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A Cross-Cultural Investigation into the Role of Textual Coherence in L2 Writing Quality

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Abstract

With the rapid advancement of corpus linguistics and natural language processing technologies, the measurement and analysis of textual cohesion have emerged as a focal point in second language (L2) writing assessment. However, the relationship between writing quality and textual cohesion among L2 writers from different cultural backgrounds remains underexplored. This study builds a small-scale corpus based on the ELLIPSE dataset, using "distance learning" as a writing prompt, and employs the TAACO tool to quantitatively analyze 489 L2 writing samples. Results indicate that cultural background does not exert a significant influence on writing quality. Additionally, both global cohesion and text-level cohesion demonstrate a significant positive correlation with writing quality. Among the 168 cohesion features examined, a combination of four key indices: functional word MATTR, adjacent two-paragraph overlap function lemmas, lemma MATTR, and binary adjacent two-paragraph overlap pronoun lemmas, explains 17.2% of the variance in writing quality. These findings highlight the critical role of textual cohesion in L2 writing evaluation from a cross-cultural perspective, offering theoretical insights for English writing instruction and practical implications for the development of automated essay scoring systems.

Keywords: L2 writing, textual cohesion, cultural background, writing quality

1. Introduction

With the rapid development of corpus linguistics and advancements in NLP technologies, textual cohesion has emerged as a pivotal factor in L2 writing research, particularly in the assessment of writing quality and the development of automated essay scoring systems. As a core component of language comprehension, cohesion plays a crucial role in understanding how texts are processed and meaning is constructed in readers' minds (McNamara et al., 1996; O'Reilly & McNamara, 2007). Previous studies have demonstrated that cohesion, as an explicit manifestation of textual coherence (Halliday & Hasan, 1976), is essential for comprehending challenging texts (McNamara & Kintsch, 1996). Unlike cohesion, which primarily refers to surface-level connectivity, coherence pertains to the overall understanding of text meaning and relies on both explicit cohesion cues and implicit semantic relationships (McNamara et al., 1996; O'Reilly & McNamara, 2007). Effective

measurement of textual coherence is critical for discourse processing research, which has led to the development of various NLP tools such as Coh-Metrix (McNamara et al., 2014). However, challenges remain due to differences in the breadth of application and operational feasibility among these tools, limiting further exploration of textual cohesion.

Although the positive influence of textual cohesion on writing quality has been widely acknowledged (Collins, 1998; Deville, 2003), not all cohesion features are consistently associated with writing quality, and the effects of certain indices remain unclear. Additionally, existing empirical studies on the relationship between textual cohesion and writing quality have largely focused on L2 writers from single cultural backgrounds (Liu & Braine, 2005; Chanyoo, 2018; Yan & Tang, 2023), overlooking the potential influence of cultural differences on writing performance. In reality, L2 writing is a complex process shaped by multiple factors, among which cultural background plays a significant role. Cultural factors not only influence writers' linguistic habits and cognitive patterns but may also affect the degree of textual cohesion and overall writing quality (Kaplan, 1966; Hyland, 2004).

To address these gaps, this study aims to investigate the role of textual cohesion in L2 writing quality from a cross-cultural perspective. Utilizing the ELLIPSE dataset (Crossley et al., 2023), we constructed a small-scale corpus based on the writing prompt "distance learning". The study employed TAACO (Crossley et al., 2019; Crossley et al., 2016), a comprehensive and user-friendly text analysis tool, to quantitatively analyze 489 L2 writing samples. Specifically, this research seeks to answer two key questions: (1) Do L2 writers from different cultural backgrounds exhibit significant differences in writing quality? (2) How are textual cohesion indices related to writing quality?

Through an in-depth analysis of 168 cohesion indices, the findings reveal that cultural background does not exert a significant influence on writing quality. However, both global cohesion and text-level cohesion show significant positive correlations with writing quality. More precisely, a combination of four key cohesion indices: functional word MATTR, adjacent two-paragraph overlap of functional lemmas, lemma MATTR, and binary adjacent two-paragraph overlap of pronoun lemmas, explains 17.2% of the variance in writing quality.

This study underscores the critical role of textual cohesion in L2 writing quality assessment from a cross-cultural perspective. The findings not only provide a robust theoretical foundation for English writing instruction but also offer practical insights for the development and optimization of automated essay scoring systems.

2. Literature Review

2.1 The Development of Cohesion and Coherence Theory

The exploration of textual cohesion and coherence can be traced back to the pioneering work of Halliday and Hasan (1976). They defined cohesion as the explicit lexical and grammatical connections within a text, whereas coherence refers to the process of constructing textual meaning at the cognitive level of the reader. Building on this foundation, McNamara et al. (1996, 2010) further distinguished between explicit cohesion cues (e.g., repetition, reference) and implicit cohesion cues (e.g., semantic consistency), emphasizing their complementary roles in text comprehension.

Moreover, advances in NLP technology have greatly contributed to the study of cohesion and coherence. Tools such as Coh-Metrix (McNamara et al., 2014) and TAACO (Crossley et al., 2019) have enabled researchers to quantitatively measure multiple dimensions of cohesion and coherence with high precision. These innovations have equipped researchers with the means to systematically analyze and quantify textual features, thus enhancing methodological rigor and providing new perspectives on the study of cohesion and coherence.

2.2 The Relationship Between Textual Coherence and Writing Quality

The influence of textual coherence on writing quality has remained a central research focus. The development of corpus linguistics has allowed for the systematic analysis of coherence using quantitative methods. Studies have demonstrated that the use of function words is closely related to textual coherence (McCarthy & Carter, 2004). Moreover, cohesion indices extracted through NLP tools exhibit strong positive correlations with writing quality (Crossley & McNamara, 2011; Zhang & Liu,

2021). These findings suggest that coherence not only serves as a key indicator of writing quality but also provides an effective foundation for the quantitative assessment of texts.

However, existing research predominantly focuses on a single cultural context, often comparing first-language (L1) English writers with L2 writers (Hyland, 2004). In response, recent studies have begun to address this gap by investigating the role of cultural schemata in shaping rhetorical patterns and coherence strategies (Zhang & Liu, 2021). Similarly, empirical studies have confirmed that while cultural factors affect surface-level rhetorical styles, deeper elements of logicality and coherence remain consistent across cultures (Yu & Gao, 2022; Zhang, Li, & Liu, 2023).

These findings imply that while cultural factors shape rhetorical preferences, they exert a relatively limited influence on the fundamental principles of textual coherence that underpin effective writing. However, the mechanisms through which cultural backgrounds interact with coherence remain insufficiently explored, necessitating further research that integrates multidimensional quantitative analysis with cross-cultural perspectives.

2.3 The Influence of Cultural Background on L2 Writing Quality

Cultural background is a critical factor influencing L2 writing. The contrastive rhetoric theory proposed by Kaplan (1966) revealed that cultural differences significantly shape writers' cognitive processes and rhetorical patterns. Specifically, Western cultures often exhibit linear logical structures and direct expression, while Eastern cultures prefer spiral structures and indirect rhetorical styles. Expanding on Kaplan's work, further research emphasized the deep-seated influence of cultural background on writing style and logical organization, which may even manifest in text coherence (Connor, 1996).

In recent years, the inclusion of cultural perspectives in L2 writing research has led to a more diversified understanding of writing quality. Empirical studies have shown that cultural factors do influence writing quality but are not definitive determinants (Cumming et al., 2016; Elhami et al., 2024). For instance, while cultural backgrounds shape rhetorical preferences, recent research highlights that L2 writers from diverse cultural contexts demonstrate convergence in fundamental aspects of writing quality, such as logicality and coherence (Zhang & Liu, 2021). These findings suggest that cultural factors impact surface-level writing features while maintaining cross-cultural similarities in deeper textual coherence.

Nevertheless, the exact mechanisms through which cultural factors interact with textual coherence and their specific manifestations in writing remain underexplored. Addressing this gap requires empirical studies that adopt multidimensional and cross-cultural approaches to fully uncover the nuanced interplay between cultural backgrounds and writing quality.

2.4 Research Gaps and the Significance of the Present Study

In summary, textual coherence, as a crucial component of writing quality, has been widely investigated in L2 writing research. However, two significant gaps persist in the existing literature: First, there is a lack of systematic empirical research examining the relationship between textual coherence and writing quality across writers from diverse cultural backgrounds. Second, limited attention has been paid to the multidimensional quantitative analysis of coherence indices in cross-cultural contexts.

To address these gaps, the present study adopts a quantitative approach based on the ELLIPSE corpus and a self-constructed small-scale corpus on distance learning. Utilizing the TAACO tool, this study quantitatively analyzes textual coherence through multiple indices, including lexical overlap, referential cohesion, and semantic consistency. Specifically, the study aims to address the following research questions:

(1) Are there significant differences in writing quality among L2 writers from different cultural backgrounds?

(2) What is the specific relationship between textual coherence indices and writing quality?

3. Method

3.1 Corpus Description

This study employed the ELLIPSE corpus alongside a custom-built, small-scale corpus constructed to examine writing performance on the prompt "distance learning." The ELLIPSE corpus is an open-access linguistic resource designed to assess writing insights, proficiency

levels, and related linguistic skills of English Language Learners (ELLs). Writing samples within the ELLIPSE corpus were collected under standardized annual assessment conditions across multiple U.S. states, ensuring uniformity in testing environments and scoring protocols. The reliability of essay scores was confirmed through reliability analyses, and previous studies have validated both the measurement reliability and scoring consistency of the corpus (Crossley et al., 2023).

For this study, a sub-corpus comprising 489 writing samples was employed. Participants were tasked with composing a short essay in response to the writing prompt "distance learning" under standardized experimental conditions. The task required writers to produce their essays within a time frame of 25 to 30 minutes and computer-based submission, aligning with established test administration protocols. The selection of this particular prompt was driven by its high frequency of occurrence within the ELLIPSE corpus, ensuring relevance, consistency, and comparability for targeted analyses.

A quantitative analysis of text length revealed that the essay word counts in the sub-corpus adhered to a normal distribution (Figure 1). Individual essay lengths ranged from 152 to 1115 words, with a mean word count of 458.3 words and a standard deviation of 171.428 (M = 458.3, SD = 171.428).

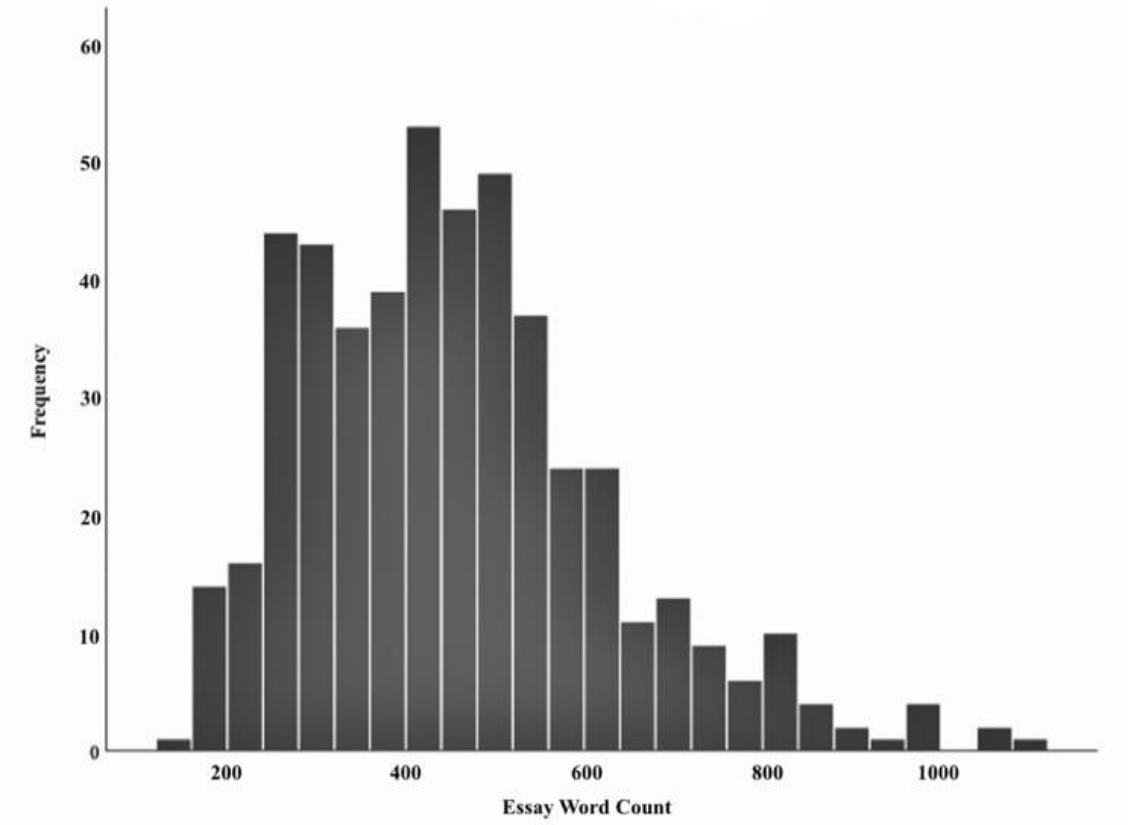


Figure 1. Distribution of Essay Word Counts in the Sub-Corpus

For performance evaluation, the essays were scored according to the standardized scoring criteria used in the ELLIPSE corpus. The scoring system was based on a 0-5 scale with intervals of 0.5 points. The observed score range spanned from 1 to 5, with increments of 0.5 serving as the common difference. The frequency distribution of the scores demonstrated a discernible trend, as illustrated in Figure 2.

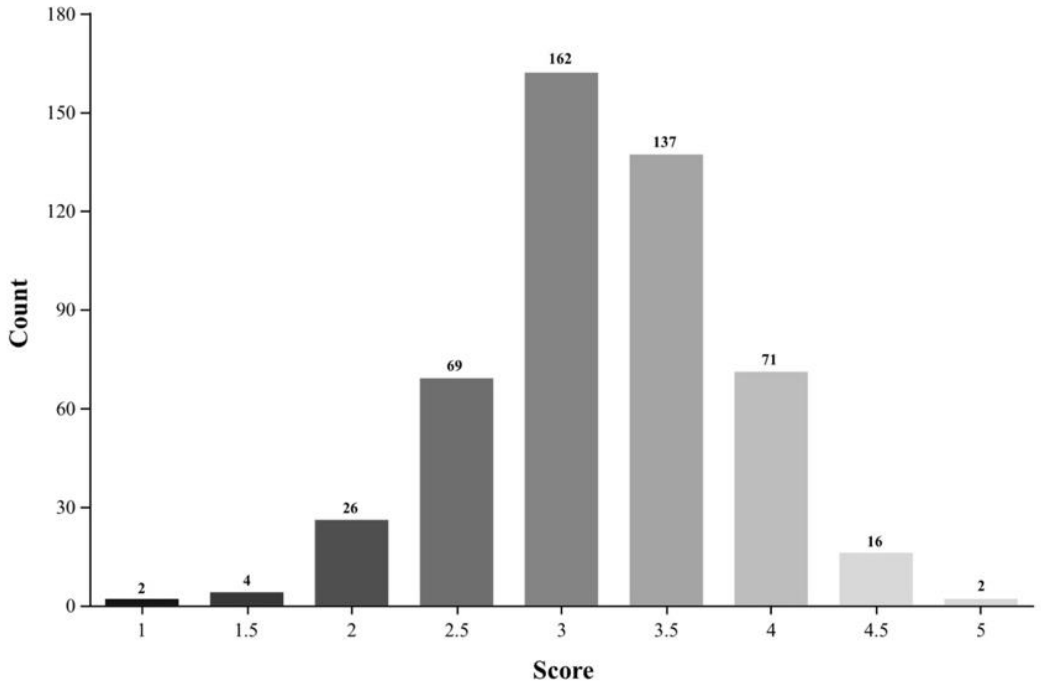
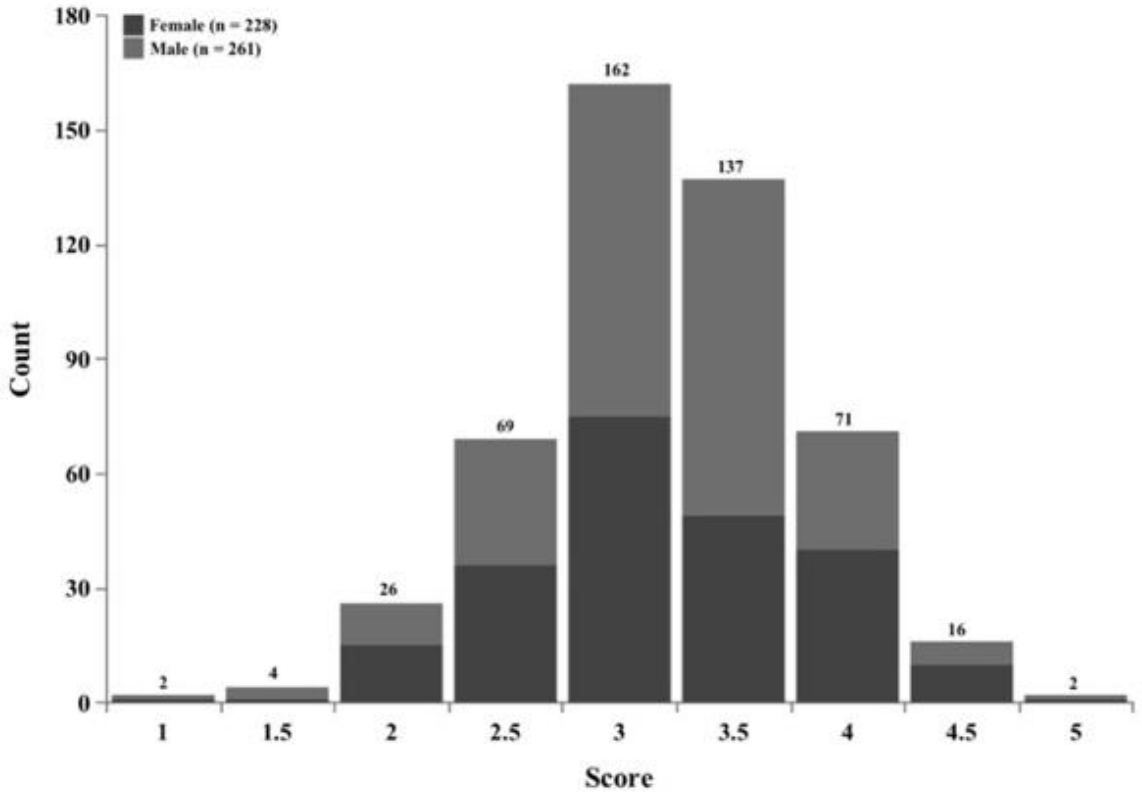


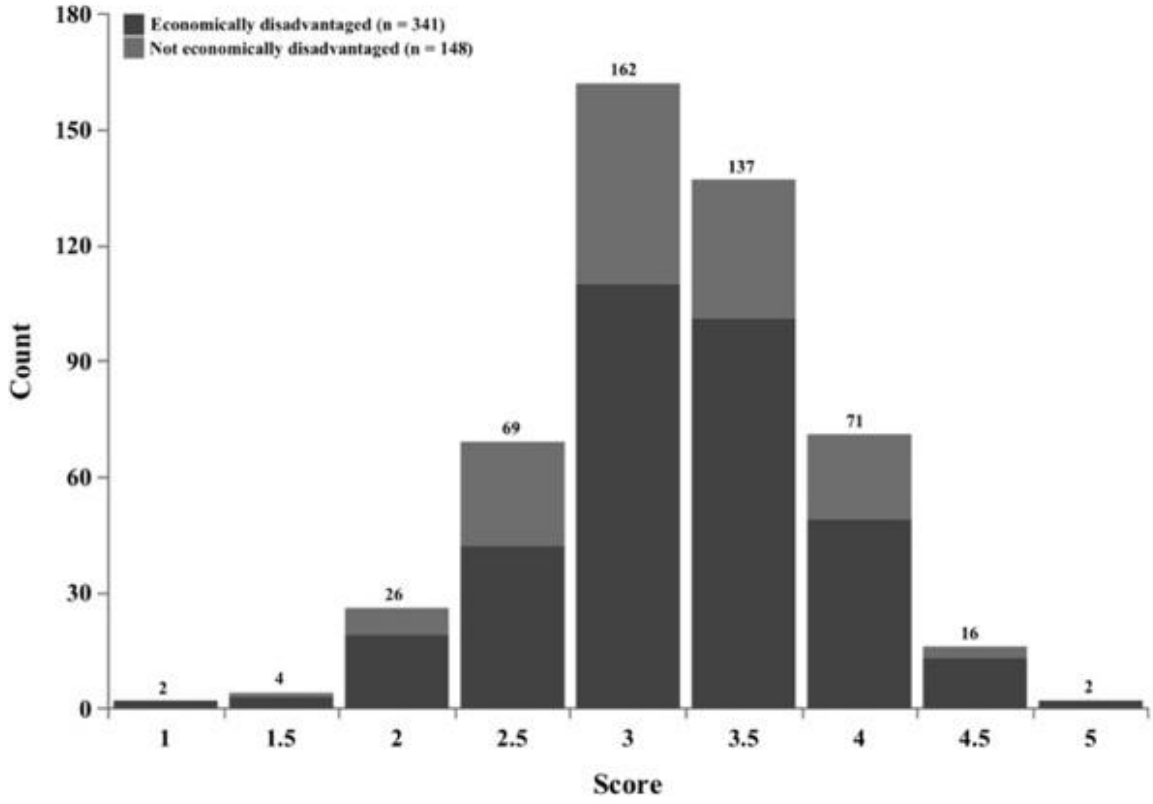
Figure 2. Frequency Distribution of Essay Scores

3.2 Demographic Details of L2 Writers

The ELLIPSE corpus offers language proficiency scores for individual writers, supporting research on both global and fine-grained proficiency features. Additionally, the corpus provides a robust dataset comprising detailed individual and demographic information for English Language Learners (ELLs), including economic status, gender, grade levels, and racial backgrounds (Crossley et al., 2023).

For the present study, the sub-corpus comprises 489 writing samples produced by L2 writers, whose demographic profiles include economic status, gender, grade levels spanning from 9th to 12th grades, and racial backgrounds. Within this sub-constructed corpus, the gender distribution reveals a slight predominance of male students (53%) over female students (47%). The cohort predominantly consists of Hispanic students, with approximately 62% enrolled in the 12th grade, while the remaining students are evenly distributed across the 9th, 10th, and 11th grades. Moreover, a significant portion of the participants, around 70%, are classified as economically disadvantaged, thereby underscoring a notable socioeconomic dimension within the dataset. To provide a comprehensive overview of these demographics, Figure 3 presents a detailed breakdown of the relationships between scores and gender, race, grade, and economic status.


Female (n = 228)
Male (n = 261)
Count
Score
180
150
120
90
60
30
0
1
1.5
2
2.5
3
3.5
4
4.5
5
2
4
26
69
162
137
71
16
2


Economically disadvantaged (n = 341)
Not economically disadvantaged (n = 148)
Count
Score
180
150
120
90
60
30
0
1
1.5
2
2.5
3
3.5
4
4.5
5
2
4
26
69
162
137
71
16
2

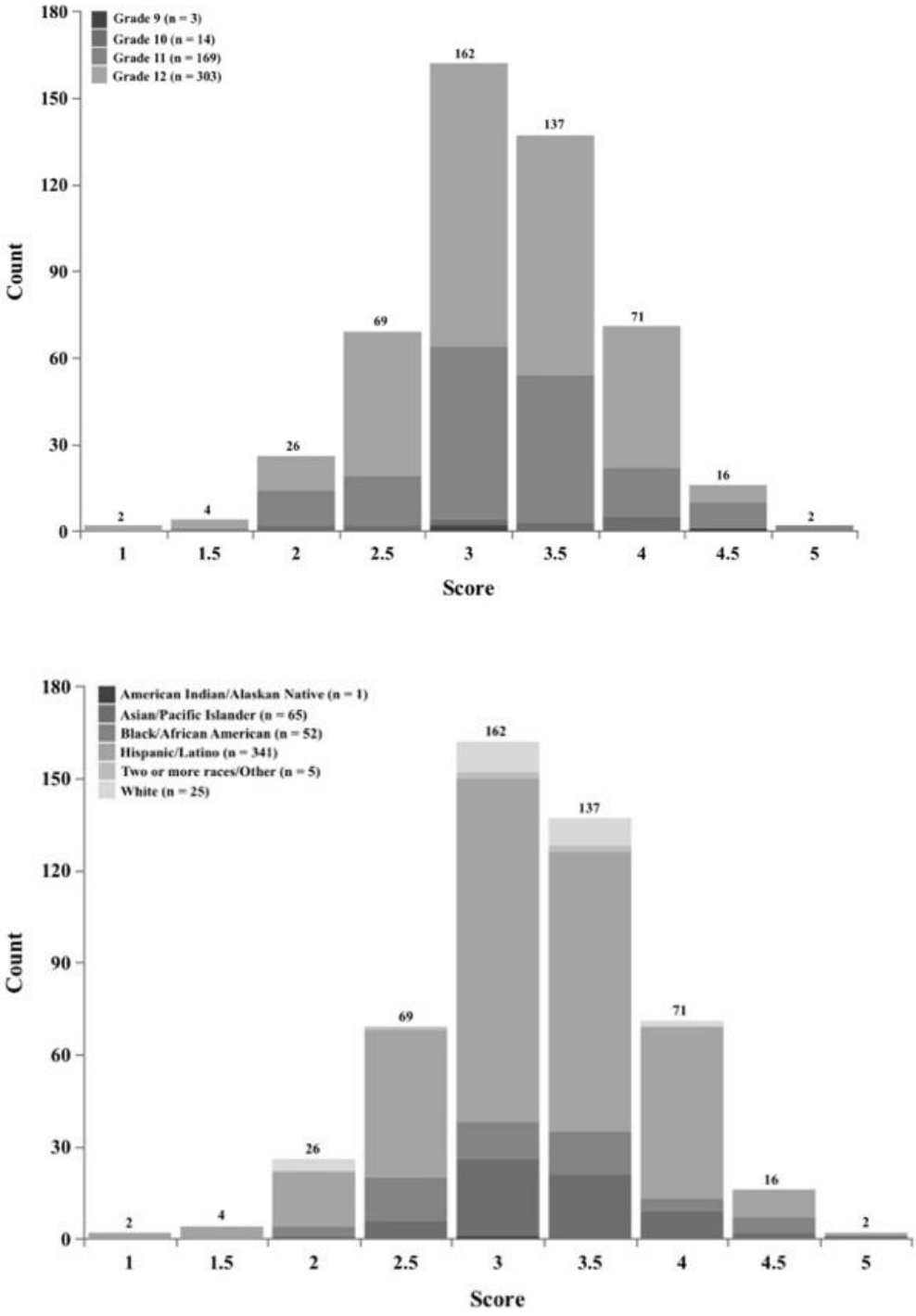


Figure 3. Relationships Between Essay Scores and Demographic Variables

3.3 Introduction to TAACO

TAACO is a freely available text analysis tool developed to support research on textual cohesion and coherence across diverse fields such as discourse studies, language assessment, education, and cognitive science. By automating the examination of cohesion devices at local, global, and textual levels, TAACO enables researchers to investigate how cohesion contributes to text comprehension and quality assessments (Crossley et al., 2019; Crossley et al., 2016).

TAACO analyzes over 160 linguistic indices across three cohesion levels. These indices are grouped into five categories: connectives, givenness, type-token ratio (TTR), lexical overlap, and semantic overlap (Crossley et al., 2019; Crossley et al., 2016). Additionally, TAACO measures givenness, reflecting how information builds on prior sentences, and TTR,

which quantifies lexical diversity by calculating the ratio of unique words to total words. TAACO further incorporates TTR-based indices for content words, lemmas, and multi-word sequences, offering a comprehensive toolkit for cohesion analysis.

This robust functionality makes TAACO a valuable resource for advancing research in text analysis and cohesion.

4. Results

4.1 L2 Writing Quality and Cross-Cultural Groups

The results of the present study shed light on the relationship between L2 writing quality, as measured by cohesion scores, and demographic variables, including gender, grade level, race, and economic status. Pearson correlation analyses were conducted to examine these relationships in Table 1, and the results indicate weak or negligible correlations across all demographic factors.

Table 1. Pearson Correlations Between Essay Scores and Demographic Variables

Variables	Demographic information	Pearson correlation coefficients
1	gender	0.001
2	grade	-0.049
3	race	-0.067
4	economic status	-0.049

Note: Pearson correlation coefficients (r) indicate the strength and direction of the relationship between essay scores and demographic variables. Correlations closer to 0 suggest weaker relationships. Negative values indicate inverse relationships.

Firstly, Gender was found to have a negligible correlation with cohesion scores, suggesting that gender does not significantly influence the quality of L2 writing in terms of cohesion. This indicates that male and female writers performed similarly in cohesion-related aspects of their writing.

For grade level, a weak negative correlation was observed, suggesting a slight decline in cohesion scores with increasing grade level. However, the magnitude of this relationship is minimal, and the result should be interpreted with caution as it does not indicate a strong or consistent trend.

Similarly, the correlation between race and cohesion scores was weak and negative. This finding suggests that racial background does not substantially impact the cohesion or overall quality of L2 writing, underscoring the limited influence of cultural or ethnic differences in this domain.

Lastly, economic status showed a weak negative correlation with cohesion scores, indicating that economic disadvantages may exert a minor influence on writing quality. However, as with the other factors, the relationship is neither strong nor statistically substantial.

In summary, the results indicate that none of the demographic variables examined (i.e., gender, grade, race, and economic status) show a meaningful or significant relationship with cohesion scores. These results suggest that demographic and cultural factors exert limited influence on textual cohesion, a key component of L2 writing quality.

4.2 L2 Writing Quality and Coherence

4.2.1 Correlation Analysis Between Coherence and Writing Scores

The present study delves into the correlation between textual coherence indices, measured using the TAACO tool, and human-assigned writing scores. Initially, through a rigorous selection process, we identified 12 indices that were most closely associated with writing quality (Table 2). Notably, these indices could be distinctly categorized into two groups: one encompassing discourse coherence, accounting for 16.7%, and the other encompassing overall coherence, representing a substantial 83.3%. The exclusion of local coherence from our primary considerations was due to its relatively weaker correlation with writing quality compared to discourse and overall coherence.

Table 2. Correlations Between TAACO Indices and Human-Assigned Essay Quality Scores

Index	Cohesion Type	Confidence Interval	r	p
Function word MATTR	Text	0.211 ± 0.061	0.373	<0.01
Lemma MATTR	Text	0.709 ± 0.040	0.303	<0.01
Adjacent two-paragraph overlap function lemmas	Global	12.482 ± 5.811	0.305	<0.01
Binary adjacent two-paragraph overlap pronoun lemmas	Global	0.830 ± 0.294	0.276	<0.01
LSA cosine similarity	Global	0.833 ± 0.233	0.275	<0.01
Adjacent two-paragraph overlap all lemmas	Global	24.643 ± 11.679	0.274	<0.01
Adjacent two-paragraph overlap pronoun lemmas	Global	2.125 ± 1.214	0.273	<0.01
Binary adjacent two-paragraph overlap noun lemmas	Global	0.902 ± 0.263	0.269	<0.01
Binary adjacent two-paragraph overlap verb lemmas	Global	0.873 ± 0.271	0.265	<0.01
Binary adjacent two-paragraph overlap noun and pronoun lemmas	Global	0.911 ± 0.258	0.257	<0.01
Binary adjacent two-paragraph overlap content lemmas	Global	0.914 ± 0.255	0.256	<0.01
Word2vec similarity (two adjacent paragraphs)	Global	0.876 ± 0.235	0.248	<0.01

Note: r = correlation coefficient; p = significance value.

The results of this analysis reveal a significant positive relationship between coherence indices and writing quality, thereby reinforcing the pivotal role of textual cohesion in L2 writing. Specifically, the study identifies both text-level cohesion and global-level cohesion as critical factors associated with L2 writing quality.

At the text level, function word MATTR demonstrated the strongest positive correlation with human scoring ($r = 0.373$, $p < 0.01$), followed by lemma MATTR ($r = 0.303$, $p < 0.01$). These findings suggest that lexical diversity, as measured by the ratio of unique function words and lemmas, plays a crucial role in enhancing perceived writing quality.

Global-level cohesion indices also displayed notable positive correlations with writing scores. Among these, the adjacent two-paragraph overlap of function lemmas ($r = 0.305$, $p < 0.01$) and binary adjacent two-paragraph overlap of pronoun lemmas ($r = 0.276$, $p < 0.01$) emerged as significant predictors. These results emphasize the importance of structural continuity and referential cohesion across adjacent text segments in contributing to essay coherence and overall quality. Additionally, indices such as LSA cosine similarity and word2vec similarity showed moderate positive correlations ($r = 0.275$ and $r = 0.248$, respectively), highlighting the role of semantic alignment in improving writing quality.

Importantly, these results were obtained despite the fact that the cultural backgrounds of the L2 writers had only a negligible influence on writing quality, as noted earlier in the study. This underscores the universal applicability of textual cohesion principles across diverse cultural contexts, further validating the robustness of the findings.

4.2.2 Regression Analysis Between Coherence and Writing Scores

To further explore the relationship between textual cohesion and L2 writing quality, a stepwise regression analysis was conducted using cohesion indices as predictors of essay scores. The analysis revealed that four key predictors significantly contributed to explaining the variance in human-assessed essay scores (Table 3).

Table 3. Stepwise Regression Analysis of TAACO Indices Predicting Essay Scores

Entry	Index Added	r	Total R^2	Un-β	β	SE	t
Entry 1	function word MATTR	.014[a]	0.000	-0.02	-0.002	0.519	-0.038

Entry 2	adjacent two-paragraph overlap function lemmas	.329[b]	0.108	0.019	0.178	0.008	2.539
Entry 3	lemma MATTR	.407[c]	0.165	4.329	0.274	0.727	5.957
Entry 4	binary adjacent two-paragraph overlap pronoun lemmas	.415[d]	0.172	0.268	0.126	0.134	2.002

Note: Stepwise regression analysis was conducted to examine the predictive power of TAACO indices for essay quality scores. The dependent variable is the essay score. Predictor variables for each step are as follows: a: Predictor variables = (constant), Function word MATTR. b: Predictor variables = (constant), Function word MATTR, Adjacent two-paragraph overlap function lemmas. c: Predictor variables = (constant), Function word MATTR, Adjacent two-paragraph overlap function lemmas, Lemma MATTR. d: Predictor variables = (constant), Function word MATTR, Adjacent two-paragraph overlap function lemmas, Lemma MATTR, Binary adjacent two-paragraph overlap pronoun lemmas. Abbreviations: r = correlation coefficient for each step; Total R^2 = total variance explained; Un-β = unstandardized regression coefficient; β = standardized regression coefficient; SE = standard error; t = t-statistic.

In the first step, function word MATTR was entered into the model, but it did not significantly predict writing scores (β = -0.002, t = -0.038, p > 0.05), contributing negligible variance to the model. This result aligns with earlier findings that not all cohesion indices demonstrate a strong relationship with writing quality, particularly at the local level.

In the second step, the addition of adjacent two-paragraph overlap of function lemmas substantially improved the model, explaining 10.8% of the variance in writing scores (β = 0.178, t = 2.539, p < 0.01). This highlights the importance of global cohesion features, particularly structural continuity across paragraphs, in influencing writing quality assessments.

The third step introduced lemma MATTR, which further increased the explained variance to 16.5% (β = 0.274, t = 5.957, p < 0.01). As a measure of lexical diversity, lemma MATTR emerged as a critical predictor, reinforcing the role of text-level cohesion in producing higher-quality essays.

Finally, the inclusion of binary adjacent two-paragraph overlap of pronoun lemmas in the fourth step marginally improved the model, with the total explained variance reaching 17.2% (β = 0.126, t = 2.002, p < 0.05). This result suggests that referential cohesion across adjacent paragraphs, particularly through pronouns, also contributes to perceptions of essay coherence and quality.

Overall, the stepwise regression model identifies adjacent two-paragraph overlap of function lemmas and lemma MATTR as the most influential predictors of L2 writing quality, with additional contributions from binary pronoun overlaps. Together, these indices account for 17.2% of the variance in essay scores, underscoring the significant but limited role of textual cohesion in writing quality. Notably, the findings also reinforce earlier observations that cultural background exerts only a minor influence on writing scores, further highlighting the universal importance of cohesion-related features across L2 writers.

5. Discussion

5.1 Cultural Background and Writing Quality

In response to the first research question, the results reveal that cultural background exerts minimal influence on L2 writing quality. Pearson correlation analysis indicated weak or negligible relationships between demographic factors (e.g., race, gender, grade, economic status) and cohesion scores. This finding aligns with prior studies suggesting that cultural factors may shape rhetorical preferences (Kaplan, 1966; Hyland, 2004) but exert limited influence on core writing quality components, such as coherence and logicality (Cumming et al., 2016; Zhang & Liu, 2021).

The lack of a substantial impact from cultural background supports the universality of cohesion principles across diverse cultural contexts. Despite variations in surface-level rhetorical styles (e.g., linear versus spiral structures; Connor, 1996), fundamental textual coherence remains consistent. These results emphasize that cohesion-related features, as assessed in this study, are less sensitive to cultural variations and more indicative of global

writing quality.

5.2 Relationship Between Textual Cohesion and Writing Quality

The second research question focused on the relationship between textual cohesion and writing quality. The findings underscore the critical role of both global and text-level cohesion in shaping L2 writing quality. Correlation analysis highlighted significant positive relationships between multiple cohesion indices and human-assessed writing scores. For instance, function word MATTR and lemma MATTR were strong predictors at the text level, emphasizing the importance of lexical diversity in enhancing writing quality. These results align with prior studies (McCarthy & Carter, 2004; Crossley & McNamara, 2011), which highlight the contribution of lexical cohesion to perceived text quality.

Global-level indices, such as adjacent two-paragraph overlap of function lemmas and binary adjacent two-paragraph overlap of pronoun lemmas, also emerged as significant predictors of writing quality. These findings demonstrate that structural continuity and referential cohesion across adjacent paragraphs play crucial roles in constructing coherent essays. Additionally, semantic cohesion indices, such as LSA cosine similarity and word2vec similarity, provided further evidence of the importance of meaning alignment in high-quality writing. Together, these results affirm the multi-dimensional nature of textual cohesion and its essential role in essay coherence.

5.3 Contribution of Cohesion Indices

The stepwise regression analysis further clarified the specific contributions of cohesion indices to writing quality. Four key indices, adjacent two-paragraph overlap of function lemmas, lemma MATTR, binary adjacent two-paragraph overlap of pronoun lemmas, and function word MATTR, explained 17.2% of the variance in essay scores. These findings suggest that global cohesion features (e.g., structural and referential continuity) and text-level features (e.g., lexical diversity) are among the most influential factors in determining writing quality.

However, it is notable that function word MATTR, while included in the regression model, contributed negligibly to the variance explained. This finding aligns with prior research suggesting that local cohesion features often have weaker relationships with writing quality compared to global or text-level features (McNamara et al., 2014; Yu & Gao, 2022).

5.4 Implications and Research Contributions

This study makes several important contributions to L2 writing research. First, it addresses the research gap highlighted in the literature by exploring the relationship between textual cohesion and writing quality across diverse cultural groups. By confirming the limited influence of cultural background on cohesion-related writing quality, the study reinforces the universality of cohesion principles, offering a more nuanced understanding of how these principles transcend cultural differences.

In addition, the study provides empirical evidence for the multi-dimensional nature of textual cohesion and its specific contributions to writing quality. The findings support the integration of cohesion indices into L2 writing assessment frameworks, offering both theoretical and practical value. For instance, the identified indices could inform pedagogical interventions targeting global and text-level cohesion to improve writing quality. Furthermore, the findings have practical implications for essay scoring, which can benefit from incorporating cohesion indices to enhance the accuracy and reliability of assessments.

6. Conclusion

This study aimed to explore the intricate relationship between textual cohesion and the quality of L2 writing, with a particular focus on the role of cultural background in shaping writing scores. Specifically, the research sought to answer two key questions: (1) What is the influence of cultural background on the cohesion and quality of L2 writing? and (2) How do various cohesion indices contribute to the assessment of writing quality? To answer these questions, the study undertook a detailed analysis of 489 L2 writing samples by employing TAACO. These samples were sourced from the ELLIPSE corpus and were prompted by the topic of "distance learning." The results provide significant insights into the complex dynamics of cohesion and writing quality in L2 contexts.

Firstly, the findings clearly indicate that cultural background exerts minimal influence on the cohesion and quality of L2 writing. Despite the diversity in cultures, the study reveals that

fundamental features of textual coherence, such as lexical diversity and structural continuity, remain universally significant. This supports the notion that cohesion principles are largely independent of cultural factors and are consistent indicators of writing quality across different demographic groups.

Secondly, in terms of cohesion's impact on writing quality, the analysis underscores the importance of both global and text-level cohesion features. Specifically, cohesion indices such as adjacent two-paragraph overlap of function lemmas and lemma MATTR were identified as key predictors of writing scores, highlighting the role of lexical diversity and structural continuity in enhancing essay coherence. The regression analysis further emphasized the limited but meaningful contribution of cohesion indices to the overall variance in writing quality, explaining 17.2% of the variance in essay scores. Notably, while local cohesion measures like function word MATTR showed negligible predictive value, global cohesion features, particularly those related to paragraph structure and referential continuity, were more influential in shaping writing quality.

Moreover, the implications of these findings are profound. On the one hand, they contribute to a deeper understanding of textual cohesion in L2 writing, demonstrating its critical role in determining writing quality. The study suggests that pedagogical interventions aimed at improving global cohesion, such as fostering structural continuity across paragraphs and enhancing lexical diversity, could significantly benefit L2 writers. On the other hand, the integration of cohesion indices into writing assessments offers a promising avenue for refining essay scoring systems, potentially leading to more reliable and objective evaluations of writing quality.

Looking forward, several avenues for future research emerge from this study. Firstly, a deeper examination of the interplay between cultural factors and textual cohesion could provide further insights into the complex nature of L2 writing. Secondly, longitudinal studies tracking the development of cohesion skills over time could shed light on the acquisition of textual cohesion in L2 learners. Finally, the integration of cohesion indices into automated essay scoring systems holds promise for enhancing the accuracy and reliability of writing assessments.

In conclusion, this study enriches our understanding of L2 writing, offering valuable insights into the relationship between cohesion and writing quality, and reinforcing the universal significance of cohesion principles in high-quality writing. The findings underscore the importance of incorporating both global and text-level cohesion features in writing instruction and assessment, which can ultimately help L2 writers produce clearer, more coherent essays.

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