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Article

Personality Traits and Writing Strategies in Chinese L2 Learners: A Correlational Study

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Abstract: This study investigated the relationship between personality traits, as measured by the Myers-Briggs Type Indicator (MBTI-M), and the use of writing strategies among Chinese as a second language (L2) learners. A total of 296 non-English major undergraduates participated in the study, completing the MBTI-M instrument alongside a writing strategy questionnaire adapted from Oxford's (1990) well-established taxonomy of language learning strategies. The collected data were analyzed using descriptive statistics, independent-samples t-tests, and Spearman rank-order correlations to examine potential associations between personality dimensions and strategy preferences. The sample exhibited a predominance of Extraverted (68.6%), Intuitive (85.5%), and Feeling (60.8%) personality types, while the Judging-Perceiving dimension was nearly evenly distributed. Results indicated that cognitive strategies were the most frequently employed category across all participants. Notably, the only statistically significant finding revealed that Thinking-type learners utilized metacognitive strategies to a greater extent than Feeling-type learners. No other MBTI dimension demonstrated significant differences or meaningful correlations with writing strategy use. These findings suggest that the Thinking-Feeling dimension may play a meaningful role in shaping metacognitive strategy deployment during L2 writing tasks, whereas other personality dimensions appear less influential, particularly within timed testing contexts. The study offers practical implications for writing instructors seeking to accommodate diverse learner profiles, while also highlighting the need for future research incorporating broader participant samples and varied writing task types to further elucidate the interplay between personality and strategic writing behavior.

Keywords: personality traits; writing strategies; L2 learners; MBTI; metacognitive strategies

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1. Introduction

Writing is widely recognized as one of the most demanding skills in second language (L2) acquisition, requiring not only linguistic competence but also sustained cognitive effort, goal-directed planning, and adaptive resource management throughout the composition process [1]. For Chinese learners acquiring English as a second language, this demand manifests in persistent challenges related to textual coherence, syntactic accuracy, lexical appropriateness, and rhetorical organization—despite extensive exposure to formal instruction over many years. These recurring patterns have led scholars to broaden their analytical scope beyond purely linguistic dimensions and explore how learner-specific psychological characteristics—including motivational orientation, emotional engagement, and dispositional tendencies—interact with writing task demands to shape performance outcomes. Such inquiry aligns with contemporary views in applied linguistics that emphasize the situated, dynamic, and agentive nature of language learning, wherein individual variation plays a constitutive role rather than merely serving as background noise.

Within the domain of individual differences, personality traits have increasingly been examined as potential determinants of strategic behavior in L2 learning contexts.

From a theoretical standpoint, enduring personality dispositions are hypothesized to influence how learners approach writing tasks—particularly in terms of attention allocation, preference for structured versus exploratory information processing, tolerance for ambiguity during drafting, and responsiveness to feedback during revision. Although numerous investigations have explored associations between personality and general language learning strategy deployment, comparatively few have focused specifically on writing-related strategy selection, sequencing, and adaptation across distinct phases of the writing process—such as prewriting, drafting, revising, and editing. A limited number of exploratory studies conducted in European educational settings have reported observable variations in strategy frequency and type according to personality profiles; however, such findings cannot be assumed to generalize directly to Chinese higher education environments due to marked contrasts in pedagogical traditions, classroom interaction norms, assessment criteria, and sociocultural expectations surrounding academic literacy development. Moreover, existing empirical work has largely centered on English majors or intensive language programs, leaving underexplored the strategic behaviors of non-English major undergraduates—who represent the largest demographic cohort among L2 learners in China's university system and whose learning conditions differ significantly in terms of instructional intensity, curricular integration, and institutional support structures [2].

The present study seeks to address these gaps by systematically examining the relationship between personality dimensions and writing strategy utilization among a representative sample of 296 Chinese undergraduate students enrolled in non-English-major programs across multiple universities. Personality is assessed using a validated instrument adapted from the Myers-Briggs Type Indicator framework, which categorizes individuals along four bipolar dimensions: Extraversion–Introversion, Sensing–Intuition, Thinking–Feeling, and Judging–Perceiving [3, 4]. Writing strategy use is measured through a comprehensive, multi-component inventory grounded in established taxonomies of language learning strategies, distinguishing among metacognitive strategies (e.g., planning, monitoring, evaluating), cognitive strategies (e.g., translating, reorganizing, summarizing), and social/affective strategies (e.g., asking questions, cooperating, self-encouragement). Three interrelated research questions guide the investigation: (1) What is the overall distribution and relative frequency of writing strategy categories employed by this population? (2) Do statistically discernible differences exist in strategy selection and application across each of the four personality dimensions? and (3) To what degree do personality variables demonstrate measurable associations with the intensity and diversity of metacognitive, cognitive, and social/affective strategy use—both individually and in combination?

2. Literature Review

2.1. Personality Frameworks

Personality traits have been systematically conceptualized through multiple theoretical frameworks within educational psychology, each offering distinct assumptions about the structure, stability, and functional implications of individual differences [5]. Among these, two prominent models—the Five-Factor Model and the Myers-Briggs Type Indicator—have garnered sustained scholarly attention due to their empirical utility and pedagogical relevance. The former treats personality as a constellation of five broad, continuously distributed dimensions—openness, conscientiousness, extraversion, agreeableness, and neuroticism—emphasizing gradational variation rather than discrete classification. In contrast, the latter employs a typological approach grounded in psychological type theory, organizing individuals into sixteen distinct personality types based on four dichotomous preferences: extraversion versus introversion, sensing versus intuition, thinking versus feeling, and judging versus perceiving. This categorical architecture facilitates comparative analysis across clearly

defined groups, making it particularly suitable for investigations examining differential behavioral patterns in learning contexts.

The present study selects the Myers-Briggs Type Indicator as its primary personality assessment instrument for both methodological coherence and theoretical alignment with the research aims [6]. Its categorical design enables robust between-type comparisons of writing strategy deployment, supporting hypothesis testing related to systematic variation in cognitive and metacognitive engagement. Conceptually, each dimension carries empirically observable correlates in academic writing behavior: the extraversion–introversion preference reflects tendencies toward interactive idea generation versus reflective, self-contained drafting; judging–perceiving orientation manifests in divergent approaches to task structuring, deadline management, and iterative revision cycles; sensing–intuition influences information processing depth and source selection criteria; and thinking–feeling shapes rhetorical stance, audience awareness, and evaluative criteria applied during drafting and editing. Furthermore, the MBTI-M adaptation has undergone rigorous psychometric evaluation within Chinese higher education settings, demonstrating acceptable reliability, cross-cultural validity, and contextual appropriateness for undergraduate and graduate student populations. Its established use in prior domestic studies affirms its suitability for capturing meaningful personality-related variance in writing practices among Chinese learners.

2.2. L2 Writing Strategies: Conceptualization and Classification

Beyond individual personality traits, the theoretical foundation of this study also rests on a robust conceptualization of writing strategies. These strategies refer to deliberate, goal-oriented actions undertaken by learners to enhance the efficiency, depth, and adaptability of their writing development. Such actions are designed to facilitate greater autonomy, improve task engagement, support sustained progress, and promote transferable competencies across diverse linguistic and academic contexts [7]. Within second language writing research, scholars have systematically categorized these strategies to reflect the multifaceted cognitive and regulatory processes involved. A widely adopted classification distinguishes three interrelated dimensions: metacognitive strategies, which encompass planning before writing, monitoring progress during composition, and evaluating outcomes after revision; cognitive strategies, which include resource utilization, textual revision, structural rehearsal, and syntactic manipulation; and social–affective strategies, which involve collaborative interaction, constructive feedback seeking, and emotional regulation during writing tasks. The current study adopts an instrument grounded in this integrative framework, ensuring comprehensive measurement of strategy deployment while maintaining conceptual coherence and pedagogical relevance. Special attention is given to fostering constructive self-regulation and interpersonal support, aligning with contemporary principles of learner-centered, process-oriented writing instruction.

2.3. Empirical Studies on Personality and L2 Writing Strategies

Building on these theoretical frameworks, a substantial body of empirical research has investigated how individual differences in personality traits shape the selection and deployment of language learning strategies, particularly within second-language writing contexts. Early investigations observed consistent patterns wherein learners exhibiting higher levels of sociability and external orientation tended to engage more frequently in interactive and peer-oriented approaches, whereas those with reflective, internally focused dispositions demonstrated greater reliance on self-regulatory and planning-oriented techniques. More recent work has further refined these associations, revealing that dimensions related to information processing preferences—such as openness to collaborative input versus preference for independent task management—significantly predict variation in drafting behaviors, feedback-seeking frequency, and revision depth [8]. Notably, tendencies toward structured time management and goal-directed task execution have been linked to systematic prewriting activities and iterative editing cycles. However, such findings predominantly originate from Western educational

environments characterized by distinct pedagogical norms, assessment practices, and classroom interaction patterns. Their applicability to diverse sociocultural and institutional settings—especially those featuring large-class instruction, exam-oriented curricula, and collectivist learning values—remains empirically underexplored. Within mainland China, although several investigations have addressed broader English learning strategy preferences across listening, speaking, and reading domains, the strategic dimension of academic writing has received comparatively limited attention, particularly among undergraduate students majoring in non-English disciplines.

3. Method

3.1. Participants

The participant pool consisted of 296 first-year undergraduate students enrolled in non-English major programs at Beijing Institute of Petrochemical Technology, a publicly funded higher education institution located in Beijing. All participants had completed standardized College English Test (CET)-Band 4 writing instruction as part of their mandatory English curriculum prior to the commencement of data collection, ensuring baseline familiarity with the prescribed writing task structure, rubric expectations, and time constraints. The disciplinary distribution reflected institutional enrollment patterns, with a strong concentration in economics, business administration, accounting, and related management disciplines. Gender composition showed a notable imbalance typical of many Chinese universities in these fields, comprising 102 male and 194 female students [9]. Age ranged narrowly between 18 and 20 years, with a mean age of 19.2 years and a standard deviation of 0.8 years, indicating high homogeneity in developmental stage and educational background. On average, participants reported 9.5 years of formal English language instruction beginning from primary school, encompassing both classroom-based learning and supplementary training. Participation was entirely voluntary, and written informed consent was obtained from each individual following institutional ethical review protocols.

3.2. Instruments

Personality traits were assessed using a standardized instrument adapted for Chinese-speaking respondents, which operationalizes personality along four fundamental dichotomous dimensions: Extraversion versus Introversion, Sensing versus Intuition, Thinking versus Feeling, and Judging versus Perceiving. This instrument comprises sixteen carefully calibrated items, with four items dedicated to each dimension to ensure balanced representation and conceptual coverage. The adaptation underwent rigorous psychometric validation within Chinese educational and psychological research contexts, confirming its structural integrity and cross-cultural appropriateness. Internal consistency was evaluated using Cronbach's alpha, yielding coefficients that indicate satisfactory reliability across all dimensions: the Extraversion/Introversion scale achieved $\alpha = 0.717$, Sensing/Intuition $\alpha = 0.710$, Thinking/Feeling $\alpha = 0.747$, and Judging/Perceiving $\alpha = 0.882$. These values collectively support the instrument's suitability for measuring stable personality preferences in academic settings involving Chinese university students [10].

Writing strategy use was evaluated through an eighteen-item self-report questionnaire specifically refined for English writing tasks encountered in standardized national examinations such as the College English Test Band-4 (CET-4). The instrument draws upon established theoretical frameworks of language learning strategy taxonomy and was systematically modified to reflect authentic writing demands—including planning, monitoring, revision, peer consultation, and emotional regulation during composition. Responses were recorded on a five-point Likert scale ranging from 'never used' to 'always used'. The scale is organized into three theoretically grounded subscales—metacognitive strategies (e.g., goal setting and self-evaluation), cognitive strategies (e.g., outlining and paraphrasing), and social/affective strategies (e.g., seeking feedback and managing anxiety)—with six items per subscale [4]. Reliability analysis

confirmed strong internal consistency: metacognitive subscale α = 0.861, cognitive subscale α = 0.801, social/affective subscale α = 0.706, and overall scale α = 0.889, affirming its robustness for empirical investigation in applied linguistics and second language writing research.

3.3. Procedure

Data collection was conducted online using the Wenjuanxing platform during a scheduled session in the Reading, Writing and Translation course, specifically held on the third day following the College English Test Band 4 (CET-4) examination [11]. All participating students were instructed to reflect carefully on their recent CET-4 writing task—recalling both the cognitive demands encountered and the specific approaches employed—before completing two standardized instruments: the Myers-Briggs Type Indicator–Modified (MBTI-M) and a validated writing strategy questionnaire. The entire procedure was administered in a single, uninterrupted session under consistent conditions to minimize contextual variability. Prior to commencement, the researcher delivered standardized oral instructions emphasizing that responses were descriptive rather than evaluative, with explicit reassurance that there were no correct or incorrect answers. A total of 303 completed submissions were initially received; after rigorous screening for completeness, logical consistency, and minimum response thresholds, 296 datasets were retained for subsequent statistical processing. All cleaned data were systematically exported into SPSS version 26.0 for descriptive statistics, reliability assessment, and inferential analyses including correlation and regression modeling.

3.4. Data Analysis

Data analysis was carried out using SPSS version 26.0, a widely adopted statistical software package in behavioral and educational research. Descriptive statistics were systematically computed to characterize the sample composition with respect to Myers-Briggs Type Indicator (MBTI) preferences, including frequencies and percentages for each of the sixteen personality types. In addition, participants' reported usage of writing strategies was quantified across three theoretically grounded subscales—metacognitive strategies (e.g., planning, monitoring, and evaluating one's writing process), cognitive strategies (e.g., summarizing, paraphrasing, and organizing textual content), and social/affective strategies (e.g., seeking peer feedback, managing writing-related anxiety, and collaborating with others). For each subscale, arithmetic means and standard deviations were calculated to provide measures of central tendency and dispersion, facilitating interpretation of typical strategy engagement levels and inter-individual variability within the cohort.

To investigate potential differences in writing strategy utilization associated with fundamental MBTI dichotomies—namely Extraversion versus Introversion (E/I), Sensing versus Intuition (S/N), Thinking versus Feeling (T/F), and Judging versus Perceiving (J/P)—independent-samples t-tests were employed. These parametric comparisons were conducted separately for each dichotomy, treating group membership as the independent variable and mean subscale scores as dependent variables. Prior to interpreting t-test outcomes, Levene's test for equality of variances was rigorously applied; in cases where the assumption of homogeneity of variance was not met ($p < .05$), adjusted degrees of freedom and corresponding t-statistics assuming unequal variances were reported to ensure statistical robustness and validity of inference.

Furthermore, nonparametric Spearman rank-order correlation analyses were performed to assess monotonic associations between continuous MBTI dimension scores—derived from preference strength indicators—and the three writing strategy subscale scores. This approach was selected to accommodate potential non-normality in score distributions and ordinal properties inherent in preference-based measurement. All inferential tests adhered to a conventional two-tailed significance threshold of $p < .05$. To enhance interpretability beyond statistical significance, effect size metrics were incorporated: Cohen's d was computed for t-test comparisons to quantify standardized mean differences, while squared Spearman correlation coefficients (r^2) were reported to

estimate the proportion of shared variance between paired variables, thereby supporting more nuanced evaluation of practical relevance and magnitude of observed relationships.

4. Findings and Discussion

4.1. Descriptive Findings

As shown in Table 1, the sample was predominantly Extraverted (68.6%), Intuitive (85.5%), and Feeling (60.8%), while the Judging–Perceiving dimension was nearly evenly split (49.7% vs. 50.3%). This distribution reflects a distinct psychological orientation among the participants, with strong tendencies toward outward energy expression, pattern-based information processing, and value-driven decision-making. The relatively balanced Judging–Perceiving ratio suggests that preferences for structure versus flexibility in lifestyle and task management were distributed without marked skew across the cohort (As shown in Table 2).

Table 1. Distribution of MBTI Types Across Four Dimensions

Dimension	Type	n	%
E/I	Introversion (I)	93	31.4
	Extraversion (E)	203	68.6
S/N	Sensing (S)	43	14.5
	Intuition (N)	253	85.5
T/F	Feeling (F)	180	60.8
	Thinking (T)	116	39.2
J/P	Judging (J)	147	49.7
	Perceiving (P)	149	50.3

Percentages are based on N = 296. Each dimension sums to 100%.

Table 2. Descriptive Statistics for Writing Strategy Use

Strategy	M	SD
Metacognitive Strategies	6.99	1.745
Cognitive Strategies	18.90	3.816
Social-Affective Strategies	4.07	0.945

The notably high proportion of Intuitive types may be attributed to the emphasis on abstract reasoning, conceptual modeling, and forward-looking analysis inherent in economics and management curricula [12]. These disciplines routinely require students to interpret complex systems, anticipate emergent trends, and synthesize disparate information—cognitive demands that align closely with intuitive processing styles. Similarly, the predominance of Extraversion may reflect the communicative, collaborative, and presentation-intensive pedagogical practices common in these fields, where verbal articulation, group discussion, and real-time feedback are integral components of learning and assessment.

Given the homogeneity of the sample in terms of institutional source and disciplinary focus, caution is warranted when generalizing these descriptive findings to broader populations. The participants were drawn exclusively from undergraduate programs in economics and management at a single university, limiting demographic and experiential diversity. Nonetheless, this personality profile provides a useful contextual baseline for interpreting the personality–strategy relationships examined in the subsequent sections, particularly as it establishes prevailing cognitive and affective tendencies that may shape strategic engagement with academic writing tasks.

Concerning the findings for writing strategy use, the data in Table 2 indicated cognitive strategies were used most frequently (M = 18.90, SD = 3.816), followed by metacognitive strategies (M = 6.99, SD = 1.745) and social/affective strategies (M = 4.07, SD = 0.945). These values represent mean frequency scores derived from validated self-report scales, with higher scores indicating greater perceived reliance on each strategy category

during CET-4 preparation and execution. The substantial standard deviation for cognitive strategies further suggests considerable individual variation in how learners deploy resource utilization, drafting techniques, and revision behaviors [13].

This pattern suggests a greater reliance on cognitive strategies—such as using dictionaries or corpora, paraphrasing, outlining, and iterative revision—than on metacognitive or social strategies. This may be attributed to the timed, high-stakes nature of the CET-4 writing task, which prioritizes task execution over higher-order planning or monitoring. The low use of social/affective strategies is consistent with the individual nature of the task, which is typically completed under time pressure with little opportunity for peer interaction, instructor consultation, or emotional regulation support. Moreover, the standardized testing environment discourages collaborative problem-solving and minimizes avenues for affective scaffolding, thereby reinforcing a predominantly intrapersonal, cognition-centered approach to writing performance.

4.2. Personality Differences in Writing Strategy Use

To examine whether writing strategy use differed across personality types, independent-samples t-tests were conducted across the four MBTI dichotomies—Extraversion/Introversion, Sensing/Intuition, Thinking/Feeling, and Judging/Perceiving. As shown in Table 3, a statistically significant group difference was observed exclusively for the Thinking–Feeling dimension with respect to metacognitive strategies, where individuals classified as Thinking types reported significantly higher usage frequency compared to those classified as Feeling types ($t = 2.674$, $p = .008$, $d = 0.318$). This moderate effect size suggests a meaningful, though not overwhelming, association between cognitive orientation and strategic self-regulation in writing. No other comparisons across the remaining three dichotomies yielded statistically significant results on any of the writing strategy subscales—including cognitive, metacognitive, social, or affective strategies—with all associated p-values exceeding the conventional alpha threshold of.05. The consistency of non-significance across multiple strategy domains implies that personality type, as operationalized by this categorical framework, may exert limited influence on the observable repertoire of writing behaviors under the conditions of this study.

Table 3. Significant T-Test Results for Writing Strategy Use by MBTI Dimensions

MBTI Dimension	Strategy Type	Group	n	M	SD	t	df	p	Cohen's d
T/F	Metacognitive	Thinking	116	7.33	1.77	2.67	294	0.008	0.32
		Feeling	180	6.78	1.70				

Only significant results ($p < .05$) are presented. Non-significant comparisons for E/I, S/N, and J/P dimensions are not shown. Effect sizes are reported as Cohen's d.

The finding that Thinking types reported more frequent use of metacognitive strategies may be interpreted in light of well-documented cognitive dispositions associated with these orientations. Individuals exhibiting stronger preference for logical analysis, objective evaluation, and structured planning tend to engage more deliberately in activities such as goal-setting before writing, ongoing monitoring of textual coherence, and retrospective evaluation of rhetorical effectiveness—core components of metacognitive regulation [1]. In contrast, individuals whose preferences emphasize interpersonal considerations, contextual sensitivity, and value-based decision-making may allocate attention differently during writing tasks, potentially prioritizing relational authenticity or emotional resonance over systematic self-assessment. This does not imply diminished competence or effort; rather, it reflects divergent emphases in regulatory focus that may manifest differently across task contexts, particularly when writing serves communicative rather than purely analytical purposes.

The absence of significant differences for the remaining three MBTI dimensions warrants careful interpretation. One plausible explanation is that the CET-4 writing task, as a standardized assessment administered under fixed time limits, establishes strong situational parameters that may reduce inter-individual variability in strategy selection.

Under such conditions, learners across diverse personality profiles may converge on pragmatic, efficiency-oriented approaches—such as rapid outlining, formulaic paragraph structuring, or lexical substitution—to meet task requirements within allocated timeframes [14]. This convergence could diminish observable distinctions rooted in dispositional tendencies. Furthermore, the high-stakes nature of the examination may heighten shared motivational priorities—accuracy, clarity, and adherence to expected conventions—thereby amplifying common behavioral patterns while attenuating idiosyncratic stylistic or procedural preferences.

An alternative explanation concerns the inherent limitations of typological models in capturing the multidimensional and continuous nature of human personality. Instruments based on binary categorization, such as the MBTI, may obscure subtle gradations in trait expression that are more reliably indexed by dimensional frameworks like the Five-Factor Model. Research has indicated that continuous measures often demonstrate greater predictive validity for domain-specific academic behaviors, including language learning strategies, because they preserve variance that categorical assignments discard through forced classification. Moreover, cultural context plays a critical role: the test-oriented English learning environment prevalent in many Chinese universities emphasizes procedural mastery, model responses, and exam-aligned practice—factors that may further compress behavioral diversity across personality groups [9]. Consequently, findings derived from Western educational settings, where pedagogical goals and assessment formats differ substantially, may not translate directly without accounting for these systemic contextual variables. Future investigations would benefit from integrating both dimensional personality assessments and ecologically valid writing tasks that vary in purpose, audience, and time pressure to better disentangle trait effects from situational influences.

4.3. Correlations between Personality and Writing Strategies

Spearman correlation analyses were performed to examine the bivariate relationships between MBTI dimension scores and writing strategy subscale scores, as the strategy variables exhibited marked deviations from normality, as confirmed by both visual inspection of Q-Q plots and formal statistical tests including the Shapiro-Wilk test [15]. Given the ordinal nature of many strategy self-report items and the skewed distribution patterns observed across all subscales—particularly in planning, monitoring, and evaluating behaviors—the non-parametric Spearman's rho coefficient was selected as the most appropriate measure of monotonic association. Table 4 presents the full correlation matrix, which includes all sixteen pairwise comparisons between the four bipolar MBTI dimensions (Extraversion–Introversion, Sensing–Intuition, Thinking–Feeling, Judging–Perceiving) and the four empirically derived writing strategy subscales (cognitive, metacognitive, social, and affective strategies), thereby offering a comprehensive overview of potential personality-strategy linkages within this specific learner population.

Table 4. Spearman's Rhon Matrix for MBTI Dimensions and Writing Strategy Subscales

Variable	1	2	3	4	5	6	7
1. E/I	—						
2. S/N	0.072	—					
3. T/F	-0.113	0.056	—				
4. J/P	-0.041	-.127*	.185**	—			
5. Metacognitive Strategies	0.042	0.052	-0.157	-0.024	—		
6. Cognitive Strategies	-0.001	-0.047	-0.063	0.007	0.698	—	
7. Social-Affective Strategies	-0.084	-0.095	-0.026	0.011	0.408	0.646	—

E/I: Extraversion vs. Introversion; S/N: Intuition vs. Sensing; T/F: Thinking vs. Feeling; J/P: Judging vs. Perceiving. Correlations were computed using Spearman's rho due to the non-normal distribution of the strategy variables. **p < .01, *p < .05 (two-tailed).

As shown in Table 4, a modest but statistically significant negative correlation was found between the Thinking–Feeling dimension and metacognitive strategies ($r = -.157$, $p < .05$), indicating that individuals scoring higher on the Thinking pole reported greater frequency and depth of engagement with planning, monitoring, and evaluating their writing processes compared to those leaning toward the Feeling pole. This pattern aligns with theoretical expectations regarding cognitive regulation, as Thinking-oriented individuals may prioritize logical structuring, objective self-assessment, and systematic revision over emotionally responsive or value-driven adjustments during writing. The finding is consistent with the independent group comparison result reported in Section 4.2, reinforcing the robustness of this association across analytical approaches. No other MBTI dimension demonstrated statistically significant associations with any of the four writing strategy subscales, even at the liberal alpha threshold of.10, suggesting limited cross-domain generalizability of broad personality typologies to domain-specific strategic behavior in academic writing contexts.

The absence of significant correlations for the Extraversion–Introversion, Sensing–Intuition, and Judging–Perceiving dimensions may reflect the highly contextualized and task-bound nature of second-language writing performance, particularly under standardized assessment conditions. In broader language learning settings, certain dispositional tendencies—such as preference for interpersonal interaction or structured goal-setting—have been observed to influence strategy selection. However, these tendencies appear attenuated when learners confront rigidly formatted, time-limited, and high-stakes writing tasks like the CET-4, where procedural efficiency and adherence to genre conventions often override individual stylistic or temperamental inclinations. The constraints inherent in such assessments—including fixed prompts, strict word limits, and uniform evaluation rubrics—may compress behavioral variability and channel learners toward convergent, instructionally scaffolded strategies regardless of underlying personality profiles. This phenomenon underscores the importance of ecological validity in strategy research and cautions against overgeneralizing findings from decontextualized personality inventories to situated academic practices.

The modest effect size ($r = -.157$) further indicates that while personality contributes incrementally to explaining variance in metacognitive strategy use, its explanatory power remains comparatively small relative to other well-documented determinants [16]. Language proficiency level—especially lexical range, syntactic complexity, and grammatical accuracy—exerts a stronger influence on how writers allocate attentional resources across drafting, revising, and proofreading stages. Similarly, prior exposure to explicit writing instruction, familiarity with rhetorical conventions of English academic discourse, and accumulated experience with timed writing tasks collectively account for substantially more variation in strategic behavior than dispositional traits alone. These factors likely operate not only independently but also interactively—for instance, higher proficiency may amplify the expression of personality-linked preferences, whereas low proficiency may constrain strategic flexibility altogether. Future investigations would benefit from employing hierarchical regression or structural equation modeling to disentangle the relative and interactive contributions of personality, linguistic competence, instructional history, and task parameters in shaping writing strategy deployment.

The absence of significant correlations for the E/I, S/N, and J/P dimensions with writing strategy use may also stem from fundamental limitations in the psychometric architecture of the MBTI instrument itself. As a forced-choice, categorical typology grounded in Jungian theory, the MBTI dichotomizes continuous psychological constructs into discrete categories, potentially obscuring subtle gradations and nonlinear thresholds that may be critical for predicting context-sensitive behaviors like strategic writing. Although dimensional scoring allows for parametric treatment in correlational analysis, the underlying measurement model does not assume interval-level scaling or linear trait expression. Continuous, empirically validated frameworks—such as those based on the Five-Factor Model—offer greater granularity in capturing trait distributions and may therefore detect more nuanced associations between openness to experience and creative

ideation, conscientiousness and planning persistence, or neuroticism and anxiety-mediated avoidance of revision. Moreover, hybrid approaches integrating behavioral observation, think-aloud protocols, and digital trace data could complement self-report measures to triangulate personality-strategy links beyond the constraints of static questionnaire formats [9].

5. Conclusion

In conclusion, this study systematically investigated the association between personality traits—as operationalized through the Myers-Briggs Type Indicator—and the deployment of writing strategies among Chinese undergraduate students who are not majoring in English. The analysis focused specifically on strategy use during preparation for and performance on the College English Test Band 4 (CET-4) writing component, a high-stakes, standardized assessment that shapes instructional priorities across many Chinese universities. Quantitative findings revealed a statistically robust and consistent pattern: participants classified as Thinking types reported significantly greater engagement with metacognitive strategies—including goal setting, planning, self-monitoring, evaluation, and revision—compared to those identified as Feeling types. This difference was confirmed through both independent-samples t-tests and bivariate correlation analyses, indicating not only group-level divergence but also a measurable linear relationship between the Thinking–Feeling continuum and metacognitive engagement. In contrast, no statistically significant associations emerged for the Extraversion–Introversion, Sensing–Intuition, or Judging–Perceiving dimensions, suggesting that, within this specific population and task context, the cognitive orientation toward logic, objectivity, and analytical decision-making—rather than interpersonal values, information processing style, or lifestyle preferences—appears to be the most salient personality-related predictor of strategic regulation in academic writing.

Theoretically, these results enrich the conceptual framework linking individual differences to second language writing behavior by situating personality not as a static trait but as a contextualized influence that interacts dynamically with institutional demands, assessment formats, and sociocultural learning norms. Rather than confirming universal personality–strategy mappings, the findings underscore how educational ecology modulates psychological variables: the test-driven nature of English instruction in Chinese higher education appears to amplify the functional relevance of analytical self-regulation, particularly under time-constrained, criterion-referenced writing conditions. This challenges assumptions derived from studies conducted in more process-oriented, learner-centered environments, where affective or social dimensions of personality may exert stronger influence on writing behaviors.

Pedagogically, the results invite a nuanced approach to differentiated writing instruction. While it would be inappropriate to stereotype learners based on personality categories, educators may consider integrating metacognitive scaffolding—such as explicit modeling of planning routines, think-aloud protocols during drafting, and structured reflection prompts—into routine writing practice. For students whose natural inclinations lean toward empathetic, value-based reasoning, such scaffolds can serve as accessible entry points into strategic self-regulation without requiring fundamental shifts in identity or worldview. Moreover, given the overall low baseline frequency of metacognitive strategy use observed across all personality types, a whole-class emphasis on developing metacognitive awareness—through guided journaling, peer feedback cycles, and iterative task analysis—may yield broader benefits than interventions targeted solely at personality subgroups.

Several methodological constraints warrant careful consideration. First, the sample was drawn exclusively from a single comprehensive university, limiting geographic, institutional, and curricular diversity. Second, reliance on self-report instruments introduces potential biases related to introspective accuracy, social desirability, and retrospective recall. Third, the MBTI's forced-choice, dichotomous structure oversimplifies personality continua and may obscure subtle gradations in cognitive

preference that could meaningfully influence strategy selection. Future investigations should therefore pursue mixed-method designs—combining longitudinal survey data with stimulated-recall interviews, artifact analysis of actual writing drafts, and classroom ethnographic observation—to trace how personality-related dispositions interact with real-time task demands, instructor feedback, and peer collaboration in shaping strategic choices.

Collectively, this study affirms that personality, particularly the Thinking–Feeling dimension, functions as a meaningful correlate—not a deterministic cause—of metacognitive strategy use in a high-stakes, academically consequential writing context. It further demonstrates that such relationships cannot be extrapolated uncritically across educational systems; rather, they must be interpreted through the lens of local pedagogical practices, assessment cultures, and learner histories. As English writing instruction continues to evolve in response to globalization, digital literacy demands, and curriculum reform, understanding how enduring psychological characteristics interface with situated learning activities remains essential—not to sort or label learners, but to design more responsive, equitable, and cognitively grounded support systems that honor both individual variation and shared developmental goals.

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