



Investigating Iranian PhD TEFL Candidates' Perceptions of an Online Collaborative Academic Writing Course: The Case of Writing Research Article Abstracts

Roya Jafari , Seyed Reza Dashtestani*

Department of English Language and Literature, Faculty of Foreign Languages and Literatures, University of Tehran, Tehran, Iran

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Abstract: Online collaborative writing (OCW) is an essential pedagogical method in higher education, promoting learner interaction and shared responsibilities in academic writing tasks. While previous research has explored learners' perceptions of OCW across various academic writing genres, there is a lack of investigation into how OCW impacts higher education students' perceptions of their research article abstract writing performance. Utilizing an OCW perception questionnaire and semi-structured interviews, this study aimed to gauge the perceptions of 20 Iranian PhD TEFL candidates regarding an online collaborative academic writing course focused on writing research article abstracts. Quantitative and descriptive analysis of the questionnaire data and qualitative thematic analysis of the interview questions revealed that participants held positive views of technology-mediated writing instruction. However, they noted challenges faced, such as connectivity issues, software glitches, or time management. Besides, they offered recommendations, including exerting more rigid rules and defining more online assignments for the betterment of such online courses. The findings underscore the necessity of integrating technology-based writing instruction into teacher training programs to equip educators with essential skills for effective implementation. Besides, given the participants' favorable looks towards interactive platforms like Google Docs, conducting joint research article writing programs can enhance the collaborative writing experience, ultimately leading to better academic outcomes for doctoral candidates.

Keywords: Abstract Writing, Online Collaborative Writing, Perceptions of Online Collaborative Writing, PhD TEFL Candidates.

* Corresponding Author.

Authors' Email Address:

¹ Roya Jafari (Roya.jafari@ut.ac.ir), ² Seyed Reza Dashtestani (rdashtestani@ut.ac.ir)



Introduction

Writing is essential for achieving success in education, the workplace, and daily life, particularly for learners of foreign languages, as it demonstrates their overall linguistic proficiency (Graham, 2019; Teng et al., 2022). In academic environments, proficient writing skills enable clear communication of scientific concepts, leading to valuable insights and scholarly publications (Ismail et al., 2018). Collaborative writing (CW) is a key pedagogical approach for second language (L2) writing, focusing on learner interaction and shared responsibilities (Storch, 2019). Participation in collaborative learning activities within higher education enhances language usage and understanding, with each member contributing to joint writing efforts (Al Hilali & McKinley, 2021). With technological advancements, CW has evolved into online collaborative writing (OCW), which is increasingly common in higher education (Anggraini et al., 2020). OCW enables students to collaborate on writing tasks via online platforms, providing flexibility and overcoming the challenges posed by traditional classroom timings (Fan & Xu, 2020; Li, 2018). Academic writing, a crucial form of writing that benefits from OCW, is linked to academic achievement and includes skills such as gathering information, paraphrasing, and editing (Fukao & Fujii, 2001). The need for strong academic writing has grown among PhD candidates due to the focus on publishing research in esteemed journals (Atai et al., 2018; Kwon, 2014). Additionally, writing abstracts for research papers is critical for these students, serving as a summary that persuades editors of the research's importance (Obeng-Ofori, 2020).

Investigating learners' perceptions of OCW has been the focus of research in numerous academic settings since it is essential for instructors to understand learners' preferences, which encompass the various types of learners and their preferred learning strategies (Storch, 2013). Perception involves the process of creating an understanding that prompts an individual's response, which is influenced by various internal and external factors. In simpler terms, students' perceptions reflect their preferences regarding the information they receive from an intervention. Grasping students' viewpoints and their willingness to embrace technology is vital when incorporating new technologies into their educational experiences. According to Al-Emran et al. (2018), the Technology Acceptance Model (TAM) indicates that users' views on how technology can improve their performance impact their attitudes towards it, fostering a positive outlook that promotes technology adoption.

In Iran, PhD students specializing in Teaching English as a Foreign Language (TEFL) face challenges when writing abstracts, including issues related to structure, length, and linguistic style, which hinder their academic development (Atai et al., 2018). This

underscores the need for systematic and structured approaches to teaching abstract writing. Besides, although learners' perceptions of OCW have been investigated for various genres of academic writing such as argumentative, narrative, etc., gauging higher education students' perceptions of OCW concerning improving their research article abstract writing performance has been under-researched. To address these issues, the current study incorporated an online collaborative academic writing course aimed at improving the Iranian PhD TEFL candidates' abstract writing while investigating their perceptions of this course through a questionnaire and semi-structured interviews.

Review of the Literature

Academic Writing and Research Articles

Writing a research article is an essential aspect of academic writing and is vital for successful publication. It allows scholars to disseminate original ideas and findings based on a thorough understanding of their field (Klein, 2008). High-quality articles that make significant contributions to knowledge are required for acceptance in esteemed journals and reflect the academic writing skills and depth of knowledge of postgraduate students (Anderson et al., 2006). Producing quality academic papers involves selecting appropriate resources, constructing logical arguments, and using precise language, all of which enhance students' understanding and analytical abilities. However, for non-native speakers, writing can pose challenges, as second-language learners often struggle with confidence and anxiety due to limited English proficiency and past negative experiences (Zotzmann & Sheldrake, 2021). Research writing requires the ability to synthesize information from various sources and adhere to academic standards. This skill is particularly crucial for PhD candidates, as it not only aids in their dissertations and research papers but also fosters critical thinking and shapes their identity as researchers (Paré, 2017). Ultimately, it encourages collaboration within the academic community (Glaister et al., 2023).

One important section of a research article is the abstract. Abstracts are vital components of research articles and significantly influence the overall value of the manuscript. Male (2018) highlights that abstracts represent a distinct genre of academic writing characterized by specific rhetorical structures. For both students and academics, writing abstracts can be more difficult than composing the entire research article, as it requires a clear understanding of organization and systematic structure (Sukan & Mohammadzadeh, 2022). Therefore, focusing on teaching this genre is recommended.

Effective abstract writing depends on several factors, with organization being especially crucial (Othman, 2011).

Abstracts are important for scholars across various disciplines, serving multiple purposes. Kosasih (2018) identifies four primary reasons for their importance: they provide easily accessible information, assist readers in deciding whether to read the full document, offer a structured outline, and summarize key concepts. To write effective abstracts, authors should employ different rhetorical strategies or move structures. Bhatia (1993) suggests a four-move structure that involves stating the purpose, outlining the method, summarizing the results, and presenting the conclusion. Hyland (2004) proposes a five-move structure that includes an introduction, purpose, method, product, and conclusion. Similarly, Swales and Feak (2004) recommend a five-move structure featuring background, aim, method, results, and conclusion.

Online Collaborative Writing

Online collaborative writing (OCW) is becoming increasingly common in higher education as a type of computer-supported collaborative learning (Anggraini et al., 2020; Pham, 2021). In OCW programs, students work together on writing assignments utilizing online platforms guided by instructors (Fan & Xu, 2020). Research indicates that OCW enhances students' writing skills (Teow, 2014), fosters active engagement in academic writing (Liao et al., 2018), and increases their confidence (Yong, 2006). Typically, students collaborate by dividing tasks and integrating their individual contributions into a final document (Storch, 2018). Although online learning has been criticized for its lower levels of social interaction due to its asynchronous nature (Akcaoglu & Lee, 2018; Lai et al., 2016), various strategies, such as synchronous interactions and collaborative assignments, have been proposed to boost engagement (Liu & Lan, 2016).

Numerous studies emphasize the effectiveness of activities like online peer editing and virtual exchanges in improving communication within online settings (Bugden et al., 2018; Ebadi & Rahimi, 2017; O'Dowd et al., 2020; Pham & Usaha, 2016; Tan et al., 2022). Web 2.0 tools, including Google Docs, wikis, and blogs, facilitate collaboration and are accessible to learners with limited technical expertise (O'Dowd et al., 2020; Rahimi & Fathi, 2022). While Google Docs is widely adopted for collaborative writing, research indicates that there is potential for enhancing interactivity and student satisfaction (Dinh & Nguyen, 2020). OCW instruction provides benefits such as real-time collaboration and access to diverse writing

resources, which contribute to the improvement of students' writing skills (Abrams, 2019; Hsu, 2020; Lai et al., 2016).

The adoption of Computer-Mediated/Online Collaborative Writing (CMCW) in second language (L2) classrooms is increasingly recognized for its benefits, particularly with the rise of Web 2.0 technologies (Cho, 2017; Li, 2018). Research indicates that computer-mediated communication (CMC) enhances both collaborative writing tasks and processes, resulting in improved writing quality and increased motivation among learners (Ebadi & Rahimi, 2017; Wang, 2015). For example, Li and Zhu (2013) found that wikis provide flexibility in collaborative writing, while Wang (2015) noted improvements in content and grammatical accuracy linked to wiki use. Aydin and Yildiz (2014) showed that wiki-based tasks enhanced grammatical skills and boosted students' enjoyment in English as a Foreign Language (EFL) classrooms.

Lai et al. (2016) highlighted that equitable collaboration patterns were associated with positive attitudes and perceived learning outcomes among university EFL students. Bikowski and Vithanage (2016) reported significant improvements in writing scores for L2 writers engaged in web-based collaborative activities. Mudawe (2018) discovered that Google Docs improved communication and editing skills for Saudi EFL and ESL students. Additionally, Selcuk et al. (2021) found that group leaders in collaborative tasks promoted planning and offered motivational support. Finally, Teng (2021) identified that using interactive whiteboard technology enhanced writing performance compared to traditional teaching methods.

Learners' Perceptions of Collaborative Writing

The rapid advancement of technology has brought about significant changes in both societal and educational frameworks. It not only empowers students to take charge of their learning experiences but also grants them easy access to a vast array of information (Lam & Lawrence, 2002). It is essential to understand students' perspectives and their acceptance of technology when incorporating new tools into their educational experiences. According to Al-Emran et al. (2018), the Technology Acceptance Model (TAM) posits that users' perceptions of how technology can improve their performance influence their attitudes toward it, fostering a positive outlook that supports technology adoption. Perception is defined as the way learners view and describe themselves (Williams & Burden, 2002). In the context of education, it refers to how students interpret specific learning methods or models. The primary approaches to evaluating students' perceptions involve administering questionnaires and conducting interviews. Understanding the preferences of L2 learners,

which include their types and learning strategies, is crucial for instructors. [Storch \(2013, p. 93\)](#) noted that “learners bring to the classroom a complex cluster of attitudes, expectations, and preferences, all of which form significant contributory factors in the language learning process”. Other researchers have also highlighted the significance of learners’ attitudes in the success of L2 acquisition ([Shehadeh, 2011](#); [Storch, 2005](#)). Their findings indicate that learners’ participation in specific activities can be influenced by their belief in the activity’s potential to enhance their language learning.

Numerous studies have explored students’ perceptions of collaborative writing models, revealing generally positive attitudes. Research by [Anggraini et al. \(2020\)](#) found that EFL students appreciated aspects such as topic comprehension, feedback, and vocabulary improvement through collaborative writing. Similarly, [Khodabakhshzadeh and Samadi \(2018\)](#) noted that students felt motivated and benefited from peer feedback after implementing collaborative writing tasks. Other studies, including those by [Alkhalaf \(2020\)](#) and [Dobao and Blum \(2013\)](#), reported positive outcomes for L2 students working in pairs or small groups, highlighting increased participation and knowledge sharing. Long-term studies, such as [Shehadeh \(2011\)](#), indicated that most students enjoy collaborative writing, while [Khodabakhshzadeh and Samadi \(2017\)](#) found it enhances motivation and writing skills. [Alkhalaf \(2020\)](#) noted that while Saudi EFL learners had positive attitudes, they faced challenges like unequal contributions from peers. [Dobao and Blum \(2013\)](#) found that Spanish students valued collaborative writing for its benefits, including active participation and language improvement. A recent study by [Dobao \(2020\)](#) showed that both heritage language and L2 learners in the U.S. had a favorable view of collaborative writing activities, believing they contributed to language development.

This study sought to answer the following two research questions:

- 1) Does the online collaborative academic writing course affect Iranian PhD TEFL candidates’ perceptions of online collaborative writing?
- 2) What are Iranian PhD TEFL candidates’ perceptions of the online collaborative academic writing course?

Method

Design

This study aimed to assess the Iranian PhD TEFL candidates’ perceptions of OCW concerning writing research article abstracts. Therefore, it utilized a mixed-methods research design to investigate the individuals’ perceptions. This approach was chosen because people’s

perceptions can be complex and changeable. By employing a mixed-methods design, the researchers aimed to enhance the validity of the findings and better capture the diversity of the participants' perceptions (Schoonenboom & Johnson, 2017). To meet the quantitative goal and collect descriptive data, the researcher employed a collaborative writing perception questionnaire adapted from Ismail et al. (2020), while the qualitative data were collected through implementing semi-structured interviews.

Participants

The research was conducted on an online teaching platform (Adobe Connect) in conjunction with an online collaborative tool (Google Docs). The participants included PhD TEFL students from state universities (46.2%) and Azad universities (53.8%) in Iran. Using convenience and snowball sampling methods, 25 individuals aged 25 to 50 were initially recruited online via instant messaging apps, LinkedIn, and emailing; however, this number dropped to 20 by the final session of the course due to participant attrition. All participants had previously completed courses in research methods and advanced writing and were either actively pursuing their university studies or working on their PhD proposals.

Instruments

The Online Collaborative Writing Perception Questionnaire

The online collaborative writing perception questionnaire created by Ismail et al. (2020) was utilized to assess the participant's perceptions of the course. The questionnaire employed a 5-point Likert scale ranging from completely disagree to completely agree and consisted of 19 items measuring four aspects of perception: perceptions of abstract writing concepts (5 items), forms of cooperation (5 items), writing skills (2 items), and classroom atmosphere (7 items). The overall reliability indices of the questionnaire, measured by the Cronbach Alpha Coefficient, were .677 for the pre-test and .874 for the post-test, both of which are acceptable and exceed the critical value of 0.6 (Tabachnick & Fidell, 2013).

The Semi-Structured Online Collaborative Writing Perception Interview

Based on the perception questionnaire (Ismail et al., 2020) and the findings from previous studies (e.g., Hu & Lam, 2010; Li, 2023), an interview protocol consisting of eight semi-structured questions (Appendix A) was conducted to provide participants with the opportunity to express their views on the implementation of the online collaborative academic writing course. Two PhD professors in applied linguistics, each with over ten years

of experience teaching academic writing courses and numerous research article publications, reviewed and offered suggestions on the appropriateness and relevance of the interview questions. While participants could share their perceptions through the questionnaire, interviews were conducted to obtain direct explanations and further insights into emerging themes (Dörnyei, 2007). This approach to data triangulation strengthened the findings related to this variable in the study.

The Online Collaborative Academic Writing Course

The researcher conducted a 5-week course consisting of 10 sessions aimed at enhancing participants' abstract writing skills. The course was held twice a week online and each session took 90 minutes. The course provided 15 hours of synchronous instruction through Adobe Connect, complemented by an additional 15 hours of asynchronous practice using Google Docs for the participants. Before commencing the course, the participants filled out the online collaborative academic writing perception questionnaire.

This online program was organized based on Hyland's (2003) genre-based approach, which features phases of modeling, joint construction, and independent construction. Figure 1 represents the details of each phase:

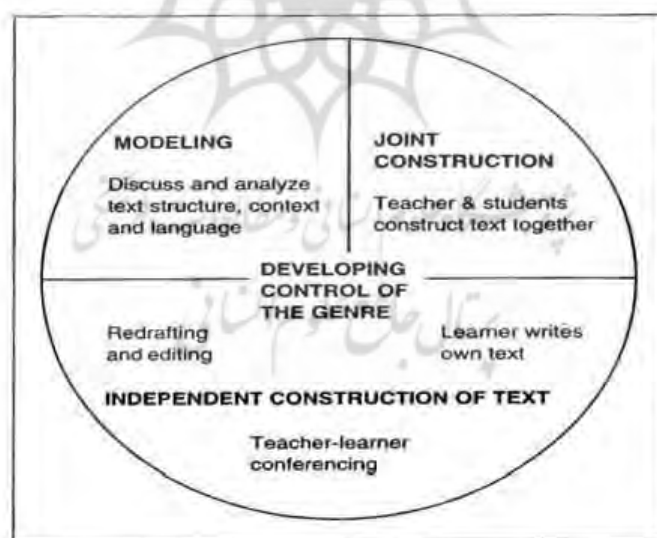


Figure 1. Hyland's Model of Genre Teaching and Learning Cycle

The Modeling Phase

During the first session, participants investigated the structure of a research article by applying Swales' (1990) hourglass metaphor and Glasman-Deal's (2010) IMRD model to

pinpoint essential information in the introduction, methods, results, and discussion sections. They analyzed a high-quality research article, deconstructing its components and discussing their communicative functions and preferred styles in breakout rooms. The second session focused on the content of the abstract, where participants learned about its format and importance. They also gained insight into identifying various rhetorical moves within an abstract (Sidek, 2017), which are represented in Figure 2:

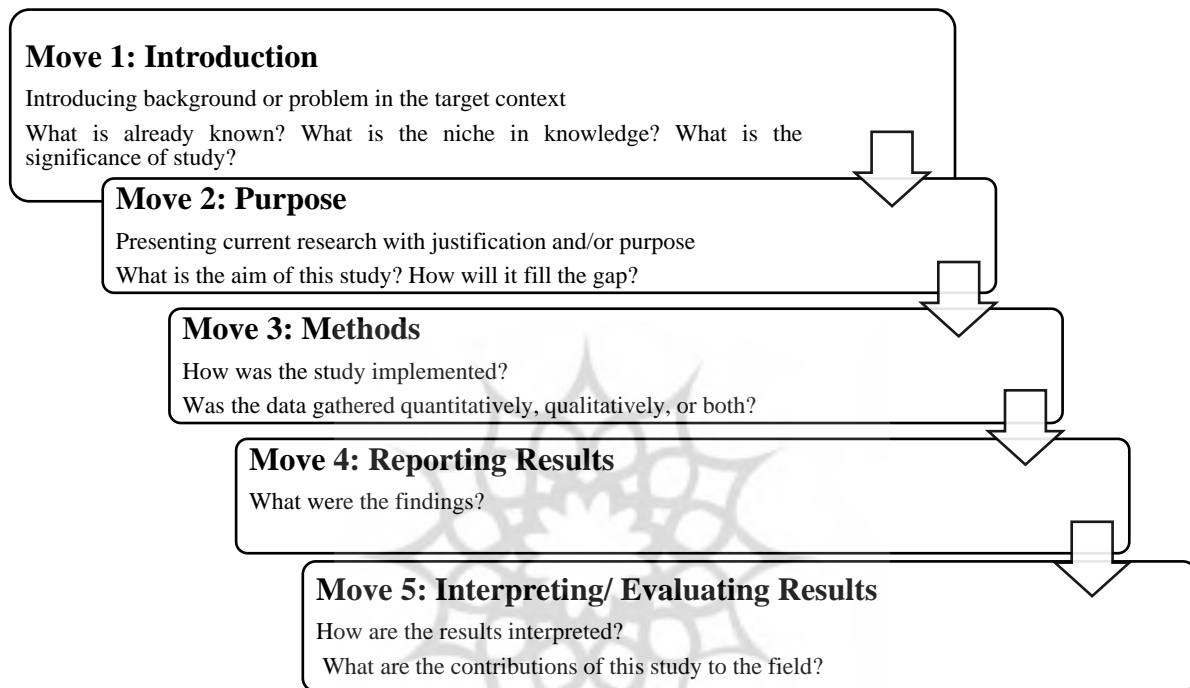


Figure 2. Rhetorical Moves in Abstract

In the session focused on Hyland's modeling phase, participants engaged in breakout room discussions about research article abstracts, exploring topics such as their characteristics, components, writing challenges, and experiences with unclear abstracts. The instructor then presented a range of abstracts from both high-quality and low-quality journals for analysis. Participants participated in collaborative activities, including deconstructing abstracts, using checklists, filling out tables, and rearranging jumbled abstracts, which facilitated interaction among students, the class, and the teacher. The third session concentrated on the language used in abstracts, where participants discussed academic vocabulary, phrases, and collocational patterns associated with each rhetorical move. They analyzed a table of rhetorical moves with suggested phrases and engaged in tasks like matching informal words to their academic equivalents and completing cloze abstracts, all aimed at promoting consensus in breakout rooms. Additionally, they identified collocations in

abstracts and collaborated to complete sentences using suitable collocations. The fourth session shifted focus to grammar and transition words, with the instructor highlighting the appropriate verb tenses for each rhetorical move. Participants worked on prompts related to tense and selected options that aligned with the communicative purpose of the moves. The latter part of the session emphasized the significance of transition words in connecting sentences, with participants practicing by labeling sentences as True/False and selecting transitions in complete abstracts, thereby encouraging critical thinking through group discussions. The fifth session was devoted to reviewing all the material from previous sessions. Participants analyzed abstracts for both content and language, answered questions, and exchanged insights during group discussions. In summary, Figure 3 represents the activities done in the modeling phase:

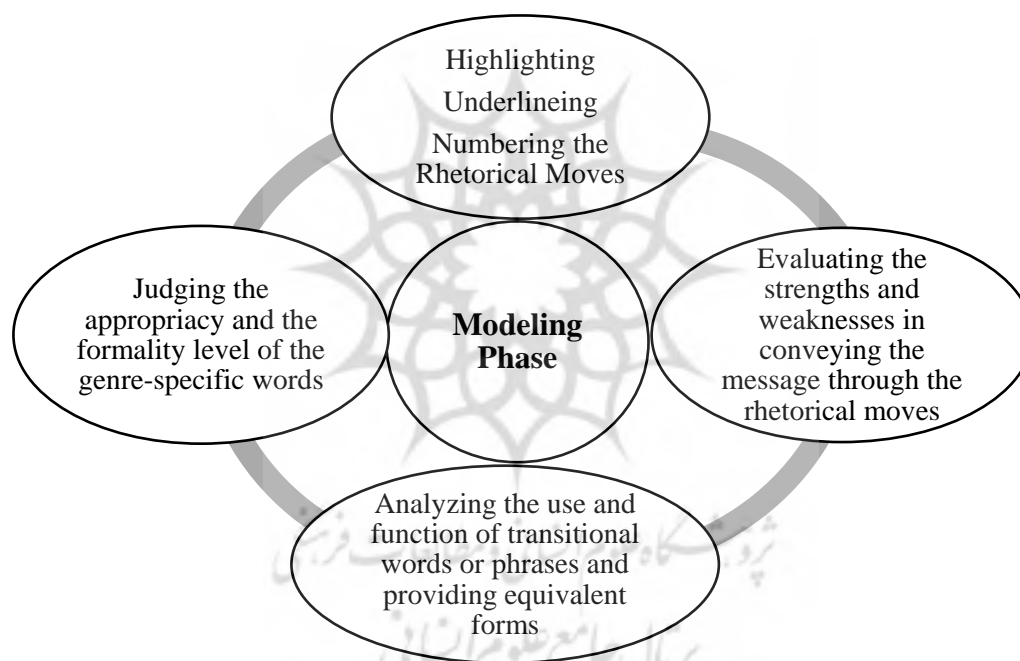


Figure 3. The Modeling Phase of Teaching

The Joint Construction Phase

In the sixth session, participants were introduced to Google Docs for collaborative drafting and guided through the writing process, which encompasses pre-writing, writing, and post-writing stages. They focused on pre-writing strategies such as Mind Mapping, Outlining, and Cornell Note-Taking. After receiving instruction, participants worked in groups to extract relevant content from a research article under supervision, compiling their contributions into a single document to be emailed to the researcher. During the seventh session, the focus shifted to the drafting stage, emphasizing the synthesis of information and grammar,

including various types of sentences (simple, compound, and complex). Participants practiced combining sentences using techniques like participles and infinitives, then transformed their outlines into coherent paragraphs, all under supervision, culminating in the submission of a one-paragraph abstract. The eighth session concentrated on the post-writing stage, with an emphasis on reviewing, revising, and editing. Participants were assigned a random abstract to evaluate and enhance, providing feedback on organization, logical flow, and common drafting mistakes. The instructor offered personalized feedback, and some abstracts were reviewed in the main room, allowing for questions and clarifications. Figure 4 represents the stages taken in this phase:

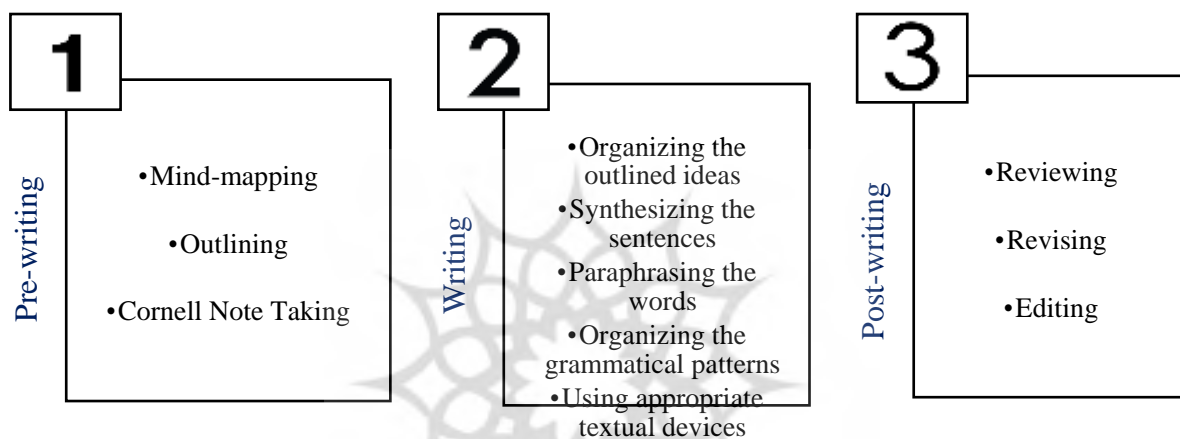


Figure 4. The Joint Construction Phase

The Independent Construction Phase

In the ninth session, in line with Hyland's independent construction phase, participants read a research article that lacked an abstract and created an outline within 20 minutes. They then spent 40 minutes writing a complete abstract based on their outline, which they subsequently emailed to the researcher. The tenth session allowed participants to review each other's abstracts, discussing elements such as content, structure, and language in breakout rooms. The researcher provided guiding questions to assist in the evaluation process, focusing on aspects like rhetorical moves, tense usage, informal language, appropriateness of collocations, and punctuation. After the peer feedback, the instructor reviewed several abstracts, enabling participants to ask questions and receive further guidance to improve their work. Throughout the course, asynchronous writing tasks were assigned to the experimental group, promoting collaboration via Google Docs. Participants worked in small groups to comment on, edit, and provide feedback on each other's writing assignments, focusing on key components of abstracts across the three instructional phases: modeling, joint

construction, and independent construction. They analyzed abstracts, drafted their own, and revised their work based on feedback from peers and the instructor. After the last session, the participants filled out the online collaborative academic writing perception questionnaire, and a sub-sample of the participants ($N = 10$) was interviewed about the course.

Data Analysis

Data analysis in the current study entails both quantitative and qualitative analyses. After collecting the quantitative data, the whole data was entered into SPSS software and a file including all details of the participants and collaborative writing perception questionnaires was recorded. As for the quantitative section (the first research question), a paired t-test was conducted on the total score of the perception questionnaire, along with a series of Wilcoxon signed ranks tests on each questionnaire item to monitor changes in the participants' perceptions of online collaborative writing prior to and after running the course.

For the qualitative section (the second research question), the interview data were analyzed thematically using the methodology outlined by Dörnyei (2007). Initially, the data were transcribed. In the pre-coding phase, the transcripts were thoroughly reviewed multiple times. Subsequently, the data were coded and recoded several times to derive 'higher-order pattern codes' from 'descriptive and low-inference' codes. Furthermore, based on Nowell's (2017) recommendation, the coding and extraction of sub-themes and major themes were crosschecked by two applied linguistics experts familiar with qualitative research and analysis of interview data.

Results

Answering the First Research Question

RQ1: Does the online abstract writing course affect PhD TEFL candidates' perceptions of collaborative writing?

To answer the first research question, two approaches were taken. First, the total scores in the pre-course and post-course phases were compared. Then, an item-specific comparison between pre-course and post-course was run.

Comparing the Total Scores

The total scores of the perceptions were compared by running a paired samples t-test. Before running the test, the normality of residual scores had to be checked. Table 1 shows the descriptive statistics of the residual scores.

Table 1. Descriptive Statistics of the Residual Scores for Participants' Perceptions

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
						Statistic	Std. Error
Residual	20	2.00	14.00	7.8500	3.31305	.137	.512
Valid N (listwise)	20						

As reported in Table 1, the total scores had improved from 2 to 14 scores from the pre-course to the post-course. The mean and standard deviation of improvement were 7.85 and 3.31. the inspection of the skewness ratio (Statistics / Std. Error) showed that the distribution of residual scores was normal as the ratio value of .267 fell within the range of ± 1.96 .

As the assumption of normality was in place, running paired samples t-test was legitimized (Table 2).

Table 2. Paired Samples T-Test on the Participants' Perceptions in Pre-study and Post-study

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Posttest – Pretest	7.850	3.313	.741	6.299	9.401	10.596	19	.000

The results ($t(19) = 10.596$, $p = .000 < .05$) in Table 2 indicate that the improvement in the perception of the participants was significant.

The effect size for the test was calculated using the following formula: Cohen's $d = \frac{\text{Mean of Difference}}{\text{SD of Difference}}$ which resulted in a large effect size value of 2.37. Figure 5 depicts the scores obtained in the pretest and posttest stages.

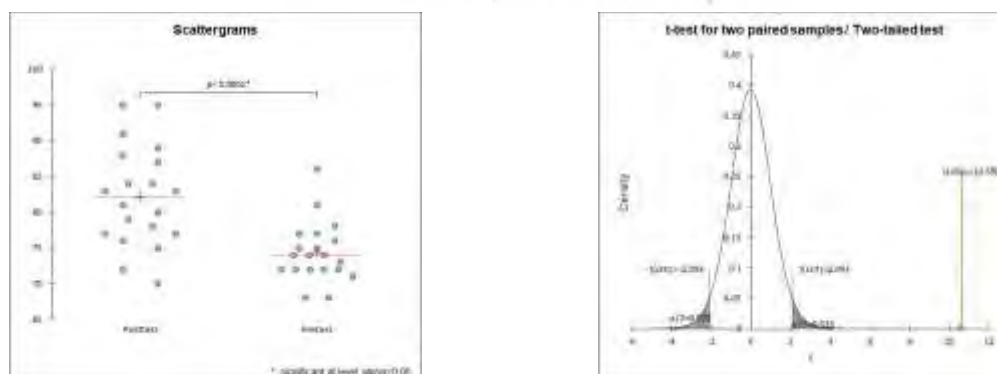


Figure 5. Scattergram and Significance Testing of the Scores of the Participants' Perceptions from the Pre-study to the Post-study

Item-Wise Comparisons

To delve into the changes in the participants' perceptions, each item's change before and after running the course was explored using a series of Wilcoxon Ranked Sign tests. The results are presented in Table 3.

Table 3. Item-Wise Comparisons of the Participants Perceptions of Collaborative Writing

Categories	Items	Z ^a	Asymp. Sig. (2-tailed)
Perception of Collaborative Writing Concept	1) The collaborative writing learning model directs me to understand the concept of academic writing.	2.324 ^b	.020
	2) The collaborative writing learning model directs me to understand the stages of academic writing.	2.195 ^b	.028
	3) The collaborative writing learning model emphasizes the balance of understanding the concept of writing and writing skills	.439 ^b	.660
	4) The collaborative writing learning model directs me to construct my understanding of the material being studied	2.121 ^b	.034
	5) The collaborative writing learning model activates my critical thinking in understanding material through learning experiences.	2.097 ^b	.036
Perception of Cooperation	6) The collaborative writing learning model encourages cooperation between students and between students and lecturers.	2.309 ^b	.021
	7) The collaborative writing learning model provides opportunities for students to share knowledge and learn about academic writing skills collaboratively.	1.732 ^b	.083
	8) The collaborative writing learning model prioritizes group collaboration in the learning process	2.236 ^b	.025
	9) The division of group learning tasks prioritizes the balance of roles between students	1.667 ^b	.096
Perception of Writing Skills	10) The learning model of collaborative writing puts forward article corrections jointly between students	1.732 ^b	.083
	11) The collaborative writing learning model prioritizes efficient writing practice.	.905 ^b	.366

Categories	Items	Z ^a	Asymp.
			Sig. (2-tailed)
Perception of Classroom atmosphere	12) The collaborative writing learning model provides students with direct experience of academic writing skills	3.259 ^b	.001
	13) The collaborative writing learning model encourages students to interact with the lecturer through discussion and question-and-answer	2.840 ^b	.005
	14) The collaborative writing learning model directs students to actively discuss learning material	2.814 ^b	.005
	15) The collaborative writing learning model creates a positive dependency among students.	2.486 ^b	.013
	16) The collaborative writing learning model optimizes the student-centered learning process.	2.496 ^b	.013
	17) The collaborative writing learning model prioritizes an interactive classroom atmosphere characterized by a group learning system and provides mutual input/criticism to each student	1.155 ^b	.248
	18) The collaborative writing learning model can build students' attitudes to dare to express their opinions in the learning process.	2.310 ^b	.021
	19) The collaborative writing learning model creates a dynamic learning atmosphere and an enjoyable learning experience.	3.051 ^b	.002

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

As reported in Table 3, the changes in the majority of items (except for the highlighted ones in the table) were significant and positive.

Answering the Second Research Question

RQ2: What are the Iranian PhD TEFL Candidates' Perceptions of the Online Collaborative Academic Writing Course?

Feelings about the Course

Regarding feelings, nearly all participants (N = 9) expressed that attending the course was worthwhile, as it provided various educational and professional benefits. The analysis of their responses revealed a range of positive feelings categorized into two main themes: a 'sense of fulfillment' and a 'sense of satisfaction.' They felt fulfilled by multiple interaction opportunities, tangible content, and regular practice tasks. Similarly, they expressed satisfaction with feeling motivated, experiencing a lively class atmosphere, and enjoying raised levels of confidence in writing abstracts. Here are some sample excerpts from the interview:

Participant 4: 'The interactive nature of the course has provided me with valuable insights and techniques that I can apply to my future academic writing endeavors.'

Participant 7: 'The fact that I could collaborate with other members filled me with motivation and encouraged me to think that students can collaborate and write a high-quality abstract.'

Participant 10: 'The atmosphere of the class was so stress-free, dynamic, and friendly; therefore, I could easily communicate with other members of the class and recognize my mistakes in writing an academic research paper'

Benefits of the Course

With regard to the benefits of the course, most participants (N = 8) believed that the course significantly improved their understanding of abstract writing concepts and provided practical techniques for independently developing abstracts for various research papers. The analysis of their answers revealed three positive features of the course: learner-centeredness, novelty, and systematicity. They believed that engaging in collaborative writing tasks, group work at different stages of the lesson, and active learning paved the way for their highlighted role in the class. They also stated that the scheme, content, and design of the course were novel and attention-grabbing. In terms of systematicity, they found access to the materials and discipline useful. Here are some sample excerpts from the interview:

Participant 1: 'I couldn't focus at times, but my group members helped me grasp the information better.' *Participant 6: 'It is reassuring to feel that you are not alone on this route and your group members' perspectives or even sometimes their criticisms can reshape your understanding of the content'.* *Participant 2: 'The design of teaching sections and the tasks was satisfactory in terms of examining the details of an abstract.'* *Participant 3: 'The*

classes were held on time, and the details were carefully checked by both the instructor and coordinator of the course before and throughout each session.'

Interaction with Group Members

In terms of interaction with peers, nearly all participants ($N = 9$) expressed favorable opinions, stating that collaborating with their peers enhanced their creativity and fostered a sense of shared excitement throughout the process. Analyzing their responses uncovered major themes such as scaffolding, critical thinking, and deep learning. Scaffolding was elaborated on through consolidation of knowledge, compensation for knowledge, and enhancing the quality of writing. for instance, *participant 10 stated, 'Learning from others, especially with competent peers, was a positive experience.'* Participant 2 mentioned, *'Collaboration helped me to fill the gap in my knowledge and notice the points that had been overlooked individually.'* In terms of critical thinking, the participants embraced thought-provoking questions, an outsider's perspective, and constructive criticism. For example, *participant 6 mentioned, 'It appealed to me when my group members asked some questions that I had never thought about; it gave me a new perspective to address the issue.'* Participant 7 stated, *'Working together offers an outsider perspective which eventually helps your writing Improve; that's what we have been doing.'* Deep learning was available for them through staying focused on the writing tasks and exerting concerted effort to accomplish them. Here are sample excerpts on these sub-themes:

Participant 9: 'My attention span was also longer, and generally, I felt I had a better sense of achievement while doing the tasks with my group mates.'

Participant 5: 'Division of responsibilities motivated me to exert more effort into accomplishing different tasks and presenting them to the whole class.'

Peer Feedback

Concerning peer feedback, nearly all participants ($N = 7$) acknowledged the supportive role of peer feedback exchanged during the sessions. However, some felt that peer feedback would hold greater significance if it were accompanied by feedback from the instructor. Analyzing the responses yielded three subthemes: quality, function, and articulation of peer feedback. The participants found peer feedback rich in quality and informative enough. For instance, *participant 1 said, 'Sometimes the feedback provided by my group members was more detailed and more comprehensive; I mean, if I were to do that specific task individually, I might have ignored some points which were worth my attention.'* In addition, they thought

peer feedback offered educational purposes. For instance, *participant 3 stated, 'When you write something, others' feedback can highlight the quality of your work in terms of its strengths and weaknesses.'* Finally, they claimed articulation of feedback solidified what they had learned. *Participant 4 stated, 'When I verbalized my comments in the form of feedback, it also helped me to better grasp the content we were discussing.'*

OCW and Different Stages of Writing an Abstract

The interviewees largely (N = 9) agreed that collaborative writing significantly aids in crafting a well-structured abstract and deepens the writers' comprehension of the abstract writing process. Through shared insights, collective decision-making, and iterative revisions, writers gain a more refined understanding of how to effectively summarize their research. The analysis of their responses revealed two key themes: orderly presentation, and writing as a process. In terms of presentation, the participants expressed satisfaction with exclusive focus, balanced coverage of issues related to writing an abstract, and applicable related tasks. For instance, participant 5 said, *'The instructor's exclusive focus on the abstract section could effectively raise my awareness toward the rhetorical moves included in an abstract.'* Participant 9 mentioned, *'The course wonderfully broadened our view toward the nuances of writing an effective abstract not only in terms of its content but also its structure and language.'* Participant 4 stated, *'Not only was the course practical but also it offered a variety of tasks that encouraged me let me tell you, it forced me to think and analyze different stages'.*

The fact that writing was taught in a cyclical process appealed to the majority of the participants. For instance, participant 6 pointed out, *This approach allowed me to grasp the rhetorical moves in the abstract effectively, and the asynchronous assignments helped us to revise our work collaboratively'.* Considering iterative revisions, they highlighted learning from mistakes, reaching effective outcomes, and enhanced collaboration. For instance, participant 3 said, *'Review sessions were mainly learner-centered, we had explicit purposes behind revising the material by answering some questions jointly.'* Participant 1 mentioned, *'By reviewing the moves and analyzing well-written abstracts, I could rectify the problematic areas in writing an abstract.'*

OCW and Opportunities

Most participants (N = 8) felt that taking this course provided them with various opportunities, ranging from broadening their academic or professional networks to enhancing

their learning skills. They believed that such online courses could provide accessibility and flexibility in attending classes without constraints of time or geographical location and experience collaborative academic efforts. Participant 2 said, *'You can collaborate with others in writing research papers of shared interest regardless of where they are or which university they study in.'* furthermore, they believed that such online courses could enhance their communication chances with their field-specific professors. Participant 4 said, *'The participants can have the opportunity to be in contact with esteemed professors and do joint research projects.'* In addition, they mentioned attending such courses could reinforce peer learning and exchanging useful resources. For instance, participant 6 said, *'The collaborative nature of this course was really attractive to me because we could even collaborate other than class time and negotiate with each other over the learned material.'* Participant 2 stated, *'This course allowed us to get familiar with some useful resources in the first place, and secondly, get familiar with the instructor's perspective for teaching the instructional material.'*

OCW and Challenges

Several participants (N = 5) noted that the country's poor Internet infrastructure led to unavoidable technological challenges, including connectivity issues and software glitches. They also highlighted that technological deficiency and time management issues could occasionally impact the overall process.

For instance, participant 4 said, *'Many problems we faced throughout this course were related to poor infrastructure and unstable internet connections in Iran that prevented members from showing up on time.'* Participant 1 mentioned, *'Software problems such as low voice quality or voices breaking up made us refresh the page or enter the class again, which led to missing some instructional points in class.'* Participant 2 mentioned, *'I could not leave comments on my groupmates' responses, but I kept reading them and took notes of interesting parts.'* In terms of time management, they admitted sometimes they failed to manage time and benefit from the class due to *availability, incomplete contributions, and different commitments*. Here are some sample excerpts:

Participant 5: 'Maybe the class time for each session could be the same, not different, because It could help us to plan and remember the class time better'

Participant 8: 'This course interfered with our exams at university, and some participants were preoccupied with those exams, so maybe such courses can be held during the summer.'

Participant 3: 'Some of the class time interfered with my work pressure; some personal issues, such as emergencies that at times hampered my regular attendance.'

Learners' Recommendations

Many suggestions were made to improve the quality of online academic courses. Analyzing the responses highlighted three key themes: implementing stricter rules and expectations, providing extra feedback, and increasing flexibility and support. In terms of rules and expectations, they raised the need for exerting stricter rules about attendance and doing assignments. Participant 6 said, *'Waiting for others to join the class was a bit taxing, maybe latecomers can be penalized by not being allowed to have access to the class file after the session.'* Participant 9 stated, *'You can ask students to write abstracts on the topics of their interest and have more content knowledge about.'*

Concerning feedback, they shared the view that comprehensive regular feedback, peer review sessions, and regular instructor feedback could yield better outcomes. Here are some sample excerpts from the interviews:

Participant 5: 'Giving more detailed and comprehensive feedback on the assignments by trained instructors throughout the whole course can minimize the mistakes made by the participants.'

Participant 7: 'I guess an abstract reviewed more than once by peers can broaden our horizons about the mistakes we unconsciously make.'

Participant 8: I believe peer feedback should be finally followed by the instructor's feedback since sometimes students can be on the wrong path.'

In terms of flexibility and support, the participants raised the subject of scheduling class time and providing more technical support. For instance, participant 4 said, *'class time and days could be matched to the majority's free time.'* Participant 8 said, *'During the first sessions, I had difficulty activating my microphone, maybe a training session could alleviate these problems'.*

Discussion

The findings indicate that participants had positive views of the collaborative writing learning model, suggesting it improved their comprehension of the material after the intervention. This supports the research by [Anggraini et al. \(2020\)](#), which highlighted EFL students' favorable perceptions of collaborative writing strategies. Furthermore, the enhanced perceptions of collaborative writing can be explained through the social constructivist

perspective on learning (Vygotsky, 1978). This theory posits that cognitive development arises from external activities and social interactions, which stimulate cognitive processes. Language development progresses from social (inter-psychological) interactions to individual (intra-psychological) understanding. Interestingly, the findings of the third interview question about the role of interaction corroborate these findings. Participants reported that interaction during collaborative tasks fostered scaffolding, critical thinking, and meaningful learning, mirroring findings from previous studies (Ghufron & Hawa, 2015; Jalili & Shahrokhi, 2017).

The collaborative nature of writing may have led to positive perceptions among students. This collaboration fostered knowledge and skill sharing in abstract writing and provided mutual support for improving writing skills, consistent with prior studies (Bhowmik et al., 2018; Dobao, 2014; Storch & Aldosari, 2013). Storch (2018) notes that effective collaborative writing requires teamwork to create a single high-quality text, which enhances learner-centeredness. To sustain active learner engagement, the material was presented in a task-based and systematic manner, a point highlighted by participants in the second interview question. Additionally, these findings align with Carvajal Medina and Roberto Flórez (2014), emphasizing the significance of peer and expert support in achieving quality writing.

In addition, students perceived that the collaborative writing model effectively balanced understanding of the concepts and the development of abstract writing skills, aligning with Sveum's (2013) findings. This model fostered material comprehension and stimulated critical thinking and learning experiences, consistent with research by Luna and Ortiz (2013). Drawing on the participants' answers to the fifth interview question, writing was not a single-shot effort, exposure to a structured presentation of learning materials, along with process writing and iterative review sessions, facilitated the internalization of various stages of abstract writing. This perspective is supported by Yu et al. (2020), who found that process-oriented instructional approaches enhance learner engagement and deep learning, and by Liu and Carless (2006), who noted that peer review improves writing quality and promotes deeper learning.

Participants reported positive perceptions of cooperation, providing each other with constructive feedback and criticism throughout the course while sharing their learning experiences. They prioritized cooperation and peer feedback, which likely enhanced the student-centered learning experience, aligning with the findings of Sajedi (2014). In a similar vein, according to responses to the fourth interview question, participants felt that peer feedback improved the quality of their work, offered diverse perspectives, and allowed them to express their thoughts. This aligns with Storch's (2018) assertion that the

collaborative writing model fosters mutual acceptance of feedback within a supportive group atmosphere. Regarding perceptions of the classroom atmosphere, the researcher aimed to create an ideal virtual environment through the platform's multimodal features, user-friendly design, and time-saving capabilities.

This suggests that increased technological affordances enhance positive emotions among learners and boost their engagement in the learning process. The participants also expressed positive emotions while answering the first interview question. They reported feeling a sense of fulfillment and satisfaction while attending the online collaborative academic writing course, as it fostered community through multiple interactions, built relationships in a stress-free setting, improved their understanding of academic conventions, enhanced their abstract writing skills, and facilitated constructive peer exchanges. These findings align with the research of [Liou and Chiang \(2024\)](#) and [Shehadeh \(2011\)](#).

In line with these interpretations, analyzing the participants' answers to the sixth interview question revealed that online collaborative writing offered enhanced opportunities, including the expansion of their academic and professional networks. This finding aligns with prior research showing that doctoral writing groups foster a collaborative social practice view of writing, as opposed to a solitary task ([Chakraborty et al., 2021](#)). Additionally, learners believed that online collaborative writing supported skill development through peer learning and access to valuable resources. In these collaborative settings, students can engage with peers, present and defend their ideas, share diverse perspectives, and actively participate in the writing process ([Storch, 2013](#)). They also engage in discussions, work on computers, and exchange useful materials and links, further enhancing their collaboration.

Apart from the findings above and their interpretations, two new subjects were touched via conducting the semi-structured interviews. The seventh interview question was about the challenges the participants faced while attending an online collaborative writing course. Participants identified two primary challenges in the online collaborative writing course: technical barriers and time management issues. Inadequate internet infrastructure led to unstable connections, causing interruptions during live sessions and difficulties accessing course materials. Software glitches and lack of prior experience with specific platforms further limited the course's effectiveness. Research indicates that poor connectivity and technical issues can hinder effective communication and collaboration, affecting overall engagement ([Jelani & Nordin, 2019](#)). Additionally, participants noted that time management difficulties arose from their varying schedules, complicating the coordination of group activities and discussions. This lack of synchronization can decrease engagement and

productivity, leading to frustration among group members who feel their contributions are undervalued (Hollister et al., 2022).

Another issue was the expectation of equal contributions, which was undermined by time management challenges, resulting in some participants submitting incomplete work or missing deadlines. This imbalance in workload can foster resentment among more committed group members. Competing commitments, such as part-time jobs and family obligations, exacerbated these time management problems, making it difficult for students to prioritize tasks effectively. Research indicates that students with multiple responsibilities often struggle to dedicate sufficient time to collaborative projects, hindering meaningful engagement (Amerstrofer & Munster-Kistner, 2022). These disparities in commitment can lead to frustration and disengagement, ultimately impacting the success of the collaborative effort.

In response to the final interview question regarding the online collaborative academic writing course for PhD TEFL candidates, participants highlighted several key areas for improvement: establishing clearer rules and expectations, providing additional feedback, and offering more flexibility and support. Participants suggested that clearer and more rigid guidelines could enhance course structure, as well-defined expectations improve student engagement and accountability in collaborative settings (Li, 2023). They also emphasized the need for extra feedback to help refine their writing skills and understanding of abstract conventions, noting that timely feedback is crucial for enhancing writing performance and boosting confidence (Er et al., 2021). Finally, participants stressed the importance of flexibility in course design, as many students juggle various commitments. A rigid schedule can hinder engagement, while adaptable deadlines and additional support mechanisms can accommodate diverse needs and enhance participation (Morrison-Smith & Ruiz, 2020). Overall, addressing these themes could significantly improve the learning experience and outcomes for PhD TEFL candidates.

Implications of the Study

The study's findings indicate that online collaborative writing provides substantial benefits for both educators and students participating in English for Academic Purposes (EAP) programs. It aids learners in understanding language use, practicing rhetorical techniques, and grasping writing conventions, positioning it as an effective writing-to-learn method. Consequently, it is recommended to integrate collaborative writing tasks with traditional individual assignments in EAP curricula. Additionally, the outcomes have broader implications for academic writing research and technology-enhanced teaching, showcasing

the positive effects of online collaborative writing via Google Docs on writing engagement and motivation. This underscores the importance of incorporating technology in language education, which can boost student engagement, motivation, and autonomy through collaborative learning opportunities. The study also offers practical insights for various stakeholders, such as teacher trainers, faculty members, doctoral candidates, and researchers. It emphasizes the need for training educators in technology-based writing instruction to ensure they possess the necessary skills for effective integration of technology. Fostering learner motivation and engagement through platforms like Google Docs can facilitate more interactive writing experiences.

Limitations of the Study

No research is devoid of limitations, and this study is not an exception. The main limitation faced is that the findings cannot be easily generalized to other higher educational contexts since the study focused on Iranian PhD TEFL candidates only, and the sample size was limited. Besides, other higher education contexts might include different instructional systems covering academic writing courses through various approaches. Consequently, caution should be exercised in generalizing findings to larger populations with other competencies or educational systems. Secondly, these findings were limited to the participants' perceptions of online collaborative writing, and no test was conducted to quantitatively measure their progress in writing research article abstracts.

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Appendix A

Semi-Structured Interview Questions

1. You have been in an online collaborative abstract writing course; how do you feel about this experience in general?
2. Was the online collaborative abstract writing course helpful? Why? Or why not?
3. Tell me what it is like to interact with members of your group to compose a piece of writing.
4. What do you think of the feedback you get from or give to your group members?
5. Does collaborative writing help you understand the different stages of abstract writing? How?
6. Based on your own experience, tell me the opportunities that online collaborative writing offers.
7. What are the problems or challenges that you faced in this online collaborative academic writing course?
8. In general, what are your recommendations for improving this course?

