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Abstract—This investigation conceptualized and executed a Personal Learning Environment (PLE) for Applied English Writing in a Chinese senior high school setting, aiming to enhance students' learning efficacy and motivation. A total of 88 senior high school students participated, and they were categorized into two cohorts: the experimental group, which employed the PLEs-AEW platform for English writing instruction, and the control group, which utilized conventional face-to-face teaching methodologies. The research methodology involved pre-and post-test assessments of Applied English Writing and a semi-structured interview. The findings from the study demonstrated that PLEs-AEW platform possesses the capacity to invigorate students' learning motivation and bolster their self-assurance. Besides, the platform has a positive impact on improving students' writing skills. The study indicated that the integration of the PLEs-AEW platform in high school contexts possesses substantial theoretical value and practical implications.

Keywords—Personal Learning Environments; English writing; high school; learning motivation; learning effectiveness

I. INTRODUCTION

In the midst of the swift growth of artificial intelligence, big data, and the expansive adoption of the "three channels and two platforms" (San Tong Liang Ping Tai), there's an urgent demand for educational reform. This technological integration into education has been embraced globally, revolutionizing teaching techniques and significantly altering perceptions on education, culture, and the structure of schooling (Li, 2020). Amidst this shift, the topic of Personalized Learning has risen to prominence in educational circles.

Personal Learning Environments (PLEs) represent a pedagogical approach harnessing technology and rooted in social educational principles. While initial research on PLEs

centered on understanding their nature and functionality, a comprehensive definition remains elusive. Certain PLE models, such as "Future PLEs" and "Reference PLEs", have been highlighted for their student-centric focus and their reliance on the "information pull" methodology. With the evolution of Web 2.0 technologies, there was a surge in researchers developing PLEs based on web applications and integrating them into their instructional practices. Subsequent studies, like that by Basham et al. (2016), indicated that students leveraging PLEs showcased performance beyond initial expectations.

However, a noticeable research void emerges when we examine the specific contexts in which PLEs are applied. While studies from the West, as referenced in the works of Sarah and Noraffandy, Basham et al., and Arroyo et al., provide strong data supporting PLEs' effectiveness, the research landscape in China appears nascent. Existing literature from scholars like Yu Xiaohua, Zhu Zhiting, Li Minjiao, and Wang Ying, primarily focuses on theoretical discussions and conceptual outlines of PLEs. There's a palpable absence of empirical studies that delve into the real-world implications, advantages, and challenges of integrating PLEs into English instruction for Chinese high schoolers.

Furthermore, given the pivotal role of English writing skills in language education, limited studies have explored the direct impact of PLE frameworks on bolstering English writing capabilities of Chinese high school students. The potential benefits of PLEs in stimulating student motivation in the realm of English writing also remain largely unexplored.

Recognizing these research gaps, this study aspires to address these areas of concern, setting out to empirically

evaluate the influence of the Personal Learning Environments Platform on the English writing efficacy and motivation of high school students in the Chinese educational context.

II. LITERATURE REVIEW

A. Development of Personal Learning Environment

The term Personal Learning Environments (PLEs) originated in 2004, introduced by the Joint Information Systems Committee (JISC) in the UK. Stephen (2007), a Canadian researcher, described PLEs as a flexible learning setting which amalgamates tools, services, individuals, and resources, characterizing a novel approach to harnessing online materials. PLEs emerged as an innovative perspective on student learning and instructional methodologies.

From one standpoint, PLEs can be seen as a platform. Van Harmelen (2006) contends that the chief aim of PLEs is to equip learners with tools for crafting their ICT-driven environments. Such spaces facilitate connections among learning communities, fostering collaboration towards common goals and aiding learners in amassing both professional and personal proficiencies via PLE usage.

Alternatively, PLEs can be viewed in the lens of resource compilation. Barroso (2010) perceives PLEs as a tailored collection of resources, tools, services, and devices that support educators and students in crafting their individual learning networks. He Yin and Xia Zhifang (2008) underscore that PLEs merge modular, interlinked components, assimilating an array of digital tools and services, such as microblogs and other related platforms, to enhance the learning process.

Lastly, PLEs can be conceptualized as a fresh pedagogical tactic. They signify a socially-driven instructional approach that integrates technology into education, spanning both instructional and learning spheres (Attwell, 2021). PLEs weave together elements of both formal and informal education into a cohesive learning journey, tapping into social networks that can span beyond institutional confines and leveraging networking frameworks. Building on this, Attwell (2021) suggests that PLEs fundamentally operate as a socio-educational mechanism that taps into technology, with a dual focus on both teaching and learning aspects. Such a vantage point implies that PLEs prioritize learner autonomy, customization, and the consolidation of various online social tools into an immersive virtual learning space.

B. Development of Application Writing

Writing is not only a tool for expressing feelings and sharing knowledge but also a means to relay information. However, application writing stands out with its distinct features. Applied English Writing refers to writing that is

specifically meant for practical purposes. Professor Chen Yaonan (1985) from Hong Kong defines application writing as a piece of text designed for real-world use and application, created by individuals or organizations using a common language and style. Such writings make it easier for people and organizations to interact. According to Ms. Li, this type of writing is deeply rooted in its social context, emphasizing that the cultural and social settings in which it is taught should be given due consideration (Li, 2008).

Specific types of application writings include reports, speeches, formal letters like applications and thank-you notes, and other documents commonly used in everyday or professional lives. Given its relevance in day-to-day communication, application writing plays a vital role in personal interactions. Feng (2011) highlighted that with about 70% of global written communications happening in English, the significance of applied English writing in communication and information sharing can't be understated.

C. Second Language (L2) Learning Motivation Theory

Gardner & Lambert(1959) contended that the motivational intensity of second language learners is determined by their motivational orientation and proposed two types of motivation: integrative orientation and instrumental orientation. Integrative orientation(Dörnyei,2021) involves a positive disposition towards the L2 group and interaction with its members, while instrumental orientation, the utilitarian counterpart in Gardner's theory, is related to the potential linguistic benefits of proficiency in the L2, such as securing a better job or a higher salary. Later, Gardner(1985) proposed a socio-educational model that expanded the connotation of integration, transforming orientation into integrative and instrumental classifications, which have significant implications for motivation research. Additionally, Gardner introduced the Attitude/Motivation Test Battery (AMTB), comprising three components: the desire to learn L2, the attitude towards learning L2, and the intensity of motivation.

Although Gardner's L2 motivation theory has long been the dominant model in the L2 domain, Tremblay & Gardne(1985) extended the socio-educational model by distinguishing between desire, attitude, and motivational intensity and adding dimensions of goal salience, achievement, self-efficacy, and L2 language advantage. However, the socio-educational model did not examine the relationships and effects between the different factors and failed to consider the impact of diverse learning environments and motivation-related factors.

In China, most empirical studies on foreign language motivation have employed traditional and modified models to explore the facilitating effects of motivation on scores or relationships. Regarding innovation in motivation theory, Qin Xiaoqing and Wen Qiufang(2002) investigated the structure of intrinsic motivation among non-English majors and proposed a causal model of foreign language learning motivation. Gao et al.(2003b)summarized university students' types of English learning motivation through a large-sample questionnaire. Qin Lili and Dai(2009) constructed a model of university-level English learning motivation based on Vygotsky's activity

theory and Dörnyei's L2MSS. Xu(2015) conducted a quantitative study on the self-system of English learning motivation among Chinese university students. In terms of domestic research on online learning motivation, Shen Yunting(2021) argued that online motivation is generally the intrinsic drive that motivates and sustains individuals to engage in online learning and direct their online learning behavior towards specific academic goals. She suggested that encouraging secondary school students to learn online can effectively enhance the efficacy of online learning.

III. RESEARCH METHODS

To comprehensively address the research question, this study integrated a blend of quantitative and qualitative research methods. This section elucidates the methodological framework and procedures that were employed.

A. Participants

The study engaged 88 senior students from a well-known high school located in East China. In coordination with the English faculty of the institution, we divided the participants into experimental and control groups based on their scores from the annual writing proficiency test. Each group contained 44 students, primarily aged between 16 and 17 years.

It's noteworthy that a single teacher was responsible for instructing both groups, ensuring consistency in teaching quality and style. The primary distinguishing factor between the two classes was the teaching approach. The experimental group was exposed to the PLEs-AEW platform for their English writing lessons, whereas the control group continued with the conventional in-person teaching methods. Despite this difference in methodology, both classes followed the same curriculum using textbooks from the Foreign Language Research Press. The duration of this experimental setup extended over one semester.

B. Research context

Both the experimental and control groups consisted of 44 students each. The study was carried out from early September 2021 through the end of December 2021, spanning roughly fifteen weeks. The writing assessment comprised two segments: an initial pre-writing test and a concluding post-writing test. Before the experiment's commencement, the pre-test was given to students from both groups to gauge their writing prowess and to ascertain their writing proficiency and skills. The materials for this initial assessment were sourced from the end-of-semester exam for the first term of the senior year at a Wenzhou high school in 2021. The test's content and difficulty level were set by the city's Education Bureau, ensuring that the writing prompts strictly adhered to the updated curriculum standards and the English syllabus. The test had a maximum score of 15 points and a duration of 20 minutes.

The main objective of this pre-test was to validate the baseline writing capabilities of students in both the

experimental and control groups. Following the course of the experiment, a post-test was administered to determine the efficacy of the PLEs-AEW platform on students' writing skills and performance, evaluating the progression in students' writing capabilities post the PLEs-AEW platform intervention. The content for the post-test was derived from the writing section of that semester's final examination, as stipulated by the city's Department of Education. The standard scoring guidelines for high school English applications were utilized as the foundational metric for this study, ensuring that the evaluation of student essays was done based on consistent and reliable criteria.

C. Research procedure

The design of the experiment was centered around specific topics. The learning resources fell into two main categories:

Standard Textbook Content: This covered lessons on celebrations and festivals, taken from "Unit 1 of English Compulsory 3".

Supplementary Learning Materials, These included:

- A documentary exploring the 24 Chinese solar terms.
- Brief video presentations on iconic Chinese celebrations, like the Ching Ming Festival and the Mid-Autumn Festival.
- A set of guidelines, along with example essays, to help students craft argumentative writings (detailed in Fig. 1).

Furthermore, the platform was enhanced with video resources on applied writing techniques, examples of well-structured writings, and practical writing advice. To encourage interaction and peer learning, discussion forums were integrated. Here, students could share insights, reflect on their writing journey, and address any writing-related queries (for a detailed layout, refer to Fig. 2).

Before the experiment's commencement, an orientation session was held. During this session, the researcher walked the students through the platform's registration procedure and demonstrated how to make the most out of its features. This was done to ensure all participants felt confident and competent in using the platform.

The teacher gave the students a task to choose a traditional Chinese festival and write an in-depth account of it. Students were to approach this topic from four angles: the festival's customs, the traditional foods associated with it, the activities carried out during the festival, and its historical origin. After crafting their narratives, students posted their views on the PLEs-AEW platform. They also took the time to read and react to their peers' submissions, offering different viewpoints and insights (as showcased in Fig. 3 & Fig. 4). By actively participating in these online discussions, students not only communicated with one another but also reinforced and articulated the knowledge they had gained from the PLEs platform.

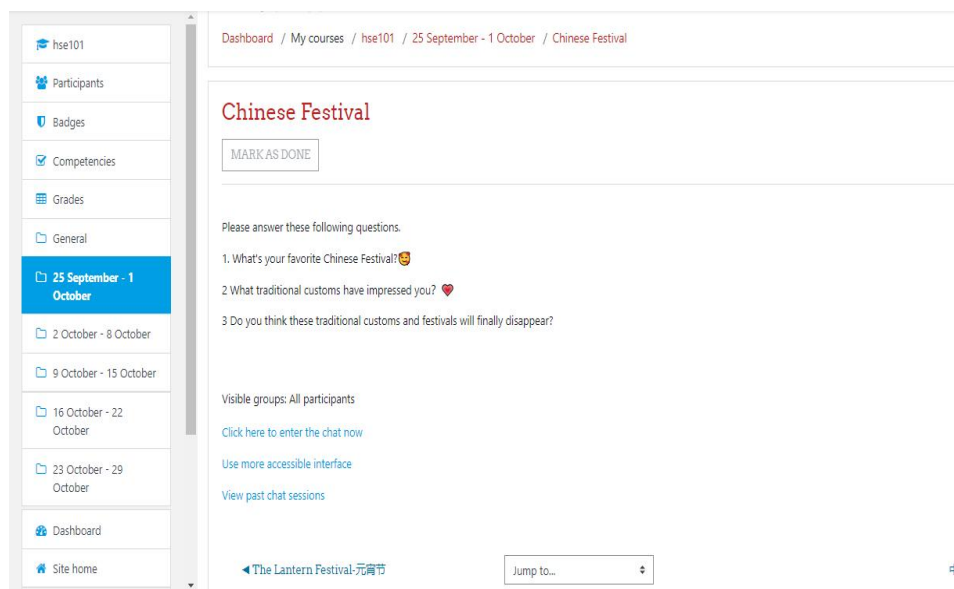


Fig. 1. Issue display area of the PLEs-AEW platform.

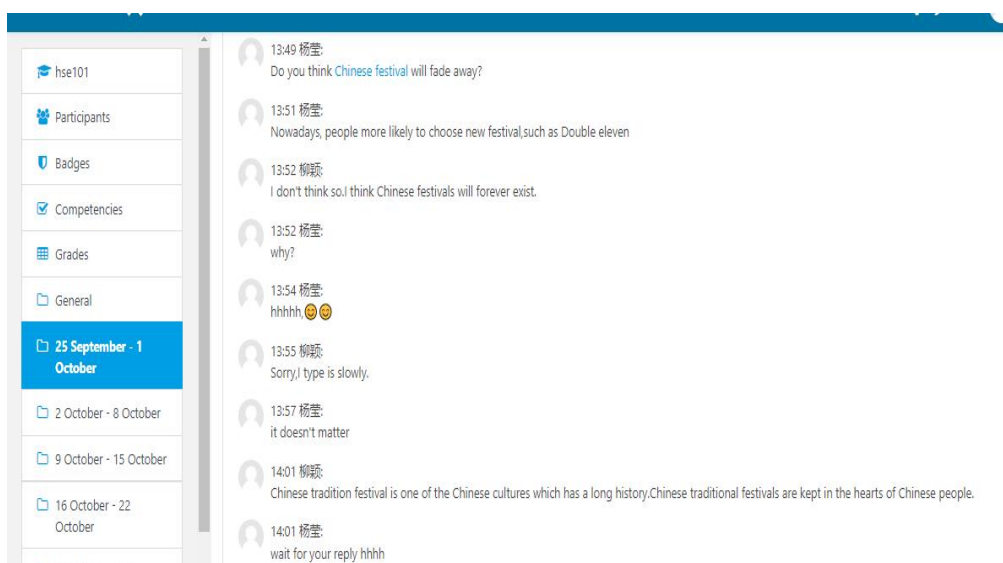


Fig. 2. Discussion forum of the PLEs-AEW platform.

The teacher handed out writing assignments to the students. To help with their tasks, students turned to the PLEs platform to gather information on applied English writing. After completing their assignments, they uploaded their essays onto the platform. The system on the platform then automatically graded the students' work. In addition, the "Pi Yue Wang" website provided further evaluation of the essays. Based on the students' writing performance, the platform also recommended specific tasks and learning materials appropriate for their skill level. This feature helped teachers get a clearer picture of how the class was performing as a whole and how individual students were progressing, all made

possible by the platform's record-keeping capability. Using feedback from both the platform and their teachers, students made revisions to their essays. The final grade for each essay was a combination of the score from the platform and evaluations from two English teachers.

At the same time, the teacher highlighted standout pieces or notable sentences and excerpts, displaying them on the forum. This practice helped to boost the students' enthusiasm and self-assurance in their English writing abilities. After taking all the feedback into account, students then made another round of revisions and submitted their updated essays to the PLEs platform.

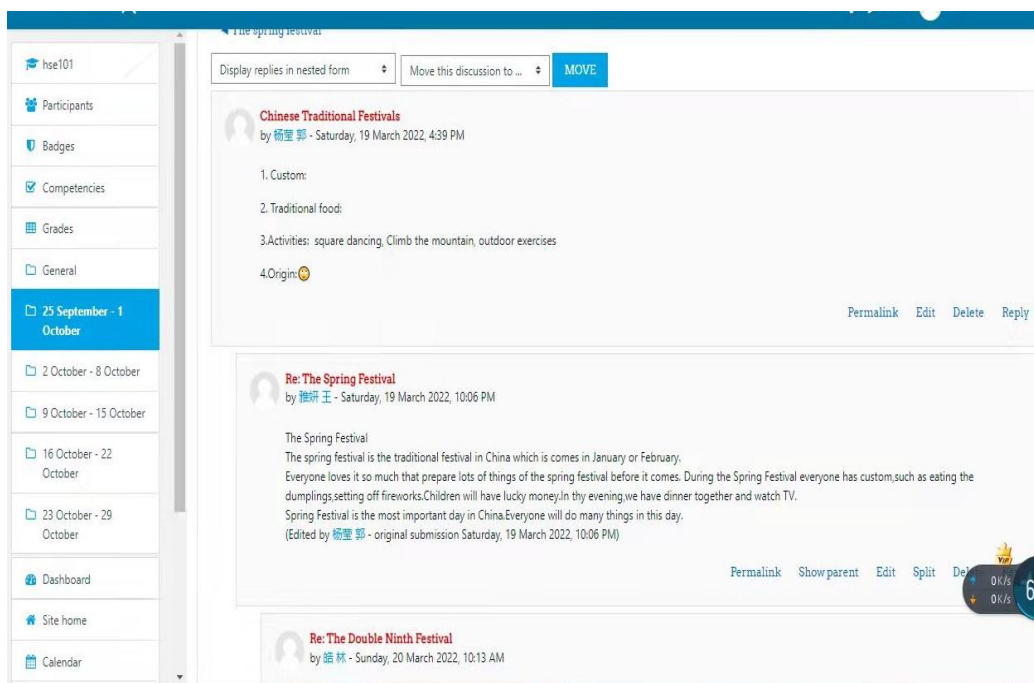


Fig. 3. Posting and replying of PLEs-AEW platforms.

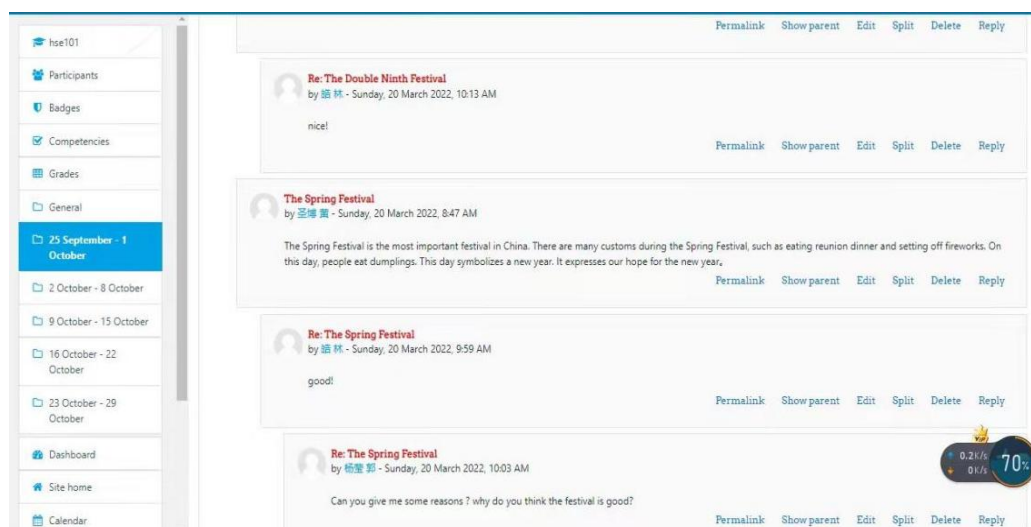


Fig. 4. Posting and replying of PLEs-AEW platforms

IV. RESULTS AND DATA ANALYSIS

A. Independent-Sample t Test of Pre-test Scores of the Experimental and Control Classes

Prior to initiating the experiment, a preliminary assessment was conducted with the 88 students split between the experimental and control groups. The primary goal of this pre-test was to verify that the writing proficiencies of students in both groups were comparably aligned, ensuring the integrity and validity of the subsequent experimental

procedures. The outcomes of this assessment are detailed in Tables 4-1 and 4-2.

Table 4-1 illustrates that the mean score for the experimental group is 6.693, while for the control group, it stands at 6.705. The associated standard deviations for these scores are 1.3172 and 1.1326 respectively. Notably, the sig.(2-tailed) value recorded is 0.288, which exceeds the threshold of 0.05. Such a result suggests that the initial English writing scores of both groups are closely matched. Consequently, there isn't a statistically significant disparity in the English writing capabilities of students between the two classes.

TABLE 4-1. GROUP STATISTICS

Grade	Class	N	average	Std. Deviation	Std. Error average
	EC	44	6.693	1.3172	.1986
	CC	44	6.705	1.1326	.1707

TABLE 4-2. INDEPENDENT SAMPLE TEST

		Levene's Test for Equality of Variances		t-test for Equality of averages		t-test for Equality of averages				
		F	Sig	t	df	Sig.(2-tailed)	average Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Grade	Equal variances assumed	1.141	.288	-.043	86	.965	-.0114	.2619	-.5320	.5093
	Equal variances not assumed			-.043	84.111	.965	-.0114	.2619	-.5322	.5094

TABLE 4-3. GROUP STATISTICS

Grade	Class	N	average	Std. Deviation	Std. Error average
	EC	44	8.193	1.3564	.2045
	CC	44	6.523	.8138	.1227

TABLE 4-4. INDEPENDENT SAMPLE TEST

		Levene's Test for Equality of Variances		t-test for Equality of averages		t-test for Equality of averages				
		F	Sig	t	df	Sig.(2-tailed)	average Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Grade	Equal variances assumed	7.650	.007	7.005	86	.000	1.6705	.2385	1.1964	2.1445
	Equal variances not assumed			7.005	70.407	.000	1.6705	.2385	1.1949	2.1460

Table 4-1 illustrates that the mean score for the experimental group is 6.693, while for the control group, it stands at 6.705. The associated standard deviations for these scores are 1.3172 and 1.1326 respectively. Notably, the sig.(2-tailed) value recorded is 0.288, which exceeds the threshold of 0.05. Such a result suggests that the initial English writing scores of both groups are closely matched. Consequently,

there isn't a statistically significant disparity in the English writing capabilities of students between the two classes.

B. Independent-Samples t Test of Post-test Scores of the Experimental and Control Classes

Prior to the experiment's commencement, both classes displayed comparable levels of proficiency in English writing. Following a fifteen-week instructional experiment, an

independent sample t-test was executed to determine if any significant disparities emerged between the writing scores of the two classes. The outcomes of this analysis are detailed in Tables 4-3 and 4-4.

Table 4-3 reveals a sig.(2-tailed) value below 0.05, signifying a marked difference in the post-writing test performances between the experimental and control groups. Notably, the experimental group's average score surpassed that of the control group by 1.67 points. This improvement underscores the efficacy of the PLEs-AEW platform in bolstering students' English writing capabilities. Such a result provides evidence in favor of the platform's potential to augment English writing proficiency among students.

C. Paired-Samples t Test Results of Pre- and Post-test Scores of the Experimental Class

The research employed t-tests to analyze the differences between pre- and post-experiment scores within the experimental group. This approach aimed to discern shifts in writing scores resulting from the intervention. The outcomes of these analyses are presented in Tables 4-5 and 4-6.

TABLE 4-5. PAIRED SAMPLE STATISTICS

		average	N	Std. Deviation	Std. Error average
Pair 1	Pre-test	6.693	44	1.3172	.1986
	Post-test	8.193	44	1.3564	.2045

TABLE 4-6. PAIRED SAMPLE CORRELATIONS

Pair 1		N	Correlation	Sig.
	Pre-test & post-test	44	.411	.006

The experimental class registered an average score of 6.693 in the pre-test and 8.193 in the post-test. This shows an enhancement in the English writing proficiency of students in the experimental group after the intervention. Compared to the control class's average score of 6.614, the experimental group achieved a higher average of 7.443. Given the sig.(2-tailed) value of 0.006, which is below the 0.05 threshold, it can be inferred that the implementation of the PLEs-AEW platform significantly boosts students' English writing capabilities and outcomes.

D. Paired-Samples t test Results of Pre and Post test Scores in the Control Class

The research sought to identify any variance in the writing outcomes of the control class post-experiment. To determine this, a paired samples t-test was undertaken, with the results detailed in Tables 4-7 and 4-8.

TABLE 4-7. PAIRED SAMPLE STATISTICS

Pair		average	N	Std. Deviation	Std. Error average
1	Pre-test	6.705	44	1.1326	.1707
	Post-test	6.523	44	.8138	.1227

TABLE 4-8. PAIRED SAMPLE CORRELATIONS

Pair		N	Correlation	Sig.
1	Pre-test & post-test	44	.056	.720

The data reveals that the control class's average score was 6.705 during the pre-test and marginally decreased to 6.523 in the post-test. As highlighted in the table, with a significance value (sig) of 0.720, which is greater than 0.05, it can be inferred that there is no notable difference between the pre- and post-test scores. This outcome suggests that the conventional face-to-face instructional approach might not be significantly impactful in enhancing students' proficiency in English writing, pointing to potential areas of concern in current English writing pedagogies.

E. Analysis of the Pre-questionnaire

A preliminary questionnaire was deployed to gauge the learning motivation levels among students in both the experimental and control groups.

TABLE 4-9. THE AVERAGE OF THE FOUR VARIABLES OF PRE-QUESTIONNAIRE IN EC

Dimension	Interest	Self-efficacy	Attitude	PLEs Platform Use
average	2.79	2.71	2.65	3.03
SD	1.04	1.08	1.03	1.13

TABLE 4-10. THE AVERAGE OF THE FOUR VARIABLES OF PRE-QUESTIONNAIRE IN EC

Dimension	Interest	Self-efficacy	Attitude	PLEs Platform Use
average	2.55	2.53	2.46	2.99
SD	0.85	0.83	0.97	1.09

Table 4-9 reveals that before engaging with the Personal Learning Environment platform, senior high school students face several hurdles in applied English writing. A closer look at Tables 4-9 and 4-10 indicates that both the experimental

class (EC) and the control class (CC) have average scores falling below three when assessing aspects such as interest, self-efficacy, and attitude towards writing. As per the Likert scale, an average score of 3.0 or less suggests that high school students have limited interest and confidence, and they also exhibit a less than favorable disposition towards English writing.

TABLE 4-11. INDEPENDENT SAMPLE T-TEST OF PRE-QUESTIONNAIRE IN EC AND CC

Dimension	Class	N	average	SD	T-value	Sig.(2-tailed)
Writing interest	16	44	2.55	0.85	-1.18	0.24
	17	44	2.79	1.04		
Writing self-efficacy	16	44	2.53	0.83	-0.90	0.36
	17	44	2.71	1.08		
Attitude	16	44	2.46	0.97	-0.89	0.37
	17	44	2.65	1.03		
PLEs platform use	16	44	2.99	1.09	-0.13	0.89
	17	44	3.03	1.13		

The data showcased in Table 4-11 indicates that both the experimental and control classes display similar average scores when evaluating interest, self-efficacy, attitude, and engagement with the PLEs platform. The Sig.(2-tailed) values associated with interest, self-efficacy, attitude, and use of the PLEs platform stand at 0.24, 0.36, 0.37, and 0.89 respectively. Given that all these values surpass 0.05, it can be inferred that no significant disparities exist between the experimental and control classes in terms of their writing competencies both pre and post the experiment. Yet, a notable observation from the table is the apparent deficiency in both classes' enthusiasm, confidence, and positive perspective towards writing prior to the introduction of the Personal Learning Environments (PLEs) platform.

F. Analysis of the Post-questionnaire

After concluding the experiment, a post-questionnaire was distributed, using the same tool as the pre-test, to examine if the concerns observed in both the experimental and control classes had been addressed. The results of this investigation can be observed in Table 4-12 and Table 4-13.

TABLE 4-12. THE AVERAGE OF THE FOUR VARIABLES OF POST-QUESTIONNAIRE IN EC

Dimension	Interest	Self-efficacy	Attitude	PLEs Platform Use
average	3.34	3.45	3.27	4.04
SD	0.96	0.94	0.98	1.16

Utilizing independent sample t-tests, as shown in Table 4-11, the study examines if there exists a significant difference in the interest, self-efficacy, and attitude towards English writing between students in the experimental class (EC) and those in the control class (CC).

TABLE 4-13. THE AVERAGE OF THE FOUR VARIABLES OF POST-QUESTIONNAIRE IN CC

Dimension	Interest	Self-efficacy	Attitude	PLEs Platform Use
average	2.63	2.62	2.75	3.00
SD	0.84	0.96	1.07	1.09

Based on the Likert scale, an average score of 3.0 or lower indicates a deficiency in high school students' self-efficacy, interest, and attitude towards English writing. As illustrated in Table 4-12, after the introduction of the PLEs, students in the experimental class (EC) displayed improved interest, self-efficacy, and a more positive attitude toward English writing. This data suggests that the experimental class experienced a positive shift in their approach to English writing following the integration of the PLEs platform.

Table 4-14 clearly illustrates notable differences between the experimental and control groups in the post-test concerning aspects of interest, self-efficacy, attitude, and the engagement with the PLEs platform in English writing. For the factor of interest, the Sig.(2-tailed) value is 0.00, which is less than the typical threshold of 0.05. Similarly, the Sig.(2-tailed) values for self-efficacy, attitude, and the use of the PLEs platform stand at 0.01, 0.03, and 0.01, respectively. Each of these values falls below the standard 0.05 threshold, indicating statistically significant differences. This means that the post-experiment results reveal distinct variances between the two groups in all four categories.

To further investigate the impact of the PLEs-AEW platform on the observed low levels of interest, self-efficacy, and attitude towards English writing, a side-by-side

comparison was made between the results from the pre-test questionnaire and the post-test questionnaire. The findings from this comparative analysis are shown in Table 4-15.

TABLE 4-14. INDEPENDENT SAMPLE T-TEST OF POST-QUESTIONNAIRE IN EC AND CC

Dimension	Class	N	average	SD	T-value	Sig.(2-tailed)
Writing interest	16	44	2.63	0.84	-3.65	0.00
	17	44	3.34	0.96		
Writing self-efficacy	16	44	2.62	0.96	-4.07	0.01
	17	44	3.45	0.94		
Attitude	16	44	2.75	1.07	-2.19	0.03
	17	44	3.27	0.98		
PLEs platform use	16	44	3.00	1.09	-4.33	0.01
	17	44	4.04	1.16		

TABLE 4-15. INDEPENDENT SAMPLE T-TEST OF POST-QUESTIONNAIRE IN EC AND CC

Dimension	EC (17)	N	average	SD
Interest	Pre-questionnaire	44	2.79	1.04
	Post-questionnaire	44	3.34	0.96
Self-efficacy	Pre-questionnaire	44	2.71	1.08
	Post-questionnaire	44	3.45	0.94
Attitude	Pre-questionnaire	44	2.65	1.03
	Post-questionnaire	44	3.27	0.98
Platform use	Pre-questionnaire	44	3.03	1.13
	Post-questionnaire	44	4.04	1.16

The data from Table 4-15 provides a clear depiction of the positive shift in students' attitudes and capabilities after the application of the PLEs platform. Initially, students' interest, self-efficacy, and attitude towards English writing were quite low, with all average scores below the 3.0 threshold, indicating a notable concern in their English writing approach. However, post-experiment, there is a substantial increase in all metrics. Specifically, the scores for interest, self-efficacy, and attitude rose to 3.34, 3.45, and 3.27 respectively, suggesting an enhanced engagement and a more positive outlook on English writing. Furthermore, the leap in the PLEs

platform usage score to 4.04 shows a greater acceptance and integration of this tool in their learning process.

This upward trend in scores showcases the impact and efficacy of the PLEs-assisted model for English writing. The heightened scores reflect that students not only grew more interested in writing but also developed a stronger belief in their writing capabilities. The PLEs platform seems to provide the necessary tools and environment conducive for nurturing these positive changes. Consequently, the results underline the potential benefits of incorporating such platforms in the pedagogical process, especially in addressing the challenges senior high school students face in applied English writing.

G. Interview Date Analysis

At the end of the semester, we interviewed eight students chosen at random. These students, grouped based on their writing scores, fell into three categories. The interviews aimed to gauge the students' views on the PLEs-AEW platform and its impact on their English writing and learning progress.

Do you like the PLEs-AEW platform? What aspects of the platform do you find more attractive than the previous way of learning?

Six students reported that they enjoyed learning to write in English using the PLEs-AEW platform. They felt that the platform could spark their interest and enhance their confidence in English writing. For example, one interviewee said, "The PLEs-AEW platform contained many videos and documents related to the topic, which relieved me from the pressure of not knowing what to write. It has also improved my interest in writing" (Respondent A). In contrast, two other students indicated that the platform did not genuinely help them in their writing. They felt that the PLEs-AEW platform had too many learning resources, and they had difficulty understanding the resources because most of them were in English. Six of the students found the most attractive aspect of the PLEs-AEW platform to be the interactive online chat room for teachers and students, where they could have relevant discussions about writing topics. The other four students found posting in the discussion forum to be the most appealing, as it allowed them to express their views freely.

Do you find it difficult to use the platform for learning? What are the main difficulties?

Only three students reported difficulties in using the PLEs-AEW platform. The primary challenges were that the interface of the PLEs-AEW platform was entirely in English, which was sometimes difficult for students with lower English grades to comprehend, and that there were too many resources in the PLEs-AEW platform, making it challenging to distinguish the materials they needed during the writing process. For instance, one interviewee said, "The platform was all in English, and it was a bit of a struggle for me to use the platform" (Respondent C).

Will you use the platform regularly if you have the chance? Why?

All students' responses concurred that the PLEs-AEW platform had increased their confidence in English writing. They felt that this learning mode created a relaxed and engaging online learning environment for them. Within such an environment, they could easily learn at their own pace and share their ideas with others on the PLEs-AEW platform. They also mentioned that the peer assessment in this model was anonymous, unlike the peer assessment in previous English writing classes. This made them less afraid of being criticized by the teacher or other students, less likely to feel embarrassed about their mistakes, and more willing to accept others' suggestions. Consequently, they could correct their errors promptly and build up significant confidence in their English writing. Additionally, they reported having accumulated numerous writing materials and learned many

authentic expressions through the PLEs-AEW platform. For instance, one interviewee said, "I would use the platform again if I had the chance. I can share my opinions with my teachers and classmates in the platform's discussion forum. On the one hand, I learned from other people's points of view. On the other hand, I also expressed my views freely, which further improved my confidence in writing" (Respondent D).

Do you feel comfortable when using the platform? What are the advantages of the platform learning compared with the traditional learning? What are the disadvantages?

All six students expressed comfort with the platform learning style, while the remaining two students mentioned that they were not entirely comfortable but found it acceptable. Six students shared that the PLEs-AEW platform for high school English application essays made them less resistant to writing in English. The learning resources they accessed within the platform assisted them in refining their writing content further. Conversely, the other two students found the platform's extracurricular resources to be overwhelming and challenging. They also encountered difficulty in managing e-learning tasks. For instance, one interviewee said, "I couldn't find the course resources efficiently because there were a lot of materials on the platform. I think this was the biggest disadvantage of the platform" (Respondent B).

Do you think the platform can help you with your writing? In what ways can it help to improve your writing skills?

All eight students agreed that the PLEs-AEW platform could help improve their applied English writing studies. Seven of the students thought that the relevant essay material and video resources within the PLEs-AEW platform could be a good way to help them improve their essays. It stimulated their desire to express themselves in their essays. The other student thought that the interactive part of the platform could effectively stimulate their interest in learning to write and reduce the stress of writing. "The platform's interactive discussion forum appealed to me most. It gives me the chance to exchange ideas with other students freely. It developed my interest in writing in English". (Respondent E)

V. FINDING AND DISCUSSION

At the conclusion of the study, our data showed that the average score of the experimental class in application essay writing rose from 6.693 during the initial assessment to 8.193 in the final assessment, marking a 1.5-point progress. This suggests the students in the experimental group improved their essay writing capabilities. Conversely, the average score for the control group saw a dip, moving from 6.705 to 6.523. This decrease implies that conventional teaching methods might adversely affect students' writing proficiency. The potential factors for this decline could be: firstly, the scarcity of writing resources in standard teaching, leaving students uncertain about English essay topics; secondly, an undue emphasis on linguistic accuracy, diverting educators' attention from enhancing language organization and application; and thirdly, students not valuing educators' feedback, which could dampen their enthusiasm and confidence, resulting in subpar writing outcomes.

Clearly, the PLEs-AEW platform holds a distinct edge over conventional teaching methods in bolstering students' English writing abilities. Earlier studies have similarly highlighted the merits of tailored online education in boosting learning effectiveness. Starting data underscores that the PLEs-AEW platform positively influences students' enthusiasm, self-belief, and perspective toward English essay writing, resonating with the self-determination aspect of L2 motivation theory. During this study, students displayed heightened interest and fortified their internal drive. Conversations with the participants indicated that the PLEs-AEW platform significantly uplifted students' eagerness to master applied English writing.

VI. CONCLUSION AND LIMITATION

This research provides a practical examination of the PLEs platform's effectiveness in high school applied English writing instruction. It aims to address two pivotal questions, first, "Does the blended learning approach, anchored by the PLEs-AEW platform, foster motivation among high school students in English application essay writing?"; second, "Does this model amplify students' proficiency in applied English writing?" After a span of 15 weeks, encompassing the experimental phase, data gathering, and subsequent analysis, two primary inferences emerged:

First, the PLEs-AEW platform acts as a catalyst in heightening students' motivation towards English writing. Incorporating the PLEs framework as a teaching aid elevates their drive and determination. By the study's culmination, students from the experimental group conveyed that their final assignments, presented to the teacher, were refined through multiple self and peer revisions. These pieces were better received by instructors, resulting in more favorable feedback and, consequently, heightened student motivation. Moreover, the virtual interactions between students and teachers on the PLEs platform kindled a profound interest in the learning process.

Second, the effectiveness of the PLEs-AEW platform in augmenting students' English writing skills is evident. Preliminary test outcomes showcased negligible differences between the experimental and control group scores. But post the integration of the PLEs-supported learning modality, discernible advancements were observed in the experimental group's writing abilities, as opposed to a marginal dip in the control group. This indicates the platform's promising influence on writing enhancement.

However, this study isn't without its constraints. Firstly, its scale is restricted, with only 88 participants, potentially influencing the findings' robustness and broader applicability. Secondly, the study's duration is relatively concise, concentrating exclusively on Applied English Writing. This focus could slightly diminish the results' credibility. For instance, the novelty of this learning mode might pique students' initial interest, yet the platform's long-term efficacy remains ambiguous.

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