The Influence of Background Music Teaching on the Accuracy and Fluency of College Students' English Writing in China

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Abstract

The study examines the influence of background music on the accuracy and fluency of English writing among college students. It shows that) Background music during teaching can help improve students' lexical accuracy in English writing. To be specific, background music teaching can reduce lexical errors greatly and restrain syntactic errors efficiently, but does not show any advantages in decreasing the students' morphological errors and punctuation errors.2). Compared with traditional teaching, background music teaching can not promote the fluency of English writing of the students.3). Although background music teaching can release students' anxiety, it may not help the students to obtain more comprehensible input. Therefore, teachers should increase opportunities for students to practice English writing and enrich the variety of tasks, enabling them to write relevant compositions. At the same time, teachers should help develop students correct English writing skills and habits; students should accumulate good sentence patterns, recite more excellent compositions and idiomatic expressions to implement them in English writing practice; students should also increase the practicing frequency and conquer dilemma before English writing to eliminate negative impact in mind, so as to extract relevant information fluently to improve English writing quality.

Keywords: *Background Music Teaching, English Writing, Accuracy, Fluency*

A. Introduction

English writing is a crucial component for college students in acquiring a second language. Among various learner-related variables, affective factors play a significant role in second language acquisition (Huang, 2023). In explaining how affect influences language learning, Krashen's (1982) Affective Filter Hypothesis provides an influential theoretical framework. Krashen argues that motivation, self-confidence, anxiety, and other affective variables affect second language acquisition by regulating the amount of comprehensible input that learners can effectively process.

Among these affective factors, anxiety deserves particular attention. During the process of English writing, learners often encounter difficulties in title formulation, content selection, and lexical choice, which may easily induce tension and anxiety. As a specific form of foreign language anxiety, writing anxiety refers to the psychological tension and behavioral avoidance experienced by learners during the writing process (Lin, 2023). Excessive anxiety can directly interfere with learners' cognitive processes, leading to psychological barriers, negative emotions, and frustration. Consequently, students may fail to experience enjoyment and a sense of

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achievement in English writing, which ultimately affects both the accuracy and fluency of their written output (Daly & Miller, 1975; Ferris & Roberts, 2001).

In the 1960s, the Bulgarian psychotherapist Georgi Lozanov proposed Suggestopedia, emphasizing the use of suggestion and relaxation in language teaching (Richards & Rodgers, 1986). One of its instructional techniques involves background music, which uses the aesthetic and emotional power of music to create a supportive learning environment. Effective implementation of background music teaching helps learners relax, reduce anxiety, generate positive emotions, and maximize learning outcomes (Cao, 2020). Furthermore, the "Mozart effect," proposed by American researchers in the early 1990s, suggested that background music could positively influence cognitive performance, including language learning. In English writing instruction, background music is considered an effective means of alleviating anxiety by creating a relaxed classroom atmosphere, reducing tension, and enhancing learners' attention to new content (Krashen, 1982; Kenji, 1999).

Kenji Saeki (1999), a Japanese scholar, proposed ten practical methods for using background music in middle school English classrooms based on his teaching experience. In China, domestic scholars have also explored the pedagogical effects of background music. Wu Ailan (2020) analyzed the influence of background music on English intensive reading and grammar classes among health school students, finding that background music helped learners relax, reduce fatigue, stimulate thinking, and increase learning interest and academic performance. From a psychological perspective, Cao Guangfa (2020) discussed the theoretical foundations of background music teaching. Gong Jufang (2015) examined the influence of Mozart background music on college students' English reading comprehension and found that although it did not significantly improve overall reading scores, it positively affected students with a strong preference for music. Mei Jingyi (2015) reported that background music during instruction facilitated students' oral English output, whereas Song Yanbei (2020) found no significant effect on freshmen's oral English performance. More recently, Shao, Guo, and Cheng (2024) demonstrated that background music could improve primary school students' reading speed using eye-tracking data.

In summary, both international and domestic scholars have investigated the relationship between background music instruction and English learning from multiple perspectives, including reading comprehension, oral output, and affective regulation. However, to date, limited research has focused on the relationship between background music and English writing accuracy and fluency among non-English majors in higher education. Therefore, the present study represents an exploratory attempt to address this research gap.

B. Methods

Participants

The participants in the study are first-year non-English-major students at Zhengzhou Electric Power Vocational and Technological College. Two natural classes of the same major at the same school were selected. Each class has 20 students, and there are 40 students in total. One class is taken as an experimental class (Background music teaching), and the other is a control class (traditional teaching). Both of them have the same teacher, syllabus, course book, and teaching schedule. Given their same major and grade, I assume they are homogeneous in other affective factors such as learning motivation, confidence, etc.

Experiment Procedures

The study lasts one semester(16 weeks) and adopts "Pre-test -Experiment Teaching-Post-test." Pre-test is conducted at the beginning of the term, and post-test is conducted at the end of the term. Between the pre-test and post-test is experimental teaching. In the experimental group (class B), I have classes with background music; in the control group (class A), I have classes with traditional teaching. Both classes write the same title, "My favourite season", in both tests, which last 30 minutes and have at least 80 words.

As it is a familiar topic to students and everyone can write about it, it can reflect students' real English writing level. The written materials on the two tests from the two classes were rewritten in my notebook for quantitative and qualitative analysis. At the pre-test, the students did not know that they would write the same topic on the post-test. The students did not receive the same topic during the teaching time. Practice effects have been minimized.

Variable Definition and Measurement

Radocy and Boyle define background music as any kind of music played while listeners' attention is focused on a task or activity rather than on the music itself (Radocy & Boyle, 2003). In the present study, background music is operationally defined as classical light music without lyrics, played by teachers to assist instruction in English classes. The evaluation of English writing accuracy in this study uses three indicators: Error-Free T-units/T-units, Total Errors/Total T-units, and Words in Error-Free T-units/Total Words, which are widely used measures in second-language writing research (Wolfe-Quintero et al., 1998). Meanwhile, the evaluation of writing fluency employs three indicators: Total Words/Total Number of T-units, Total Words/Number of Clauses, and Total Words/Number of Error-Free T-units, reflecting learners' ability to produce continuous, efficient written output (Wolfe-Quintero et al., 1998).

Data Collection and Analysis

The data collected in this study include students' written compositions from the pre-test and post-test, as well as questionnaire responses. All data were analyzed using SPSS statistical software. Based on the error analysis framework proposed by Ferris and Roberts (2001), errors in students' compositions were categorized into ten types: sentence pattern, tense, singular–plural noun forms, articles, subject–verb agreement, word choice, verb forms, pronouns, spelling (including punctuation, capitalization, and letter case), and other errors. Each composition was manually annotated using the following coding system: E (error), T (T-unit), C (clause), EFT (error-free T-unit), and W (total words). Independent-samples t-tests were conducted to examine differences in students' English writing accuracy and fluency between the experimental and control groups.

Research questions

Based on the above discussion, this paper examines the influence of background music instruction on the development of English writing among higher vocational college freshmen in Chinese non-English majors through a teaching experiment. The specific research questions are as follows:

1. Can background music teaching improve the accuracy of English writing of college students in China?
2. Can background music teaching improve the fluency of English writing of college students in China?

C. Results and Discussion

Accuracy Result of English Writing

Table 1 shows the accuracy results of English writing in the pre-test and post-test in the two classes. Class A adopts traditional teaching, and Class B adopts background music teaching. There were 3 group ratios in each class. The table is analyzed as follows.

Table 1. The Accuracy Result of English writing in the pre-test and post-test in Class A and B

	Evaluation projects	Pre-test/ post-test	Class A		Class B			
			Mean	Standard Deviation	mean	Standard Deviation	t	p
Accuracy of English writing	Error-Free T-units / T-units	Pre-test	0.71	0.26	0.38	0.26	3.06	0.006**
		post-test	0.33	0.28	0.52	0.21	-2.22	0.034*
	Total Errors / Total T-units	Pre-test	0.79	0.44	1.51	0.84	-2.29	0.032*
		post-test	1.46	0.79	1.01	0.69	1.82	0.078 n.s.
	Words in Error-Free T-units / Total Words	Pre-test	0.68	0.28	0.33	0.24	3.21	0.004**
		post-test	0.29	0.28	0.52	0.23	-2.74	0.010*

$P>0.05$= Class A and B are not significantly different, n.s.=not significant; $P<0.05$= Class A and B are significantly different, * =significant; $P<0.01$= Class A and B are very significantly different, **= very significant. First, the ratio of Error-Free T-unit to T-unit. In the pre-test, the mean of Class A is 0.71, the standard deviation is 0.26; while the mean of Class B is 0.38, the standard deviation is 0.26. The accuracy of Class A is higher than that of Class B and independent sample t-tests shows there is very significant different between Class A and Class B. Therefore, we can assume: the difference in post-test accuracy is mainly due to different teaching methods. In the post-test, the mean of Class A decreased to 0.33, while the mean of Class B increased to 0.52, which shows significant difference. In all, it shows that the background music teaching improves the accuracy of Class B, while the accuracy of Class A decreases significantly. Second, the ratio of Total Errors to Total T-units. In the pre-test, the mean of Class A is 0.79, the standard deviation is 0.44; while the mean of Class B is 1.51, the standard deviation is 0.84. Independent t-test shows there is significant between Class A and Class B.Therefore, we can assume that the difference in post-test accuracy is mainly due to different teaching methods. In the post-test, the mean of Class A is 1.46, the standard deviation is 0.79; while the mean of Class B is 1.01, the standard deviation is 0.69. Independent t-test shows there is no different between Class A and Class B. In all, the error rate of Class A in the post-test increases two times than that of in the pre- test, while the error rate of Class B in the post-test decreases to 1.01, background music teaching decreased the error rate of Class B.

Third, the ratio of Words in Error-Free T-units to Total Words. In the pre-test, the mean of Class A is 0.68, the standard deviation is 0.28; the mean of Class B is 0.33, the standard deviation is 0.24. Independent t-test shows there is very significant different between Class A and Class B. We can assume: the difference in the post-test is mainly due to different teaching method. In

the post-test, the mean of Class A is 0.29, with a standard deviation of 0.28; the mean of Class B is 0.52, with a standard deviation of 0.23. An independent t-test shows there is a significant difference between Class A and Class B. In all, background music teaching increases the accuracy of Class B. To make the analysis more accurate, four types of errors (lexical, morphological, syntactic, and punctuation) are also analyzed. See Table 2:

Table 2. Percentage of the Four Types of Errors in the Pretest and post-test in Class A and B.

Class	Pre-test/ post-test	Lexical errors	Morphological errors	Syntactic errors	Punctuation errors	Total errors
Class A Troditional Teaching	Pre-test	11（27%）	6（15%）	9（22%）	15（36%）	41
	post-test	59（34%）	11（6%）	52（30%）	53（30%）	175
Class A Background Music Teaching	Pre-test	67（43%）	8（5%）	52（34%）	27（18%）	154
	post-test	28（20%）	10（7%）	51（38%）	47（35%）	136

Table 2 shows that, in the pre-test, the total errors of Class A are 41, while there are 175 errors in the post-test. There are 154 errors in the pre-test of Class B, 136 in the post-test. Of the four types of errors, the number of lexical errors has the greatest change. The post-test of lexical error in Class A is 48 more than that in the pretest, while the post-test of lexical error in Class B is 39 fewer than that in the pretest. There is almost no difference in syntactic errors in Class B between pre-test and post-test, and the punctuation errors in the post-test are 20 more than those in the pre-test. There is no difference in morphological errors between Class A and Class B. In all, Table 2 shows that background music instruction effectively helps students reduce lexical and total errors and effectively suppresses syntactic errors, but has no significant effect on morphological or punctuation errors.

The Fluency Result of English Writing

Table 3 shows the fluency results of English writing of Classes A and B in the pre-test and post-test. It is analyzed as follows.

Table 3. The Fluency Result of English Writing of Class A and B in the Pre-test and Post-test

	Evaluation projects	Pre-test/ post-test	Class A		Class B		t	p
			Mean	Standard Deviation	Mean	Standard Deviation		
Fluency in English writing	Total Words/Total number of T-units	Pre-test	6.96	3.04	7.09	1.49	-0.145	0.886 n.s.
		Post-test	9.98	4.08	7.80	1.65	2.142	0.042*
	Total Words/The number of clauses	Pre-test	31.65	15.99	35.26	17.18	-0.366	0.720 n.s.
		post-test	31.41	11.72	44.19	22.57	-1.768	0.096 n.s.
		Pre-test	10.82	4.80	24.53	17.20	-2.319	0.030*

	Total Words/The Number of Error-Free T-units	post-test	30.26	18.08	16.22	5.78	2.946	0.006**

P>0.05= Class A and B are not significantly different, n.s.=not significant; P<0.05= Class A and B are significantly different, * =significant; P<0.01= Class A and B are very significantly different, **= very significant.

First, the ratio of total words to the total number of t-units. In the pretest, the mean of Class A is 6.96, with a standard deviation of 3.04; the mean of Class B is 7.09, with a standard deviation of 1.49. An independent-samples t-test shows that there is no difference between Class A and Class B. In the post-test, the mean of Class A is 9.98, with a standard deviation of 4.08; the mean of Class B is 7.80, with a standard deviation of 1.65. An independent-samples t-test shows a significant difference between Class A and Class B. A further comparison of the mean value found that the mean of Class A is higher than that of Class B in the post-test. Second, the ratio of total words to the number of clauses. In the pre-test, the mean of Class A is 31.65, with a standard deviation of 15.99; the mean of Class B is 35.26, with a standard deviation of 17.18. There is no difference between Class A and Class B in the pre-test. In the post-test, the mean of Class A is 31.41, with a standard deviation of 11.72; the mean of Class B is 44.19, with a standard deviation of 22.57. There is no difference between Class A and Class B in the post-test. There is almost no difference in the mean of Class A between pre-test and post-test (pre-test 31.65, post-test 31.41); there is an 8.93 point difference in the post-test than in the pre-test in Class B. In all, there is no significant difference between Class A and Class B. Background music teaching has no significant influence on Class A and Class B. Third, the ratio of total words to the number of error-free T-units. In the Pre-test, the mean of Class A is 10.82, with a standard deviation of 4.80; the mean of Class B is 24.53, with a standard deviation of 17.20. The means of Class A and Class B differ significantly. In the post-test, the mean of Class A is 30.26, with a standard deviation of 18.08; while the mean of Class B is 16.22, with a standard deviation of 5.78. The mean of Class A and Class B shows a very significant difference. The post-test score of Class A surpasses the pre-test score of Class B and is much higher than the post-test score of Class B.

The results indicate that: (1) background music teaching can effectively improve the accuracy of English writing, and its effect is superior to that of traditional teaching; (2) background music teaching does not enhance English writing fluency, and its effect is inferior to traditional teaching. Based on Krashen's Affective Filter Hypothesis (Krashen, 1982) and Wolfe-Quintero et al.'s (1998) framework of writing development, these findings are further analyzed in relation to the characteristics of the two teaching approaches.

A comparison of pre-test and post-test results shows that background music instruction significantly improved the writing accuracy of Class B, whereas the accuracy of Class A, which used traditional instruction, declined. Learner-related factors can be broadly divided into affective factors and competence-related factors. Affective variables, particularly anxiety, strongly influence learners' cognitive resource allocation. Increased anxiety leads to a reduction in available cognitive resources, whereas anxiety reduction helps release cognitive capacity for task performance. Writing, as a cognitively demanding output task, requires learners to allocate limited attentional resources to integrating form and meaning. When affective filters are lowered, more cognitive resources can be devoted to monitoring language form, thereby improving accuracy (Krashen, 1982; Skehan, 1998; DeKeyser, 2007). Background music in the classroom

contributes to a relaxed atmosphere, alleviates tension and anxiety, and thus facilitates greater accuracy in English writing.

Further analysis of error types also supports this conclusion. In terms of lexical errors, the post-test results for the traditional teaching group increased by 7% compared with the pre-test, whereas those for the background music group decreased by 23%. This suggests that students exposed to background music experienced reduced anxiety and were better able to use vocabulary accurately in a relaxed learning environment. By contrast, sustained anxiety in traditional writing instruction may have contributed to the increase in lexical errors. Regarding syntactic errors, the traditional teaching group showed a substantial increase on the post-test, while the background music group remained relatively stable, suggesting that background music instruction may help curb the growth of syntactic errors. However, punctuation errors increased in both groups during the post-test, suggesting that while students focused more on sentence accuracy and fluency, attention to punctuation was relatively neglected. This finding highlights punctuation as an area requiring further pedagogical intervention.

From the perspective of writing fluency, background music teaching did not produce significant positive effects. The traditional teaching group outperformed the background-music group across several fluency indicators. For example, in the ratio of total words to total number of T-units, both groups showed similar means in the pre-test, with no significant difference. In the post-test, however, the traditional teaching group demonstrated a substantial increase, while the background music group showed only a slight improvement, resulting in a significant between-group difference. This indicates that students in the traditional teaching group produced longer sentences and made greater progress in fluency. Moreover, the ratio of total words to error-free T-units in the traditional teaching group was nearly three times higher in the post-test than in the pre-test, whereas the background music group showed a decline. These findings suggest that background music teaching may hinder the development of writing fluency.

According to Wolfe-Quintero et al. (1998), accuracy and fluency rely on different language systems. Accuracy depends primarily on rule-based processing, whereas fluency relies on the automatic retrieval of prefabricated language chunks from long-term memory. For fluent language production, linguistic knowledge must be sufficiently entrenched in long-term memory through extensive and conscious output practice (DeKeyser, 2007). Given that many students lack adequate stored knowledge of English writing, background music may interfere with the cognitive processes required for fluent output. Furthermore, for students with well-established study habits, background music may function as external interference, prompting them to consciously suppress or avoid distractions during cognitively demanding writing tasks.

To further validate these findings, a questionnaire titled Impact of Background Music on Study/Work was administered to students from the background music teaching class and six parallel classes. A total of 313 questionnaires were distributed, and all were returned. The questionnaire consisted of five single-choice questions and one open-ended question. Overall, the results indicate that although most participants subjectively believe background music enhances study or work efficiency, objective responses reveal that it influences attention, emotional states, and task completion to varying degrees.

Specifically, although the majority of participants reported listening to music while studying or working, over 90% demonstrated awareness of background music through recognition or humming, indicating cognitive engagement with the music. More than half of the participants reported difficulty completing demanding tasks when background music was present, and approximately 78% acknowledged emotional fluctuations influenced by background music. Despite this, 58% of respondents believed that background music had positive effects on study or work efficiency.

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These findings reveal a clear discrepancy between learners' subjective perceptions and objective cognitive influence. While learners prefer a relaxed learning environment with background music, they may underestimate the extent to which background music diverts attentional resources. The results of the present study are consistent with Song Yanbei's (2020) findings, which also suggest that background music can distract learners during language tasks. Consequently, the widely held belief that background music universally enhances learning by reducing anxiety and improving instructional effectiveness (Cao, 2020) should be reconsidered, particularly in relation to complex output tasks such as English writing.

D. Conclusion

The study of the influence of Background Music Teaching on the Accuracy and Fluency of College Students' English Writing in China. It shows that, firstly, background music instruction can enhance the lexical accuracy of college students' English writing and effectively suppress syntactic errors, but has no significant effect on reducing morphological or punctuation errors. Background Music class increased punctuation errors in the post-test, indicating that participants were more concerned about sentence accuracy and fluency than about correct punctuation. Morphological errors are almost the same in the pre-test and post-test in the two classes. Second, background music during instruction hinders participants' English writing fluency. Fluency requires learners to use the memory system to extract existing language blocks. Therefore, to ensure the fluency of language output, language information should be stored in long-term memory so that learners can retrieve it with minimal attention resources whenever needed. Conscious speech output practice is key to ensuring that language information is stored in long-term memory. Students lack sufficient knowledge of English writing; therefore, background music instruction hinders their English writing fluency. Besides, most people are accustomed to working or studying in a quiet environment, and background music may distract them and reduce the fluency of their English writing.

Teachers should teach students writing skills, provide relevant topic data for them to recite, and improve students' English writing accuracy. For example, teachers ask students to keep a diary and give peer feedback daily. Teachers check the assignment occasionally and correct common mistakes in public if necessary. At the same time, teachers should also help students develop correct writing skills and habits to improve writing accuracy. This can not only improve students' writing effectiveness but also stimulate their interest and motivation in English writing, and enhance their sense of ease and achievement. Students should accumulate many more idiomatic sentences, memorize more excellent compositions, and fixed expressions to use them in English writing. The more they practice, the better. Students should also address dilemmas in the English writing class to reduce negative impacts on their minds, enabling them to extract relevant information more fluently and improve the quality of their English writing.

Despite detailed analysis, elaboration, and repeated modification, this thesis still has its limitations. In terms of sample selection, a larger number of subjects should be selected, and the writing process of the participants can be strictly supervised to obtain more effective samples and enhance the representativeness of the research results. In terms of genre selection, this study uses narrative writing, and future research writing genres can be rich and diverse; In terms of research duration, this study is only one semester, and the future research duration can be one year or even two years to discuss more deeper the influence of background music on the writing accuracy and fluency of freshmen in non-English majors.

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References

Cao, G. F. (2020). The psychological basis of background music teaching. Modern Education Science, (1), 80–81.

Daly, J. A., & Miller, M. D. (1975). The empirical development of an instrument of writing apprehension. Research in the Teaching of English, (3), 242–249.

DeKeyser, R. M. (2007). Practice in a second language: Perspectives from applied linguistics and cognitive psychology. Cambridge University Press.

Ferris, D. R., & Roberts, B. (2001). Error feedback in L2 writing classes: How explicit does it need to be? Journal of Second Language Writing, 10, 161–184.

Gong, J. F. (2015). The influence of Mozart background music on college students' English reading comprehension. Journal of Guangxi Institute of Education, (1), 142–145.

Huang, S. (2023). Affective factors' influence on senior high school students' English writing (Master's thesis). Inner Mongolia Minzu University. https://doi.org/10.27228/d.cnki.gnmmu.2023.000305

Kenji, S. (1999). Facilitating classroom teaching with background music. Foreign Language Teaching Abroad, (4), 22–23, 46.

Krashen, S. D. (1982). Principles and practice in second language acquisition. Pergamon Press.

Lin, J. (2023). A study on the impact of continuation writing on senior high school students' English writing anxiety and writing performance (Master's thesis). Minnan Normal University. https://doi.org/10.27726/d.cnki.gzzsf.2023.000358

Mei, J. (2015). The impact of background music teaching on the accuracy and fluency of college students' oral English in China. International Journal for Innovation Education and Research, 3, 120–128.

Richards, J. C., & Rodgers, T. S. (1986). Approaches and methods in language teaching. Cambridge University Press.

Shao, H., Guo, S., & Cheng, M. (2024). The study of eye movement of background music on reading comprehension. Psychological Research, 17(5), 470–477. https://doi.org/10.19988/j.cnki.issn.2095-1159.2024.05.011

Skehan, P. (1998). A cognitive approach to language learning. Oxford University Press.

Song, Y. (2020). The influence of background music teaching on accuracy and fluency of freshmen's oral English in China. International Journal for Innovation Education and Research, 8, 1–11.

Wang, W. (2020). Creating college English second classroom under the guidance of affective filter hypothesis. Journal of Jiangxi Vocational and Technical College of Electricity, 33(10).

Wolfe-Quintero, K., Inagaki, S., & Kim, H. (1998). Second language development in writing: Measures of fluency, accuracy, and complexity. University of Hawai'i at Mānoa, Second Language Teaching & Curriculum Center.

Wu, A. L. (2020). The preliminary application of background music in English teaching. Medical Education, (3), 25–26.

Xu, Q. (2024). The influence of background music on memory. Science & Technology Vision, (14), 02.