

Peer Instruction's Impact on EFL Writing Proficiency: A Quasi-experiment in a Chinese University

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Abstract

This study investigated the impact of peer instruction on learners' writing proficiency in a Chinese university. It adopted a quasi-experimental research design and lasted for fourteen weeks. Peer instruction was used as an intervention for the experimental group, while the teacher-centred traditional approach was employed for the control group. The quasi-experiment results showed no significant difference in the pretest writing proficiency between the experimental and control groups. However, the experimental group's writing proficiency significantly exceeded the control group's in the posttest. Therefore, the intervention was effective in this quasi-experiment, and peer instruction significantly influenced EFL learners' writing proficiency. Nevertheless, this study also had the limitation of a small sample and short duration. In future studies, educators and teachers should reduce these limitations to optimize the peer instruction approach in EFL writing instruction.

Keywords: Peer Instruction, EFL Writing, University EFL Learners, Writing Proficiency

INTRODUCTION

With the trend of globalization, the importance of learning English for youngsters in China is apparent. As one crucial language output, English writing is a productive skill for English students (Jayanti, 2019), reflecting their comprehensive English application abilities. Hence, promoting students' English writing proficiency is critical and urgent in college English instruction (Liu & Pang, 2023). However, some issues exist in EFL students' writing proficiency in China.

Students of English are not motivated to study (Bai, 2021). Passing the final test and earning a CET-4 or CET-6 certificate is the main reason they attend the English course. In addition to making students emotionally inert and reluctant to write, examination-oriented training also contributes to their low writing proficiency. For most EFL students, writing frequently entails thinking in their original tongue and then verbatim translating it into English (Sun, 2021). However, there are noticeable distinctions in meaning, word order, and syntax between Chinese and English. As such, there are grammatical and syntactic mistakes in their writing (Fitriana & Nurazni, 2022). As a result, the majority of EFL students in China lack critical thinking skills when writing.

Additionally, the conventional method of teaching writing involves the teacher primarily concentrating on vocabulary and grammar (Wang, 2022). Students always write on their own and adhere to a model format. Due to their diverse majors and interests, EFL students primarily depend on their professors but are hesitant to participate in group activities (Xie, 2019). As a result, EFL students could scarcely have original ideas with this exam-focused teaching strategy, and their writing would inevitably lack depth and emphasis.

Soviet psychologist Vygotsky founded the Sociocultural Theory. He thought that the development of higher cognitive processes could only occur when people engaged in social and cultural activities. As a result, human social and cultural components are essential to knowledge construction and the development of higher cognition (Vygotsky, 1978). Based on this idea, research on foreign language education claims that learning a foreign language is not just a passive process but is actively realized and internalized through language as a

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cognitive instrument with external support.

Mazur (1997) discovered that employing a one-way educational pattern—where teachers create course contents and then train students—would not provide an outstanding teaching impact during his time teaching chemistry at Harvard University. However, questioning students and allowing them to work through challenges through group discussion and introspection might replace this process and help students learn more effectively. Under such circumstances, Mazur (1997) invented the peer instruction approach. Thousands of teachers in various educational sectors have successfully implemented it throughout various nations and regions (Li, 2019). This study attempts to adopt peer instruction in EFL writing classrooms in a Chinese university to examine its impact on students' English writing proficiency.

Research Objectives

This study examined whether the peer instruction approach significantly influenced EFL students' writing proficiency at a Chinese university. The goal was accomplished by achieving the following particular objectives:

RO 1: To determine if the experimental and control groups' writing proficiency differed significantly in the pretest.

RO 2: To determine whether the experimental and control groups' writing proficiency differed significantly in the posttest.

RO 3: To determine whether the experimental group's writing proficiency differed significantly between the pretest and posttest.

Research Questions

This study attempted to discover the answers to the following three research questions:

RQ 1: Is there a significant difference in writing proficiency between the experimental and control groups in the pretest?

RQ 2: Is there a significant difference in writing proficiency between the experimental and control groups in the posttest?

RQ 3: Is there a significant difference in writing proficiency between the pretest and the posttest for the experimental group?

LITERATURE REVIEW

Peer Instruction

Mazur (1997) of Harvard University invented the peer instruction approach. In 1984, he started teaching physics and employed traditional teaching approaches, such as assigning reference books, taking notes, doing experiments, and teaching the material from the textbook in class, just like most modern educators (Zhang, 2019). Then, in 1990, he started to reflect on the disadvantages of the traditional teaching approaches. Students already know basic physics fundamentals from their daily lives before they even start school. These ideas also make it difficult for students to accept what their professors teach. Therefore, traditional teaching methods cannot clarify students' misconceptions and build scientific ideas. Consequently, Mazur created the peer instruction approach as a substitute teaching strategy. Through engaging conversations and peer involvement, this approach promotes active learning and enables students to face and resolve their misconceptions together. Mazur (2012) stated during the International Seminar on Peer Instruction hosted at Beijing Normal University that Confucius' maxim, "Three people in a row, there must be my mentor," inspired his concept of developing peer instruction.

Mazur invented the peer instruction approach because, before that, he found it extremely difficult to understand his students' learning circumstances and to determine the breadth and tempo of his physics lesson due to the large class size (Zhai & Zhang, 2022). Peer instruction, however, assisted him in achieving effective teaching outcomes. Following years of growth, more and more educators at all levels—from middle schools to universities—are recognizing the benefits of the peer instruction approach (Zhai & Zhang, 2022). Zhang and

Mazur (2010) initially introduced the peer instruction approach to China. Teachers in China, ranging from university professors to elementary school instructors, have employed the peer instruction approach to teach a variety of disciplines. Zhang and Mazur (2010) first presented the peer instruction approach in a journal article published in *China University Teaching*. In this journal article, Zhang and Mazur first provided an outline of Mazur's peer instruction approach before discussing the importance of the approach to education.

The theoretical foundation of peer instruction was then further enhanced by researchers under Zhang's (2013) direction as they developed a diverse evaluation model based on the college curriculum and the peer instruction strategy. Following the introduction of peer instruction to China, a growing number of educators focused on it and used it to teach a variety of disciplines. Studies indicate that there is broad support for and acceptance of this strategy. Chinese researchers have mainly examined peer instruction from three angles: theory, impact, and implementation approaches (Song, 2017; Zhai & Zhang, 2022).

In summary, the development of the peer instruction approach occurred due to ongoing practice and improvement in the American educational system. Nonetheless, there are some differences between the educational landscape in China, the psychology of learning, and the teaching philosophies of Chinese educators and American educators. Due to these variations, Chinese academics and researchers have been refining their teaching methods to incorporate peer instruction into classroom instruction more effectively. However, there is still much space for development. The use of peer instruction is still somewhat narrow, especially in English language learning, not to mention the EFL writing teaching.

EFL Writing

Researchers and educators worldwide have been interested in the teaching strategies linked to writing in a foreign language, sometimes a second language, in recent years. A few typical approaches to writing teaching are described in the following section.

The Genre Writing Approach

Swales (1990) introduced the term genre, which was first used in literary criticism as a literary and rhetorical concept in ESP (English for Specific Purposes) education (Xu & Jiang, 2021). Swales' primary goal with his Genre Theory was to investigate the structural features of genres to provide ESP education ideas (Zhao & Liu, 2021). Subsequently, three schools emerged from the Genre Theory, one of which was the Australian Systemic Functional Linguistics (SFL) School, represented by Martin. Martin (1993) introduced the genre writing approach and used it to integrate language teaching, contributing to the advancement and refinement of the genre theory.

In addition, Halliday's systematic-functional grammar maintains that languages differ in their functions because of their diverse objectives. Learning a language involves more than memorizing grammar rules; it also entails comprehending the intrinsic link between a text's structure and function within a particular context (Halliday, 1994). The genre analysis theoretical framework benefited from Halliday's perspective. Three phases of the genre writing teaching approach were summarized by Martin (1993) of the University of Sydney: deconstruction, joint construction and independent construction.

Through the genre writing approach, students can think for themselves, comprehend and assimilate the teacher's knowledge intake, and then apply what they have learned to their writing. Students can develop passably well-structured, acceptable compositions with consistent training and improvement.

The Product Writing Approach

Based on the Behaviourist Learning Theory, the product approach views the writing teaching process as one in which teachers provide incentives and students react (Nunan, 2011). It is a part of the conventional teaching approach, which focuses on the overall outcomes of the writing activities (Odeh, 2020).

This teaching approach follows a single, linear writing process that consists of outlining, writing, and editing (Yang, 2018). According to the guidelines and directions provided by the teacher, students can easily fulfill their writing tasks. To ensure that students properly comprehend the sample essay, the teacher prepares it in advance

and discusses it with the class from various perspectives. Students then choose a theme from the teacher's sample essay to outline their essays. After that, students polish the sentences, edit and revise their writing, and create satisfactory compositions.

There are benefits and drawbacks to the product strategy. It is simple for the students to complete their writing assignment by following the teacher's instructions and the sample essay because, according to Yang (2018), the teacher supervises classroom activities, leads classroom management, and evaluates students' work when using the product writing approach (Zhong, 2016). In contrast, it's essential to consider the product approach's drawbacks. This approach overemphasizes the accomplished product while ignoring the writing process, which might help students improve their writing proficiency and foster teamwork. As a result, rather than encouraging a deeper grasp of writing skills and tactics, students' writing tasks become too mechanical and focus only on generating a final product.

The Process Writing Approach

The outcome and process of writing can be both the centre of focus in English writing teaching. Teachers and students are engaged in the final product and consequence of the writing task when they concentrate on outcomes (Jiang, 2007). When focusing on the process, teachers and learners give more importance to the steps and processes of the writing process, the range of tasks involved, and the associated writing approaches and abilities needed.

The communicative theory is the foundation of the process writing approach (Yang, 2018). This approach emphasizes the process in English writing, valuing the internal thoughts that students generate while writing and fostering the development of their comprehension and reasoning skills under the guidance of professors or experienced peers. These efforts collectively aid students in achieving the objectives of English writing. Instead of focusing on the students' written products, the teacher assists them in completing the stages of writing. Pre-writing, writing, and revision processes can be used to summarize the basic pattern of the process writing approach (Zhong, 2016).

According to the process approach, writing is a creative, exploitable, and cyclical activity that allows authors to explore concepts and give them significance. In English writing, student interaction and introspection are thought to be more significant than enforcing lexical, syntactic, or contextual constraints. The emergence of the process approach has also encouraged teachers to concentrate on writers (students) rather than inanimate writing products (Jiang, 2007). This approach promotes creating and sustaining a constructive, proactive, and cooperative creative atmosphere (Dhanya & Alamelu, 2020). It also gives students enough time and little guidance to guarantee that they finish the creative process independently and assists them in starting, writing, revising, and editing independently. Writing in English becomes a complicated, iterative, creative process that cannot be finished in a single step when seen from a process viewpoint.

Theoretical Framework

The central supporting theories for this study were Vygotsky's Sociocultural Theory and the ZPD (Zone of Proximal Development) principle (1978). The key concept in this study was peer instruction (Mazur, 1997). The theoretical framework is shown in Figure 1.

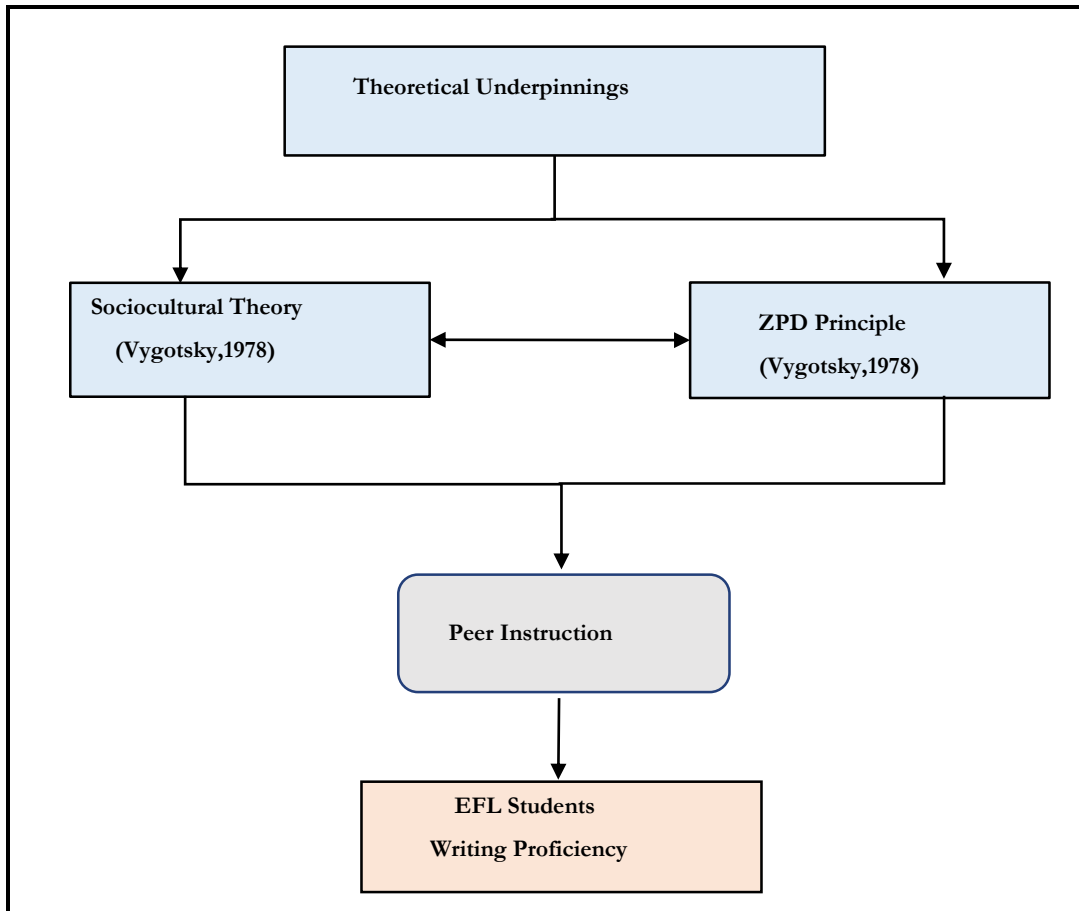


Figure 1: Theoretical framework

The Sociocultural Theory

In applied linguistics, the sociocultural theory is derived from Vygotsky's cultural-historical psychology, which examines the evolution of higher mental processes (Lantolf & Thorne, 2006). According to socioculturalism, cultural practices and artefacts control people's psychological processes. The three sub-theories, namely ZPD, Internalization, and Mediation, represent the fundamental concepts of the Sociocultural Theory (Wang & Qin, 2022).

Mediation, a fundamental idea of Sociocultural Theory, highlights the indirect and instrument-regulated interactions between people and their external environment (Li, 2022). Natural rules govern humans' lower mental processes. While human higher cognitive capabilities are indirectly related to social and cultural elements like tools, symbols, and language, objects directly cause them. The ZPD principle, which examines the link and gap between current and potential development levels, is based on sociocultural theory and views the evolution of human higher psychological function as a dynamic development process (Xi, 2020). Because of this, ZPD is frequently used to analyze how people's higher psychological functions evolve dynamically under intermediate influence.

ZPD and mediation both entail external mediation, highlighting the connections between intermediary tools—like language and symbols—and the external world while also pointing to people's interior psychological growth (Li, 2022). Conversely, internalization emphasizes how people change their social platform behaviours and beliefs into internal psychological growth platforms through overt social communication (Vygotsky, 1987). According to Vygotsky, individuals acquire their higher psychological functions twice: once at the social level and again at the individual level.

Zone of Proximal Development (ZPD)

Another fundamental idea of Vygotsky's (1996–1934) Sociocultural Theory (1978; 1986) is the ZPD principle. Vygotsky was hailed as the Mozart of psychology by both Soviet Russian and Western scientists. He accomplished much in his brief life and gave cognitive psychology its first theoretical research foundation. His exceptional intellect and wide-ranging, profound ideas left behind a wealth of resources for future researchers (Zhang et al., 2022). He put out the well-known ZPD concept in the early 1930s to explain how children's intellect developed and to show how learning, teaching, and growth are intrinsically linked. It demonstrates that the primary goal of classroom teaching is to stimulate and generate a psychological function that does not now exist rather than to enhance or train the internal psychological function that has already been formed (Vygotsky, 1978; Zhang et al., 2022). As a result, the only classroom teaching that is successful and preferred comes before the growth of the children.

According to Xi and Lantolf (2021), students' cultural growth often symbolizes a shift from the current level of development to the potential level in their ZPD. The ZPD principle's broad relevance highlights the possibility of peer collaboration as a source of progress for young students (Ramesh et al., 2023). Teachers' scaffolding, mainly through the teaching approach, also contributes to students' progress. To recognize and manage children's ZPD, teachers should ascertain their students' current and potential development stages. They should also assist students in moving from their current development to their potential growth stage.

METHODOLOGY

Research Design

The primary research design used in this study was quasi-experimental (Table 1). When it is impossible to control all potentially impacting extraneous elements, researchers can exert flexible control over experimental subjects by mimicking experimental circumstances or using natural settings (Rogers & Revesz, 2019). The experimental group received a 14-week intervention of peer instruction. The primary features of this teaching approach are collaboration and student-centeredness. The students in the control group completed identical writing assignments and experienced the conventional teacher-centred approach to writing teaching.

Table 1: Quasi-experimental research design

Research Design			
Group	Pretest	Intervention	Posttest
Experimental	O ₁	X	O ₂
Control	O ₃	--	O ₄

O₁: writing proficiency pretest in the experimental group

O₂: writing proficiency pretest in the experimental group

O₃: writing proficiency pretest in the control group

O₄: writing proficiency pretest in the control group

X: intervention of peer instruction

Research Setting and Samples

University L, a polytechnic university, was the chosen university for this study. University L is a key construction

institution and a provincial multidisciplinary university with a strong engineering focus in Anhui Province, China. Over 60 majors in engineering, physics, literature, economics, management, law, and the arts are available to undergraduate students. There are three autonomous multidisciplinary master's degrees, eleven professional master's degrees, and seventeen master's degrees in first-class fields.

At University L, where the researcher works as an English teacher, two groups of EFL students—the experimental and the control groups—participated in this study. They were from two intact classes assigned to the researcher. There were 30 participants in each intact class (N=30). The two groups of students received identical writing lessons. However, the experimental group was taught using the peer instruction approach, while the control group was taught using the traditional teacher-centred approach.

Research Schedule

Table 2 depicts the research schedule for the learners in the experimental group. The intervention of peer instruction was implemented from Week 2 to Week 12. The experimental group was divided into seven sub-groups, and learners participated in group writing activities in respective sub-groups.

Table 2: Research schedule for students in the experimental group

Research Schedule in EG*		
Week	Activity	Prompt for Writing
1	-Pretest -Grouping students -The researcher explains the peer instruction skills -Introduction to the structure of an English essay	Individual writing: Introduce a book and explain why it is worth reading
2	-Four types of English writing - Narration - Using peer instruction to plan the essay - Using peer instruction to write the first draft	Group writing task: “The Mysterious Package”
3		Group writing task: “The Mysterious Package”
4	-Using peer instruction to write the final draft -Teacher feedback	Group writing task: “The Mysterious Package”
5	-The teacher introduced description in writing - Using peer instruction to plan the essay - Using peer instruction to write the essay	Group writing task: “The University Campus”
6	-Teacher feedback -The teacher introduced exposition in writing	Group writing task: “The University Campus”
7	-The teacher introduced comparison and contrast - Using peer instruction to plan the essay - Using peer instruction to write the essay	Group writing task: “Generation X and Generation Z”
8	-Teacher feedback - The teacher introduced cause and effect	Group writing task: “Generation X and Generation Z”
9	- Using peer instruction to plan the essay - Using peer instruction to write the essay	Group writing task: “When We Run out of Petroleum”
10	-Teacher feedback	Group writing task: “When We Run out of Petroleum”
11	- The teacher introduced argumentation in writing - Using peer instruction to plan the essay - Using peer instruction to write the essay	Group writing task: “Should We Set off Fireworks”
12	-Teacher feedback	Group writing task: “Should We Set off Fireworks”
13	- Using peer instruction to write the essay	Free writing: “My College Life”
14	-Posttest	Individual writing: Introduce a book and explain why it is worth reading

* In this study, EG refers to the experimental group and CG represents the control group.

Data Collection and Analysis

The purpose of data collection and analysis is to answer the research questions in this study. Table 3 shows how data were analyzed from the perspective of the research questions in this study.

Table 3: Data collection and analysis table

Data Analysis	
No	Reflecting Theories

	Research Questions	Data Type and Collection	Data Analysis
1	Is there a significant difference in writing proficiency between the experimental and control groups in the pretest?	Quantitative Pretest (CET writing)	using SPSS with various repeated measures using an independent samples T-test analysis
2	Is there a significant difference in writing proficiency between the experimental and control groups in the posttest?	Quantitative Posttest (CET writing)	using SPSS with various repeated measures using an independent samples T-test analysis
3	Is there a significant difference in writing proficiency between the pretest and the posttest for the experimental group?	Quantitative Pretest & posttest (CET writing)	using SPSS with various repeated measures using a paired samples T-test

The main instrument in this study was the test paper, which was taken from CET-4 in March 2023 and used for the pretest and posttest. The pretest scripts of the experimental and control groups were evaluated to respond to the first research question (RQ 1). Three evaluators assessed the scripts during a moderation session with the researcher and received briefings. An independent samples T-test analysis was performed to determine if there was a significant difference in writing proficiency between the two groups (the experimental and control groups). The experimental and control groups' posttest scripts were evaluated to address the second research question (RQ 2). After the intervention was applied to the experimental group, an independent samples T-test analysis was performed to determine whether writing proficiency between the experimental and control groups differed significantly. The third research question (RQ 3) was addressed by evaluating the experimental group's pretest and posttest scripts. A paired samples T-test was used to assess the difference in the experimental group's writing proficiency between the pretest and posttest.

FINDINGS AND DISCUSSIONS

Normality Test

The normal distribution of the sample data is necessary for many statistical approaches used in quantitative data analysis (Kwak & Park, 2019; Dong, 2023). It is crucial to verify if the data satisfies the normalcy criteria. The researcher cleansed the data so there were no missing values before the normality test. For the pretest's normality test, 60 values—30 from the experimental and 30 from the control groups—were valid. Additionally, 30 values from the experimental group and 30 from the control group made up the 60 valid values for the posttest normality test.

For the normality test, the Shapiro-Wilk p-value (often more than .05) was chosen (González-Estrada & Cosmes, 2019). Table 4 shows the experimental group's pretest p-value for Shapiro-Wilk .115 ($p=.115, p>.05$), the control group's pretest p-value is .598 ($p=.598, p>.05$), the experimental group's posttest p-value is .213 ($p=.213, p>.05$) and the control group's posttest p-value is .666 ($p=.666, p>.05$). Each of the four p-values is more than .05, indicating a normal distribution for each of the four data sets.

Table 4: Tests of normality

Tests of Normality								
	Kolmogorov-Smirnov ^a				Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.		
pretest_EG	.123	30	.200*	.944	30	.115		
pretest_CG	.127	30	.200*	.972	30	.598		
posttest_EG	.146	30	.100	.954	30	.213		
posttest_CG	.116	30	.200*	.974	30	.666		

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

When comparing the data distribution, the box plot is frequently used to describe the distribution's shape, variability, outlier, maximum and lowest values, mean and median values, lower and higher quartiles, and so on (Bhatnagar et al., 2021). The distribution of the pretest and posttest for the experimental and control groups is

generally normal, according to the Box plots in Figure 2.

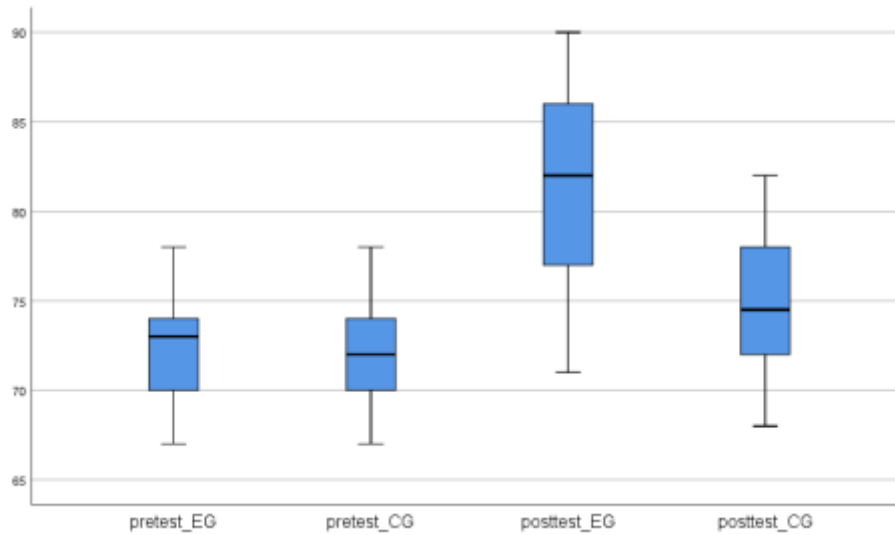


Figure 2: Box plots of pretest and posttest

Writing Proficiency of Pretest: EG vs. CG

RQ 1: Is there a significant difference in writing proficiency between the experimental and control groups in the pretest?

The hypothesis for the quasi-experiment was that students in the experimental and control groups had similar writing proficiency before the intervention's implementation to guarantee that the posttest results could be comparable (Dong, 2023). If the two groups were equally proficient writers from the start, the researcher may conclude that the intervention was the reason for the variations in the two groups' posttest writing competence scores (SirotoVÁ et al., 2021).

To determine whether the experimental and control groups' writing proficiency levels were comparable before implementing the peer instruction, process writing, and group writing intervention, the researcher performed an independent samples T-test analysis of the pretest between the two groups. This allowed the researcher to address Research Question 1. An inferential statistical test known as the independent samples T-test sometimes called the unpaired T-test, examines whether the mean scores of two unrelated and independent groups differ statistically significantly (Mishra et al., 2019).

The group statistics from the pretest for the independent samples T-test are displayed in Table 5. The data indicates that the experimental group's mean pretest score was 72.53 (M=72.53, SD=3.277), whereas the control group's mean score was 72.50 (M=72.50, SD=2.701). Since the two mean scores are almost identical, it can be concluded that the two groups' average English writing proficiency was equal. Thus, before the implementation of the intervention, the two groups' writing proficiency was equivalent. Therefore, this equivalency in pretest writing proficiency ensured the comparison of the experimental and control groups' posttest writing proficiency.

Table 5: Group statistics of pretest in T-test

Group Statistics						
	Group	N	Mean	Std. Deviation	Std. Error Mean	
pretest	EG	30	72.53	3.277		.598
	CG	30	72.50	2.701		.493

When comparing the pretest scores between the experimental and control groups, the null hypothesis (no statistically significant difference) is accepted, as evidenced by the p-value of the independent samples T-test result .966 ($t=.043, p>.05$) in Table 6. It indicates that there is no statistically significant difference between the

experimental and control groups in the pretest. This finding indicates even further that at the start of the quasi-experiment, the experimental and control groups' writing proficiency was equal before the intervention's implementation. The experimental and control groups' posttest results can be compared due to this parallel writing proficiency (SirotoVÁ et al., 2021; Dong, 2023).

Table 6: Independent Samples T-test of pretest between EG and CG

Independent Samples Test											
		Levene's Test for Equality of Variances			t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper	
pretest	Equal variances assumed	1.400	.242	.043	58	.966	.033	.775	-1.519	1.585	
	Equal variances not assumed			.043	55.955	.966	.033	.775	-1.520	1.587	

Writing Proficiency of Posttest: EG vs. CG

RQ 2: Is there a significant difference in writing proficiency between the experimental and control groups in the posttest?

Assessing posttest writing competence was crucial in demonstrating the impact of the quasi-experiment's intervention, as it was assumed that students' writing proficiency was similar to that in the pretest (Putri et al., 2020; Turan & Tan, 2020). Susanti et al. (2020) suggest that in a quasi-experiment where the experimental and control groups performed equally in the pretest, the success of the intervention could be demonstrated if the experimental group outperformed the control group in the posttest.

To address Research Question 2, the researcher used an independent samples T-test to compare the experimental and control groups' posttest writing proficiency scores. The posttest group statistics in the T-test output are displayed in Table 7. The results indicate that the experimental group's mean posttest score is 81.37 (M=81.37, SD=4.909), whereas the control group's mean score is 75.07 (M=75.07, SD=3.629). As shown in Table 8, the experimental group's mean score is significantly higher than the control group's, with a mean difference of 6.300 (MD=6.300), suggesting that the experimental group's pupils outperformed the control group in the posttest.

Table 7: Group statistics of posttest in T-test

Group Statistics							
	Group	N	Mean	Std. Deviation	Std. Error Mean		
posttest	1	30	81.37	4.909			.896
	2	30	75.07	3.629			.663

As can be seen in Table 8, the alternative hypothesis is accepted, and the null hypothesis is rejected since the p-value is less than .05, specifically .000 (t=5.652, p<.05). According to the alternative hypothesis, the posttest results for the experimental and control groups differ statistically significantly. As a result, there was a statistically significant difference in writing proficiency between the two groups in the post. This shows that students in the experimental group wrote better than those in the control group due to the implementation of the intervention (peer instruction). This result is consistent with the study conducted by Zou and Xie (2019), whereby it was discovered that the experimental group outperformed the control group in the posttest writing capability.

Table 8: Independent Samples T-test of posttest between EG and CG

Independent Samples Test											
			Levene's Test for Equality of Variances		t-test for Equality of Means				95% Confidence Interval of the Difference		
			F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
posttest	Equal variances assumed		2.735	.104	5.652	58	.000	6.300	1.115	4.069	8.531
st	Equal variances not assumed				5.652	53.403	.000	6.300	1.115	4.065	8.535

Writing Proficiency of EG: Pretest vs. Posttest

RQ 3: Is there a significant difference in writing proficiency between the pretest and the posttest for the experimental group?

Research Question 3 explored whether the peer instruction approach helped students in the experimental group become more proficient writers. This was the central inquiry used to assess the effectiveness of the intervention. The comparison of the experimental group's pretest and posttest results provided the solution.

The researcher used a paired samples T-test to get the answer to Research Question 3. The dependent samples T-test, also known as the paired samples T-test, is used to determine if there is a statistically significant difference in means between two paired observations (Mishra et al., 2019). The same samples are measured twice in a paired samples T-test, by different approaches or at separate times. A paired samples T-test was used to examine the experimental group's writing proficiency between the pretest and posttest in this study.

According to Table 9, the pretest mean score is 72.53 (M=72.53, SD=3.277), whereas the corresponding mean posttest score is 81.37 (M=81.37, SD=4.909). Table 10 shows a significant rise in the mean posttest score compared to the mean pretest score, with a mean difference of 8.833 (MD=8.833). This significant difference shows that students in the experimental group considerably improved their writing proficiency due to the implementation of the intervention, as seen by the experimental group's much higher posttest scores than the pretest results. Consequently, the peer instruction approach greatly impacted the experimental group's writing proficiency.

Table 9: Paired samples statistics of T-test for the experimental group

Paired Samples Statistics						
		Mean	N	Std. Deviation	Std. Error Mean	
EG	posttest	81.37	30	4.909		.896
	pretest	72.53	30	3.277		.598

According to Table 10, the paired samples T-test yielded a p-value of .000 (t=9.590, p<.05), which is less than .05. This indicates that the alternative hypothesis is accepted and the null hypothesis is rejected. According to the alternative hypothesis, there was a statistically significant difference in the experimental group's writing proficiency between the pretest and posttest. This considerable difference proved that the experimental group significantly increased their writing proficiency. Consequently, the application of peer instruction in EFL writing teaching significantly impacted students' writing proficiency.

Table 10: Paired samples T-test of the experimental group

Paired Samples Test									
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
EG	posttest-pretest	8.833	5.045	.921	6.949	10.717	9.590	29	.000

In summary, the experimental group demonstrated a significantly increased writing proficiency, as seen by their significantly superior performance in the posttest compared to the pretest. The enhancement of the experimental group's writing proficiency was explained by Vygotsky's (1978) ZPD principle. Students' writing proficiency improved due to the support and cooperation in peer instruction activities, allowing them to go from their current development stage to their potential development level (Vygotsky, 1978; Silalahi, 2019). The results are consistent with studies by Rahimi and Fathi (2022) and Teng and Zhang (2020), which assert that the experimental group improved their writing proficiency and also echo the studies by Akhtar et al. (2019) and Khodadadi et al. (2022), which show that the experimental group wrote better in the posttest than in the pretest when the intervention of peer instruction was implemented.

CONCLUSION

Summary of Findings

This study aimed to determine how peer instruction affected the writing proficiency of EFL students. The quantitative research method was used to acquire data for this quasi-experiment. The primary quantitative data sources were the pretest and posttest. Overall, the results of this study provided strong evidence for the beneficial effects of peer instruction on students' writing proficiency. The experimental group's primary source of intervention was the peer instruction approach, whereas the control group employed the conventional teacher-centred approach. The pretest and posttest results were used to gauge each group's writing proficiency. A thorough examination of the two groups' pretest and posttest results revealed that the intervention was successful overall and that peer instruction significantly improved the students' writing proficiency. Drawing on Vygotsky's Zone of Proximal Development (ZPD) concept (1978), peer instruction positively impacted learners' ZPD and helped them bridge the gap between their actual and prospective development levels (Xi & Lantolf, 2021). As a result, students' intellectual development was accelerated, improving their writing abilities.

Implication and Recommendation

This study has various implications for teaching practice. Based on the knowledge gained from this study, educators and teachers ought to actively investigate a variety of successful teaching pedagogies in the classroom. Teachers should know how students develop their subjectivity in the classroom and offer tailored advice and assistance to suit each student's unique requirements. To maximize students' motivation and interest in studying, they need to be aware of how they communicate and collaborate.

The results demonstrate individual differences in students' academic performance and aptitude. Consequently, teachers must also know each student's unique growth, appreciate their uniqueness and qualities, and offer tailored advice and assistance. This fosters each student's growth by igniting his or her potential and creativity. The results of this study underlined the necessity for policymakers in the field of education to reevaluate the current framework and set of regulations. They must support educational reform and emphasize developing students' capacity for real-world application and their full qualifications. This covers various topics, including updating educational systems, assessment approaches, and curriculum design. In addition, the government, colleges, families, and society must work together and promote educational reform.

The generalizability of the peer instruction approach should be the main focus of future research. This study only looked into one Chinese polytechnic university. Future research should concentrate on more varied cohorts of EFL students from various Chinese colleges. It has been demonstrated that peer instruction helps students

become more proficient writers. Thus, more research may examine how to apply this strategy broadly at other university kinds, in a particular region of China, or perhaps throughout the nation. This integrated teaching strategy will help an increasing number of teachers and students.

LIMITATIONS

This study offers some fresh viewpoints and insights on EFL writing teaching. However, the quasi-experimental nature of this study limits its ability to generalize its findings to a larger population. The sample size, randomization, time restriction, and sampling type were among the typical restrictions of the quasi-experiments in this study. Because this study utilized an intact group design, a characteristic of a quasi-experimental study, its conclusions cannot be generalized. Thus, it was not possible to choose research participants at random. The two intact classes in this study were allocated to the researcher by the university. In addition, the sample size was small. Each of the two intact classes comprised 30 students, which more or less influenced the effectiveness of the quasi-experiment.

Another drawback is the length of the research, which prevented the researcher from conducting the study over a longer, more appropriate time frame to properly track the intervention's long-term effects on students' writing proficiency. It took some time for the students to adjust to the new teaching strategy. Additionally, the teacher needed to provide some foundational writing expertise in each lesson. These shortened the amount of time needed to carry out the intervention itself.

All in all, this study examined how peer instruction affected university EFL students' writing proficiency. It used a quasi-experimental research methodology to achieve its three research aims. This study used the quantitative research method to collect and analyze data. The main findings of this study showed that students' writing proficiency was significantly impacted by peer instruction. The results of this study suggest that, because of its significant and beneficial effects on students' writing competency, peer instruction can be a potentially workable teaching strategy for university EFL writing courses. To further support EFL writing teaching at Chinese universities, additional optimization is required to promote and implement the peer instruction approach in the future.

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