# The Integration of the PERMA Model into University EFL Writing Instruction and Its Effects on Students' Writing Ability

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## Abstract

This study aimed to 1. examine the effects of a PERMA-based instructional approach on Thai university EFL students' overall writing ability and 2. investigate its effects on specific writing components. A quasi-experimental one-group pretest–posttest design was employed. Participants were 42 second-year English majors enrolled in a Phayao Studies course at a public university in northern Thailand. They were selected from an intact class of 45 students through convenience sampling, three students were excluded for failing to meet the 80% attendance requirement. The intervention integrated PERMA principles into process-oriented writing instruction through five lessons over five consecutive weeks. Writing ability was assessed using an analytic rubric covering organization, logical development of content, grammar, mechanics, and style and expression. Expert review yielded IOC values of 0.75–1.00, while inter-rater agreement between two experienced English instructors was 85%. Data were analyzed using descriptive statistics, paired-samples t-tests, repeated-measures MANOVA, and Wilcoxon signed-rank tests. Effect sizes were calculated using Cohen's d_av, and Bonferroni-adjusted comparisons were conducted.

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Research Findings: overall writing scores increased significantly from 11.57 to 13.00, $t(41) = 6.54$, $p < .001$, with a moderate effect size ($d_{av} = 0.70$). MANOVA also revealed a significant multivariate effect across the five writing components, Wilks' $\Lambda = .29$, $F(5, 37) = 18.10$, $p < .001$. Significant improvements were found in organization, logical development of content, and style and expression. Although grammar and mechanics scores increased, the improvements were not significant after Bonferroni adjustment. The greatest gains occurred in the first three components. These findings suggest that integrating PERMA principles into process-oriented EFL writing instruction may enhance overall writing ability, particularly in organization, content development, and expression, highlighting its potential value for university-level EFL pedagogy.

**Keywords:** PERMA Model, EFL Writing Ability, Paragraph Writing, University Students

## Introduction

Thailand continues to face challenges in English language proficiency despite ongoing educational reforms. According to the EF English Proficiency Index (EF EPI), Thailand ranked 106th out of 116 countries in 2024, with a score of 415, placing it in the "Very Low Proficiency" category and below the global average of 477 (EF Education First, 2024). In the 2026 edition, Thailand ranked 107th out of 117 countries, with a score of 406, remaining in the "Very Low Proficiency" category (EF Education First, 2026). Research on Thai university students' English proficiency also indicates that many learners perceive their proficiency to be at relatively low CEFR levels. For example, Ngonkum and Deerajviset (2024) found that the university students in their study generally

rated their English proficiency at the A1 level, while Mafu and Sappapan (2023) reported that most undergraduate participants demonstrated A2-level proficiency. Similarly, a large-scale study involving more than 5,900 university students highlighted the importance of systematic English language assessment and proficiency development in Thai higher education (Waluyo et al., 2024). These findings underscore the need for effective instructional approaches to strengthen students' English language skills, particularly their ability to communicate effectively in writing.

Among the four language skills, writing is widely recognized as one of the most demanding for English as a Foreign Language (EFL) learners because it requires the integration of linguistic knowledge, cognitive processing, and self-regulatory abilities. Effective writing involves generating ideas, organizing content coherently, selecting appropriate vocabulary, applying grammatical structures accurately, and revising texts to improve clarity and overall quality (Weigle, 2002). Furthermore, academic writing requires learners to construct and support arguments, critically evaluate information, and maintain coherence across extended texts, thereby placing considerable cognitive demands on the writing process (Wang & Said, 2024). Recent research has also highlighted the difficulties EFL learners encounter when coordinating these multiple demands, particularly when producing academic texts that require higher-order thinking, adherence to disciplinary conventions, and linguistic accuracy (Okičić, 2024). Thus, writing proficiency extends beyond the application of linguistic knowledge and requires the effective coordination of cognitive, metacognitive, and language-related skills.

In addition to its linguistic and cognitive complexity, EFL writing is closely associated with learners' affective factors. The demanding nature of

writing requires sustained effort, self-regulation, and repeated revision, all of which may influence learners' motivation, confidence, and engagement throughout the writing process (Weigle, 2002, Wang & Said, 2024). Writing self-efficacy, defined as learners' beliefs in their ability to perform writing tasks successfully, is particularly important because it can influence their willingness to engage in writing activities and persist when facing difficulties. Recent research has identified a positive relationship between writing self-efficacy and writing performance among university-level EFL learners (Song et al., 2026). Similarly, studies have suggested that learners who employ effective writing strategies and possess higher levels of writing self-efficacy tend to engage more actively in writing tasks and demonstrate better learning outcomes (Dinsa & Taddese, 2024). These findings suggest that effective EFL writing instruction should address not only learners' linguistic and cognitive development but also the psychological factors that support sustained engagement and learning.

Motivation and engagement are also important determinants of successful language learning. Positive learning experiences can encourage learners to participate actively, maintain their motivation, and persist when confronting challenging language tasks. In contrast, negative emotional experiences may undermine participation and hinder learning progress (Zhang et al., 2024, Zhang et al., 2025). Accordingly, attention to learners' psychological well-being and positive learning experiences has become increasingly relevant to the design of effective language instruction.

In this regard, Positive Psychology (PP) offers a valuable perspective for understanding and promoting learners' well-being, personal strengths, positive emotions, and psychological flourishing. Within second language acquisition (SLA), this perspective highlights the role of positive psychological experiences

in supporting learners' motivation, confidence, engagement, and academic development (Esmaeilee et al., 2025, Nguyen & Nguyen, 2025). One influential framework within Positive Psychology is Seligman's PERMA model, which comprises five interconnected dimensions: Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment. These dimensions provide a framework for creating learning environments that promote positive emotional experiences, active participation, supportive interpersonal relationships, meaningful learning experiences, and a sense of achievement. Recent research has demonstrated the potential of PERMA-based interventions to promote psychological well-being and positive educational outcomes (Esmaeilee et al., 2025, Wammerl & Lichtinger, 2025). These findings suggest that PERMA may offer a useful theoretical foundation for integrating psychological well-being into language instruction. However, its potential contribution to the development of specific EFL writing skills requires further empirical investigation.

Despite growing interest in Positive Psychology in language education, existing research has focused more extensively on learners' psychological well-being, general language achievement, and oral language skills than on writing performance. For example, Esmaeilee et al. (2025) examined the effects of a PERMA-based intervention on L2 speaking proficiency, while Wammerl and Lichtinger (2025) investigated a PERMA-based positive education program in the context of teacher education. Consequently, empirical evidence regarding the instructional effects of PERMA-based approaches on EFL writing performance, particularly across individual writing components, remains limited. This gap is particularly relevant in the Thai EFL context, where university students continue to encounter difficulties in academic writing, including vocabulary use, grammatical accuracy, text organization, and the development of coherent arguments (Prapobratanakul, 2024).

To address this research gap, the present study integrates the PERMA model into process-oriented EFL writing instruction and examines its effects on Thai university students' writing performance. Specifically, the study aims to (1) examine the effects of a PERMA-based instructional approach on students' overall EFL writing ability and (2) investigate its effects on five specific writing components: organization, logical development of content, grammar, mechanics, and style and expression. By examining both overall writing performance and its individual components, this study seeks to contribute empirical evidence to the application of Positive Psychology in second language education and provide practical implications for designing psychologically supportive and instructionally effective EFL writing activities in higher education.

## Objectives of Research

The present study aimed to:

1. To examine the effects of a PERMA-based instructional intervention on Thai university students' overall EFL writing ability.

2. To examine the effects of the PERMA-based instructional intervention on five specific components of EFL writing ability: (1) organization, (2) logical development of ideas (content), (3) grammar, (4) punctuation, spelling, and mechanics, and (5) style and overall quality of expression.

## Research Methodology

This study employed a quasi-experimental one-group pretest–posttest design to examine changes in students' EFL writing performance following a PERMA-based instructional intervention. A comparison group was not included because the intervention was implemented in an intact classroom within a natural instructional setting. Pretest and posttest assessments were used to

measure changes in students' overall writing ability and individual writing components following the intervention. The target population comprised second-year undergraduate students enrolled in the Phayao Studies course (146201) at a public university in northern Thailand during the second semester of the 2025 academic year. Convenience sampling was used to select one accessible intact class, which initially consisted of 45 students. To be included in the final analysis, students were required to attend at least 80% of the instructional sessions and complete both the pretest and posttest writing assessments. Three students did not meet the attendance requirement and were excluded. Consequently, the final sample consisted of 42 students whose data were included in the statistical analyses.

Selecting an intact class allowed the intervention to be implemented within an authentic educational setting. However, because the participants were drawn from a single class at one university, the findings should be interpreted cautiously when considering their applicability to other EFL learning contexts.

The PERMA-based instructional activities were integrated into the regular schedule of the Phayao Studies course (146201), which aims to develop students' communicative competence through integrated practice in listening, speaking, reading, and writing. During the intervention sessions, however, instructional activities focused specifically on writing development. Data collection took place during the second semester of the 2025 academic year. The pretest was administered on June 17, 2025, before the intervention began. The intervention consisted of five instructional sessions integrated into the regular course schedule. Following completion of the intervention, the posttest was administered on September 24, 2025.

The same writing prompt, "Why is perseverance such an important quality to have?", was used for both the pretest and posttest to maintain

consistency in the writing task and facilitate comparison of students' performance across the two assessment occasions. Using the same topic was intended to minimize variations in topic difficulty and familiarity that might influence writing scores.

The study was conducted in accordance with established ethical principles for research involving human participants. Permission to conduct the study was obtained from the University of Phayao. Before data collection, all participants were informed of the study's objectives, procedures, and their rights as research participants. Participation was voluntary, and written informed consent was obtained from all participants before the study commenced. Participants were informed that they could withdraw from the study at any time without academic penalties or adverse consequences. To protect confidentiality and privacy, identifying information was replaced with participant codes. Data obtained from questionnaires, writing assessments, and interviews were used exclusively for research purposes. Audio recordings were made only with participants' consent and were used solely for transcription and analysis. All research data were securely stored and accessible only to the researcher.

The research activities were designed to minimize disruption to students' academic activities and potential psychological discomfort. Throughout the study, attention was given to participants' well-being, privacy, fairness, and ethical treatment.

The conceptual framework integrated the PERMA model into a process-oriented writing approach. The five dimensions of PERMA—Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment—were incorporated throughout the three stages of the writing process: pre-writing, while-writing, and post-writing.

The framework assumed that creating positive psychological conditions during writing instruction could support learners' engagement, persistence,

confidence, and willingness to participate in writing activities. These conditions were expected to contribute to improvements in five components of EFL writing ability: organization, logical development of ideas, grammar, mechanics, and style and overall quality of expression, as illustrated in Figure 1.

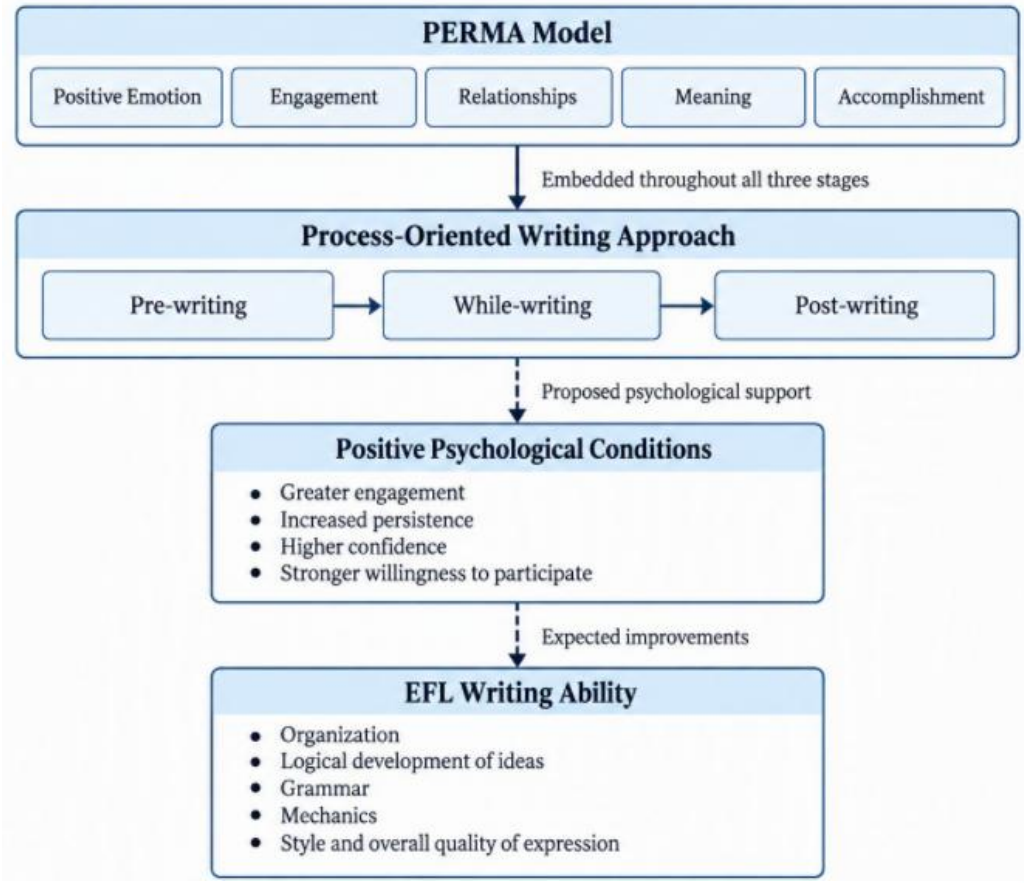



**Figure 1** Conceptual Framework of the PERMA-Based Writing Intervention Integration of the OREO Framework

The OREO framework (Opinion, Reason, Evidence, and Opinion Restatement) was used as an instructional scaffolding technique to support paragraph organization and the logical development of ideas. Rather than

serving as an independent theoretical model, OREO functioned as a practical instructional tool for guiding students in constructing coherent and logically organized paragraphs. Its application was consistent with the process-oriented writing approach, which emphasizes planning, drafting, and organizing ideas throughout the writing process.

OREO was incorporated primarily into the pre-writing and while-writing stages. During pre-writing, students used the framework to generate, organize, and sequence their ideas before composing a paragraph. During while-writing, it guided students in developing and organizing their written content by presenting an opinion, providing supporting reasons and evidence, and restating the main opinion.

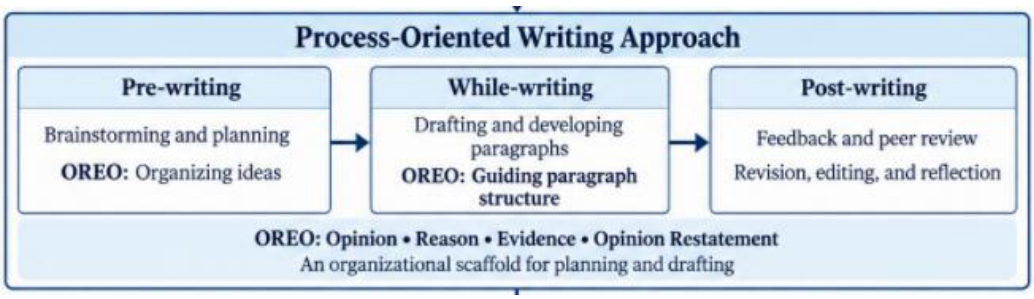



**Figure 2** Integration of the OREO Framework into the Process-Oriented Writing Approach

### Process Writing in the PERMA-Based Intervention

The intervention adopted process writing as an instructional approach that views writing as a recursive and developmental activity rather than merely the production of a final written text. It emphasizes the processes of generating ideas, organizing information, drafting, revising, editing, and presenting written work. This approach encourages learners to engage actively in idea generation, reflection, peer interaction, and continuous improvement throughout the writing process. The intervention organized the writing process into three stages:

pre-writing, while-writing, and post-writing. During pre-writing, students generated and organized ideas before composing their texts. The while-writing stage focused on drafting and developing ideas into coherent paragraphs. Finally, during post-writing, students reviewed, revised, and reflected on their work through feedback and self-assessment.

The intervention was implemented over five consecutive weeks during the second semester of the 2025 academic year, following the midterm examinations. One 120-minute instructional session was conducted each week, resulting in five sessions. To maintain consistency with the existing course syllabus and minimize disruption to required course content, the intervention was integrated into regular class time. Each session followed the same three-stage instructional sequence, as described below.

**Phase 1: Pre-writing (Brainstorming and Planning) – 35 minutes**

The pre-writing phase aimed to prepare students emotionally, cognitively, and socially for the writing task. Each session began with brief guided relaxation activities, such as mindful breathing, soothing background sounds, and body-awareness exercises, to promote calmness and help reduce writing anxiety (Positive Emotion). Writing topics were then introduced and connected to students' local contexts to enhance relevance and Meaning. Students participated in collaborative brainstorming using shared Google Docs, which facilitated active participation and idea sharing (Engagement). With teacher guidance, students grouped and organized their ideas to prepare for writing. They subsequently established individual writing goals to strengthen goal orientation and their sense of Accomplishment. During the first session, students received explicit instruction on paragraph structure using the OREO framework to establish a common foundation for paragraph organization. Throughout the five sessions, model sentences and topic-related vocabulary were provided, with lexical support tailored to the focus of each writing task.

**Phase 2: While-writing (Drafting and Revising) – 60 minutes**

The while-writing phase emphasized collaborative engagement and shared responsibility. Students worked in small groups to produce paragraph drafts, with each member assigned a specific responsibility related to one of the following areas: organization, content, grammar, mechanics, or style. This role-based approach encouraged sustained Engagement and strengthened Relationships through cooperation. Group members discussed and negotiated content and language choices in real time, promoting collaborative problem-solving and active participation in the writing process. Through these interactions, students worked together to produce a finalized group draft, reinforcing a collective sense of Accomplishment.

**Phase 3: Post-writing (Feedback and Reflection) – 25 minutes**

The post-writing phase focused on feedback, reflection, and consolidation of learning. The lecturer first provided strengths-based oral feedback, highlighting effective aspects of students' work to reinforce Positive Emotion. This was followed by whole-class reflective discussions in which students interpreted and discussed the Meaning of the writing topics. Students then participated in peer-supported revision and editing, fostering constructive interaction and maintaining positive Relationships. Finally, students completed self-assessment activities by reviewing their initial goals, reflecting on their learning processes, and identifying small but meaningful achievements to strengthen their sense of Accomplishment.

An opinion paragraph writing test and an analytic scoring rubric were developed to assess students' EFL writing ability. The writing test required students to produce an opinion paragraph of approximately 120 words within 60 minutes. This task length and time allocation were intended to provide sufficient opportunities for planning, drafting, and revising at the paragraph level (Weigle, 2002). The writing task was designed to assess students' ability to express a clear opinion, support their ideas with reasons, and demonstrate

appropriate paragraph organization, language use, and writing conventions. These aspects reflect key dimensions of effective writing identified in second language writing research (Brown, 2004; Weigle, 2002).

An analytic scoring rubric was developed to evaluate students' writing performance. It comprised five components: (1) organization, (2) logical development of ideas (content), (3) grammar, (4) punctuation, spelling, and mechanics, and (5) style and overall quality of expression. These components were adapted from established analytic approaches to writing assessment (Jacobs et al., 1981; Brown, 2004), which distinguish major dimensions of writing to facilitate diagnostic assessment. Each component was scored on a four-point scale, ranging from 1 to 4, yielding a total score of 5–20 points.

The content validity of the writing test and scoring rubric was evaluated using the Index of Item–Objective Congruence (IOC). Four experts in English language teaching and writing instruction were invited to assess the alignment of the instruments with the research objectives. Their evaluations covered the writing prompt, test instructions, word-length and time requirements, and individual rubric components. IOC values of 0.50 or higher were considered acceptable. As presented in Table 1, all evaluated items met this criterion. Minor revisions were made based on the experts' qualitative feedback before the instruments were used in the main study.

**Table 1** IOC Values for the Writing Test and Writing Rubric

| Instrument | Item Evaluated / Rubric Component | IOC Value |
|---|---|---|
| Writing Test | Alignment of the writing prompt with the research objectives | 0.75 |
| Writing Test | Clarity of writing instructions | 1.00 |
| Writing Test | Appropriateness of word length and time allocation | 0.75 |
| Writing Rubric | Organization | 0.75 |
| Writing Rubric | Development of ideas (Content) | 1.00 |
| Writing Rubric | Grammar | 0.75 |
| Writing Rubric | Punctuation, spelling, and mechanics | 0.75 |
| Writing Rubric | Style and overall quality of expression | 0.75 |

The IOC results ranged from 0.75 to 1.00, indicating that all evaluated components met the predetermined content-validity criterion. These results provided evidence supporting the relevance of the writing test and scoring rubric to the intended assessment objectives.

Before the main study, a pilot test was conducted with 20 EFL students to examine the suitability of the writing assessment and the scoring consistency of the adapted analytic rubric based on Brown's (2004) criteria. The pilot writing samples were independently assessed by the researcher and two additional raters, all of whom had experience in English language instruction and EFL writing assessment. All three raters used the same scoring rubric. The resulting scores were compared to examine agreement among the raters. Identical ratings were obtained in 17 of the 20 cases, yielding an agreement rate of 85%. This result provided preliminary evidence of scoring consistency before the rubric was used in the main study. However, formal blind-scoring procedures were not implemented; therefore, it could not be confirmed that the raters were unaware of whether the writing samples came from the pretest or posttest condition.

Quantitative data from the pretest and posttest writing assessments were analyzed using IBM SPSS Statistics, Version 25. Preliminary data screening was conducted to check the accuracy and completeness of the dataset. Descriptive statistics, including means and standard deviations, were calculated to summarize students' performance at pretest and posttest. To examine changes in overall writing ability, a paired-samples t-test was conducted using the total writing scores. Effect size was estimated using Cohen's ($d_z$), and 95% confidence intervals (CIs) were calculated for the mean difference. To examine changes across the five interrelated writing components, a repeated-measures multivariate analysis of variance (MANOVA) was conducted. Following a significant multivariate result, component-level comparisons were performed using paired-samples t-tests. Cohen's ($d_z$) and 95% CIs were also calculated for these comparisons. The normality of the difference scores (posttest minus pretest) was assessed using the Shapiro–Wilk test before the inferential

analyses. As all five difference-score distributions significantly deviated from normality, Wilcoxon signed-rank tests were additionally conducted as nonparametric follow-up analyses to examine changes in individual writing components. To control the family-wise Type I error rate across the five component-level comparisons, the Bonferroni-adjusted significance level was set at .01 (.05/5).

In addition, gain scores were calculated to examine the magnitude of improvement across the five writing components. The frequencies and percentages of students whose scores improved, declined, or remained unchanged were also calculated to provide supplementary information about individual changes in writing performance.

Before conducting the inferential analyses, the relevant statistical assumptions were examined. In particular, the normality of the difference scores (posttest minus pretest) for each of the five writing components was assessed using the Shapiro–Wilk test. The results are presented in Table 2.

**Table 2** Shapiro–Wilk Tests of Normality for Difference Scores (Posttest – Pretest)

| Writing Component | W | p |
|---|---|---|
| Organization | 0.61 | < .001 |
| Logical Development of Ideas (Content) | 0.67 | < .001 |
| Grammar | 0.43 | < .001 |
| Mechanics | 0.42 | < .001 |
| Style and Overall Quality of Expression | 0.62 | < .001 |

*Note.* Difference scores were calculated by subtracting pretest scores from posttest scores. All five distributions significantly deviated from normality ($p < .001$).

As shown in Table 2, the Shapiro–Wilk tests indicated significant departures from normality across all five difference-score distributions. Accordingly, Wilcoxon signed-rank tests were conducted as additional nonparametric analyses to examine changes in the individual writing components.

Overall, the analytical approach combined descriptive and inferential statistics, effect-size estimation, confidence intervals, and nonparametric follow-up analyses to provide a comprehensive assessment of changes in students' overall EFL writing ability and individual writing components following the PERMA-based instructional intervention.

## Results of Research

This section presents the findings in relation to the two research objectives. Descriptive and inferential statistics were used to examine changes in students' overall writing ability and performance across the five writing components following the PERMA-based instructional intervention. The results are presented in the following order: descriptive statistics, overall writing performance, multivariate and component-level analyses, Bonferroni-adjusted comparisons, differences in mean gain scores across components, and individual patterns of score changes.

**Table 3** Descriptive Statistics for Overall Writing Ability and the Five Writing Components

| Measure | n | Pretest Mean (SD) | Posttest Mean (SD) |
|---|---|---|---|
| Overall Writing Ability | 42 | 11.57 (1.73) | 13.00 (2.34) |
| Organization | 42 | 2.45 (0.80) | 2.81 (0.94) |
| Logical Development of Ideas (Content) | 42 | 2.21 (0.65) | 2.62 (0.99) |
| Grammar | 42 | 2.12 (0.89) | 2.31 (1.02) |
| Mechanics | 42 | 2.55 (0.80) | 2.69 (0.87) |
| Style and Overall Quality of Expression | 42 | 2.24 (0.76) | 2.57 (0.86) |

Table 3 presents the descriptive statistics for students' overall writing ability and the five writing components before and after the intervention. The mean overall writing score increased from 11.57 at pretest to 13.00 at posttest. Similarly, the mean scores for all five writing components were higher at

posttest than at pretest. The largest descriptive gains were observed in Logical Development of Ideas (Content) and Organization, followed by Style and Overall Quality of Expression. Grammar and Mechanics showed comparatively smaller increases. These descriptive findings provide an overview of the changes in students' writing performance, which were further examined using inferential statistical analyses.

**Table 4** Paired-Samples t-Test Results for Overall Writing Ability

| Measure | Pretest M (SD) | Posttest M (SD) | $\Delta M$ | t(df) | p | Cohen's dz | 95% CI of $\Delta M$ |
|---|---|---|---|---|---|---|---|
| Overall Writing Ability | 11.57 (1.73) | 13.00 (2.34) | 1.43 | 6.54 (41) | < .001 | 1.01 | [0.99, 1.87] |

Table 4 presents the paired-samples t-test results for students' overall writing ability. The analysis revealed a statistically significant increase in posttest scores compared with pretest scores, $t(41) = 6.54$, $p < .001$. The mean difference was 1.43 points, with a 95% confidence interval ranging from 0.99 to 1.87. The confidence interval did not include zero, indicating a statistically significant improvement in overall writing scores. The effect size, calculated using Cohen's dz, was 1.01, indicating a large standardized within-participant effect. These findings show that students obtained higher overall writing scores following the PERMA-based instructional intervention.

**Table 5** Repeated-Measures MANOVA Results for the Five Writing Components

| Multivariate Test | Value | F | df | p |
|---|---|---|---|---|
| Wilks' Lambda | 0.29 | 18.10 | 5, 37 | < .001 |

*Note.* Dependent variables: Organization, Logical Development of Ideas (Content), Grammar, Mechanics, and Style and Overall Quality of Expression.


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Table 5 presents the results of the repeated-measures multivariate analysis of variance (MANOVA) examining changes across the five writing components. The analysis revealed a statistically significant multivariate effect, Wilks' $\Lambda$ = .29, $F(5, 37) = 18.10$, $p < .001$. This result indicates that the combined pattern of scores across the five writing components differed significantly between the pretest and posttest assessments. Follow-up analyses were therefore conducted to examine changes in each component separately. The results are presented in Table 6.

**Table 6** Follow-Up Analyses of Changes in the Five Writing Components

| Writing Component | Pretest M (SD) | Posttest M (SD) | ΔM | t(df) | p (t) | Cohen's dz | 95% CI for ΔM | Wilcoxon Z | r | p (Wilcoxon) |
|---|---|---|---|---|---|---|---|---|---|---|
| Organization | 2.45 (0.80) | 2.81 (0.94) | 0.36 | 4.77 (41) | < .001 | 0.74 | [0.21, 0.51] | 3.84 | 0.59 | < .001 |
| Logical Development of Ideas (Content) | 2.21 (0.65) | 2.62 (0.99) | 0.40 | 4.47 (41) | < .001 | 0.69 | [0.22, 0.59] | 3.66 | 0.56 | < .001 |
| Grammar | 2.12 (0.89) | 2.31 (1.02) | 0.19 | 2.44 (41) | .019 | 0.38 | [0.03, 0.35] | 2.16 | 0.33 | .031 |
| Mechanics | 2.55 (0.80) | 2.69 (0.87) | 0.14 | 2.61 (41) | .012 | 0.40 | [0.03, 0.25] | 2.33 | 0.36 | .020 |
| Style and Overall Quality of Expression | 2.24 (0.76) | 2.57 (0.86) | 0.33 | 4.11 (41) | < .001 | 0.63 | [0.17, 0.50] | 3.46 | 0.53 | < .001 |

*Note.* Cohen's dz represents the standardized mean difference for paired observations. The Wilcoxon effect size r is based on the standardized test statistic divided by the square root of the sample size.

Table 6 presents the follow-up analyses of changes in each writing component. The paired-samples t-test results showed statistically significant increases in Organization, Logical Development of Ideas (Content), and Style and Overall Quality of Expression at the .05 significance level. Grammar and Mechanics also showed higher posttest mean scores, although their corresponding p-values were .019 and .012, respectively. The standardized

effect sizes varied across components, with larger effects observed for Organization, Logical Development of Ideas (Content), and Style and Overall Quality of Expression than for Grammar and Mechanics.

The Wilcoxon signed-rank test results showed a similar pattern of pretest-to-posttest changes. All five components had higher posttest scores, with statistically significant unadjusted p-values at the .05 level. However, because multiple component-level comparisons were conducted, these results require adjustment to control the family-wise Type I error rate. The Bonferroni-adjusted results are presented in Table 7.

**Table 7** Bonferroni-Adjusted p-Values for Multiple Comparisons Across the Five Writing Components

| Writing Component | Original p | Bonferroni-Adjusted p |
|---|---|---|
| Organization | < .001 | < .001 |
| Logical Development of Ideas (Content) | < .001 | .001 |
| Grammar | .023 | .116 |
| Mechanics | .014 | .072 |
| Style and Overall Quality of Expression | < .001 | .002 |

Table 7 presents the Bonferroni-adjusted p-values for the five component-level comparisons. Based on the adjusted results reported in this table, statistically significant changes were found in Organization, Logical Development of Ideas (Content), and Style and Overall Quality of Expression. In contrast, the changes in Grammar and Mechanics did not remain statistically significant after the Bonferroni correction. This pattern suggests that the observed improvements were more pronounced in the organizational, content-development, and expressive aspects of writing than in grammar and mechanics.

**Table 8** Comparison of Mean Gain Scores Across the Five Writing Components

| Writing Component | Mean Gain | SD |
|---|---|---|
| Logical Development of Ideas (Content) | 0.40 | 0.59 |
| Organization | 0.36 | 0.48 |
| Style and Overall Quality of Expression | 0.33 | 0.53 |
| Grammar | 0.19 | 0.51 |
| Mechanics | 0.14 | 0.35 |

Table 8 compares the mean gain scores across the five writing components. A repeated-measures analysis of variance (ANOVA) revealed a statistically significant difference in the magnitude of gain scores among the components, $F(4, 164) = 2.56$, $p = .040$. Descriptively, the largest mean gains were observed in Logical Development of Ideas (Content), Organization, and Style and Overall Quality of Expression, whereas Grammar and Mechanics showed smaller mean gains. This finding indicates that the magnitude of change was not uniform across the five components. However, the overall ANOVA result does not identify which specific pairs of components differed significantly. Further pairwise comparisons would be required to determine the locations of these differences.

To provide additional insight into individual patterns of change, the numbers and percentages of students whose scores increased, decreased, or remained unchanged in each writing component were examined. The results are presented in Table 9.

**Table 9** Number and Percentage of Students Showing Improvement, Decline, or No Change in Each Writing Component (n = 42)

| Writing Component | Improved n (%) | Declined n (%) | No Change n (%) |
|---|---|---|---|
| Organization | 15 (35.71) | 0 (0.00) | 27 (64.29) |
| Logical Development of Ideas (Content) | 15 (35.71) | 0 (0.00) | 27 (64.29) |
| Grammar | 6 (14.29) | 0 (0.00) | 36 (85.71) |
| Mechanics | 6 (14.29) | 0 (0.00) | 36 (85.71) |
| Style and Overall Quality of Expression | 13 (30.95) | 0 (0.00) | 29 (69.05) |

Table 9 presents the distribution of individual score changes across the five writing components. Improvements were observed in all components, although the proportions of students showing improvement varied. The largest numbers of students showing improvement were found in Organization and Logical Development of Ideas (Content), with 15 students (35.71%) in each component. In Style and Overall Quality of Expression, 13 students (30.95%) showed higher posttest scores. Smaller proportions of students improved in Grammar and Mechanics, with six students (14.29%) in each component.

No students showed a decrease in their scores in any of the five components. Nevertheless, most students maintained the same scores between the pretest and posttest assessments. The proportion of students showing no change ranged from 64.29% in Organization and Logical Development of Ideas (Content) to 85.71% in Grammar and Mechanics. These findings indicate that, although higher posttest scores were observed across all five components at the group level, individual improvements were concentrated among a subset of participants, while the majority maintained their initial component-level scores.

## Conclusion and Discussion

The findings of this study indicate that students' overall writing scores were significantly higher at posttest than at pretest following the implementation of the PERMA-based process writing intervention. This improvement may be interpreted in light of Seligman's (2011) PERMA framework, which identifies Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment as five elements associated with well-being and human flourishing. In the present intervention, these elements were incorporated into different stages of the writing process through activities intended to promote emotional readiness, active participation, collaborative learning, meaningful writing, and recognition of individual progress. Such learning conditions may have supported students' willingness to participate and persist in writing activities. However, because the study did not directly measure writing anxiety, motivation, self-efficacy, or psychological well-being, these factors should be regarded as possible explanations rather than empirically established mechanisms underlying the observed improvement.

The findings may also be interpreted through Fredrickson's (2001) Broaden-and-Build Theory, which proposes that positive emotions can broaden individuals' momentary thought-action repertoires and help build enduring personal resources. In the context of the present intervention, positive learning experiences and supportive classroom interactions may have encouraged students to explore ideas, consider alternative expressions, and persist through planning, drafting, and revising. The use of strengths-based feedback and opportunities to recognize progress may also have contributed to a more supportive writing environment. Nevertheless, the study did not directly assess cognitive flexibility, creativity, or psychological resources. Therefore, the connection between positive emotions and students' writing performance should be interpreted as a theoretically informed explanation rather than a directly tested causal pathway.

The present findings are broadly consistent with previous research on positive psychology in language education. Oladrostam et al. (2024) examined the integration of positive psychology into an EFL teacher education program, highlighting the relevance of positive psychology to language teacher education. Esmaeilee et al. (2025) investigated a PERMA-based positive psychology intervention and reported improvements in EFL learners' speaking performance. Similarly, Ly and Nguyen (2025) examined PERMA-based lessons in English for Medical Purposes and reported improvements in students' well-being during English-speaking learning activities. Although these studies focused on teacher education, speaking performance, or learner well-being rather than writing, they provide a relevant basis for considering the application of positive psychology in language education. The present study extends this line of inquiry by examining writing performance, particularly paragraph writing, as an outcome of a PERMA-based instructional intervention. This focus is important because L2 writing involves the coordination of several demanding processes, including idea generation, content organization, linguistic formulation, and revision (Hyland, 2019; Weigle, 2002).

Although the overall writing scores increased significantly, the pattern of improvement differed across the five writing components. Following the Bonferroni adjustment, statistically significant improvements remained in Organization, Logical Development of Ideas (Content), and Style and Overall Quality of Expression, whereas the improvements in Grammar and Mechanics did not remain statistically significant. This pattern suggests that the observed gains were more evident in the organizational, content-development, and expressive dimensions of writing than in linguistic accuracy. One possible explanation is that the intervention placed considerable emphasis on generating ideas, organizing information, collaborative discussion, and expressing personal perspectives. These activities may have provided more immediate

opportunities to develop higher-order aspects of paragraph writing. In contrast, grammar and mechanics may require more explicit, focused practice and sustained feedback before measurable improvements become evident. This interpretation is consistent with process-oriented approaches to L2 writing, which emphasize planning, drafting, revising, and the gradual development of written texts (Hyland, 2019; Weigle, 2002). However, the present findings do not establish that higher-order writing skills necessarily develop before lower-order skills; this possibility requires further investigation using longitudinal or comparative designs.

An important consideration in interpreting the component-level findings is the contribution of other instructional elements incorporated into the intervention. In particular, the OREO framework (Opinion, Reason, Evidence, and Opinion Restatement) provided explicit scaffolding for developing and organizing ideas in opinion paragraphs. This structure may have contributed to the observed improvements in Organization and Logical Development of Ideas (Content), independently of or in combination with the PERMA-based activities. Collaborative writing activities may also have supported idea sharing, peer interaction, and opportunities to discuss and revise written work. Previous research has shown that learners' engagement during collaborative writing can be associated with task design and aspects of text quality (Phan & Dao, 2023). Accordingly, the improvements observed in the present study should be understood in the context of an integrated instructional approach involving PERMA principles, process writing, OREO scaffolding, and collaborative activities. The contribution of PERMA alone cannot be isolated from these other instructional components.

The use of the same writing prompt in both the pretest and posttest also warrants consideration. Although using an identical prompt may help maintain consistency in the assessment task, repeated exposure may have

increased students' familiarity with the topic and its content requirements. Consequently, some of the observed score gains may have been associated with task familiarity or practice effects rather than instructional improvement alone. Future studies should consider using equivalent but different writing prompts at pretest and posttest, with comparable levels of difficulty and assessment criteria, to reduce the potential influence of repeated task exposure.

Overall, the findings provide preliminary evidence that integrating PERMA principles into a structured process-writing approach is a promising instructional option for supporting EFL paragraph writing. Nevertheless, the one-group pretest–posttest design, the absence of a comparison group, and the integration of multiple instructional elements limit the extent to which the observed changes can be attributed specifically to the PERMA framework. Future research using comparison groups, more rigorous experimental or quasi-experimental designs, and direct measures of relevant psychological variables would help clarify the contribution of PERMA-based instruction to writing development.

This study examined changes in Thai university EFL students' writing performance following the implementation of a PERMA-based process writing intervention. The findings showed a statistically significant increase in students' overall writing scores from pretest to posttest. At the component level, statistically significant improvements remained after Bonferroni adjustment in Organization, Logical Development of Ideas (Content), and Style and Overall Quality of Expression. Although the mean scores for Grammar and Mechanics also increased, these changes did not remain statistically significant after adjustment for multiple comparisons. Thus, the observed pattern of improvement was more evident in the organizational, content-development, and expressive dimensions of paragraph writing than in grammatical and mechanical accuracy.

The study contributes to the application of positive psychology in EFL writing instruction by illustrating how the five elements of Seligman's (2011) PERMA framework can be incorporated into the stages of process writing. The intervention combined activities intended to promote positive emotions, engagement, supportive relationships, meaningful learning, and a sense of accomplishment with structured writing procedures. It also incorporated OREO scaffolding and collaborative writing activities. This integrated approach offers a practical example of how psychological principles and structured writing instruction can be brought together in a university EFL classroom.

However, the findings should be interpreted in light of several limitations. First, the one-group pretest–posttest design did not include a comparison group; therefore, the observed improvement cannot be attributed solely to the PERMA-based intervention. Second, the intervention combined PERMA principles with process writing, OREO scaffolding, and collaborative activities, making it difficult to determine the independent contribution of each component. Third, the same writing prompt was used in both assessments, potentially introducing task-familiarity or practice effects. Finally, psychological variables such as writing anxiety, motivation, self-efficacy, and well-being were not directly measured. Future research should employ comparison groups or more rigorous experimental designs, use equivalent but different assessment prompts, and include measures of relevant psychological variables. Longer intervention periods may also be needed to investigate whether explicit grammar and mechanics instruction, when integrated with PERMA-based practices, can produce more consistent improvements in linguistic accuracy.

## Research Recommendations

### 1. Pedagogical Implications

1) Integrate PERMA-oriented activities into process-based English writing instruction to promote content development, organization of ideas, and written expression.

2) Provide learning activities that allow students to choose meaningful topics, brainstorm ideas, exchange perspectives, and recognize their own progress.

3) Complement PERMA-oriented activities with explicit instruction in grammar and language conventions, with particular emphasis on sentence structure, punctuation, spelling, and writing revision.

### 2. Practical Implications

1) Apply the PERMA principles throughout the three stages of the writing process:

- **Prewriting :** Foster emotional readiness, encourage the selection of meaningful topics, and facilitate collaborative brainstorming.

- **Drafting :** Promote student engagement, collaborative learning, and the exchange of ideas.

- **Post-writing :** Provide opportunities for feedback, reflection, self-assessment, and goal setting to improve writing performance.

2) Integrate activities such as constructive feedback, individual goal setting, and collaborative learning into existing courses, adapting them to students' proficiency levels and learning needs.

### 3. Research Implications and Future Directions

1) Investigate the effectiveness of PERMA-based instruction through experimental or quasi-experimental research designs with comparison groups to distinguish the effects of PERMA-oriented activities from those of other instructional components, such as process-based writing, the OREO technique, and collaborative learning.

2) Examine the integration of positive psychology activities with systematic language instruction, particularly in grammar, language conventions, and sentence structure.

3) Employ mixed-methods research to explore students' experiences of engagement, peer relationships, meaningful learning, and writing achievement.

4) Conduct longitudinal studies to monitor the retention of writing skills and the longer-term effects of the instructional approach.

**4. Policy Implications**

1) Consider integrating psychologically supportive teaching principles into English writing instruction guidelines, taking into account the linguistic, cognitive, motivational, and emotional dimensions of student learning.

2) Promote curriculum development that incorporates meaningful writing activities, student engagement, constructive feedback, and reflection alongside systematic language instruction.

3) Provide teacher training on integrating positive psychology principles into process-based writing instruction, with an emphasis on activity design, collaborative learning, feedback provision, and formative assessment.

## Contributions of the Study

This study contributes to EFL writing research and positive psychology in several ways.

First, it extends the application of the PERMA framework to EFL writing instruction by examining changes in students' overall writing performance and five specific writing components following a PERMA-based process writing intervention.

Second, it provides a differentiated account of writing development by showing that statistically significant improvements after Bonferroni adjustment were observed in Organization, Logical Development of Ideas (Content), and

Style and Overall Quality of Expression, whereas improvements in Grammar and Mechanics did not remain statistically significant. This finding highlights the importance of examining writing performance at both the overall and component levels.

Third, the study presents an instructional approach that integrates PERMA principles with process writing, OREO scaffolding, and collaborative learning activities. This integration offers a practical example for EFL instructors who wish to address psychological and instructional dimensions of paragraph writing within regular classroom practice.

Finally, the study provides a basis for further research into the relationship between positive psychology and specific language-learning outcomes. In particular, it identifies the need for more rigorous studies that examine the respective contributions of psychological support, writing scaffolding, collaborative activities, and explicit language instruction to EFL writing development.

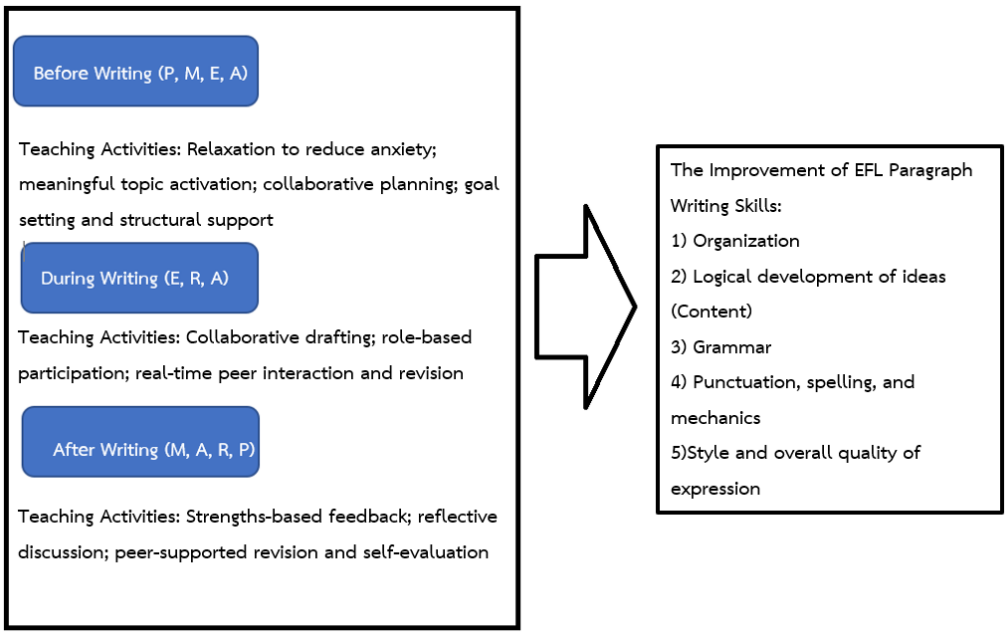



**Figure 3** Proposed Body of Knowledge: A PERMA-Based Process Writing Framework

This study proposes a PERMA-based process writing framework that integrates the five elements of positive psychology—Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment—into the three stages of paragraph writing: prewriting, while-writing, and post-writing. The framework illustrates how psychological principles can be incorporated into structured writing activities rather than being treated solely as general background conditions for learning.

At the prewriting stage, activities may emphasize emotional readiness, meaningful topic selection, idea generation, and collaborative brainstorming. At the while-writing stage, students engage in drafting, organizing ideas, developing supporting details, and exchanging feedback through structured and collaborative activities. At the post-writing stage, students revise and edit their paragraphs, reflect on their progress, receive constructive feedback, and identify further learning goals. OREO scaffolding may be used to support the organization and development of ideas throughout the relevant stages.

The framework also reflects the pattern of findings in the present study. Improvements after Bonferroni adjustment were statistically significant in Organization, Logical Development of Ideas (Content), and Style and Overall Quality of Expression, while the changes in Grammar and Mechanics did not remain statistically significant. Therefore, the framework should be understood as a proposed instructional synthesis informed by the study rather than as evidence that each PERMA element independently causes improvement in every writing component. Further research is needed to test the relationships among the PERMA elements, specific writing processes, and writing outcomes.

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