Effects of the Process Approach in a Flipped Classroom Environment on Chinese University Students' English Writing Abilities and Self-efficacy

Xiaoyan Li[1], Nawamin Prachanant[2], & Akkarapon Nuemaihom[3]

[1] Ph.D. Candidate, English Language Teaching Program, Faculty of Humanities and Social Sciences, Buriram Rajabhat University, Thailand

[2] Associate Professor, English Language Teaching Program, Faculty of Humanities and Social Sciences, Buriram Rajabhat University, Thailand

[3] Associate Professor, English Language Teaching Program, Faculty of Humanities and Social Sciences, Buriram Rajabhat University, Thailand

Correspondence: Akkarapon Nuemaihom, Associate Professor, English Language Teaching Program, Faculty of Humanities and Social Sciences, Buriram Rajabhat University, Thailand. E-mail: akkarapon.nm@bru.ac.th

Received: March 26, 2026 Accepted: August 27, 2026 Online Published: November 16, 2026

doi:10.5430/wjel.v17n1p584 URL: https://doi.org/10.5430/wjel.v17n1p584

Abstract

Learners of English as a second/foreign language (ESL/EFL) frequently exhibit relatively low levels of English writing ability and writing self-efficacy at numerous Chinese universities. Addressing this issue, the present study investigated Chinese university students' current status of English writing ability and self-efficacy, their learning needs, the effects of a process-oriented approach implemented in a flipped classroom environment on learners' English writing ability and self-efficacy, and students' overall perceptions of this instructional model. Adopting a mixed-methods research design, this study enlisted 40 first-year non-English majors from Chuxiong Normal University via cluster random selection, distributing them evenly into an experimental group (n = 20) and a control group (n = 20). Multiple instruments were employed for data collection, and the collected data were analyzed via descriptive statistics, t-tests, and qualitative content analysis. The results revealed generally low levels of English writing ability and self-efficacy among participants, with no statistically significant differences between the two groups in the pretest. In contrast, the experimental group exhibited significantly greater improvements in English writing ability ($p < .001$) and English writing self-efficacy ($p < .001$) in the posttest, alongside predominantly positive perceptions toward the integrated teaching model. The findings validated the effectiveness of integrating the process approach with flipped classroom instruction in enhancing EFL learners' English writing abilities and self-efficacy, providing practical pedagogical implications for college English writing instruction and second language teaching in the Chinese EFL context.

Keywords: process approach, flipped classroom, Chinese university students, English writing ability, self-efficacy

1. Introduction

Improving the quality of higher education has become a core strategic priority for educational development in China. High-quality foreign language education serves as a fundamental guarantee for cultivating high-caliber talents in contemporary universities (Cai, 2018; Wen, 2018). As an essential component of college English education, English writing plays a crucial role in supporting national opening-up strategies, socioeconomic development, students' academic advancement, international communication competence, and long-term career development (He, 2020; Xiang, 2020).

Despite these policy initiatives, traditional college English writing instruction in China remains predominantly teacher-centered and product-oriented (Wen & Si, 2018; Liu & Zhang, 2018). Conventional writing classrooms prioritize knowledge lecturing and final-product evaluation, sometimes neglecting procedural training, iterative practice, and critical thinking development. This pedagogical limitation results in rigid student writing, insufficient innovative expression, and stagnant learning progress (Liu & Zhang, 2018). Furthermore, rigid summative assessment systems fail to reflect individual learning growth, significantly suppressing students' writing motivation and long-term competence development (Wen & Si, 2018).

To mitigate the deficiencies of traditional writing pedagogy, flipped classroom models and process-oriented writing instruction have emerged as influential educational innovations (Bergmann & Sams, 2012; Liu & Zhang, 2018). The flipped classroom reverses conventional teaching sequences by transferring basic knowledge input to out-of-class self-regulated learning, thus reserving in-class time for interactive collaboration, practice, and individualized teacher scaffolding. In parallel, the process writing approach emphasizes multi-stage writing training, peer collaboration, and iterative revision throughout the entire writing process (Flower & Hayes, 1981). The integration of these two pedagogies generates instructional synergy, allowing for systematic procedural writing training and facilitating positive affective development and enhanced writing self-efficacy among EFL learners (Bandura, 1986; Strayer, 2012).

While current literature has separately confirmed the efficacy of flipped learning and process writing pedagogy, empirical studies on their combined implementation in college English writing settings are scarce, especially for non-English majors in Chinese higher education institutions. Few studies have systematically examined the comprehensive effects of this integrated pedagogy on both students' English writing ability and English writing self-efficacy. Furthermore, student perceptions toward this innovative instructional model remain underexplored, representing a significant local research gap.

This study investigated the effects of the process-oriented writing instruction implemented in a flipped classroom environment on Chinese university students' English writing ability and self-efficacy. The following four research questions directed the present study:

RQ1: What are the current statuses and learning needs of Chinese university students regarding English writing abilities and self-efficacy?

RQ2: Does the process approach in a flipped classroom environment instruction enhance Chinese university students' English writing abilities? If so, to what extent?

RQ3: Does the process approach in a flipped classroom environment instruction improve Chinese university students' English writing self-efficacy? If so, to what extent?

RQ4: How do the students perceive the treatment of the process approach in a flipped classroom environment?

2. Literature Review

This section reviews the relevant theoretical frameworks and empirical studies concerning the process approach to writing, flipped-classroom pedagogy, EFL writing ability, and writing self-efficacy. By synthesizing prior domestic and international findings, this section identifies existing research gaps and lays a theoretical foundation for the present study.

2.1 The Process Approach to Second-Language Writing

Originating from L1 composition research, the process approach shifts teaching emphasis from final written products to the recursive cognitive procedures of writing: pre-writing, drafting, peer feedback, revision, and final editing (Hyland, 2019). In contrast to product-oriented writing instruction that emphasizes grammatical accuracy and model-text imitation, process-oriented pedagogy treats writing as a meaning-making problem-solving activity instead of mechanical language output (Flower & Hayes, 1981). Constructivism and cognitive learning theory are the theoretical underpinnings. Learners gradually construct textual meaning through repeated drafting and revision rather than producing finished compositions in one attempt (Zimmerman & Risemberg, 1997). Empirical evidence indicates that process-based interventions improve EFL learners' content richness, text coherence, and reduce writing anxiety (Graham & Perin, 2007; Ferris, 2011). Nevertheless, conventional offline process writing faces practical constraints. Limited class time prevents teachers from delivering individualized guidance for every student, and in-class peer revision often remains superficial without structured training (Ferris, 2011). Such limitations hinder the full potential of process pedagogy in regular university classrooms.

2.2 Flipped Classroom in EFL Writing Contexts

The flipped classroom is a blended learning model that reverses traditional in-class lecturing and after-class practice (Bergmann & Sams, 2012; Bishop & Verleger, 2013). Basic knowledge acquisition is assigned as pre-class autonomous learning via videos and reading materials, whereas classroom time is reserved for discussion, collaborative tasks, peer review, and teacher-mediated scaffolding (Lo, Hew, & Chen, 2017). In EFL writing courses, flipped design helps resolve time-shortage dilemmas. Pre-class resources allow students to prepare writing themes and linguistic input beforehand, freeing class hours for interactive revision activities (Soltanpour & Valizadeh, 2018). Systematic review evidence suggests flipped writing instruction yields positive gains in writing performance, learner engagement and autonomous learning capacity (Turan & Akdağ-Çimen, 2019). Nevertheless, many existing flipped-classroom writing studies still adopt product-oriented assessment, failing to embed recursive multi-draft procedures into flipped-lesson frameworks (Shang, 2023). Few studies integrate the core philosophy of the process approach into flipped-classroom instructional systems.

2.3 Chinese University Students' EFL Writing Competence

For Chinese EFL undergraduates, English writing represents one of the most challenging language skills, integrating linguistic, discourse, pragmatic and strategic competences (Wen, 2018). Influenced by long-term exam-driven teaching, Chinese learners commonly exhibit problems including formulaic expressions, insufficient content development, weak logical cohesion and heavy reliance on writing templates (Liu & Zhang, 2018). Many students view writing merely as an examination task, lacking intrinsic motivation to revise and iterate their drafts voluntarily. Scholars argue that improving Chinese students' writing quality requires moving beyond product-centered drills and establishing iterative learning cycles with continuous formative feedback (Wen & Si, 2018). Both process writing pedagogy and student-centered flipped learning align with these requirements. Combining the two models may mitigate drawbacks of traditional writing classrooms, including insufficient student participation and lack of personalized instruction (Teng, 2019).

2.4 Writing Self-efficacy in Second-language Acquisition

Writing self-efficacy originates from Bandura's social-cognitive theory, referring to learners' self-evaluated confidence in accomplishing specific writing tasks (Bandura, 1986; Pajares, 2003). As a domain-specific motivational construct, it powerfully predicts writing motivation, strategy adoption, persistence, and final writing achievement (Shell, Murphy, & Bruning, 1989; Pajares, 2003). Students with low writing self-efficacy often evade writing assignments and experience increased writing anxiety, which subsequently inhibits their performance improvement (Pajares, 2003). Successful mastery experiences, verbal persuasion and vicarious experience are major sources

for building self-efficacy (Bandura, 1986). Process writing provides multi-stage practice and constructive feedback that generate mastery experiences for learners (Zimmerman & Risemberg, 1997). Likewise, flipped-classroom collaborative activities may enhance learners' sense of accomplishment and learning confidence (Shang, 2023). However, most existing literature investigates process instruction or flipped classrooms separately. Empirical evidence exploring their combined effects on the writing self-efficacy of Chinese students remains relatively scarce.

2.5 Research Gaps

Review of existing literature reveals two notable research gaps. First, relatively few empirical studies construct a systematic instructional framework that merges the process writing approach with flipped-classroom settings for college English in Mainland China (Teng, 2019; Shang, 2023). Second, previous studies frequently focus solely on objective English writing scores, neglecting the concurrent advancement of English writing proficiency and self-efficacy in writing (Pajares, 2003). This study develops a process approach in a flipped classroom environment instructional framework and examines effects of the process approach in a flipped classroom environment on Chinese university EFL learners' English writing ability and English writing self-efficacy. The findings intend to supplement empirical evidence for blended L2-writing pedagogy and offer practical implications for college-English writing curriculum reform in China.

3. Methodology

This study adopted a two-phase mixed-methods research design, consisting of framework development and pedagogical intervention implementation. Detailed research procedures are presented as follows.

3.1 Phase 1: Development of the Flipped Process Writing Instructional Framework

This phase aimed to design and validate a process-oriented flipped classroom instructional framework for improving Chinese university students' English writing ability and self-efficacy. It included five systematic procedures: first, synthesizing theoretical and empirical literature on flipped classrooms, process writing instruction, English writing ability, and self-efficacy; second, analyzing the current status and learning needs of Chinese university students' English writing development and English writing self-efficacy; third, designing lesson plans, English writing ability tests, self-efficacy questionnaires, and teacher logs; fourth, conducting expert validity evaluation of all research instruments and instructional materials; and fifth, implementing a pilot study to refine all instruments and teaching procedures.

3.1.1 Population and Phase 1 Sample

The target population consisted of 3,111 first-year non-English major students across ten academic majors at Chuxiong Normal University during the 2026 academic year. The quantitative survey sample included 342 students selected through stratified random sampling and simple random sampling, as per the Krejcie and Morgan sample size determination table.

Additionally, three college English teachers at Chuxiong Normal University were recruited via purposive sampling for semi-structured interviews. The participants included one male teacher and two female teachers, each possessing around 30 years of formal expertise in teaching college-level English.

3.1.2 Research Instrument

Two primary instruments were adopted in Phase 1: a student questionnaire and a teacher semi-structured interview protocol.

The student questionnaire was adapted from Pajares and Valiante (1997), comprising two sections: basic demographic information and items investigating students' current writing performance, self-efficacy status, and learning needs. Expert validity evaluation yielded an Item-Objective Congruence (IOC) index ranging from 0.80 to 1.00. The questionnaire achieved excellent internal consistency, with a Cronbach's alpha value of 0.96 calculated via SPSS 27. The instrument was piloted among 30 undergraduate students who did not participate in the formal study.

The semi-structured interview protocol, adapted from Creswell and Poth (2018), contained participant background information and five open-ended questions regarding current college English writing teaching problems, student learning status, and instructional improvement needs. Expert validation confirmed acceptable content validity (IOC = 0.80–1.00).

3.1.3 Data Collection

The online questionnaire was distributed through Wenjuanxing, a professional Chinese online survey platform. Students completed anonymous questionnaire responses via mobile devices. All semi-structured interviews were performed in person at a quiet campus cafeteria to ensure participant comfort and authentic expression. Each interview lasted 30 to 45 minutes. Audio recordings were collected with participants' prior informed consent. All interviews were conducted in Chinese to enhance expression accuracy.

3.1.4 Data Analysis

Quantitative questionnaire data were analyzed using descriptive statistics (mean and standard deviation) in SPSS 27. The audio recordings of qualitative interviews were transcribed word-for-word and translated into English by a qualified Chinese–English translator. Translation accuracy was double-checked and revised to ensure academic rigor. Qualitative content analysis was conducted through iterative open coding and axial coding to extract core themes and subthemes. Member checking was employed to verify the credibility and trustworthiness of qualitative findings.

3.2 Phase 2: Implementation of Flipped Process Writing Intervention and Perception Exploration

This phase implemented the validated flipped process writing instructional intervention and explored students' perceptions of the innovative teaching model. This phase involved two core procedures: pretest and posttest quasi-experimental intervention, and post-treatment perceptual investigation among experimental group participants.

A quasi-experimental pretest–posttest control group design was employed. Forty first-year non-English majors were equally assigned to the flipped classroom group (FCG, n = 20) and the normal traditional instruction group (NFG, n = 20). All participants scored between 100 and 120 in the national college entrance examination English test (total score = 150), with writing subsection scores ranging from 9 to 13 (total writing score = 15). Participants' overall English proficiency was classified as intermediate to higher-intermediate level.

3.2.1 Population and Phase 2 Sample

The Phase 2 cohort mirrored Phase 1, comprising 3,111 first-year non-English major students from ten disciplines at Chuxiong Normal University (2026 academic year). The 40 quasi-experimental participants constituted a separate convenience sample selected from the identical population through cluster random sampling.

Significantly, the Phase 2 quasi-experimental sample was completely independent of the Phase 1 questionnaire sample with no overlapping participants. The two samples originated from the identical population but fulfilled different research purposes: the Phase 1 sample supported large-scale status quo investigation, whereas the Phase 2 sample engaged in controlled instructional intervention.

3.2.2 Research Instrument

Multiple validated instruments were utilized in Phase 2, including English writing ability pretests and posttests, English writing self-efficacy pre- and post-questionnaires, teacher logs, student perception questionnaires, and standardized lesson plans.

English Writing Ability Tests

Pretest and posttest English writing tasks were selected from authentic CET-4 writing prompts from the past three years to ensure validity and consistent difficulty levels. All tests required timed argumentative essay writing with specified word count requirements. Writing quality was evaluated based on an adapted analytic rubric (Weir, 2004), covering organization, logical development, vocabulary and grammar, and expressive quality. Each dimension accounted for 15 points, yielding a total score of 60. Three qualified raters (two doctoral-degree holding English linguistics instructors and the researcher) independently scored all compositions following Brown and Abeywickrama's (2010) analytic assessment procedure.

English Writing Self-Efficacy Questionnaire

Adapted from Bruning et al. (2013), the questionnaire measured five dimensions of writing self-efficacy: task-specific confidence, skill-related confidence, process-oriented confidence, self-regulation ability, and contextual learning beliefs. Expert validation confirmed acceptable content validity (IOC = 0.80–1.00), and Cronbach's alpha reached 0.95. The questionnaire was piloted among 30 nonparticipant students.

Teacher Log

Adapted from Richards and Farrell (2005), the teacher log documented classroom observations and student learning reflections throughout the intervention. The instrument obtained satisfactory expert validity (IOC = 0.80–1.00) and was implemented at Week 1 and Week 5 of the intervention period.

Student Perception Questionnaire

Adapted from Shooli et al. (2022), the five-point Likert-scale questionnaire explored FCG students' learning perceptions of the flipped process writing model. The instrument demonstrated excellent validity (IOC = 0.80–1.00) and internal consistency (Cronbach's alpha = 0.94) after pilot testing.

Lesson Plans

Five standardized argumentative writing lesson topics were selected from the official college English textbook published by Foreign Language Teaching and Research Press. The five-week intervention comprised three 60-minute sessions per week, accumulating 15 hours of instructional intervention. All lesson plans passed expert content validation (IOC = 0.80–1.00) and pilot revision.

3.2.3 Data Collection

All 40 participants completed a 60-minute writing pretest and a 20-minute self-efficacy pre-questionnaire prior to intervention. The FCG received five weeks of flipped process writing instruction, while the NFG received conventional product-oriented writing teaching. Upon intervention completion, all participants completed a parallel-difficulty writing posttest and self-efficacy post-questionnaire. Only FCG participants completed the post-treatment perception questionnaire. The instructor submitted structured teacher logs at the beginning and end of the intervention cycle.

3.2.4 Data Analysis

Quantitative data from writing ability tests, self-efficacy questionnaires, and perception surveys were analyzed using descriptive statistics and independent samples t-tests via SPSS 27. Qualitative data extracted from teacher observation logs were systematically analyzed via

content analysis to enhance quantitative results.

4. Results

This section reported the results of the analysis, structured in alignment with the four research questions.

4.1 What are the current statuses and learning needs of Chinese university students regarding English writing ability and self-efficacy?

This section answered the first research question. Results from both quantitative and qualitative data were presented as follows.

4.1.1 Quantitative Findings

Table 1. Mean and standard deviation of the current statuses and learning needs of Chinese university students regarding English writing ability (n = 342)

Evaluation Contents	Level of English Writing Ability		
	$\bar{x}$	S.D.	Meaning
1.English Writing Abilities	**2.17**	**0.41**	**Low**
1.1 Organization: Introduction, Body and Conclusion	**1.71**	**0.48**	**Low**
1.1.1 I know well the organization: introduction, body and conclusion in English essay writing.	1.56	0.53	Low
1.1.2 I can organize and write the introduction, body and conclusion for English essay writing.	1.84	0.65	Low
1.1.3 I can organize and write the introduction, body and conclusion for English essay writing well.	1.75	0.60	Low
1.2 Logical Development of Ideas: Content	**2.21**	**0.53**	**Low**
1.2.1 I think logical thinking ability is crucial to English writing ability.	3.66	0.89	High
1.2.2 I have good logical thinking ability.	1.78	0.60	Low
1.2.3 I know well how to develop ideas logically.	1.82	0.67	Low
1.2.4 I can develop content logically.	1.56	0.54	Low
1.3 Vocabulary and Grammar	**2.37**	**0.61**	**Low**
1.3.1 I think vocabulary and grammar are important for English writing ability.	3.50	0.88	High
1.3.2 I have a rich vocabulary reserve and a solid mastery of grammatical knowledge.	1.70	0.59	Low
1.3.3 I can use proper vocabulary and correct grammar in English writing.	1.92	0.71	Low
1.4 Style and Quality of Expression	**2.36**	**0.57**	**Low**
1.4.1 I think style and quality of expression are important in English writing.	3.75	0.87	High
1.4.2 I can use proper and correct tone, rhetoric, and sentence structure in English writing.	1.61	0.54	Low
1.4.3 I can write in English with accuracy, clarity, fluency and richness in vocabulary and grammar.	1.73	0.67	Low
2.Process Approach to English Writing Instruction	**1.73**	**0.53**	**Low**
2.1 I know well the English process writing approach.	1.77	0.64	Low
2.2 I can write in English using the process approach.	1.51	0.56	Low
2.3 I find the English process writing approach is beneficial for my English writing.	1.90	0.67	Low
Total	**2.09**	**0.39**	**Low**

From Table 1, the overall total score (M = 2.09, SD = 0.39) revealed that Chinese university students in this sample demonstrated a low level of English writing ability. At the subdimension level, vocabulary and grammar obtained the highest mean score, followed by style and quality of expression, and then logical development of ideas (content). Organization (introduction, body, and conclusion) yielded the lowest score among all dimensions. Meanwhile, perceptions regarding the process-approach-based English writing instruction (M = 1.73, SD = 0.53) reflected a low level.

4.1.2 Qualitative Findings

Both themes and subthemes were drawn from semi-structured interviews, as shown in Table 2.

Table 2. Themes and subthemes drawn from semi-structured interviews

Themes	Subthemes
1. Chinese University Students' English Writing Abilities	1.1 Organization: Introduction, Body and Conclusion 1.2 Logical Development of Ideas: Content 1.3 Vocabulary and Grammar 1.4 Style and Quality of Expression
2. Chinese University Students' English Writing Self-efficacy	2.1 Task-specific Confidence 2.2 Skill-related Confidence 2.3 Process-oriented Confidence 2.4 Self-regulation and Motivation 2.5 Context-specific Beliefs
3. Effective English Writing Instructional Method for Enhancing Chinese University Students' English Writing Abilities and Self-efficacy	3.1 Process Approach 3.2 Blended Learning Environment 3.3 Process Approach in a Flipped Classroom Environment

From Table 2, themes generated from the semi-structured interviews covered Chinese university students' English writing abilities, their writing self-efficacy, and effective instructional approaches for improving learners' writing abilities and self-efficacy. Corresponding subthemes comprised four writing-ability dimensions (organization: introduction, body, and conclusion; logical development of ideas: content; vocabulary and grammar; style and quality of expression), five writing self-efficacy dimensions (task-specific confidence, skill-related confidence, process-oriented confidence, self-regulation and motivation, and context-specific beliefs), as well as three instructional-model categories (process approach, blended learning environment, and process approach within a flipped classroom environment).

All three college English instructors at Chuxiong Normal University during the 2026 academic year were interviewed and highlighted the existing conditions and developmental requirements concerning Chinese university students' English writing ability. They noted that undergraduate learners in China generally demonstrate deficiencies in English writing abilities. For example, in the College English Test Band 4 and Band 6 (CET-4 & CET-6), most students score below the average on the writing section; only a small minority obtain above-average results, and very few achieve high scores (Zheng & Cheng, 2008). Selected excerpts from the semi-structured interviews were presented below:

"My students do not have good English writing abilities. For example, they cannot organize an English essay well in terms of introduction, body, and conclusion. Therefore, teachers should pay more attention to it in our daily college English writing teaching and try to improve students' English writing ability to organize the introduction, body, and conclusion of an English essay." (T1)

"Students in my class are not good at organizing the English essay when they are doing an English writing task. It is the biggest dilemma for them to move further in the English essay writing procedure. Therefore, the English writing ability to organize the introduction, body, and conclusion of an English essay should be cultivated in students." (T2)

"When doing an English essay writing task, my students always feel anxious because they do not know how to organize the whole piece of English essay writing. For example, they do not know how to make a good start of the English essay, how to develop the body, and how to make an effective conclusion, which is very difficult but extremely important for students. Therefore, students should be trained to develop this English writing ability during their daily learning." (T3)

The analysis of the results in the writing section indicates that students lacked the knowledge to effectively initiate an English essay, to construct the body, and to formulate a compelling conclusion, which proved to be quite challenging yet crucial for their success (Ma & Wen, 1999; Zheng & Cheng, 2008); they lacked ability to develop the content logically since students' English writings were in poor logic (Ma & Wen, 1999; Gui, 2004); they could not use appropriate vocabulary and correct grammar to express their ideas and focus on the proper writing style and quality of expression (Gui, 2004; Zheng & Cheng, 2008). Some quotes from the semi-structured interviews were as follows:

"Students in my class often struggle to structure English essays coherently across introductions, body paragraphs, and conclusions. Accordingly, instructors should emphasize this structural dimension in college English writing instruction to foster learners' essay-organizing competence." (T1)

"Developing logical content should be paid more attention to because it can make the writer's viewpoints clear and convincing. However, my students do not have such English writing ability. I think I will train them and help them develop this English writing ability in my college English classes." (T2)

"Definitely, vocabulary and grammar are extremely important in English writing. However, my students have long been plagued by a lack of vocabulary and grammar knowledge, which results in poor writing quality. I believe that to write high-quality English compositions, the difficulties in vocabulary and grammar must be overcome." (T3)

"Students in my class cannot write in a proper style and express in quality when doing an English essay writing task because they think it

is hard for them to do it. I think I need to help them overcome this difficulty." (T3)

Furthermore, all three college English teachers also pointed out that students lacked self-efficacy in English writing, as they could not complete writing tasks with confidence. For example, according to their daily observations during in-classroom English writing instructions, students often felt anxious and frustrated when tasked with English writing assignments. Some even refused to do them at all. It could be revealed that students lacked task-specific confidence, skill-related confidence, process-oriented confidence, self-regulation and motivation, and context-specific beliefs (Li & Liu, 2013; Li, Liu, & Liu, 2013). Below were selected quotes from the semi-structured interviews.

"When confronted with writing assignments, my students frequently appear bewildered. They do not know how to start. They need confidence." (T1)

"Well, my students cannot clearly understand that different English writing skills should be used in a specific English writing task. So, they are very anxious when faced with a specific English writing task." (T2)

"Many of my students consider English essay writing a difficult and complicated process, and they lack confidence in completing it." (T3)

"My students do not have the ability of self-regulation to monitor and control their English essay writing process. They do not have any drive to finish English essay writing tasks." (T1)

"Students in my classes always do not have enough confidence to deal with the specific English essay writing situations." (T2)

Ultimately, all three college English teachers emphasized that a more effective instructional mode should be implemented in Chinese university English writing courses, as the conventional teaching approach has proven inadequate in enabling students to attain satisfactory outcomes in CET-4 and CET-6; thus, the process approach within a flipped classroom setting would serve as a superior teaching mode for Chinese university English teachers to improve students' English writing ability (Liu & Zhang, 2018). For instance, two college English teachers mentioned that their students appeared more curious and showed great interest when talking about the process approach, blended learning environment, and the process approach in a flipped classroom environment. Both teachers and students believed that the new teaching mode of process approach in a flipped classroom environment might enhance and improve students' English writing abilities and English writing self-efficacy (Liu & Zhang, 2018). Several representative quotes from the semi-structured interviews were shown below.

"In order to improve students' English writing scores in the CET-4 and CET-6, their English writing abilities and self-efficacy should be continuously enhanced. I believe that the process writing approach can effectively help students." (T1)

"The blended learning environment can stimulate students' enthusiasm and initiative in learning English writing. This, in turn, helps improve their English writing abilities and self-efficacy." (T2)

"It is helpful to apply the process approach in a flipped classroom environment in English essay writing instruction." (T3)

4.2 Does the process approach in a flipped classroom environment instruction enhance Chinese university students' English writing abilities? If so, to what extent?

This section answered the second research question. Each test required participants to write an English argumentative essay on an assigned topic, accompanied by clear instructions indicating a 60-minute time constraint and a 120-word stipulation distributed across three paragraphs. All tests were administered in a paper format with printed answer sheets. This study adopted Brown and Abeywickrama's (2010) analytical assessment procedure to evaluate participants' English writing ability. For scoring, three raters participated in the assessment: Rater 1 and Rater 2 were university staff holding PhDs in English Linguistics with specialized expertise in English writing instruction, and Rater 3 was the researcher herself. The three-rater scoring design was implemented to enhance scoring reliability and reduce subjective bias in evaluation. The analytic rubric was adapted from Weir's (2004) writing-ability components and covered four dimensions: organization (introduction, body, and conclusion); logical development of ideas (content); vocabulary and grammar; and style and quality of expression. Each dimension was worth 15 points, yielding a maximum total score of 60.

4.2.1 Comparison of Pretest Results of Four Dimensions for Evaluating Chinese University Students' English Writing Abilities between the FCG and NFG

Table 3. T-test results of pretests on four dimensions of English writing abilities between the FCG and NFG

Writing Dimensions	**1. FCG (Pretest) (n = 20)**		**2. NFG (Pretest) (n = 20)**		**t**	**p-value**	**Effect size r**
	$\bar{x}$	**S.D.**	$\bar{x}$	**S.D.**			
1. Organization: Introduction, Body and Conclusion	8.85	0.84	8.82	0.74	0.13	0.90	0.02
2. Logical Development of Ideas: Content	8.87	0.60	8.95	0.61	-0.44	0.66	0.07
3. Vocabulary and Grammar	10.40	0.64	10.23	0.67	0.82	0.42	0.13
4. Style and Quality of Expression	9.05	0.58	9.27	0.56	-1.21	0.23	0.19
Total	**37.16**	**1.68**	**37.26**	**1.30**	**-0.21**	**0.84**	**0.03**

From Table 3, no statistically significant difference was observed between the FCG and NFG in the pretest total writing scores (t = -0.21 p

= 0.84). At the dimension level, there were no statistically significant group differences for organization (introduction, body, and conclusion) (t = 0.13, p = 0.90), logical development of ideas (content) (t = -0.44, p = 0.66), and vocabulary and grammar (t = 0.82, p = 0.42), style and quality of expression (t = -1.21, p = 0.23).

According to Table 3, all effect size r values for the four writing dimensions and the overall score were under 0.20, categorizing them as small effects as per Cohen's (1988) criteria. The effect sizes for organization, logical development of ideas, vocabulary and grammar, style and quality of expression, and the total score were 0.02, 0.07, 0.13, 0.19, and 0.03 respectively. These small magnitudes indicated that any observed between-group disparities were trivial, verifying that the two groups were comparable at baseline for both the composite writing score and each separate writing dimension.

4.2.2 Comparison of Pretest and Posttest Results of Four Dimensions for Evaluating Chinese University Students' English Writing Abilities within the FCG

Table 4. T-test results of pretest and posttest on four dimensions of English writing abilities within the FCG

Writing Dimensions	**1. FCG (Pretest) (n = 20)**		**2. FCG (Posttest) (n = 20)**		**t**	**p-value**	**Effect size r**
	$\bar{x}$	**S.D.**	$\bar{x}$	**S.D.**			
1. Organization: Introduction, Body and Conclusion	8.85	0.84	13.15	0.37	-24.48***	<.001	0.98
2. Logical Development of Ideas: Content	8.87	0.60	13.45	0.44	-26.86***	<.001	0.99
3. Vocabulary and Grammar	10.40	0.64	13.75	0.26	-21.82***	<.001	0.98
4. Style and Quality of Expression	9.05	0.58	13.83	0.23	-31.94***	<.001	0.99
Total	**37.16**	**1.68**	**54.19**	**0.53**	**-42.18*** **	**<.001**	**0.99**

*** The overall difference was statistically significant (t = -42.18, p < .001)

As shown in Table 4, a statistically significant overall group difference was detected at the p < .001 level. At the dimension level, statistically significant differences were also found across all four writing-ability dimensions at the p < .001 level.

Table 4 displays the effect size r values calculated from paired-samples t-tests comparing the pretest and posttest writing scores of the FCG. Respectively, the writing dimension 1, 2, 3 and 4 yielded effect sizes of 0.98, 0.99, 0.98, and 0.99, with the total writing score producing an effect size of 0.99. Based on Cohen's (1988) widely accepted standards for effect size, r values above 0.50 represent large effects. All effect sizes observed in this analysis far exceeded this threshold, indicating that the process writing intervention generated extremely substantial, practically meaningful improvements in every measured component of students' English writing ability. The substantial effect sizes, alongside p-values (p < .001) in every dimension, validated that the statistically significant pre-post changes were not mere numerical variations, but indicated meaningful real-world improvements in writing proficiency following the instructional intervention.

4.2.3 Comparison of Posttest Results of Four Dimensions for Evaluating Chinese University Students' English Writing Abilities between the FCG and NFG

Table 5. T-test results of posttests on four dimensions of English writing abilities between the FCG and NFG

Writing Dimensions	**1. FCG (Posttest) (n = 20)**		**2. NFG (Posttest) (n = 20)**		**t**	**p-value**	**Effect size r**
	$\bar{x}$	**S.D.**	$\bar{x}$	**S.D.**			
1. Organization: Introduction, Body and Conclusion	13.15	0.37	10.32	0.57	18.78***	<.001	0.95
2. Logical Development of Ideas: Content	13.45	0.44	10.85	0.60	15.72***	<.001	0.93
3. Vocabulary and Grammar	13.75	0.26	12.35	0.56	10.19***	<.001	0.86
4. Style and Quality of Expression	13.83	0.23	12.83	0.50	8.11***	<.001	0.80
Total	**54.19**	**0.53**	**46.35**	**1.28**	***25.30*** **	**<.001**	**0.97**

*** The overall difference was statistically significant (t = 25.30, p < .001)

Table 5 showed a statistically significant overall group difference at the p < .001 level, with each of the four writing-ability dimensions also showing significant group differences at this same threshold.

Table 5 reports the effect size r values of independent-samples t-tests comparing posttest writing proficiency between the FCG and NFG. The four writing dimensions produced effect sizes of 0.95, 0.93, 0.86, and 0.80 respectively, with the overall total writing score reaching 0.97. In line with Cohen's (1988) widely adopted benchmarks, r values above 0.50 represent large effects. The total writing score showed the largest effect size (r = 0.97). Combined with uniformly significant p-values (p < .001) across all four writing dimensions and the total score, these large effect sizes revealed that the gaps in practical writing competence between the experimental group and control group after the teaching intervention were substantial and educationally meaningful.

4.3 Does the process approach in a flipped classroom environment instruction improve Chinese university students' English writing self-efficacy? If so, to what extent?

This section answered the third research question. Both the experimental group and the control group had received the English writing self-efficacy questionnaire.

4.3.1 Comparison of Pretest Results of Chinese University Students' English Writing Self-efficacy between the FCG and NFG

Table 6. T-test results of pretests of English writing self-efficacy between the FCG and NFG

Self-efficacy	1. FCG (Pretest) (n = 20)		2. NFG(Pretest) (n = 20)		t	p-value
	$\bar{x}$	S.D.	$\bar{x}$	S.D.		
1. Task-specific Confidence	**1.82**	**0.41**	**1.88**	**0.36**	**-0.41**	**.68**
1.1 I feel confident about English writing tasks.	1.80	0.62	1.85	0.67	-0.25	.81
1.2 I can complete specific English writing tasks.	1.85	0.59	1.90	0.64	-0.26	.80
2. Skill-related Confidence	**2.05**	**0.56**	**2.10**	**0.55**	**-0.28**	**.78**
2.1 I feel confident about my English writing skills.	2.05	0.60	2.10	0.79	-0.23	.82
2.2 I can use specific English writing skills, like grammar, vocabulary, sentence structure, and organization.	2.05	0.69	2.10	0.72	-0.23	.82
3. Process-oriented Confidence	**1.88**	**0.46**	**1.93**	**0.52**	**-0.32**	**.75**
3.1 I feel confident about the English writing process.	1.95	0.76	2.00	0.79	-0.20	.84
3.2 I can manage the English writing process, from pre-writing activities like brainstorming and planning to revising and editing.	1.80	0.62	1.85	0.81	-0.22	.83
4. Self-regulation and Motivation	**1.82**	**0.37**	**1.88**	**0.48**	**-0.37**	**.72**
4.1 I feel confident about self-regulation and motivation.	1.90	0.64	1.95	0.69	-0.24	.81
4.2 I can set goals for my English writing, monitor my progress and stay motivated throughout the English writing process.	1.75	0.55	1.80	0.62	-0.27	.79
5. Context-specific Beliefs	**2.05**	**0.54**	**2.10**	**0.53**	**-0.30**	**.77**
5.1 I feel confident about the context-specific English writing.	2.00	0.65	2.05	0.76	-0.22	.82
5.2 I can do the English writing varied depending on the context, such as the audience for the English writing, the purpose of the English writing task, or the time constraints.	2.10	0.72	2.15	0.81	-0.21	.84
Total	**1.92**	**0.31**	**1.98**	**0.21**	**-0.60**	**.55**

From Table 6, no statistically significant difference was detected between the FCG and NFG for the pretest total self-efficacy score (t = -0.60, p = .55). At the dimension level, no statistically significant group differences were found across the five main dimensions: Dimension 1 (t = -0.41, p = .68), Dimension 2 (t = -0.28, p = .78), Dimension 3 (t = -0.32, p = .75), Dimension 4 (t = -0.37, p = .72), and Dimension 5 (t = -0.30, p = .77).

4.3.2 Comparison of Pretest and Posttest Results of Chinese University Students' English Writing Self- efficacy within the FCG

Table 7. T-test results of pretest and posttest of English writing self-efficacy within the FCG

Self-efficacy	1. FCG (Pretest) (n = 20)		2. FCG(Posttest) (n = 20)		t	p-value
	$\bar{x}$	S.D.	$\bar{x}$	S.D.		
1. Task-specific Confidence	**1.82**	**0.41**	**3.92**	**0.59**	**-15.70******	**<.001**
1.1 I feel confident about English writing tasks.	1.80	0.62	4.00	0.73	-11.00*****	<.001
1.2 I can complete specific English writing tasks.	1.85	0.59	3.85	0.75	-9.75*****	<.001
2. Skill-related Confidence	**2.05**	**0.56**	**3.88**	**0.46**	**-12.10******	**<.001**
2.1 I feel confident about my English writing skills.	2.05	0.60	3.85	0.49	-13.08*****	<.001
2.2 I can use specific English writing skills, like grammar, vocabulary, sentence structure, and organization.	2.05	0.69	3.90	0.64	-8.37*****	<.001
3.Process-oriented Confidence	**1.88**	**0.46**	**3.88**	**0.43**	**-13.78******	**<.001**

3.1 I feel confident about the English writing process.	1.95	0.76	4.05	0.51	-9.20***	<.001
3.2 I can manage the English writing process, from pre-writing activities like brainstorming and planning to revising and editing.	1.80	0.62	3.70	0.57	-8.32***	<.001
4. Self-regulation and Motivation	**1.82**	**0.37**	**3.77**	**0.47**	**-17.09*** **	**<.001**
4.1 I feel confident about self-regulation and motivation.	1.90	0.64	3.70	0.73	-8.46***	<.001
4.2 I can set goals for my English writing, monitor my progress and stay motivated throughout the English writing process.	1.75	0.55	3.85	0.49	-13.08***	<.001
5. Context-specific Beliefs	**2.05**	**0.54**	**3.83**	**0.29**	**-11.71*** **	**<.001**
5.1 I feel confident about the context-specific English writing.	2.00	0.65	3.75	0.44	-9.95***	<.001
5.2 I can do the English writing varied depending on the context, such as the audience for the English writing, the purpose of the English writing task, or the time constraints.	2.10	0.72	3.90	0.45	-7.62***	<.001
Total	**1.92**	**0.31**	**3.86**	**0.15**	**-26.59*** **	**<.001**

*** The overall difference was statistically significant (t = -26.59, p < .001)

As illustrated in Table 7, a statistically significant overall group difference was found at the p < .001 level, and each of the five self-efficacy dimensions demonstrated statistically significant differences at that level.

4.3.3 Comparison of Pretest and Posttest Results of Chinese University Students' English Writing Self- efficacy within the NFG

Table 8. T-test results of pretest and posttest of English writing self-efficacy within the NFG

Self-efficacy	**1.NFG(Pretest) (n = 20)**		**2.NFG(Posttest) (n = 20)**		**t**	**p-value**
	$\bar{x}$	**S.D.**	$\bar{x}$	**S.D.**		
1. Task-specific Confidence	**1.88**	**0.36**	**3.12**	**0.48**	**-10.16*** **	**<.001**
1.1 I feel confident about English writing tasks.	1.85	0.67	3.20	0.62	-8.10***	<.001
1.2 I can complete specific English writing tasks.	1.90	0.64	3.05	0.51	-6.90***	<.001
2. Skill-related Confidence	**2.10**	**0.55**	**3.15**	**0.43**	**-6.33*** **	**<.001**
2.1 I feel confident about my English writing skills.	2.10	0.79	3.15	0.67	-3.94***	<.001
2.2 I can use specific English writing skills, like grammar, vocabulary, sentence structure, and organization.	2.10	0.72	3.15	0.67	-4.97***	<.001
3. Process-oriented Confidence	**1.93**	**0.52**	**3.50**	**0.32**	**-11.11*** **	**<.001**
3.1 I feel confident about the English writing process.	2.00	0.79	3.45	0.51	-7.31***	<.001
3.2 I can manage the English writing process, from pre-writing activities like brainstorming and planning to revising and editing.	1.85	0.81	3.55	0.51	-8.23***	<.001
4. Self-regulation and Motivation	**1.88**	**0.48**	**3.50**	**0.43**	**-10.31*** **	**<.001**
4.1 I feel confident about self-regulation and motivation.	1.95	0.69	3.50	0.51	-9.13***	<.001
4.2 I can set goals for my English writing, monitor my progress and stay motivated throughout the English writing process.	1.80	0.62	3.50	0.69	-7.77***	<.001
5. Context-specific Beliefs	**2.10**	**0.53**	**3.75**	**0.34**	**-10.69*** **	**<.001**
5.1 I feel confident about the context-specific English writing.	2.05	0.76	3.70	0.47	-7.47***	<.001
5.2 I can do the English writing varied depending on the context, such as the audience for the English writing, the purpose of the English writing task, or the time constraints.	2.15	0.81	3.80	0.41	-7.47***	<.001
Total	**1.98**	**0.21**	**3.41**	**0.57**	**-21.00*** **	**<.001**

*** The overall difference was statistically significant (t = -21.00, p < .001)

From Table 8, a statistically significant overall group difference was detected at the p < .001 level, and all five self-efficacy dimensions were found at the p < .001 level.

4.3.4 Comparison of Posttest Results of Chinese University Students' English Writing Self- efficacy between the FCG and NFG

Table 9. T-test Results of posttests of English writing self-efficacy between the FCG and NFG

Self-efficacy	**1.FCG(Posttest)**	**2.NFG(Posttest)**	**t**	**p-value**

	(n = 20)		(n = 20)			
	$\bar{x}$	S.D.	$\bar{x}$	S.D.		
1. Task-specific Confidence	**3.92**	**0.59**	**3.12**	**0.48**	**4.69*** **	**<.001**
1.1 I feel confident about English writing tasks.	4.00	0.73	3.20	0.62	3.76***	<.001
1.2 I can complete specific English writing tasks.	3.85	0.75	3.05	0.51	3.96***	<.001
2. Skill-related Confidence	**3.88**	**0.46**	**3.15**	**0.43**	**5.16*** **	**<.001**
2.1 I feel confident about my English writing skills.	3.85	0.49	3.15	0.67	3.77***	<.001
2.2 I can use specific English writing skills, like grammar, vocabulary, sentence structure, and organization.	3.90	0.64	3.15	0.67	3.62***	<.001
3. Process-oriented Confidence	**3.88**	**0.43**	**3.50**	**0.32**	**3.13** **	**.003**
3.1 I feel confident about the English writing process.	4.05	0.51	3.45	0.51	3.72***	<.001
3.2 I can manage the English writing process, from pre-writing activities like brainstorming and planning to revising and editing.	3.70	0.57	3.55	0.51	0.88	.39
4. Self-regulation and Motivation	**3.77**	**0.47**	**3.50**	**0.43**	**1.93**	**.06**
4.1 I feel confident about self-regulation and motivation.	3.70	0.73	3.50	0.51	1.00	.32
4.2 I can set goals for my English writing, monitor my progress and stay motivated throughout the English writing process.	3.85	0.49	3.50	0.69	1.85	.07
5. Context-specific Beliefs	**3.83**	**0.29**	**3.75**	**0.34**	**0.74**	**.46**
5.1 I feel confident about the context-specific English writing.	3.75	0.44	3.70	0.47	0.35	.73
5.2 I can do the English writing varied depending on the context, such as the audience for the English writing, the purpose of the English writing task, or the time constraints.	3.90	0.45	3.80	0.41	0.74	.47
Total	**3.86**	**0.15**	**3.41**	**0.18**	**8.61*** **	**<.001**

*** The overall difference was statistically significant (t = 8.61, p < .001)

Table 9 revealed a statistically significant overall group difference at p < .001 level. At the subdimension level, statistically significant differences were found for Dimensions 1, 2 and 3.1 at p < .001. By contrast, subdimension 3.2 yielded no statistically significant difference (t = 0.88, p = .39). Likewise, no significant group differences were observed for Dimensions 4 and 5 (t = 1.93, p = .06; t = 0.74, p = .46). Their corresponding subdimensions, namely 4.1, 4.2, 5.1, and 5.2, also showed nonsignificant results (t = 1.00, p = .32; t = 1.85, p = .07; t = 0.35, p = .73; t = 0.74, p = .47).

Taken together, these results indicate that following the five-week, quasi-experimental intervention, participants demonstrated substantial improvements in English writing ability and writing self-efficacy, respectively.

4.4 How Do the Students Perceive the Treatment of the Process Approach in a Flipped Classroom Environment?

This section answered the fourth research question. Both quantitative data from perception questionnaires and qualitative data from teacher logs were collected.

4.4.1 Qualitative Findings

Throughout the instructional intervention, the researcher continuously observed and documented FCG students' learning reflections using structured teacher logs. Two logging sessions were conducted: one at the end of the first week of intervention implementation and the other upon completion of the five-week instructional treatment.

Table 10. Themes and subthemes drawn from teacher logs

Themes	Subthemes
1. Satisfaction of the Treatment	1.1 Enjoyment for learning English writing through process approach in a flipped classroom environment
	1.2 Making English writing more engaging and interesting
	1.3 Helping to improve ability to write different topics of English argumentative essay writing
2. Motivation to Learning English Writing	2.1 Encouraging to take responsibility for own learning
	2.2 Becoming more self-efficacious in English writing
3. Attitudes towards the Treatment	3.1 Helping to develop effective English writing habits
	3.2 The English writing abilities learned through the treatment were useful for independent learning

From Table 10, three main themes emerged from the teacher logs: satisfaction with the intervention, motivation for English writing learning, and attitudes toward the intervention. Seven corresponding subthemes were identified: enjoyment of English writing learning via

the process-oriented flipped-classroom approach; greater engagement and interest in English writing; improved competence in writing argumentative essays on diverse topics; increased ownership of one's own learning; enhanced self-efficacy in English writing; development of effective English writing habits; and the perceived utility of intervention-acquired writing skills for independent learning.

Participants reported satisfaction with the intervention, reflected in their enjoyment of the flipped-classroom process-writing activities, heightened engagement and interest in English writing, and enhanced competence in handling various English writing tasks (Shang, 2023). For instance, it was recorded in teacher logs that "Students showed a little bit happy and excited in English writing activities before receiving the treatment." (10/16/2025) "Students appeared relaxed and more confident to tackle problems in writing argumentative essays and could finish writing within the time limit after receiving the treatment." (11/13/2025) The findings discovered that the new treatment of the process approach in a flipped classroom environment might augment participants' enjoyment for learning English writing, make English writing more engaging and interesting, and improve participants' abilities to write English argumentative essays (Shang, 2023).

Furthermore, via the treatment, participants appeared more motivated in English writing classes and had enough motivation to engage in English writing tasks (Fathi, Rahimi, & Liu, 2023). For example, it was recorded in teacher logs that "before receiving the treatment, students showed little engagement in online group discussions and abilities to integrate feedback into their drafts, and little improvement of self-efficacy was seen in students' English argumentative essay writing on different topics using already mastered writing skills, such as organizing introduction, body, and conclusion." (10/16/2025) "Students became more self-regulated and efficient to take different topics of English argumentative essay writing tasks and showed their great confidence in expressing their ideas clearly and logically after receiving the treatment." (11/13/2025) The results indicated that participants developed self-efficacy and self-regulation in completing English writing tasks through the process approach in a flipped classroom setting (Khosravi, Dastgoshadeh, & Jalilzadeh, 2023).

Lastly, all participants held a positive attitude toward the new treatment of process approach in a flipped classroom environment since they found that the new teaching mode could help them develop effective English writing habits, and the English writing abilities learned through the treatment were useful for independent learning (Shang, 2023). For instance, it was recorded in teacher logs that "Most students showed less effective English writing habits because they could not finish their English writing tasks by going through different phases of process writing approaches before receiving the treatment." (10/16/2025) "All students became familiar with the different phases of process writing approach. As a result, students appeared more confident to overcome difficulties encountered during different English writing phases and could finish their English argumentative essay writing tasks within the time limit smoothly." (11/13/2025) The findings proved that the process approach in a flipped classroom environment instruction mode was more effective than traditional teaching mode (Shooli, Rahimi Esfahani, & Sepehri, 2022; Shang, 2023).

4.4.2 Quantitative Findings

Following the process-oriented flipped-classroom intervention, participants in the FCG completed a perception questionnaire. This questionnaire served as an evaluation instrument for exploring FCG participants' perceptions of the instructional treatment. The results from the questionnaire about their perceptions of the process-oriented flipped-classroom approach for fostering Chinese university students' English writing ability and writing self-efficacy are presented in Table 11.

Table 11. The mean and standard deviation of each item of the perception questionnaire (n = 20)

Statements	**Satisfaction**		
	$\bar{x}$	**S.D.**	**Meaning**
1. Evaluation of the Process Approach in a Flipped Classroom Environment on Enhancing Chinese University Students' English Writing Abilities and Self-efficacy	**4.54**	**0.51**	**Highest**
1.1 I enjoy learning English writing through the process approach in a flipped classroom environment.	4.65	0.59	Highest
1.2 I could apply the English writing skills learned from the process approach in a flipped classroom environment in different types of English writing.	4.20	0.77	High
1.3 The process approach in a flipped classroom environment makes English writing more engaging and interesting.	4.70	0.57	Highest
1.4 The process approach in a flipped classroom environment helps me improve my ability to write different types of English writing.	4.60	0.60	Highest
2. Motivations towards the Process Approach in a Flipped Classroom Environment on Enhancing Chinese University Students' English Writing Abilities and Self-efficacy	**4.01**	**0.77**	**High**
2.1 The process approach in a flipped classroom environment encourages me to take responsibility for my own learning.	3.80	1.06	High
2.2 The process approach in a flipped classroom environment makes me more self-efficacious in English writing process.	4.00	1.01	High
2.3 The process approach in a flipped classroom environment makes me more self-efficacious in specific English writing tasks.	3.85	0.88	High

2.4 The process approach in a flipped classroom environment makes me more self-efficacious in related English writing skills.	3.95	1.05	High
2.5 The process approach in a flipped classroom environment makes me more self-efficacious in self-regulation and motivation.	4.10	0.85	High
2.6 The process approach in a flipped classroom environment makes me more self-efficacious in specific English writing context.	4.35	0.75	High
3. Attitudes towards the Process Approach in a Flipped Classroom Environment on Enhancing Chinese University Students' English Writing Abilities and Self-efficacy	**4.73**	**0.41**	**Highest**
3.1 The process approach in a flipped classroom environment has helped me develop effective English writing habits.	4.75	0.44	Highest
3.2 The English writing abilities I learned through the process approach in a flipped classroom environment are useful for independent learning.	4.70	0.47	Highest
Total	**4.30**	**0.48**	**High**

Table 11 showed a high overall mean score (M = 4.30, SD = 0.48), indicating that participants expressed generally favorable views of the process-oriented flipped-classroom intervention intended to foster both English writing ability and writing self-efficacy. Across dimensions, attitudes towards this instructional approach yielded the highest scores, followed by evaluations of the intervention; motivation toward the treatment obtained the lowest scores. For Aspect 1, Items 1.1, 1.3, and 1.4 reflected the highest levels of satisfaction, followed by Item 1.2. For Aspect 2, Item 2.6 produced the highest satisfaction rating, followed by Items 2.1, 2.2, 2.3, 2.4, and 2.5. For Aspect 3, both Items 3.1 and 3.2 demonstrated the highest satisfaction levels.

5. Discussion

The investigator elaborates on the results of using the process approach in a flipped classroom environment instruction to enhance Chinese university students' English writing abilities and self-efficacy as follows:

5.1 Current States and Needs on Chinese University Students' English Writing Abilities and Self-Efficacy

Quantitative findings revealed low levels of Chinese university students' English writing ability across four dimensions: 1) organization (introduction, body, and conclusion); 2) logical development of ideas (content); 3) vocabulary and grammar; and 4) style and quality of expression. Participants demonstrated a strong need for writing-skill improvement, as they possessed limited knowledge of instructional approaches such as the process approach. Among all measured dimensions, organization (introduction, body, and conclusion) obtained the lowest score in this investigation, followed by logical development of ideas (content). These results suggest that these two writing dimensions represent priority areas for instructional intervention. This finding aligns with Gui (2004), who reported that Chinese university students tend to struggle with essay organization, logical content development, expressive quality, and vocabulary-grammar accuracy. Zheng and Cheng (2008) further argued that students require more practice in producing well-organized, logically coherent essays with high-quality expression. Additionally, learners need to build greater writing self-confidence for writing tasks, procedural skills, and writing processes, alongside increased writing motivation.

Qualitative findings drawn from semi-structured interviews with three college-English teachers indicated that Chinese university students need to improve their writing self-efficacy across five subdimensions: 1) task-specific confidence; 2) skill-related confidence; 3) process-oriented confidence; 4) self-regulation and motivation; and 5) context-specific beliefs. All three teachers highlighted self-regulation and motivation, as well as process-oriented confidence, as areas requiring substantial improvement. This observation can be attributed to students' generally low self-efficacy toward English writing. The present results are consistent with Li and Liu (2013), who noted that Chinese university students often lack confidence in comprehending writing tasks and deploying appropriate writing skills, while exhibiting low motivation to complete assigned English writing tasks. Bruning et al. (2013) also emphasized that greater pedagogical attention should be directed toward the writing process to help students fully interpret writing requirements.

5.2 A Comparison of Four Dimensions of Chinese University Students' English Writing Abilities before and after the Process Approach in a Flipped Classroom Environment Method

The results revealed that participants' posttest mean score for English writing ability was significantly higher than their pretest mean score ($p < .001$). This finding suggests that the process-oriented flipped-classroom intervention was effective in fostering students' English writing ability following exposure to this instructional treatment. Gains in writing competence stemmed from engagement in this effective learning experience. These outcomes are consistent with Liu and Zhang (2018), who reported that flipped-classroom pedagogy supports Chinese university students in producing well-organized, logically coherent essays. Flower and Hayes (1981) confirmed that the process approach benefits Chinese university students in developing logical essays, as it emphasizes the iterative writing cycle (drafting, revising, and editing) instead of focusing solely on final written products, enabling learners to refine writing skills incrementally. Likewise, Shang (2023) pointed out that the process approach promotes learners' writing autonomy and reflective thinking, encouraging students to take ownership of the full writing-organization process and engage in ongoing self-evaluation.

5.3 A Comparison of Chinese University Students' English Writing Self-efficacy Before and After the Process Approach in a Flipped Classroom Environment Method

The results revealed that participants' posttest mean score for English writing self-efficacy was significantly higher than their pretest mean score ($p < .001$). This finding suggests that the process-oriented flipped-classroom intervention was effective in enhancing students' writing self-efficacy following exposure to this instructional treatment. Improvements in writing self-efficacy arose from engagement in these effective learning activities. These findings align with Pajares and Johnson (1994), who argued that the process approach mitigates learners' writing anxiety by decomposing complex writing assignments into manageable stages, rendering academic writing more accessible. Similarly, Khosravi et al. (2023) confirmed that integrating the process approach with flipped-classroom instruction can foster learners' writing self-efficacy and autonomy. The flipped-classroom format nurtures independent-learning capacities, whereas the step-by-step progression embedded within the process approach generates tangible writing gains and positive learning experiences.

However, as illustrated in Table 9, posttest comparisons revealed no significant differences between the FCG and NFG across two critical writing self-efficacy subdimensions: self-regulation and motivation, and context-specific beliefs. This noteworthy finding outlines the boundary conditions of the integrated flipped process-writing model. These nonsignificant outcomes may be interpreted with respect to learner-level traits and limitations of the present intervention. First, students' self-regulation and motivation represent stable dispositional attributes shaped by long-term learning histories and habitual learning patterns (Teng & Zhang, 2020). Unlike malleable writing skills and strategic self-efficacy, such affective traits cannot be fundamentally transformed by brief instructional interventions, which can only yield modest adjustments to entrenched learning mindsets. Second, context-specific beliefs — grounded in learners' preexisting task perceptions and course-related attitudes — remained unaltered owing to design limitations within the current intervention (Bruning et al., 2013). The pedagogical framework adopted in this study prioritized procedural-writing practice and interactive revision to boost general writing competence, yet it did not include targeted modules for restructuring situational beliefs or mitigating writing anxiety. Collectively, the flipped process-writing model primarily facilitates skill-related self-efficacy rather than deep-seated affective and contextual beliefs. For comprehensive affective-cognitive development, future research should embed systematic motivational activation, self-regulatory training, and context-specific belief building components into instructional designs.

5.4 Students' Perceptions towards the New Treatment of the Process Approach in a Flipped Classroom Environment Method

Both quantitative and qualitative findings indicated that Chinese university students generally held positive attitudes toward the process-oriented flipped-classroom intervention designed to enhance their English writing ability and writing self-efficacy. This result can be attributed to the practical merits of this instructional model for English writing learning, which substantially contributed to improvements in students' writing performance and self-efficacy. These outcomes align with Liu and Zhang (2018), who confirmed that Chinese university students perceived flipped English writing instruction as more effective than traditional instruction. The flipped format supports personalized writing guidance: pre-class flipped activities enable teachers to identify learners' drafting difficulties in advance, while in-class process-oriented teaching permits targeted interventions for students at diverse proficiency levels. Likewise, Khosravi et al. (2023) noted that Chinese university students favored the process approach because it promotes constructive peer-to-peer and teacher feedback during interactive sessions, allowing learners to recognize and remediate writing deficiencies in a timely fashion.

6. Conclusion

In conclusion, integrating the process-writing approach within a flipped-classroom setting generates positive effects on Chinese undergraduate students' English writing ability and writing self-efficacy. The following are the tangible theoretical and practical contributions that this study generates. First, its empirical findings provide targeted references for college-English educators and researchers. The results clarify how the flipped-classroom framework supports the multistage process of writing instruction, and how this combined model improves learners' writing competence and affective perceptions. These insights can inform the design, implementation, and further investigation of process-oriented writing teaching within flipped-learning contexts. Second, this study delivers practical pedagogical implications for frontline teachers. It validates the effectiveness of the integrated teaching model and offers actionable strategies for practitioners to implement this approach, with the goal of fostering students' writing ability and self-efficacy in routine classroom instruction. Third, this research also provides a valuable reference for early-career researchers in related fields. It supports scholarly inquiry for newcomers to higher-education EFL research by establishing a clear research framework and depicting hypothesized relationships among variables for subsequent studies on blended writing instruction.

Overall, the flipped-process writing model proposed in this study proves to be a feasible and effective instructional strategy. Educators and relevant practitioners may adopt this model to optimize English writing pedagogy and facilitate students' efficient learning.

7. Implications and Recommendations

The findings point toward promising directions for improving English writing pedagogy at Chinese universities. Furthermore, the study yields implications for English writing instruction and L2 English learning within Chinese tertiary contexts. Given that organization represented students' weakest performance dimension, the following pedagogical suggestions are proposed. First, teachers may design targeted training sessions to equip students with skills for logical outlining and content structuring prior to writing tasks. Second, instructors can provide sample frameworks and graphic organizers such as mind maps to support students in arranging content coherently.

Third, teachers should deliver timely feedback concerning students' organizational performance and assign regular practice to consolidate these competencies.

For future research, pretesting participants' writing self-efficacy before intervention implementation is strongly advised. Random assignment is recommended to balance preexisting ability levels across experimental groups. In the event that statistically significant baseline differences persist despite randomization, researchers may implement analysis of covariance (ANCOVA) to statistically account for these confounding variables during data analysis.

Acknowledgements

We greatly appreciate the valuable contributions of our community advisory committee members. We would also like to thank every team member who took the time to participate in this study.

Authors' contributions

Li Xiaoyan was responsible for the design and revision, as well as the data collection and the drafting of the manuscript. Li Xiaoyan, Associate Professor Dr. Nawamin Prachanant and Associate Professor Dr. Akkarapon Nuemaihom revised it. Associate Professor Dr. Akkarapon Nuemaihom evaluated all phases of manuscript preparation and assumes principal responsibility for correspondence with a journal throughout the submission, peer-review, and publication processes. All authors have granted their permission for the final manuscript and have approved to its publication.

Funding

This work was financially supported by the authors.

Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Sciedu Press.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Language editing only of this manuscript was assisted by Doubao AI and Grammarly.

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

Open access

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/4.0/).

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

References

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Prentice-Hall.

Bergmann, J., & Sams, A. (2012). *Flip your classroom: Reach every student in every class every day*. International Society for Technology in Education.

Bishop, J. L., & Verleger, M. A. (2013). The flipped classroom: A survey of the research. In *ASEE Annual Conference & Exposition. American Society for Engineering Education*. https://doi.org/10.18260/1-2--22585

Brown, H. D., & Abeywickrama, P. (2010). *Language assessment: Principles and classroom practices* (2nd ed.). Pearson Longman.

Bruning, R., Dempsey, M., Kauffman, D. F., McKim, C., & Zumbrunn, S. (2013). Examining dimensions of self-efficacy for writing. *Journal of Educational Psychology, 105*(1), 25-38. https://doi.org/10.1037/a0029692

Cai, J. G. (2018). Paradigm exploration of EFL teaching in foreign language environment: Review and reflection on foreign language

education in Chinese universities over the past 40 years of reform and opening-up. *Journal of Northeast Normal University (Philosophy and Social Sciences), 5*, 12-17.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.

Fathi, J., Rahimi, M., & Liu, G.-Z. (2023). A preliminary study on flipping an English as a foreign language collaborative writing course with video clips: Its impact on writing skills and writing motivation. *Journal of Computer Assisted Learning, 39*(2), 659-675. https://doi.org/10.1111/jcal.12772

Ferris, D. R. (2011). *Treatment of error in second language student writing* (2nd ed.). University of Michigan Press. https://doi.org/10.3998/mpub.2173290

Flower, L., & Hayes, J. R. (1981). A cognitive process theory of writing. *College Composition and Communication, 32*(4), 365-387. https://doi.org/10.58680/ccc198115885

Graham, S., & Perin, D. (2007). A meta-analysis of writing instruction for adolescent students. *Journal of Educational Psychology, 99*(3), 445-476. https://doi.org/10.1037/0022-0663.99.3.445

Gui, S. C. (2004). A cognitive model of error analysis of Chinese learner English based on corpus. *Modern Foreign Languages, 27*(2), 123-132.

He, L. Z. (2020). New requirements for college English teaching in the new era: The basis and key points of the revision of the College English Teaching Guide. *Foreign Language World, 4*, 13-18.

Hyland, K. (2019). *Teaching and researching writing* (3rd ed.). Routledge.

Khosravi, R., Dastgoshadeh, A., & Jalilzadeh, K. (2023). Writing metacognitive strategy-based instruction through flipped classroom: an investigation of writing performance, anxiety, and self-efficacy. *Smart Learning Environments, 10*, Article 264. https://doi.org/10.1186/s40561-023-00264-8

Li, H., & Liu, R. D. (2013). The relationship between foreign language writing anxiety and writing self-efficacy and their prediction of writing performance. Foreign Language Research, *2, 48-54, 112*.

Li, H., Liu, R. D., & Liu, Y. (2013). The mediating effect of foreign language writing self-efficacy on the influence of writing anxiety on writing performance. *Psychological Development and Education, 29*(4), 385-390.

Liu, J. Z., & Zhang, L. J. (2018). *A study of college foreign language writing teaching based on the language learning community of Chinese and foreign teachers and students. Foreign Language World, 1,* 79-87.

Lo, C. K., Hew, K. F., & Chen, S. K. (2017). Toward a set of design principles for flipping the classroom: A synthesis of the literature. *Educational Technology Research and Development, 65*(6), 1467-1491.

Ma, G. H., & Wen, Q. F. (1999). A study of factors influencing college students' English writing ability. *Foreign Language Teaching and Research, 31*(4), 34-39.

Pajares, F. (2003). Self-efficacy beliefs, motivation, and achievement in writing: A review of the literature. *Reading & Writing Quarterly, 19*(2), 139-158. https://doi.org/10.1080/10573560308222

Pajares, F., & Valiante, G. (1997). Influence of self-efficacy on elementary students' writing. *Journal of Educational Research, 90*(6), 353-360. https://doi.org/10.1080/00220671.1997.10544593

Pajares, F., & Johnson, M. J. (1994). Confidence and competence in writing: The role of self-efficacy, outcome expectancy, and apprehension. *Research in the Teaching of English, 28*(3), 313-331. https://doi.org/10.58680/rte199415378

Richards, J. C., & Farrell, T. S. C. (2005). *Professional development for language teachers: Strategies for teacher learning.* Cambridge University Press. https://doi.org/10.1017/CBO9780511667237

Shang, H.-F. (2023). Flipped instruction: Factors affecting the effects of EFL writing performance. *Innovations in Education and Teaching International, 61*(4), 521-533. https://doi.org/10.1080/14703297.2023.2283608

Shell, D. F., Murphy, C. C., & Bruning, R. H. (1989). Self-efficacy and outcome expectancy mechanisms in reading and writing achievement. *Journal of Educational Psychology, 81*(1), 91-100. https://doi.org/10.1037/0022-0663.81.1.91

Shooli, E., Rahimi Esfahani, F., & Sepehri, M. (2022). Flipped classroom influence on the learner's outcomes: A study based on English writing courses in Iran. *Education Research International, 2022*, Article 1530290, 1-9. https://doi.org/10.1155/2022/1530290

Soltanpour, F., & Valizadeh, M. (2018). A flipped writing classroom: Effects on EFL learners' argumentative essays. *Advances in Language and Literary Studies, 9*(1), 5-13. https://doi.org/10.7575/aiac.alls.v.9n.1p.5

Strayer, J. F. (2012). How learning in an inverted classroom influences cooperation, innovation and task orientation. *Learning Environments Research, 15*(2), 171-193. https://doi.org/10.1007/s10984-012-9108-4

Teng, L. S. (2019). A comparison of self-regulated learning and self-efficacy in EFL writing. *System, 84*, 124-135.

Teng, L. S., & Zhang, L. J. (2020). *Empowering learners in the second/foreign language classroom: Can self-regulated learning strategies-based writing instruction make a difference? Journal of Second Language Writing, 48*, Article 100701. https://doi.org/10.1016/j.jslw.2019.100701

Turan, Z., & Akdağ-Çimen, B. (2019). Flipped classroom in English language teaching: A systematic review. *Computer Assisted Language Learning, 33*(5-6), 546-566. https://doi.org/10.1080/09588221.2019.1584117

Weir, C. J. (2004). *Language testing and validation: An evidence-based approach. Palgrave*.

Wen, Q. F. (2018). *Reflections on foreign language education. Contemporary Foreign Language Studies, 4*, 9-10.

Wen, Q. F., & Si, W. G. (2018). Rethinking talent cultivation in foreign language education: From compound talents to whole-person education. *Shandong Foreign Language Teaching Journal*, *3*, 50-60.

Xiang, M. Y. (2020). Adapting to the new situation and promoting the construction of college English curriculum system: A commentary on the curriculum of the Guide to College English Teaching. *Foreign Language World, 4*, 28-34.

Zheng, Y., & Cheng, L. (2008). Test review: College English Test (CET) in China. *Language Testing*, *25*(3), 408-417. https://doi.org/10.1177/0265532208092433

Zimmerman, B. J., & Risemberg, R. (1997). Becoming a self-regulated writer: A social cognitive perspective. *Contemporary Educational Psychology, 22*(1), 73-101. https://doi.org/10.1006/ceps.1997.0919