

# An Empirical Study on Continuation Writing in Senior High School under the Assessment and Feedback of ChatGPT

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**Abstract:** *With the integration of generative AI in English education, its potential application in English writing assessment could have a transformative impact on high school English instruction. This study employs both quantitative and qualitative research methods, using pre-tests and post-tests, questionnaires and interviews to investigate the effects of ChatGPT and teacher feedback on high school students' writing proficiency and motivation in English continuation writing tasks within a foreign language teaching context. The experiment showed that after two months of instruction with feedback from both ChatGPT and teachers, writing scores of both groups improved significantly. However, the performance of the experimental group did not significantly exceed that of the control group. Most students appreciated the feedback from ChatGPT, yet remained neutral about its potential to replace teacher feedback. Effectively combining intelligent feedback with teacher feedback, to leverage their strengths, can enhance teaching and assessment efficiency, ultimately improving students' proficiency and interest in English writing.*

**Keywords:** ChatGPT Feedback; Teacher Feedback; Continuation Writing in Senior High School; Evaluation and Feedback; Writing proficiency and motivation.

## 1. INTRODUCTION

The General Senior High School English Curriculum Standards (2017 Edition, Revised 2020) (hereinafter referred to as the Standards) emphasize that language skills (including listening, speaking, reading, viewing, and writing) are vital components in enhancing students' comprehensive language proficiency. Recognizing the strong connection between reading and writing, continuation writing was introduced in 2012. This approach requires students to understand the original text's content, theme, and structure accurately while creatively developing cohesion based on given prompts using clear and precise English (Wang Chuming 2012:3). This exercise showcases the openness and flexibility of this question type, enabling students to cultivate language proficiency and critical thinking within a framework that blends imitation and creativity.

Writing feedback is considered as "an extension of the writing process" (Zhu E 2016:125), helping writers identify areas for improvement in both form and content to enhance their writing skills. The Standards specify that the evaluation mechanism should be student-centered, fostering balanced and comprehensive development. The goal is to integrate teaching, learning, and evaluation into a cohesive whole, leveraging evaluation to promote teaching and learning while stimulating students' interest and motivation. However, objective challenges such as heavy teaching workloads and large class sizes make it difficult for teachers to monitor student writing and provide meaningful feedback. Common issues include uniform feedback, insufficient process-oriented and interactive evaluation, an overemphasis on scoring, students misunderstanding teachers' evaluative language and symbols, a lack of targeted feedback, and the inability to offer personalized suggestions. Consequently, the Standards recommend that teachers actively incorporate modern information technology into English teaching to enhance learning efficiency. In May 2023, the Ministry of Education's Office issued the Action Plan for Deepening Reform of Basic Education Curriculum and Instruction, which underscores the need to fully utilize digital empowerment in basic education to optimize the teaching process.

In the era of rapidly evolving artificial intelligence, Automated Writing Evaluation (AWE) systems like IEA, IntelliMetric, e-rater, and BETSY are used to predict writing scores. Tools like Grammarly provide corrective feedback on learners' writing, aiding both learners and educators in the writing process (Godwin-Jones 2022:7). Domestic platforms such as Criterion, Pigai, and iWrite also evaluate from the perspectives of lexicon, syntax, and discourse (Wang Zhijie 2022: 81). Among these tools, ChatGPT stands out as an advanced language processing tool that has found broad application in educational fields, especially in language learning and writing instruction. Developed by the American AI research lab OpenAI, ChatGPT is based on the Generative Pre-trained Transformer

(GPT) model and is trained on extensive data to simulate human-like language interactions, providing high-quality linguistic outputs. This capability offers unique value in high school English teaching, particularly in feedback and evaluation. Despite research into ChatGPT's educational applications, there remains a scarcity of studies focusing specifically on continuation writing in high schools. Thus, this study aims to fill that gap by exploring the empirical application of ChatGPT in providing feedback for such writing tasks, with the hope of delivering more effective teaching support and feedback mechanisms.

## 2. LITERATURE REVIEW

ChatGPT, developed by the American AI research laboratory OpenAI and released on November 30, 2022, is a dialogue system based on the latest Generative Pre-trained Transformer (GPT) model ([https://www.thepaper.cn/newsDetail\\_forward\\_22181449](https://www.thepaper.cn/newsDetail_forward_22181449)). Through extensive pre-training on large text datasets, ChatGPT learns language patterns and structures, enabling it to generate coherent, relevant, and diverse text responses. It has proven effective in various language learning courses, enhancing learners' writing abilities (Barrot 2023:2). Currently, the application of ChatGPT in English writing instruction is increasingly explored both domestically and internationally.

## 3. ENGLISH WRITING INSTRUCTION WITH CHATGPT

Teachers can leverage ChatGPT for tasks such as easy grading, providing writing samples, and conducting assessments for both writing and exercises (Stan Skrabut 2023:29). Consequently, the utility of ChatGPT can significantly reduce teachers' workload. It aids teachers in quickly grasping the background knowledge of specific topics in English academic paper writing, offering feedback on students' writing, and generating classroom teaching materials (Chen Mo and Lv Mingchen 2024:164-165). Students can develop critical thinking by comparing the feedback quality of ChatGPT. Additionally, the detailed interactions between students and ChatGPT recorded in the system can serve as a record of the students' writing process and progress (Yanfang Su et al. 2023:9). Thus, the practical effects and potential values of AI tools are crucial in discourse writing instruction (Yaqi Wu 2023:149), providing new insights and guidance for teaching practice and future research. Furthermore, some foreign scholars have tested teachers' attitudes towards using ChatGPT in writing instruction. For instance, ChatGPT can provide teachers with learning resources for different curriculum objectives, offer students personalized learning resources, assist in grading students' work, and save teachers time in browsing, selecting, and aligning learning materials (Nguyen Thi Thu Hang 2023:22-23). The results indicate that these teachers are keen to use ChatGPT in writing classes. However, many studies also express concerns about the reliance on ChatGPT by teachers and students. They confirmed that ChatGPT's quickly generated solutions might hinder students' critical thinking or problem-solving abilities. Similar issues were noted regarding teachers using ChatGPT as a lesson preparation tool (Kasneji et al. 2023:7).

## 4. ENGLISH WRITING EVALUATION AND FEEDBACK WITH CHATGPT

ChatGPT can assist the writing process in various ways, from grammar checking and proofreading to summarization and creative writing, showcasing its potential to enhance writing skills (Atlas, S 2023: 49). To further explore ChatGPT's feedback effectiveness, many scholars designed experiments comparing formative feedback from ChatGPT with that from human evaluators. They examined the feasibility and applicability of using ChatGPT to provide feedback to students, revealing how ChatGPT complements teacher assessments and benefits students at different writing levels (Wei Dai et al. 2023; Ossa, C and Willatt, C 2023; Qi Lu et al. 2024; Parker, JL et al. 2023; Tao Fang et al. 2023; Jerry Huang 2023; Kai Guo and Deliang Wang 2023). For instance, research illustrated that feedback generated by ChatGPT is often more detailed, fluid, and coherent than that of a human teacher (Wei Dai et al. 2023:324-325). Domestically, some teachers have discussed how ChatGPT provides feedback on high school students' English writing across three dimensions: vocabulary, grammar, and discourse (Mao Yansheng et al. 2024: 324-325). Additionally, the advantages of ChatGPT in grammar revision, punctuation correction, vocabulary replacement, semantic fluency, style debugging, and outline writing were analyzed by comparing teacher feedback with ChatGPT feedback (Wei Shuang and Li Luyao 2023:34). While numerous studies confirm the advantages of ChatGPT in writing assessment, its limitations are also evident. For example, one study found no significant improvement in paper quality when using GPT as a writing tool, with the control group often outperforming the experimental group (Željana Bašić et al. 2023:14). ChatGPT struggled to provide effective feedback on the coherence and cohesion of argumentative essays (Su-Youn Yoon et al. 2023:21). Additionally, experimental comparisons between ChatGPT and manual evaluation revealed some gaps in the

technology's capabilities, including consistency, common reference, inter-sentence tense errors and inter-sentence boundary errors (Tao Fang et al. 2023: 10). To some extent, human evaluators can provide higher quality feedback in all categories (Jacob Steiss et al. 2023:7). Therefore, people's preference for AI-generated feedback and human-generated feedback was almost equal (Juan Escalante et al. 2023:8-9).

## 5. ENHANCING STUDENTS' WRITING SKILLS WITH CHATGPT

Most relevant studies have found that ChatGPT significantly enhances students' academic writing skills, and students have responded positively to its impact (Santosh Mahapatra 2024:12-13). By providing writing prompts, immediate feedback, and revision suggestions, ChatGPT can improve English learners' writing abilities (Abdullayeva and Musayeva 2023: 2). Additionally, some scholars have documented how ChatGPT improves grammar, vocabulary, coherence, and argument depth, thereby assessing its impact on students' writing abilities and critical thinking (Nguyen Minh An 2024: 54-55). While study results indicate substantial improvements in students' writing skills and stimulation of critical thinking, researchers also acknowledge the challenges posed by excessive reliance on AI tools. It is evident that ChatGPT can generate responses based on user-entered keywords, positively influencing education and learning. However, not all these features effectively cultivate students' learning skills, particularly creative writing skills (Muhammad Shidiq 2023: 354-355).

## 6. ENHANCING STUDENTS' WRITING MOTIVATION WITH CHATGPT

As mentioned earlier, ChatGPT can improve students' writing skills in certain contexts, with studies recognizing the innovative teaching role of artificial intelligence and its positive impact on writing skills and motivation (Cuiping Song and Yanping Song 2023:8-9). While ChatGPT can motivate learners to develop reading and writing skills, some respondents were neutral about its impact on developing listening and speaking abilities (Jamal Kaid Mohammed Ali et al. 2023:44). Due to the nature of the technology, AI tools such as Grammarly and ChatGPT may also undermine users' personal expression and weaken their motivation to write and think (Baron 2023:2).

In summary, current research has made significant contributions to revealing the potential of ChatGPT in English writing instruction. The application of ChatGPT promotes a shift from traditional teaching models to more personalized and interactive ones. However, it also raises the need to rethink the role of teachers and the arrangement of teaching content. Most existing research focuses on the application of ChatGPT in general English writing feedback, with little empirical study specifically on continuation writing in senior high school. The evaluation mostly involves grammar correction, vocabulary selection, and sentence polishing, lacking consideration of narrative development. Additionally, most studies use qualitative analysis or small-scale quantitative research, lacking support from large-scale, long-term empirical studies. Further study is needed on students' acceptance, depth of understanding, and the actual effect of AI feedback on writing motivation.

This study aims to explore the application of ChatGPT in continuation writing in senior high school through empirical research, addressing existing research gaps and providing a practical basis. Specifically, this study seeks to answer the research question: To what extent does ChatGPT influence the writing proficiency of continuation writing among senior high school students, and what are their attitudes toward it?

## 7. METHOD

### 7.1 Participants

This study selected 102 students from Classes 2 and 3, both second-year science classes at a high school in Kunshan City, as research subjects. These parallel classes were formed based on the results of senior high school entrance examination. The students, who had minor differences in English proficiency, generally had a weak foundation in English and low interest in learning the language. In this experiment, the subjects were divided into two groups: 51 students from Class 3 received personalized writing feedback from ChatGPT-4 (Experimental Group or EG), while 51 students from Class 2 continued with traditional teacher feedback (Control Group or CG). Throughout the experiment, efforts were made to ensure that both groups received the same instructional content and homework load, in order to facilitate a fair comparison between the effects of ChatGPT feedback and traditional teachers' feedback.

### 7.2 Instruments

This study employs a mixed-methods approach to comprehensively evaluate the feedback provided by ChatGPT and teachers in continuation writing for senior high students, integrating both quantitative and qualitative data analysis.

First, the author collected the scores of the two classes from the mid-term and final examinations of the first semester of their sophomore year as pre-test and post-test scores respectively (see Appendix I). Both examinations were citywide standardized tests, and the paper assessments were conducted through the Zhixue network. Therefore, the test papers and the scores before and after the experiment had extremely high reliability and validity. During the experiment, the students from both classes completed a 150-word continuation writing task within a limited time each week. The Experimental Group (EG) received evaluations from ChatGPT-4, while the Control Group (CG) received evaluations from their teacher.

Additionally, a questionnaire adapted from the original scale developed by Waller and Papi (2017: 59) was used. The adapted questionnaire (see Tables 1 and 2) consisted of fifteen items that assessed students' feedback orientation (Q1-Q8) and their writing motivation and acceptability (Q9-Q15) regarding the use of ChatGPT. Participants rated each item on a five-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree) (see Appendix II).

**Table 1:** Feedback orientation items

Original items	Adapted items
When I do not understand my teacher's comments, I talk to him/her.	I can receive a personalized and interactive feedback from ChatGPT.
I like when my teacher corrects all of my mistakes (grammar, content, organization, spelling, punctuation).	I like when ChatGPT corrects all of my mistakes (grammar, content and plot, organization, spelling, punctuation)
I like when my teacher uses correction symbols to show me my mistakes.	I like when ChatGPT provides revised edition to show me my mistakes.
When I get my papers back, I read all of the comments carefully.	When I get my papers back, I can better understand all of the comments of ChatGPT and accept them.
Written corrective feedback from my teacher helps me to be a better writer.	Written corrective feedback from ChatGPT boosts my confidence and passion for continuation writing.
I remember the mistakes my teacher points out to me and I try not to make them again.	I refer to the evaluation and feedback of ChatGPT when writing.
I like when my teacher writes questions on my paper to make me think about my writing (not just gives me the answer).	I like when ChatGPT categorizes questions of my writing (not just gives me the answer).
	I look forward to future writing evaluations being conducted by ChatGPT instead of that of teachers'.

**Table 2:** Writing motivation items

Original items	Adapted items
I enjoy writing in English.	I enjoy writing continuation task after receiving the feedback of ChatGPT.
Writing in English is very important to me.	Writing continuation task can improve my writing proficiency.
I always look forward to my ESL writing classes.	I always look forward to my continuation writing classes after receiving the feedback of ChatGPT.
I would like to spend lots of time learning to write in English.	I would like to spend lots of time learning to write continuation task.
I would like to concentrate on learning to write in English more than any other topic.	I would like to concentrate on learning to write continuation task more than any other topic.
I actively think about what I have learned in my English writing class.	I actively think about what I have learned in my continuation writing class.
I really try to learn how to write in English.	I will try to learn how to improve my continuation writing according to the feedback of ChatGPT.

Finally, before and after the experiment, the author randomly selected four students with different performance levels from both the EG and CG to conduct interviews (see Appendix III). These interviews aimed to further optimize the writing evaluation method, improve teaching strategies, and better understand changes in students' attitudes towards ChatGPT feedback and teacher feedback, thus ensuring the authenticity and accuracy of the experimental results.

The interview questions included:

- (1) When you get your papers back, do you only look at the grade, or do you carefully read your teacher's revision suggestions?
- (2) Can you understand your teacher's comments on your writing?
- (3) After experiencing the assessment from ChatGPT, has your enthusiasm for continuation writing improved?
- (4) Do you want teachers to continue using ChatGPT for the evaluation of continuation writing?

## 8. DATA ANALYSIS AND FINDINGS

### 8.1 Analysis and discussion of test results

The teacher input the compositions of the Experimental Group (EG) into ChatGPT-4 and provided prompts for it to score the students' compositions and offer evaluations on vocabulary, grammar, content and plot, cohesion, coherence of discourse, and logic (see Appendix IV). The revised versions and feedback were then sent to students through Dingding. Students in the Control Group (CG) continued to receive corrections and feedback from the teacher according to the same standards. Two months later, these students took the final exam, and the scores of the continuation writing were used as the post-test data. Both pre- and post-tests were independently rated by different teachers, ensuring the reliability and validity of the scores.

To explore if there were any significant differences in scores between the two groups before and after the experiment, two independent samples t-tests were conducted using SPSS 27. A general linear model was employed, with the time of the tests (pre-test [T1] and post-test [T2]) as a within-subjects variable and the group (experimental group or EG, and control group or CG) as a between-subjects variable. The number of cases, mean values, standard deviation, t-values, and two-tailed significance were examined. Additionally, paired sample t-tests were conducted to detect significant changes in the pre-test and post-test scores of the EG and CG.

The results of the independent sample t-tests for the between-subjects variable at T1 and T2 are reported in Tables 3 and 4.

**Table 3:** Pre-test results of CG and EG

	Class	N	Mean	SD	t	Sig(2-tailed)
T1	CG	51	6.892	2.0306	-.148	.882
	EG	51	6.961	2.6035	-.148	.882

**Table 4:** Post-test results of CG and EG

	Class	N	Mean	SD	t	Sig(2-tailed)
T2	CG	51	8.51	2.549	-.664	.508
	EG	51	8.90	3.360	-.664	.508

The results in Table 3 and Table 4 revealed no significant difference between the EG and CG means in both the pre-test and post-test ( $t=0.148$ ,  $p=0.882$ ,  $p>0.05$ ;  $t=0.664$ ,  $p=0.508$ ,  $p>0.05$ ). This indicates that the method of providing feedback (whether by a human tutor or ChatGPT) did not have a significant effect on students' post-test scores. Consequently, the writing proficiency of students in both classes remained essentially similar, which aligns with the findings of Escalante et al. (2023: 13).

The paired sample t-tests of the within-subjects variable at T1 and T2 are reported in Tables 5 and 6.



**Table 5:** Comparative analysis of pre-test and post-test results of the CG

		N	Mean	SD	t	Sig(2-tailed)
CG	T1	51	6.892	2.0306		
	T2	51	8.51	2.549	-4.637	.002

**Table 6:** Comparative analysis of pre-test and post-test results of the EG

		N	Mean	SD	t	Sig(2-tailed)
EG	T1	51	6.961	2.6035		
	T2	51	8.90	3.360	-5.050	<.001

The comparative analysis of pre-test and post-test results for the CG and EG (Tables 5 and 6) revealed significant changes in scores ( $t=4.637$ ,  $p=0.002$ ,  $p<0.05$ ;  $t=5.050$ ,  $p<0.001$ ). This indicates that both teacher evaluations and ChatGPT evaluations can improve students' writing proficiency.

Therefore, teachers can collaborate with ChatGPT to leverage its efficient and labor-saving features for initial evaluations. Following this, teachers can conduct face-to-face second evaluations with students based on the ChatGPT feedback, thereby compensating for the disadvantages of machine evaluation, such as the lack of opportunities for oral communication..

## 8.2 Analysis and discussion of questionnaire survey results

To assess whether students' writing motivation improved and to evaluate their acceptance and willingness towards teacher feedback and ChatGPT feedback, the author conducted a questionnaire survey with 52 students (including one student who didn't attend the pre- and post-tests) in the EG after the experiment. Participants were informed that the collected data would be kept confidential, would not affect their scores, and would only be used for the purposes of this experiment. They were required to complete 15 single-choice questions, and the statistical results were analyzed after the completion of the questionnaire.

**Table 7:** Results of Q1-Q8 (F: frequency; P: percentage)

	Q1		Q2		Q3		Q4		Q5		Q6		Q7		Q8	
	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P
Strongly disagree	1	1.92%	1	1.92%	0	0%	0	0%	0	0%	0	0%	0	0%	5	9.62%
Disagree	0	0%	3	5.77%	0	0%	3	5.77%	0	0%	1	1.92%	0	0%	14	26.92%
Occasionally agree	5	9.62%	5	9.62%	8	15.38%	8	15.38%	12	23.08%	6	11.54%	1	1.92%	14	26.92%
Agree	25	48.08%	23	44.23%	23	44.23%	20	38.46%	19	36.54%	23	44.23%	22	42.31%	10	19.23%
Strongly agree	21	40.38%	20	38.46%	21	40.38%	21	40.38%	21	40.38%	22	42.31%	29	55.77%	9	17.31%
total	52	100%	52	100%	52	100%	52	100%	52	100%	52	100%	52	100%	52	100%

The above eight questions were designed to investigate students' propensity to feedback and receptivity to ChatGPT feedback. Firstly, when it comes to the overall acceptance of feedback from ChatGPT, most students (48.08% and 40.38%) selected "Agree" and "Strongly Agree" in response to questions about whether they can receive a personalized and interactive feedback from ChatGPT. This indicates a positive reception of ChatGPT's feedback by the majority of students. Secondly, in terms of the understandability of feedback from ChatGPT, a significant majority (78.84%) agreed, showing that students could well comprehend the feedback provided by ChatGPT. However, opinions were divided as to whether ChatGPT is expected to replace teachers in writing assessments in the future, with 36.54% disagreeing, 26.92% neutral, and 36.54% agreeing.

**Table 8:** Results of Q9-Q15 (F: frequency; P: percentage)

	Q9		Q10		Q11		Q12		Q13		Q14		Q15	
	F	P	F	P	F	P	F	P	F	P	F	P	F	P
Strongly disagree	0	0%	0	0%	0	0%	2	3.85%	0	0%	0	0%	0	0%
Disagree	4	7.69%	0	0%	3	5.77%	11	21.15%	6	11.54%	0	0%	0	0%
Occasionally agree	14	26.92%	7	13.46%	15	28.85%	17	32.698%	14	26.92%	4	7.69%	5	9.62%
Agree	17	32.69%	23	44.23%	15	28.85%	13	25%	20	38.46%	25	48.08%	22	42.31%
Strongly agree	17	32.69%	22	42.31%	19	36.54%	9	17.31%	12	23.08%	23	44.23%	25	48.08%
total	52	100%	52	100%	52	100%	52	100%	52	100%	52	100%	52	100%

The above seven questions were designed to investigate students' attitudes and motivation towards writing after the experiment. Overall, these results highlight the high acceptance and positive feedback from students regarding the use of ChatGPT as a teaching aid. They believe ChatGPT can provide valuable feedback that helps improve their writing skills. However, when asked if they would like to spend a lot of time learning this kind of writing task, 25% of students disagreed, 32.69% of students were neutral, and 42.31% of students agreed with learning, which indicated that students' motivation to write is not strongly stimulated. But the fact that most students were willing to learn this type of composition shows that students had more room for improvement and it could enhance their motivation to write.

### 8.3 Analysis and discussion of interview results

**Question 1:** When you get your papers back, do you only look at the grade or do you carefully read your teacher's revision suggestions?

Student A (high proficiency): "I always read the teacher's comments carefully. Understanding the feedback helps me see where I can improve and ensures I don't repeat the same mistakes in future assignments."

Student B (moderate proficiency): "I usually look at the grade first, but I try to go through the comments as well. Sometimes it's hard to understand what the teacher is suggesting, so it might not always be clear how to use the feedback."

Student C (low proficiency): "I mostly look at the grade because I have difficulty in understanding some suggestions, and I will not take the initiative to ask the teacher in private".

Student D (very low proficiency): "I just look at the grade because I don't understand the comments most of the time. They don't really make sense to me, so I don't bother much with them."

According to the interview, students with high writing proficiency tended to engage deeply with feedback, appreciating detailed and specific comments. They were more likely to understand and apply the feedback to improve their writing skills. As for students with moderate to low proficiency, they often struggled with the complexity and clarity of the feedback provided. These students occasionally found teacher comments confusing, especially when they involved technical terms or shorthand that wasn't explained thoroughly. Finally, students with very low proficiency generally overlooked detailed feedback due to difficulties in understanding, indicating a disconnect between the feedback provided and their ability to comprehend and apply it effectively.

**Question 2:** Can you understand your teacher's comments on your writing?

Student A (high proficiency): "Yes, I usually understand the comments very well. They're detailed and specific, which really helps me know exactly what to work on."

Student B (moderate proficiency): "Most of the time, I get what the teacher is saying, but sometimes the technical terms or the shorthand comments can be confusing."

Student C (low proficiency): "Not always. Sometimes I have to ask for more explanation in class or from friends because some comments are too brief or use complex language."

Student D (very low proficiency): "No, not really. I often find them hard to follow. I feel like they're meant for someone who is already good at writing. Sometimes I can't understand the original text of the composition, and I have no ideas when I write it, so I only write a few sentences each time, and rarely have the opportunity to get the teacher's comments on the content."

Through this question, it can be concluded that students with higher writing skills understood and appreciated the depth of teacher feedback, finding it helpful for improvement. However, those with lower skills reported challenges in understanding, which may indicate a need for more foundational support in writing before they can benefit from higher-level feedback.

**Question 3:** After experiencing the assessment from ChatGPT, has your enthusiasm for continuation writing improved?

Student A (high proficiency): “Definitely. ChatGPT’s feedback is prompt and insightful, and it challenges me to think differently about how I write. It’s made the writing process more engaging for me.”

Student B (moderate proficiency): “Yes, it has. The feedback from ChatGPT is easy to understand, and I like that it gives suggestions on how I can improve right away.”

Student C (low proficiency): “Somewhat, yes. It’s encouraging to get feedback that I can actually understand and use, unlike some of the confusing comments I used to get and my final exam score has improved.”

Student D (very low proficiency): “I was no longer afraid to write continuation writing task, and would took the initiative to find out the problems according to the suggestions. It’s nice to get quicker responses, but I’m still struggling with writing.”

There is a general trend of increased enthusiasm across all proficiency levels with the introduction of ChatGPT, attributed to its prompt and straightforward feedback. Students with high and moderate proficiency found ChatGPT’s instant feedback to be engaging and helpful for immediate improvements. And students with low proficiency felt somewhat encouraged but still faced overarching challenges with writing that may not be fully addressed by AI feedback alone.

**Question 4:** Do you want teachers to continue using ChatGPT for the evaluation of continuation writing?

Student A (high proficiency): “Yes, I think it’s a great tool that complements traditional teaching methods well. It provides a different perspective and helps refine my writing further.”

Student B (moderate proficiency): “I am neutral about the comments provided by ChatGPT because I sometimes do not understand the feedback from ChatGPT and find teacher’s evaluations more interactive. I think these two ways can be combined, and teachers can adjust and modify according to the feedback of ChatGPT.”

Student C (low proficiency): “I do, because it seems to make the feedback process faster and more consistent. I think using ChatGPT to grade essays is also a good attempt to reduce the teacher’s working load. It helps to have both human and AI feedback.”

Student D (very low proficiency): “I still prefer to have my essays corrected by a teacher because the suggestions of ChatGPT are far beyond my writing level. I think teacher can regard ChatGPT as an assistant to evaluate.”

The majority of students across all levels expressed a desire to continue using ChatGPT alongside traditional teacher feedback. Students who like teacher evaluation believed that they could follow up and revise their compositions through face-to-face communication with teachers, while students who like ChatGPT feedback paid more attention to the efficient and detailed feedback of AI. Therefore, they perceived the combination of AI and human feedback as beneficial, offering both quick, clear guidance and detailed, personalized improvement suggestions.

In conclusion, the integration of AI tools like ChatGPT in educational settings for writing assessment is generally well-received by students. However, the effectiveness of such tools varies based on the student’s initial writing proficiency. While ChatGPT enhances engagement and provides a level of feedback immediacy that is highly valued, there remains a clear need for human intervention, particularly for students at lower proficiency levels who require more basic skills support and personalized attention. These responses cater to a spectrum of writing abilities, offering a realistic view of how students at different levels might perceive and react to feedback from both traditional and AI-assisted evaluations.

## 9. CONCLUSION

This study represents one of the pioneering efforts to examine the differences between ChatGPT and traditional teacher evaluations in the context of continuation writing in a foreign language, utilizing a mixed-method approach. The findings indicate that although ChatGPT’s evaluations and feedback might not surpass those of teachers in enhancing writing achievement, they offer significant value in augmenting assessment processes. By incorporating ChatGPT into educational practices, teachers can deliver more efficient feedback. This efficiency, coupled with personal interactions, can substantially improve students’ writing skills. ChatGPT can function as an interlocutor,



content provider, teaching assistant, and evaluator, while teachers coordinate disparate resources through high-quality instructional decisions that engage students in active investigation and raise awareness of AI ethics (Jaeho Jeon and Seongyong Lee 2023: 15887-15888). Additionally, understanding students' varied feedback preferences enables educators to tailor their feedback strategies more effectively, potentially enhancing overall writing motivation.

This study does have limitations that should be considered in future research. Firstly, the sample comprised 102 high school sophomores from southern Jiangsu, which is relatively small and limited to a specific demographic. Future studies should aim for a larger and more diverse sample size across different grades to enhance the generalizability of the findings. Secondly, the research only involved questionnaires and interviews with students. Investigating teachers' attitudes and acceptance of using ChatGPT for feedback could enrich the study further. Moreover, while the mixed-methods approach was employed, deeper case studies and more sophisticated statistical analyses could yield additional insights into feedback mechanisms in writing evaluation.

Overall, ChatGPT holds promise as a supplementary tool in writing education, providing efficient feedback that supports teachers' efforts in developing students' writing abilities and motivation. However, its use in education also demands attention to issues of academic integrity, potential biases, and misinformation in information processing (Tareq Rasul et al. 2023:7-8), as well as concerns related to ethics, law, and personal privacy protection (FX Risang Baskara 2023: 50-51). Educators and learners alike should utilize AI appropriately and guard against an over-reliance that could impede their ability to engage in critical and creative thinking or problem-solving (Kasneji et al. 2023:7; Jessie S. Barrot 2023:4).

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#### Appendix I: Table of Experimental Group and Control Group Before and After Tests

Class two: Control group

Class three: Experimental group

Number	Class number	Pre-test score	Post-test score
1	2	8	4
2	2	9.5	10
3	2	9	11
4	2	3	4
5	2	8	9
6	2	6	6
7	2	5.5	7
8	2	7	7
9	2	3	5
10	2	5.5	7
11	2	9	11
12	2	6	11
13	2	9	13
14	2	8	7
15	2	6	11
16	2	8	4
17	2	10	12
18	2	8	10
19	2	8.5	10
20	2	8.5	10
21	2	1.5	6
22	2	7.5	13
23	2	8	7
24	2	9.5	7
25	2	6.5	11
26	2	9	7
27	2	8.5	11
28	2	6.5	5
29	2	7	7
30	2	6	11

Number	Class number	Pre-test score	Post-test score
31	2	6	10
32	2	3.5	4
33	2	6.5	3
34	2	8.5	11
35	2	8.5	10
36	2	5.5	10
37	2	5.5	8
38	2	6.5	5
39	2	5.5	10
40	2	5	10
41	2	3.5	7
42	2	9	10
43	2	7	7
44	2	6	9
45	2	1.5	8
46	2	7	10
47	2	7.5	9
48	2	8	9
49	2	9	11
50	2	8.5	11
51	2	8	8
52	3	9	11
53	3	8	11
54	3	11	11
55	3	6.5	5
56	3	8	9
57	3	10	13
58	3	4.5	9
59	3	11	14
60	3	9	10
61	3	9	11
62	3	9	7
63	3	3.5	2
64	3	13	11
65	3	8	8
66	3	4	2
67	3	8	8
68	3	5.5	11
69	3	8.5	15
70	3	9.5	11
71	3	5.5	3
72	3	6.5	8
73	3	8.5	10
74	3	5.5	11
75	3	9.5	12
76	3	0	0
77	3	9	9
78	3	9	12
79	3	7.5	9
80	3	2	8
81	3	8.5	9
82	3	7.5	9
83	3	7	13
84	3	6	11

Number	Class number	Pre-test score	Post-test score
85	3	8.5	9
86	3	7	9
87	3	7.5	5
88	3	7	8
89	3	7.5	11
90	3	4.5	9
91	3	8.5	12
92	3	5.5	9
93	3	1	9
94	3	6.5	10
95	3	7.5	8
96	3	7	12
97	3	2	0
98	3	4	10
99	3	2.5	6
100	3	7	9
101	3	7.5	12
102	3	7	3

#### Appendix II: A Questionnaire on Writing Ability and Attitude of Continuation Writing

Dear students:

Thank you for taking the time to participate in this survey. This questionnaire aims to understand students' attitudes and opinions on the application of ChatGPT to the evaluation feedback after reading English in high school. This questionnaire is anonymous, with a total of 15 questions, please answer according to your actual situation, there is no right or wrong answer, the survey results are only for this research, will not be disclosed. Thanks again for your sincere participation!

(1) I can receive a personalized and interactive feedback from ChatGPT.

- Strongly disagree
- Disagree
- Occasionally agree
- Agree
- Strongly agree

(2) I like when ChatGPT corrects all of my mistakes (grammar, content and plot, organization, spelling, punctuation).

- Strongly disagree
- Disagree
- Occasionally agree
- Agree
- Strongly agree

(3) I like when ChatGPT provides revised edition to show me my mistakes.

- Strongly disagree
- Disagree
- Occasionally agree
- Agree
- Strongly agree

(4) When I get my papers back, I can better understand all of the comments of ChatGPT and accept them.

- Strongly disagree
- Disagree
- Occasionally agree
- Agree



- Strongly agree
- (5) Written corrective feedback from ChatGPT boosts my confidence and passion for continuation writing.
- Strongly disagree
  - Disagree
  - Occasionally agree
  - Agree
  - Strongly agree
- (6) I refer to the evaluation and feedback of ChatGPT when writing.
- Strongly disagree
  - Disagree
  - Occasionally agree
  - Agree
  - Strongly agree
- (7) I like when ChatGPT categorizes questions of my writing (not just gives me the answer).
- Strongly disagree
  - Disagree
  - Occasionally agree
  - Agree
  - Strongly agree
- (8) I look forward to future writing evaluations being conducted by ChatGPT instead of that of teachers'.
- Strongly disagree
  - Disagree
  - Occasionally agree
  - Agree
  - Strongly agree
- (9) I enjoy writing continuation task after receiving the feedback of ChatGPT.
- Strongly disagree
  - Disagree
  - Occasionally agree
  - Agree
  - Strongly agree
- (10) Writing continuation task can improve my writing proficiency.
- Strongly disagree
  - Disagree
  - Occasionally agree
  - Agree
  - Strongly agree
- (11) I always look forward to my continuation writing classes after receiving the feedback of ChatGPT.
- Strongly disagree
  - Disagree
  - Occasionally agree
  - Agree
  - Strongly agree
- (12) I would like to spend lots of time learning to write continuation task.
- Strongly disagree
  - Disagree
  - Occasionally agree
  - Agree
  - Strongly agree

(13) I would like to concentrate on learning to write continuation task more than any other topic.

- Strongly disagree
- Disagree
- Occasionally agree
- Agree
- Strongly agree

(14) I actively think about what I have learned in my continuation writing class.

- Strongly disagree
- Disagree
- Occasionally agree
- Agree
- Strongly agree

(15) I will try to learn how to improve my continuation writing according to the feedback of ChatGPT.

- Strongly disagree
- Disagree
- Occasionally agree
- Agree
- Strongly agree

### **Appendix III: Interview Outline**

Since the beginning of this semester, teachers have applied ChatGPT to the evaluation and feedback of continuation writing. This interview is designed to understand students' attitudes and opinions on this evaluation method. Everyone can actively express their views in order to help teachers improve her teaching method.

- (1) When you get your papers back, do you only look at the grade, or do you carefully read your teacher's revision suggestions?
- (2) Can you understand your teacher's comments on your writing?
- (3) After experiencing the assessment from ChatGPT, has your enthusiasm for continuation writing improved?
- (4) Do you want teachers to continue using ChatGPT for the evaluation of continuation writing?

### **Appendix IV: The Sample for ChatGPT and the Sample of AI-generated Feedback**

You will be a professional language teacher who is an expert on providing feedback on the writing of English language learners. Out of a full score of 25, please score the following English essays first, and then make suggestions on the aspects of vocabulary, grammar, content and plot, cohesion and coherence of discourse, logical structure, etc., and finally provide the revised version.

Original student writing:

A few weeks later, I went to the farm again I walked, straightly to the milking horse, which I'm not being used in many years. There was a new spiderweb under the selling, but the window was fixed perfectly, though there was not any birds trapped, I was became a little bit disappointed the memory of the little hummingbird was in my mind like that has just happened, so I try to stay here for a while to watch the hummingbird came, even it looked like impossible.

I was just about to live with a hummingbird appeared. Suddenly I heard of a kind of voice like wings shaking I turned around and precisely saw a hummingbird. She hovered in front of my fish and looked into my eyes for a long time. I was sure that it was the hummingbird that I met last time. I was surprised that the hummingbird still came to the farm. After a while , she let out a squeaking call and was gone again. But I thought this time was different from the last. I thought she was saying hello to me.

AI-generated feedback:

Score: 11/25

Feedback:

(1) Vocabulary: There are several instances of incorrect or awkward word usage. For example, “milking horse” (probably intended to be “milking barn”), “selling” (should be “ceiling”), and “fish” (should be “face”). Usage of more precise and varied vocabulary could improve the quality of the narrative.

(2) Grammar: There are multiple grammatical issues, including tense inconsistencies (“I went” vs. “I was became”), misuse of words (“straightly” should be “straight”), and improper verb forms (“I was just about to live” should likely be “leave”).

(3) Content and Plot: The narrative has a charming aspect, focusing on a personal experience with a hummingbird. However, the plot is somewhat disjointed and hard to follow due to the language errors and unclear expressions.

(4) Cohesion and Coherence: The essay lacks smooth transitions between ideas, and several sentences are confusing due to misplaced modifiers and awkward phrasing.

(5) Logical Structure: The structure of the narrative could be more logically organized by clearly introducing the setting, developing the encounter, and then reflecting on the experience to provide a satisfying conclusion.

Suggested Revision:

A few weeks later, I returned to the farm and walked straight to the old milking barn, which had not been used for many years. Under the ceiling was a new spiderweb, but the window had been perfectly fixed. Despite the absence of trapped birds, which left me a bit disappointed, the memory of the little hummingbird was fresh in my mind as if it had just happened. Hoping to see the hummingbird again, even though it seemed unlikely, I decided to stay for a while longer. Just when I was about to leave, a familiar flutter caught my attention. I turned around and saw the hummingbird hovering right in front of my face, gazing into my eyes. I was certain it was the same one I had met before. Surprised to see it still visiting the farm, I watched as it chirped briefly and then flew away. This time, however, felt different; I believed it was greeting me.

This revised version clarifies the sequence of events, improves grammatical accuracy, and enhances coherence and cohesion in the narrative.

Abbreviations

AI: Artificial Intelligence

ChatGPT-4: Generative Pretrained Transformer 4 (from OpenAI)

ChatGPT: A specific chatbot interface for the GPT models

AWE: Automated writing evaluation

EG: Experimental group

CG: Control group