignments, and found that collaborative writing significantly influenced aspects of students' writing, such as content, organization, and vocabulary. Students reported finding the experience enjoyable and believed it contributed to their overall learning, despite it being a novel approach for them. They recognized the potential for improvement in their writing and other skills, particularly communication, as they actively provided feedback to each other throughout the writing process.

(With) that being said, it is important to note that collaboration can have a detrimental impact on the quality of students' work if there is a lack of effective dynamics and communication within the group. When there is an imbalance in the sharing of tasks, certain members may encounter difficulties in managing their workload (Shehadeh, 2011; Wang, 2022).

### **2.3 Argumentative Writing**

Argumentative writing represents a genre of written expression in which authors take a specific stance on an issue or topic and provide substantiated evidence to support their position (Allen et al., 2019). At the university level, argumentative writing serves as a prevalent writing genre, where students endeavor to persuade their audience while presenting logical justifications for their beliefs or ideas (Wolfe et al., 2009). This genre requires the employment of critical thinking skills and organizational abilities to effectively construct the argument (Vögelin et al., 2019). For L2 learners, argumentative writing poses considerable difficulty, especially given their limited experience in composing academic texts in their first language (L1) (Zhao, 2017)

In the context of composing argumentative writings, various methods of organizing the text exist. Mitchell & Riddle (2000) contend that argument cannot be easily transferred between contexts, as the nature of argumentation and the "argumentative essay" genre are discipline-specific. Davies (2008), on the other hand, suggests teaching argument through syllogisms based on the Toulmin model, which encompasses six constituents: claim, data, warrant, backing, rebuttal, and qualifier. The initial three constituents constitute the fundamental components, while the subsequent ones represent secondary elements, comprising an expanded argumentative structure that remains discretionary. The use of the Toulmin model appears more suitable for analyzing and constructing individual claims rather than addressing the larger structural aspects of essays. Mitchell and Riddle (2000) propose a four-stage procedure for overall text organization, while Bacha (2010) combines the Toulmin model with organizational plans. Davies (2008) offers a six-step procedure for essay planning and development, with the syllogistic argument form playing a role in step 5. Conventional academic literacy support methods such as textbooks, writing guidelines, and lecturer feedback often lack explicit treatment of argumentation. The available advice mostly centers on linguistic aspects and neglects the rhetorical function of argument in disciplinary knowledge construction. Comments are crucial for writing development (Hyland & Hyland, 2006), yet they often yield no results due to students' misunderstanding or the use of imperative and categorical language (Lea & Street, 1998).

In Wingate's (2012) study, a total of 117 undergraduates completed a questionnaire concerning students' struggle with argumentative writing. The study found that many students arrive at university with incomplete or inaccurate understandings of argument and possess formal structures that do not support effective writing in the expected genre. The instruction they receive at the university lacks consistency and adequacy in addressing argumentation. The significance of argumentation as a crucial requirement for essay writing is often obscured due to the use of vague language and an emphasis on surface-level features. As a result, it is argued that writing instruction should prioritize the development of argument as its primary and central focus. The researcher then proposed the essay writing framework as part of the conceptual framework of this research (see Figure 3.1) to help convey this concept to students. In this framework, the bold text in the middle box underscores that the essence of essay writing argumentation lies in establishing one's own position, which is synonymous with argument development. Furthermore, the figure demonstrates that this central element of essay writing is intricately connected to and reliant upon the other two components in the framework.

In Zhu's study (2001) investigated the challenges, writing processes, and strategies employed by a group of 14 Mexican graduate students working on an argumentative writing assignment in English. The findings from the data analysis revealed that, from the participants' perspective, addressing rhetorical concerns (e.g., organizing and developing arguments) presented a major challenge, although linguistic aspects (e.g., vocabulary) also posed difficulties. The participants utilized a variety of strategies to cope with these challenges. However, it is essential to approach the results with caution due to the relatively small number of participants and the homogeneous nature of the group (ESL teachers from the same language background). Nonetheless, the results offer valuable insights into the difficulties, processes, and strategies employed by second-language writers when learning to write argumentatively in English.

Collaborative writing is a process where multiple individuals collectively engage in decision-making and creation to produce a unified written piece, rooted in Vygotsky's sociocultural theory. Learners actively participate in social interactions to develop knowledge and generate shared output, making joint determinations on substance and linguistic aspects of their compositions. This approach facilitates knowledge exchange, idea sharing, and negotiation of meaning among learners, surpassing individual work and promoting joint efforts in knowledge construction. Collaborative writing has gained popularity in language teaching as a learner-centered activity, and research shows its positive impact on L2 writing development from a sociocultural perspective. Studies have indicated improved writing quality, content, organization, and vocabulary, and students generally hold favorable attitudes towards collaborative writing tasks. However, challenges can arise in group dynamics and task sharing. While previous research has focused on face-to-face settings, this study aims to investigate the impact of collaborative writing tasks within the context of flipped classroom learning.

### **3. Research Methodology**

The purpose of this study is to investigate the effectiveness of a MOOC-based flipped classroom with collaborative writing instruction in improving EFL learners' argumentative writing abilities. Argumentative writing is an essential skill for EFL learners, but it is often challenging to teach. Therefore, this study aims to examine whether a MOOC-based flipped classroom with collaborative writing instruction can enhance students' argumentative writing skills.

#### **3.1 Population and Sample**

The study aimed at second-year English majors (300 students) at a university located at the northeastern part of China. These Chinese natives have been studying English for 8-9 years. Those students chose the English language as their major of their own volition and were selected based on their Gaokao scores. The students can be considered similar in terms of their English learning history, interest in English, and Gaokao scores.

The participants of this study were 30 EFL learners in one class, aged between 18-25 years, enrolled in an undergraduate English Academic Writing course. The selection of the research institute and participants was based on purposive sampling (Mackey & Gass, 2015). Notably, argumentative writing holds significance for students with advanced language proficiency levels, as emphasized by Cheong et al., (2021). This genre demands higher-order cognitive skills and critical thinking, necessitating learners to carefully consider how to appropriately employ the L2 language to support their viewpoints and challenge opposing perspectives.

#### **3.2 Research Design**

The investigation opted for a research design known as a single group pre-test and post-test design, which falls under the category of experimental designs frequently employed in research studies to assess the efficacy or impact of a treatment on a singular group of participants. This research design offers a structured approach to evaluating the potential effects of an instruction by measuring students' writing abilities at two distinct points in time: before the treatment (pre-test) and after the treatment (post-test). By comparing the pre-test and post-test scores, the researcher can discern and analyze any observable changes or variations in the dependent variable, thereby providing valuable insights into the effects of the MOOC-Based Flipped Classroom with Collaborative Writing instruction on the targeted group of participants. This approach allows researchers to examine the effect and draw meaningful conclusions regarding the outcomes of the treatment, contributing to the advancement of knowledge in the respective field of study.

#### **3.3 Research Instruments**

There were two types of instruments involved in the study, namely instructional instruments and research instruments.



### 3.3.1 Instructional instruments

This study explored the implementation and effects of the MOOC-Based Flipped Classroom with Collaborative Writing Instruction as a comprehensive instructional strategy. Serving as both the treatment and instructional instrument, this approach involves a two-phase learning process, wherein participants engaged in MOOC-based flipped classroom activities followed by collaborative writing tasks. Specifically, participants were required to autonomously study a MOOC course online([https://www.icourse163.org/course/GDUFS1206115801?from=searchPage&outVENDOR=zw\\_mooc\\_pcscsjg\\_](https://www.icourse163.org/course/GDUFS1206115801?from=searchPage&outVENDOR=zw_mooc_pcscsjg_)) before attending class, where they received teacher-led lectures and participated in collaborative writing activities. Chapters 13-20 of the MOOC course were dedicated to argumentative writing and thus were employed as learning materials for the research. This innovative pedagogical model aimed to enhance students' learning experience by incorporating elements of self-directed learning, technology integration, and collaborative knowledge construction.

For the in-class lecture part, the researcher would spend one session checking if the students understood the MOOC lessons and providing additional materials concerning those lessons. Then, the students engaged in collaborative argumentative writing.

MOOC-Based Flipped Classroom with Collaborative Writing, the students had one session to engage in collaborative writing each week. They were asked to write Topic 1 collaboratively in two class sessions on the 2<sup>nd</sup> and 3<sup>rd</sup> weeks, Topic 2 in two class sessions on the 4<sup>th</sup> and 5<sup>th</sup> weeks, and Topic 3 in two class sessions on the 6<sup>th</sup> and 7<sup>th</sup> weeks. Thirty students were divided into 6 groups on a voluntary basis, which would ensure the efficiency and compatibility among group members. For each topic, students in each group first brainstormed their ideas and then worked on writing up the essay, specifically following the essay writing framework proposed by Wingate (2012) as illustrated in Figure 1 conceptual framework.

### 3.3.2 Research instruments

**Pre-test and post-test assessment:** Two timed argumentative writing tasks were used as a pre-test and post-test assessment to measure the participants' argumentative writing skills. The topic for the pre-test was: Should Mobile Phone Be Used in Class? and for the post-test topic was: What are the benefits and drawbacks of studying abroad? The topics were chosen because of their similarity in terms of close relevance to students as well as the appropriate difficulty. To assess participants' writings, a rubric developed by McDonough et al. (2018) was employed. The scale rubric involves content, organization, and language use.

**Three collaborative writing tasks:** Students were required to write on three topics collaboratively during class sessions on the 2<sup>nd</sup> and 3<sup>rd</sup> weeks, 4<sup>th</sup> and 5<sup>th</sup> weeks, and 6<sup>th</sup> and 7<sup>th</sup> weeks, respectively. The topics for the three writing tasks were: Task 1: Should schools require their students to wear school uniforms? Task 2: Should violent video games be illegal? and Task 3: Should homework be banned? Students collaboratively helped each other to develop an argument by brainstorming the ideas, discussing the compelling arguments to be used in writing, searching, drafting, and editing their writing before submitting the work and reflecting their learning of argumentation writing in the session.

**The MOOC-based flipped classroom with collaborative writing instruction (MFCCWI) questionnaire:** A questionnaire, adapted from the questionnaire by Cañabate et al. (2019) and translated into Chinese to avoid possible misunderstanding, were administered to the participants on the 8<sup>th</sup> week to gather their opinions about the effects of the MOOC-based flipped classroom with collaborative writing instruction.

### 3.4 Validity and Reliability

#### Validity

The content validity of the instructional instrument (lesson plan) and two research instruments (pre-test/post-test argumentative writing and the questionnaire) were checked. Three experts were invited to evaluate and provide comments for content validity in the Item Objective Congruence (IOC) forms. A research instrument is considered acceptable when the overall IOC value surpasses 0.50. Conversely, if the overall IOC value falls below 0.50, it indicates that the research instrument necessitates editing and revision in accordance with the recommendations provided by the experts. According to the three experts, the final IOC was 0.93.

#### Reliability

The researcher conducted reliability test with a pilot group consisting of 15 students who came from another university. In order to ensure the reliability of pre- and post-tests, lesson plan, and questionnaire, those students in the pilot group share similar demographic features in similar learning situations as the study participants. The pre- and post-tests, a sample lesson, and the questionnaire were used in the pilot study.

To calculate the reliability of the questionnaire, Cronbach's Alpha was employed to measure internal consistency and the value (0.98) showed that the questionnaire was highly reliable. the Intercoding Correlation Coefficient (ICC) analysis was conducted. The scores for these tests were assigned by two raters: the researcher and another additional evaluator who had been trained in using the argumentative writing scoring rubric. These scores were then evaluated and compared as part of the ICC analysis. The ICC value was 0.97 and 0.98 for the pre-test and the post test, respectively. These ICC values were greater than 0.75, thus indicating a great reliability (Portney & Watkins, 2009).

### 3.5 Ethical Considerations in Research

Before the data collection, research ethical clearance has been approved by the Ethics Review Board of Rangsit University. All the data collection steps were carefully and strictly performed based on the procedures to ensure that all the participants were ethically treated in the study.

In the commitment to ethical research practices, it was incumbent upon the researcher to inform participants in advance, securing their informed consent for the use of their verbal or written contributions as sources of data. Identifiable information, such as the actual names of the university and the students, were omitted from the final academic document.

### 3.6 Data Collection

To test the effects of the proposed instruction, scores from the pre-test and post-test were collected as quantitative data while results from the MFCCWI questionnaire were collected as qualitative data. The following steps were performed:

**Week 1 Pre-test:** The participants completed the pre-test assessment in 45 minutes before the treatment began. The pre-test assessment consists of an argumentative writing task. In order to select appropriate participants, the pre-test was administered to all the classes the researcher teaches (at least 30 students in each class).

**Week 2-7 MOOC-Based Flipped Classroom with Collaborative Writing Instruction:** The instruction of argumentative writing in English was conducted via MOOC platform and face-to-face classroom lecture. The students collaboratively practiced writing argumentative writing in three topics.

**Week 8 Post-test and students' opinions:** The participants completed the post-test assessment in 45 minutes after the treatment ends. The post-test assessment consisted of an argumentative writing task.

### 3.7 Data Analysis

The research employs both quantitative and qualitative data analysis methods. Table 1 shows the summary of Data Analysis.

**Table 1 Summary of Data Analysis**

| Research objectives   | Research instrument         | Data   | Data analysis  |
|---|-----------------------------|--|--|
| 1. To investigate the effect of the MOOC-based flipped classroom model with collaborative | Instructional intervention. | Learning tasks<br>Scores of pre-test and post-test | Comparison of the pre-test and post-test after the writing |

| Research objectives   | Research instrument   | Data                                  | Data analysis   |
|---|---|---------------------------------------|---|
| argumentative writing on Chinese EFL undergraduate learners' writing abilities.   | Pre-test of argumentative writing<br><br>Post-test of argumentative writing |                                       | instructional treatment   |
| 2. To explore students' opinions toward using the MOOC-based flipped classroom model with collaborative argumentative writing instruction to improve their writing abilities. | questionnaire   | Students' opinions towards the course | Descriptive analysis from the close-ended part of the questionnaire<br><br>Content analysis from the open-ended part of the questionnaire |

#### 4. Results and Discussion

##### 4.1 Data Analysis for the First Research Question

The first research question sought to determine the differences in students' argumentative writing abilities by comparing their performance before (pretest) and after (posttest) receiving instruction.

**Table 2 Comparing Means within Group Before and After Treatment**

| Pre-test | Post-test | T-Test Value      |
|----------|-----------|-------------------|
| Mean     | Mean      |                   |
| (SD)     | (SD)      | ( <i>p</i> value) |
| 5.367    | 6.737     | -9.687            |
| (0.4901) | (1.1115)  | (0.000)           |

The statistical examination of the treatment's efficacy revealed that the mean score increased from a pre-test value of 5.367 (SD = 0.4901) to a post-test mean of 6.737 (SD

= 1.1115). This improvement was statistically significant, as evidenced by the t-test result of -9.687 and a corresponding p-value of less than 0.001.

#### 4.2 Data Analysis for the Second Research Question

To investigate the opinions of university students on argumentative writing instruction incorporating MOOC-based flipped classroom model with collaborative argumentative writing, a questionnaire was utilized. This questionnaire was distributed to all students following the completion of the post-test. The 2-part questionnaire was to explore students' opinion towards the instruction and sought for possible explanations. This study analyzed the data derived from 9 specific statements and 4 open-ended questions. The analysis of the responses to the 9 statements was conducted using descriptive statistical methods, namely mean and standard deviation calculations. Meanwhile, the open-ended questions were examined through content analysis.

**Table 3 Students' opinions towards the argumentative instruction combining MOOC-based flipped classroom and collaborative writing**

|   | Questionnaire items   | Mean | SD    |
|---|---|------|-------|
| 1 | I like learning from the MOOC-based flipped classroom.  | 4.17 | 1.262 |
| 2 | I think the MOOC-based flipped classroom helped me to improve my writing.                       | 4.27 | 1.258 |
| 3 | The MOOC-based flipped classroom is a useful supplement to the teacher's lectures.              | 4.27 | 1.202 |
| 4 | I enjoyed writing collaboratively with my partners.   | 3.93 | 1.388 |
| 5 | I think the communication and discussion between my partners and me was informative and useful. | 4.17 | 1.177 |
| 6 | I think working with partners produces better writing than I work on my own.                    | 4.07 | 1.285 |
| 7 | I think the instruction is useful for improving peer learning.                                  | 4.27 | 1.230 |
| 8 | I think the instruction has improved my motivation for writing.                                 | 4.23 | 1.104 |
| 9 | I think that the instruction has improved my relationships with my partners.                    | 4.17 | 1.177 |
|   | Average   | 4.17 | 1.23  |

The results from the 5-point Likert scale questionnaire reveal that students predominantly possess affirmative attitudes towards the instruction of argumentative writing that integrates MOOC-based flipped classroom with collaborative writing. Each item in the questionnaire consistently scored above 3.93, with an aggregate average of 4.17, highlighting the students' positive disposition towards this instruction.

The research employed four open-ended questions to ascertain students' views on the effectiveness of argumentative writing instruction in enhancing their skills and the perceived difficulty of the instruction.

The first open-ended question was “Do you think that you have mastered the techniques to write argumentative essays?” The results from this question are seen below in Table 4.

**Table 4 Students’ opinions regarding their mastery of the techniques to write argumentative essays**

| <b>Students’ opinions</b>           | <b>Frequencies of key phrases in the response</b> | <b>Percentage</b> |
|-------------------------------------|---|-------------------|
| 1. have mastered them               | 19  | 63.33%            |
| 2. have fairly good command of them | 7   | 23.33%            |
| 3. challenging to master them all   | 4   | 13.33%            |

Most students expressed positive opinions. The highest frequencies of students’ opinions was “have mastered them” ( $f = 19$ ), followed by “have fairly good command of them” ( $f = 7$ ). Some students believed it was “challenging to master them all” ( $f = 4$ ), saying that there was still room for improvement.

The second open-ended question was “Do have any unsolved difficulties regarding writing argumentative essays?” The results from this question are seen below in Table 5.

**Table 5 Students’ opinions regarding their unsolved difficulties in writing argumentative essays**

| <b>Students’ opinions</b>        | <b>Frequencies of key phrases in the response</b> | <b>Percentage</b> |
|----------------------------------|---|-------------------|
| no unsolved difficulties         | 16  | 53.33%            |
| choosing and deciding on a topic | 2   | 6.67%             |

| <b>Students' opinions</b>        | <b>Frequencies of key phrases in the response</b> | <b>Percentage</b> |
|----------------------------------|---|-------------------|
| insufficient arguments and proof | 2   | 6.67%             |
| other individual difficulties    | 10  | 33.33%            |

The highest frequencies of students' opinions was "no solved difficulties" ( $f = 16$ ), followed by "choosing and deciding on a topic" ( $f = 2$ ) and "insufficient arguments and proof" ( $f = 2$ ). The rest 10 students expressed their individual difficulties, including difficulties in determining the major elements, collecting and selecting arguments, grasping logical relationships in argumentation, corresponding discussion to thesis, polishing the contents, etc.

The third open-ended question was "Do you think this argumentative writing instruction help you improve your writing abilities? Explain." The results from this question are seen below in Table 6.

**Table 6 Students' opinions regarding whether the instruction helps improve their writing abilities**

| <b>Students' opinions</b>                  | <b>Frequencies of key phrases in the response</b> | <b>Percentage</b> |
|--|---|-------------------|
| helps to improve writing abilities         | 25  | 83.33%            |
| provides moderate improvement              | 1   | 3.33%             |
| provides some improvement                  | 1   | 3.33%             |
| provides expanded thinking and inspiration | 1   | 3.33%             |
| helps to improve logical thinking          | 1   | 3.33%             |
| no improvement                             | 1   | 3.33%             |

Most students were positive about the effectiveness of the instruction. The highest frequencies of students' opinions was "helps to improve writing abilities" ( $f = 25$ ), followed by "provides moderate improvement" ( $f = 1$ ), "provides some improvement" ( $f = 1$ ), "provides expanded thinking and inspiration" ( $f = 1$ ), "helps to improve logical thinking" ( $f = 1$ ), and "no improvement" ( $f = 1$ ).

The fourth open-ended question was “What seems to be the obstacle(s) for you to follow this argumentative writing instruction? Please explain.” The results from this question are seen below in Table 7.

**Table 7 Students’ opinions regarding obstacles to follow the instruction**

| <b>Students’ opinions</b> | <b>Frequencies of key phrases in the response</b> | <b>Percentage</b> |
|---------------------------|---|-------------------|
| no obstacles              | 9   | 30.00%            |
| individual obstacles      | 21  | 70.00%            |

The highest frequencies of students’ opinions were “no obstacles” ( $f = 9$ ). The rest 21 students discussed their individual obstacles, including starting the essay (such as selection of appropriate argument or stance), organizing the essay (such as finding the appropriate evidence, employing the right format), using proper language (such as choosing the right word and grammar), and lack of motivation, and so on.

## **5. Conclusion and Discussion**

This research aimed to examine the effects of implementing a MOOC-based flipped classroom along with collaborative writing instruction, and to gather insights into university students' opinions of this instruction. The outcomes of the study revealed several noteworthy points for discussion, as detailed below.

After the MOOC-based classroom and three collaborative writing tasks, students showed a significant enhancement in their writing abilities. The pre-test highlighted initial difficulties in structuring and articulating arguments correctly and in using appropriate language. However, there was a notable improvement in their ability to effectively apply what they had learned and construct comprehensive essays. In-depth analysis of writings from three students, representing most, medium and least improvement (in terms of gained scores) respectively, further validated the effectiveness of the instruction in refining students' argumentative writing abilities.

Improvements in students' argumentative writing were observed across three critical dimensions stipulated by the scoring rubric: content, organization, and language use. These improvements were manifested/manifested themselves as a result of focused instruction and practice. Further, they are essential for students to effectively express their ideas, engage in academic discourse, and participate in broader communicative contexts. Students showed a marked improvement in the content of their argumentative writing by demonstrating a deeper understanding of the topic at hand. They began to integrate a wider range of reliable sources, incorporating evidence and examples that were more relevant and persuasive. This is indicative of their ability to conduct thorough research and critically



analyze different viewpoints. Moreover, students developed the skill to present balanced arguments, acknowledging counterarguments while effectively defending their stances.

Indeed, this evolution in content not only reflected their growing subject matter expertise but also showed an enhanced ability to think critically. Organizationally, students' progress was evident in the clearer structure of their essays. Initially, the students might struggle with the standard format of argumentative writing. Over time, however, they learned to construct well-organized essays with logical progression. Each paragraph began to serve a distinct purpose, with clear topic sentences and coherent development of ideas. The use of transitional phrases also improved, providing smoother connections between points. This organizational development was crucial for readers to follow and be persuaded by the argument presented. In terms of language use, students exhibited a significant enhancement in their command of the language. This is seen in their use of a more sophisticated and varied vocabulary, appropriate to academic discourse. Grammatical accuracy also improved with fewer instances of errors that might obscure meaning. Furthermore, students started to adopt a more formal and academic tone, which is essential in argumentative writing. The use of rhetorical devices, such as analogy, metaphor, and rhetorical questions, became more frequent and effective in adding persuasive power to their writing. This mastery of language not only aids in clearly articulating their arguments but also in engaging the reader more effectively. Through dedicated practice and guided instruction, students gradually transformed their writing, making it more compelling, coherent, and academically rigorous. However, there was still room for improvement on the logical flow and reasoning.

The positive effects of integrating flipped classroom and collaborative writing on students' writing abilities were consistent with the findings of earlier studies (Florence & Kolski, 2021; Shafiee Rad et al., 2021; Su Ping et al., 2020b; Zou & Xie, 2019).

## **5. Pedagogical Implications**

At the pedagogical level, the findings provide further empirical evidence on the effectiveness of combining MOOC-based flipped classrooms with collaborative writing in enhancing L2 students' argumentative writing abilities.

First, writing instructors should focus on creating dynamic, interactive online content for the flipped classroom, ensuring that students are well-prepared for the collaborative writing sessions. This approach should be integrated with the writing instruction, fostering a supportive and interactive learning environment that maximizes students' potential for learning.

Second, this study underscores the need for university administrators to recognize the value of innovative teaching methods like MOOC-based flipped classrooms combined

with collaborative writing. These strategies, along with other pedagogical innovations, should be considered in teacher evaluation criteria.

Third, teacher educators should emphasize, in behalf of novice teachers, the importance of integrating technology and collaboration in writing instruction. Also, training should include strategies for effectively managing MOOC-based flipped classrooms and facilitating collaborative writing, preparing them to address challenges in teaching L2 argumentative writing.

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