

Text Cohesion vs. Fine-Grained Indices of Syntactic Complexity in L2 Writing: Their Relations to Overall EFL Writing Scores

Zafer SUSOY¹ 

Abstract: The purpose of this study is to determine how various cohesion indices (CI), as determined by the Tool for the Automatic Analysis of Cohesion (TAACO), and syntactic complexity indices, as determined by the Tool for the Automatic Analysis of Syntactic Sophistication and Complexity (TAASSC), relate to the writing quality evaluations of English as a Foreign Language (EFL) learners. This study employs a quantitative research methodology, using regression and correlation analysis to examine the collected learner corpus. Although there was no noticeable relationship between coherence devices and writing quality, syntactic complexity is a key differentiator between proficient and less proficient EFL writers. Metrics such as clause length and complex nominals per clause contribute to a sophisticated writing style, signaling advanced linguistic capability. Furthermore, 50% of the variance in the overall writing quality scores of the learners was explained by the regression model only when text length (TL) and proficiency level were added as confounding variables. The study's findings are discussed in light of the related literature and future directions.

Keywords: Automated writing assessment, cohesion, second language writing, syntactic complexity, text length, writing proficiency

Yabancı Dil Yazımında Metin Bağlıklılığı ve İnce Ayrıntılı Sözdizimsel Karmaşıklık İndeksleri: Genel Yazım Puanlarıyla İlişkileri

Öz: Bu çalışma, Metin Bağlıklılığı Otomatik Analiz Aracı (TAACO) ile ölçülen çeşitli bağlaşıklık indeksleri ile Sözdizimsel Sofistike ve Karmaşıklık Otomatik Analiz Aracı (TAASSC) ile ölçülen sözdizimsel karmaşıklık indeksleri arasındaki ilişkiyi ve bunların Yabancı Dil Olarak İngilizce (EFL) öğrenenlerin yazma kalitesine etkisini araştırmaktadır. Nicel bir araştırma paradigmasını takip eden bu çalışma, derlenen öğrenci korpusunu korelasyon ve regresyon testleri yoluyla analiz etmiştir. Bağlıklılık araçları ile yazma kalitesi arasında anlamlı bir ilişki bulunamazken, sözdizimsel karmaşıklık, ileri düzeydeki EFL yazarları ile daha az yetkin olanları ayırt etmek için kritik bir faktör olarak ortaya çıkmıştır. Cümle uzunluğu ve cümle başına düşen karmaşık isim tamlamalarının kullanımı gibi metrikler, ileri düzey dil yetkinliğini işaret eden sofistike bir yazma tarzına katkıda bulunmaktadır. Ayrıca, öğrenci yazılarının genel yazma kalitesi puanlarındaki varyansın %50'si, yalnızca metin uzunluğu ve dil yeterlilik seviyesi bağımsız değişken olarak modele eklendiğinde regresyon modeli ile açıklanabilmektedir. Çalışmanın bulguları ilgili literatür ve gelecekteki araştırma yönelimleri çerçevesinde tartışılmaktadır.

Geliş tarihi/Received: 10.12.2024 Kabul Tarihi/Accepted: 02.06.2025

Makale Türü: **Araştırma Makalesi**

*This study is based on the data collected for the author's doctoral dissertation study. However, in the current study, new data analysis tools and variables were included.

¹ Dr. Öğr. Üye, Tokat Gaziosmanpaşa Üniversitesi, İngiliz Dili Eğitimi, zafersusoy@gmail.com, 0000-0002-6890-6007

Atıf için/To cite: Susoy, Z. (2025). Text cohesion vs. fine-grained indices of syntactic complexity in l2 writing: Their relations to overall efl writing scores. *Van Yüzüncü Yıl University Journal of Education*, 22(2), 477-493. <https://doi.org/10.33711/yyuefd.1599497>

Anahtar Kelimeler: Bağışıklık, ikinci dil yazımı, metin uzunluğu, otomatik yazma değerdirmesi, sözdizimsel karmaşıklık, yazma yeterliliği

Introduction

The significance of linguistic characteristics in assessing writing proficiency in a second language (L2) has been explored extensively in scholarly research over the past three decades (Crossley & McNamara, 2012; Crossley, Kyle & McNamara, 2016; Lin et al., 2024; Zhang & Zhang, 2023). Traditional studies in this area have primarily focused on surface-level and text-based metrics to differentiate between various levels of writing competency. These metrics include text length (TL), lexical variety, word recurrence, and word frequency (Engber, 1995; Jarvis et al., 2003). Furthermore, computational tools like the Tool for the Automatic Analysis of Cohesion (TAACO) and Coh-Metrix have significantly advanced the research on cohesion in L2 writing by assessing linguistic cohesion across multiple levels (Crossley et al., 2016; Graesser et al., 2004). Additionally, understanding these linguistic features can help educators tailor instruction and feedback to meet the specific needs of L2 writers. As the field continues to evolve, incorporating more comprehensive measures of writing quality will likely lead to even deeper insights into the complexities of second language acquisition.

Crossley et al. (2016) have shown that cohesion in L2 writing can be categorized into local, global, and textual levels. Local cohesion refers to links between sentences, such as overlapping words or phrases and connectives (e.g., “however” or “therefore”), that create explicit connections at the sentence level. Global cohesion extends these connections across larger text structures, such as paragraphs, relying on concepts like lexical overlap to sustain thematic continuity throughout a text (Crossley et al., 2019). Textual cohesion, also known as “givenness,” is seen across the entire document, achieved by devices such as repeated references to entities, typically realized through pronouns and lexical repetition (Lin et al., 2024). On the other hand, research on deeper-level linguistic indexes, which explore written language's underlying semantics and communicative goals, has been noticeably lacking (Engber, 1995). The importance of cohesion for L2 writing is reinforced by findings highlighting how well-structured cohesion can improve text comprehensibility and perceived quality. Studies have demonstrated that greater global cohesion correlates positively with expert judgments of writing quality, suggesting that connections between larger text units are crucial for a coherent reading experience (Crossley & McNamara, 2010, 2012; Graesser et al., 2004; Lin et al., 2024; Zhang & Zhang, 2023).

In the current study, text cohesion is analyzed on three distinct levels: local, global, and givenness. These indices of text cohesion are derived from the TAACO framework, which provides a comprehensive approach to examining text structure. At the local level, text cohesion is measured by the semantic overlaps between sentences, which are established through the use of various connectives. This aspect focuses on how individual sentences within a paragraph relate to each other, creating a network of ideas that enhances readability and understanding. Connectives such as “however,” “therefore,” and “in addition” play a crucial role in signaling relationships between thoughts, guiding readers through the logical progression of the text. The global level of text cohesion shifts focus to the paragraph level, where lexical overlaps are analyzed. This involves counting the lemma types that appear at least once in the subsequent two paragraphs, thus highlighting the extent to which themes and vocabulary are carried across larger segments of text (Crossley et al., 2016). Effective global cohesion fosters coherence throughout the entire piece, allowing readers to connect ideas across different sections and enhance their overall understanding of the narrative or argument

being presented. The third dimension of cohesion, referred to as givenness, is assessed by calculating the ratio of repeated content lemmas and third-person pronouns to the total number of words in the text. This measure reflects how much information is being recycled or referred back to within the text, which can signal to readers what is already known versus what is new information.

Research indicates that excessive reliance on local cohesive devices may be associated with diminished writing quality in essays authored by native speakers. This phenomenon likely arises from an overuse of these devices, which can disrupt the natural flow of writing and result in overly simplistic structures that undermine the sophistication of the text (Crossley et al., 2019). In contrast, for second language (L2) writers, the frequent use of local cohesive devices appears to correlate positively with writing quality. This enhancement is attributed to the clarity and explicitness these devices provide, which assists readers who may face challenges with fluency in the language. The application of such devices can effectively bridge gaps in comprehension, thereby promoting greater accessibility to the writer's ideas. Overall, the analysis of text cohesion through these three levels contributes valuable insights into the complexities of effective writing. By understanding how local, global, and givenness factors interact, educators and writers can better appreciate the nuances of cohesion, ultimately leading to improved writing practices and outcomes.

Additionally, syntactic complexity (SC) has emerged as another key factor influencing L2 writing quality, with research indicating that more sophisticated syntax is often linked to higher writing proficiency (Crossley & McNamara, 2012). SC is defined by measures such as clause length, use of subordinate clauses, and sentence variation, which together contribute to a mature writing style that aligns with advanced writing skills. The presence of SC in L2 writing adds depth and signals linguistic sophistication, enhancing the text's perceived quality among raters. For the most part, previous research has linked SC among the primary factors influencing writing quality judgments of written FL works (Crossley & McNamara, 2010, 2011; Ellis & Yuan, 2004; Lu, 2011; Mazgutova & Kormos, 2015).

Two research questions lead the present study;

- 1) What is the relationship between SC indices and EFL learners' overall writing quality scores?
- 2) What is the relationship between cohesive indices and EFL learners' overall writing quality scores?

Literature Review

The examination of linguistic features in second language (L2) writing has been a central topic within the field of applied linguistics for many years, particularly in relation to their impact on writing quality and proficiency assessment. Among these linguistic features, cohesion and syntactic complexity (SC) emerge as critical elements that significantly shape perceptions of proficiency and contribute to the overall quality of a written text. Cohesion refers to the various ways in which different elements of a text are linked together, facilitating a clear and logical flow of ideas. It can be analyzed through various indices, including local cohesion, which focuses on connections within smaller text segments, global cohesion, which assesses the overarching structure and coherence of the entire text, and textual cohesion, which examines how various parts of the text interact to create a unified whole. The concept of cohesion is essential for fostering readability, as it helps the reader navigate through the text seamlessly, ensuring that the relationships between ideas are explicit and easily understood (Halliday & Hasan, 2014; Crossley & McNamara, 2016).

In addition to cohesion, syntactic complexity plays a pivotal role in determining writing quality. Syntactic complexity encompasses the variety and sophistication of sentence structures employed in a text, which can reflect a writer's linguistic proficiency and ability to convey nuanced ideas. Studies have demonstrated that increased syntactic complexity often correlates with higher levels of writing proficiency, as it allows for a more elaborate expression of thoughts and a greater degree of nuance. Together, cohesion and syntactic complexity not only enhance the quality and clarity of L2 writing but also serve as indicators of a writer's linguistic development. By systematically analyzing these features, educators and researchers can gain insights into the specific competencies that contribute to effective writing in a second language. Moreover, such analyses can inform instructional practices, enabling educators to focus on areas that may enhance students' writing abilities and overall proficiency. This comprehensive understanding of linguistic features thus plays a crucial role in advancing both pedagogical techniques and theoretical frameworks within applied linguistics.

Text Cohesion and Text Quality in L2 Writing Studies

The study of text cohesion and quality in L2 writing underscores L2 writers' complexities in developing cohesion that aligns with the expectations often set for L1 (first language) writing. Halliday and Hasan (2014) defined that text cohesion can reveal lexical, semantic, and argumentative relationships within a text that provide meaning and readability across segments such as sentences and paragraphs, which is associated with the interconnectedness of text segments and is a crucial component of writing. Cohesive devices like lexical and semantic overlaps are often analyzed in terms of two types of text cohesion: local cohesion, which happens at the sentence level, and global cohesion, which happens over greater segment gaps like paragraphs, chapters, or even texts (inter-document cohesion) (Crossley, 2020). Givenness and causal connections are examples of textual cohesive devices that can appear throughout a text (Graesser et al., 2004; Halliday & Hasan, 2014).

Research on cohesion in L2 writing is less extensive than in L1, with findings indicating that L2 proficiency levels influence the use and effectiveness of cohesive devices that display a complex picture (Crossley et al., 2016). Skilled L2 writers tend to produce texts with less repetitive cohesion but greater lexical diversity, which indicates advanced writing skills. This trend suggests that L2 proficiency often correlates with reduced reliance on overt cohesive devices at the local level, favoring broader vocabulary and more nuanced semantic connections, thereby enhancing the perceived quality of writing (Crossley & McNamara, 2012; Engber, 1995; Grant & Ginther, 2000; Jarvis, 2002). According to the findings of these studies, essays written by highly skilled L2 writers have a wider variety of vocabulary.

The amount of semantic similarity between the first and middle paragraphs and the first and end paragraphs, on the other hand, is one measure of global cohesion that Crossley, Roscoe, McNamara, and Graesser (2011) found to be strongly correlated with essay quality. McNamara, Crossley, and Roscoe (2013) and Crossley and McNamara (2011) published similar results, demonstrating a positive correlation between essay quality evaluations and lexical and semantic overlap indices across paragraphs. Furthermore, Crossley and McNamara (2016) discovered that their quality scores improved when students changed a text regarding global cohesiveness. Crossley et al. (2016) support that local cohesion, like repetitive lexical overlap, is not consistently linked to higher-quality judgments by human raters. In contrast, global cohesion—measured as the semantic similarity between paragraphs or throughout the text—positively correlates with quality judgments. This distinction between

local and global cohesion highlights the nuanced expectations for writing coherence, which depends on both linguistic proficiency and the strategic use of cohesion that complements text organization rather than merely linking ideas superficially.

Less research has been done on the evolution of cohesion devices in L2 authors. Yang and Sun (2012) found that more skilled learners used more and more correct local cohesion techniques, such as conjunctions, ellipses, pronouns, and lexical overlap, when comparing second and fourth-year undergraduate Chinese L2 English learners. Similarly, studies using TAACO and Coh-Metrix have shown that computational analyses can quantify cohesion and offer insightful information about the changing textual patterns in L2 writing. This helps researchers understand how particular types of cohesion predict the quality of essays (Crossley et al., 2016; Graesser et al., 2004). In a longitudinal study, Crossley and McNamara (2016) discovered that the pre-and post-test writings of college-level L2 authors evolved over a semester. In particular, they noted significant improvements in global and text cohesion and the noun overlap between paragraphs. Promoting global cohesion through vocabulary diversity and semantic depth may assist gains in perceived writing quality, according to research on how L2 authors create these cohesive techniques. This understanding provides insights into L2 instruction and assessment.

Syntactic Complexity and Text Quality in L2 Writing Studies

The interplay between syntactic complexity (SC) and the overall quality of text in second language (L2) writing has garnered significant attention in academic research. Scholars in the domains of L2 Acquisition and Applied Linguistics have increasingly recognized SC as a critical measure for evaluating language proficiency and performance (Norris & Ortega, 2009). In the context of L2 writing studies, syntactic complexity pertains to the extent and sophistication of the syntactic structures that learners utilize in their written works (Lu, 2011; Ortega, 2015). This metric is often employed as a key indicator of a student's linguistic progression and maturity in syntax, serving as an essential tool for assessing the caliber of their writing (Crossley et al., 2011; Lu, 2011; Ortega, 2003; Wolfe-Quintero et al., 1998). Since 2009, there has been a noticeable rise in research efforts aimed at formulating a more comprehensive and nuanced framework for the evaluation of L2 writing and language proficiency. This initiative has been characterized by the need to incorporate a wider range of complexity metrics at both the level of clauses and sentences, along with more detailed assessments at the phrasal and clausal levels (Norris & Ortega, 2009; Bulté & Housen, 2012). Moreover, the pursuit of a more sophisticated evaluative structure has gained momentum through advancements in large-scale corpus-based research methodologies (Biber & Grey, 2010; Biber et al., 2011).

Furthermore, as scholars delve deeper into the characteristics of effective writing in a second language, the emphasis on understanding how syntactic complexity correlates with various dimensions of writing quality—such as coherence, cohesion, and lexical richness—has become increasingly prominent. This holistic approach to evaluation seeks not only to quantify syntactic features but also to appreciate their role in the broader context of communication effectiveness. By integrating these diverse perspectives, researchers aim to provide a richer understanding of what constitutes proficient L2 writing, enabling educators to better support students in their language development journeys. Furthermore, understanding the interplay between SC and writing quality not only enriches our theoretical understanding of L2 acquisition but also has practical implications for teaching practices. For instance, educators can focus on enhancing syntactic complexity in their writing instruction, thereby promoting higher-level linguistic skills in their students. By fostering an environment that encourages the use of varied and sophisticated syntactic structures, educators can help

learners achieve greater fluency and proficiency in their L2 writing. Ongoing research into the dimensions of syntactic complexity and its correlation with writing quality continues to be essential. As we refine our methods of assessment and develop more sophisticated tools for analysis, we will not only enhance our understanding of L2 writing but also improve educational practices, ultimately leading to more successful outcomes for language learners.

Research into syntactic complexity (SC) has become a focal point for scholars investigating second-language (L2) writing, alongside additional components such as accuracy, fluency, and lexical proficiency (Ai & Lu, 2013, p. 251). Researchers have aimed to establish reliable indicators of SC in order to trace the developmental paths of L2 learners (Wolfe-Quintero et al., 1998; Ortega, 2003; Lu, 2011). A substantial body of work has delved into how SC in L2 writing correlates with students' proficiency levels. Numerous studies have tracked changes in L2 writing over periods, whether longitudinally or in shorter spans (Stockwell & Harrington, 2003; Stockwell, 2005; Mazgutova & Kormos, 2015; Vyatkina, Hirschmann, & Golcher, 2015). For instance, Stockwell and Harrington (2003) identified a noteworthy enhancement in the writing skills of Japanese learners after a 5-week email exchange with native speakers of Japanese. Following this, Stockwell (2005) conducted a similar investigation to determine if email correspondence among non-native speakers (NNS) over five weeks would influence their SC. In this case, SC was assessed via the mean length of T-units. Unlike the findings of the earlier study, Stockwell's (2005) results showed no substantial change in email SC, which he attributed to the shorter lengths of emails exchanged among NNS students compared to those shared between native speakers and NNS students. Furthermore, it is essential to recognize that the mean length of T-units, as a metric of complexity, is significantly affected by the overall length of the written output, potentially clarifying the discrepancies observed in the two studies.

Challenging the premise that SC in L2 writing naturally develops over time with increased instruction and exposure, two studies present alternative perspectives. Mazgutova and Kormos (2015) explored SC development in the context of a 4-week intensive academic writing course, dividing learners into two groups: Group 1, comprising older and more advanced ESL students, and Group 2, consisting of younger and less proficient learners. Their findings revealed that the younger, less proficient group experienced significant gains during the four weeks, whereas the older, more advanced group showed minimal improvement, a difference attributed to their varying levels of proficiency. Similarly, Vyatkina et al. (2015) examined SC growth in beginning L2 German learners over a two-year college curriculum. Their research illustrated a consistent increase in the use of diverse syntactic structures across lexical, phrasal, clausal, and sentential levels. In summary, the development of syntax can be observed over time, whether within a concentrated 4-week course or through a broader 2-year program lacking specific focus on complex syntax. This suggests that possessing a more extensive range of syntactic structures contributes to producing writing that is more sophisticated, complex, and varied, thereby distinguishing higher proficiency from lower proficiency levels.

Apart from the amount of exposure to language and proficiency, studies claim that genre and planning conditions have a so-called effect on the relationship between SC and L2 writing quality. For example, Zhang and Liu (2021) indicated that in timed argumentative writing, SC was a better predictor of overall scores than it was in timed narrative writing. In a recent review exploring how SC correlates with writing quality in L2 texts based on the Web of Science database, Song (2022) emphasized the need for varied syntactic structures to enhance text quality. Likewise, Wondemagegne, Simegn, & Adugna (2024), using TAASSC (Tool for the Automatic Analysis of Syntactic Sophistication and Complexity), found that the

use of varied adverbial modifiers and nonfinite clauses, including modal auxiliaries governed by infrequent verbs, was indicative of quality writing. The reviewed studies collectively highlight that SC is critical to L2 writing quality. Varied syntactic structures often lead to higher writing quality, although the impact can differ based on genre and proficiency level. Future research should continue to explore these nuances to offer a broader understanding of SC in L2 writing.

Method

This study's methodology was designed to quantitatively explore the relationships between CI and SC measures and their impact on writing quality among EFL learners. A learner corpus consisting of descriptive essays written by undergraduate English Language Teaching (ELT) students was analyzed using advanced computational tools. Cohesion was assessed using the TAACO, while SC was measured with the TAASSC.

Learner Corpus and Quality Ratings

The dataset for this research was gathered from descriptive compositions authored by 204 undergraduate students majoring in English Language Teaching (ELT) at a public university in Turkey. This group consisted of 102 first-year students and 102 fourth-year students. We recognize that there may be distinctions in linguistic proficiency levels between these two cohorts, as it is commonly understood that measures of syntactic complexity (SC) and cohesion in second language writing evolve with increased instruction and experience, varying with proficiency levels (Crossley et al., 2016; Lin et al., 2024; Mazgutova & Kormos, 2015; Vyatkina, 2015; Treffers-Daller et al., 2018; Zhang & Zhang, 2023). The essays were evaluated by two raters: an English native speaker pursuing an MA in ELT, who has over a decade of experience in both teaching L2 writing and assessing academic texts, and another rater with more than thirty years of experience in teaching and evaluating various types of academic writing. In instances where there was a score discrepancy of one point or more, a third evaluator was brought in to resolve the differences.

Table 1

Summary of the Corpus Data

Level	N	Total Word Count	Min.	Max.	M	Std. Dev.
First-year	102	28.648	113	473	281	71.619
Fourth-year	102	36.861	127	685	361.3	113.792

Data Processing and Analysis

The TAACO 1.0 software, created to examine textual cohesion components, was first used to process the students' compositions to analyze coherence. The program utilizes synonym sets derived from the WordNet lexical database, originally developed by Miller in 1995. In addition, it incorporates a part-of-speech (POS) tagging system provided by the Natural Language Toolkit (NLTK), which was created by Bird, Klein, and Loper in 2009. This combination of resources enables the program to enhance its linguistic capabilities, allowing for more accurate text analysis and processing by leveraging a comprehensive understanding of words and their grammatical functions. The use of these established tools not only increases the effectiveness of the application but also contributes to its adaptability across various linguistic tasks. TAACO 1.0 differs from other text-processing software in that it specifically reports on a range of cohesive aspects of a given text. The various cohesiveness levels used in the study, chosen indices for each level, and index descriptions in the TAACO interface are summarized in Table 2.

Table 2

Cohesion Indices in TAACO; Levels, Indices, and Calculation Methods

Cohesion Level	Selected Indices for Each Level of Cohesion	Index Description in TAACO
Local	Use of connectives	The ratio of all connectives to all words in the text
Global	Lexical overlaps between sentences	No. of all lemma types that appear at least once in the next two sentences
Text	Lexical overlaps between paragraphs	No. of all lemma types that appear at least once in the next two paragraphs
	Givenness	The ratio of repeated content lemmas and third-person pronouns to the total number of words in the text.

Second, the SC of students' writings was evaluated using TAASSC, which evaluates both conventional SC indices and fine-drawn indicators of phrasal and clausal complexity (Kyle, 2016). TAASSC evaluates a wide range of syntactic structure development-related criteria. In addition to standard SC indices, this study incorporates fine-grained phrasal (like the number of adjectives per noun phrase) and clausal (like the number of adverbials per clause) difficulty indices. Table 3 lists all 14 of the SC indices that TAASSC has provided and computed.

Table 3

SC Indices in TAASSC; Types and Calculation Methods

SC Index Level	Index Description in TAASSC.	Numerator/Denominator
Unit Length	ML ³ sentence	NO ² words in text/ NO ² sentences in text
	ML ³ T-unit	NO ² words in text/ NO ² T-units in text
	ML ³ clause	NO ² words in text/ NO ² clauses in text
Clausal	clauses per sentence	NO ² clauses in text/ NO ² sentences in text
	verb phrases per T-unit	NO ² verb phrases in text/ NO ² -units in text
	clauses per T-unit	NO ² clauses in text/ NO ² T-units in text
	DC ⁴ per clause	NO ² DC ⁴ / NO ² clauses
	DC ⁴ per T-unit	NO ² DC ⁴ / NO ² T-units
	T-units per sentence	NO ² T-units in text/ NO ² sentences in text
	complex T-unit ratio	NO ² complex T-units in text/ NO ² T-units
	CP ¹ per T-unit	NO ² CP ¹ / NO ² T-units

	CP ¹ per clause	NO ² CP ¹ / NO ² clauses
	CP ¹ per T-unit	NO ² CP ¹ / NO ² T-units
	CP ¹ per clause	NO ² CP ¹ / NO ² clauses

¹Coordinate phrases, ²Number of, ³Mean length of, ⁴Dependent clauses

To examine the relationships between the variables in question, SPSS statistical software was used to reach the Pearson correlation coefficient. A hierarchical regression analysis was also run to explore the extent of variance in the writing scores by cohesive and SC indices provided by TAACO and TAASSC.

Results

In this section, the findings start by presenting the correlations between two independent variables (class level and TL) and writing quality scores since writing quality scores are our primary concern and the dependent variable. First, it was discovered that class level had the strongest positive correlation with writing quality, which was found to be statistically significant ($r(204)=.625$, $p<0.01$). This finding suggests that the writing quality scores assigned by human judges tend to increase along with the proficiency, which in this case indicated via class level. In addition, the Pearson correlation test revealed that TL - calculated by the total number of words in the text- also significantly correlated with the writing quality scores ($r(204)=.448$, $p<0.01$), as displayed in Table 4.

Table 4

Pearson Correlations of Class Level And Total Number Of Words In A Text To Overall Writing Scores

Index	r
Class Level	,625**
Text length	,448**

**Correlation is significant at the 0.01 level

Another correlational test explored the relationships between writing quality scores and 4 CI provided by TAACO on local, global, and text levels and 14 fine-grained SC indices by TAASSC. According to the correlational findings, none of the CI showed any significant relationship with the overall writing quality scores. As for the SC indices, however, the mean length of clause ($r(204)=.142$, $p<0.05$) and complex nominals per clause ($r(204)=.149$, $p<0.05$) -though weak- showed significant correlations with the writing quality scores. On the other hand, clauses per sentence showed a weak, statistically significant, and negative correlation with the writing scores ($r(204)=-.143$, $p<0.05$).

Table 5

Pearson Correlations Between Overall Writing Scores and The Cohesion And SC Indices

Index	Cohesion and SC Level	r
Use of connectives	Local	-0,076
LO ¹ between sentences		-0,088
LO ¹ between paragraphs	Global	0,041
Givenness	Text	0,078

ML ² of sentence	Unit Length	-0,09
ML ² of T-unit		-0,086
ML ² clause		0,142
Clauses per sentence	Clausal	-0,143
Verb phrases per T-unit		-0,117
Clauses per T-unit		-0,136
DC ³ per clause		0,001
DC ³ per T-unit		-0,125
T-units per sentence		-0,055
Complex T-unit ratio		0,003
CP ⁴ per T-unit		-0,033
CP ⁴ per clause		0,1
CN ⁵ per T-unit		-0,075
CN ⁵ per clause		0,149

¹Lexical Overlaps, ²Mean Length of, ³Dependen Clauses, ⁴Coordinate Phrases, ⁵Complex Nominals

In Table 5, only basic CI are included as predictors. The R² of 0.026 indicates that these CI explain about 2.6% of the variance in writing quality scores. The modest effect size suggests that local and global cohesion levels, represented by connective usage, givenness, and lexical overlaps between sentences and paragraphs, minimally predict overall writing quality scores. Model 2 expands to include traditional SC indices alongside cohesion measures. The R² value increases to 0.101, showing that 10.1% of the variance in writing quality scores is now explained. Although the increase is statistically insignificant (p = 0.163), it does suggest that SC, in combination with CI, has a greater potential to predict writing quality. This finding mirrors the significance of syntax in writing quality—particularly how longer clauses, complex T-units, and varied syntactic structures often signify advanced proficiency in L2 writing. Model 3, however, demonstrates a marked improvement in explanatory power. With an R² of 0.503, this model explains 50.3% of the variance in writing quality scores. The high significance level (p < 0.001) indicates a robust relationship between SC, cohesive measures, and writing quality scores when TL and curricular levels of learners are included. These results strongly suggest that incorporating the proficiency levels and total number of words in the text, along with cohesive and SC measures, offers a substantial predictive advantage for assessing L2 writing quality.

Table 6

Hierarchical Multiple Regression Analysis with a Three-Layered Model (Dependent Variable; Writing Quality Overall Scores)

Model	R	R ²	Std. Err.	R ² Change	F Change
Cohesive indices (CI)	0,16	0,026	0,47	0,026	1,305
SC indices	0,317	0,101	0,464	0,075	1,428
Class level and text length	0,709	0,503	0,348	0,403	49,964

The results align with existing literature highlighting the role of SC in L2 writing quality. While cohesion devices provide clarity for L2 readers, they do not alone define quality. Instead, a nuanced blend of advanced syntactic features appears more indicative of writing proficiency, emphasizing that learners who employ complex structures tend to produce higher-rated essays. This model progression from cohesion to complex syntax and class level and TL offers a detailed view of how cohesive and linguistic characteristics add to overall writing quality, only in highly proficient learners and in longer texts.

Discussion and Conclusion

The current study probes into the interplay between SC, cohesion, and their joint effect on EFL writing quality. It provides potent insights into how syntax and cohesion relate to overall writing quality. The findings extend our understanding of the nuanced relationships in L2 writing.

Using the TAACO, the present study analyzed cohesion at local, global, and textual levels. Indices of local cohesion, such as the use of connectives and the lexical overlaps between sentences, showed weak negative correlations with the writing scores. Though statistically non-significant, these findings echo the previous research that asserted excessive use of these local cohesion devices could block the natural text flow, thus making the task of text comprehension harder (Crossley et al., 2016; Tabari & Wind, 2023; Tabari et al., 2024). In contrast -and in tune with the current study's findings- advanced L2 writing comprises less overt cohesive devices, repetition, and more lexical variation to indicate better-quality writing (Crossley & McNamara, 2012; Yang & Sun, 2012). While cohesion enhances the comprehensibility of a text, its influence on writing quality seems less significant than that of SC. Overemphasis on local cohesion, often seen in less skilled writers, may suggest a dependence on overt clarity instead of employing more sophisticated and subtle language use.

In the current study, the learners' essays were processed onto TAASSC. Fine-grained measures of SC, such as the mean length of clause and complex nominal per sentence, arose as a significant -though weak- index of higher-quality L2 writing. This finding follows previous studies that relate SC to higher language proficiency (Crossley et al., 2016; Hao et al., 2024; Lu, 2011; Peng et al., 2024). Using longer clauses and nominalizations improves linguistic proficiency and improves writing quality (Bychkovska & Lee, 2023; Ellis & Yuan, 2004; Ortega, 2015). On the other hand, the findings displayed a weak negative correlation between the number of clauses per sentence and writing quality. It may suggest that excessive use of densely packed or structured sentences might distract the readers, thus reducing comprehension. Therefore, this finding warrants a balance between SC and readability in L2 writing (Zhang & Lu, 2024), which may lead to future directions for EFL teachers to shape their practices to teach and assess writing.

Along with the significant and strong positive correlations of class level and TL with L2 writing quality, these two variables, according to the results of the hierarchical regression model, mutually explained over 50% of the variance in writing quality scores. This reinforces the notion that linguistic proficiency develops over time with more exposure and instruction, which eventually reflects in the higher scores attained to learner essays (Mazgutova & Kormos, 2015; Vyatkina et al., 2015). The idea that longer text enhances the writing quality perceived by human scorers has long been supported in previous studies (De Vilde, 2023). Likewise, longer texts might provide a basis for various syntactic structures, cohesive strategies, and other elements associated with better-quality writing. This study pinpoints the multifaceted nature of L2 writing quality, suggesting a distinct approach integrating SC and cohesion. However, the negligible contribution of cohesion warrants the traditional emphasis placed on it in L2 writing assessments.

The study's findings reaffirm the importance of SC in L2 writing assessment, locating it as a more powerful indicator of perceived writing quality than cohesion. The current study contradicts the dichotomy of the presence or absence of cohesive devices and supports the notion that cohesive devices should be selectively distributed at different levels across the text. (Tabari & Johnson, 2023). For instructional purposes, the current study's findings emphasize how important it is to train L2 learners about the strategic use of cohesive devices

in a way that supports readability and logical flow of ideas. Teachers can improve their L2 writing curricula by highlighting the effective deployment of cohesive devices to produce longer texts without detracting from subject continuity.

As for the findings on TL and proficiency, they highlight that TL offers a canvas for manifesting SC and textural depth when paired with proficiency. By integrating these two constructs, teachers can better assist L2 learners in improving their skills for advanced L2 writing. Additionally, automated text processing tools used in the study, such as TAACO and TAASSC, emerge as valid and valuable analysis tools that dichotomize the intricate text characteristics, which transforms the conventional surface-level textual data analysis. Such advancements in automated text analysis could provide a fairer and more nuanced assessment of L2 writing.

The present study examined essays from a particular educational setting (Turkish EFL context). Future research could extend this context to differing linguistic and cultural spheres. In addition, exploiting the genre effect would offer a deeper understanding of the role of genre in studying complexity and cohesion, such as in expository and argumentative writing (Zhang & Liu, 2021). In addition, human raters and readers' perceptions from a qualitative angle could help contextualize the quantitative findings to get richer meanings out of the relationships exposed.

Ethics Committee Approval Information: This research was produced using data collected by the author for his doctoral thesis. Therefore, it was carried out with the permission of the Social and Human Scientific Research and Publication Ethics Committee of Tokat Gaziosmanpaşa University, dated 29/04/2019 and numbered 31064.

Conflict of Interest Information: The author declares that there is no conflict of interest with any institution or person within the scope of the study.

Statement of Contribution Rate: The study has one author and the author conducted the study alone.

References

- Ai, H., & Lu, X. (2013). A corpus-based comparison of syntactic complexity in NNS and NS university students' writing. In *Automatic treatment and analysis of learner corpus data* (pp. 249-264). John Benjamins publishing company. <https://doi.org/10.1075/scl.59.15ai>
- Biber, D., Gray, B., & Poonpon, K. (2011). Should we use characteristics of conversation to measure grammatical complexity in L2 writing development?. *Tesol Quarterly*, 45(1), 5-35. <https://doi.org/10.5054/tq.2011.244483>
- Bird, S., Klein, E., & Loper, E. (2009). Natural language processing with Python: analyzing text with the natural language toolkit. " O'Reilly Media, Inc."
- Bulté, B., & Housen, A. (2012). Defining and operationalising L2 complexity. *Dimensions of L2 performance and proficiency: Complexity, accuracy and fluency in SLA*, 32, 21.
- Bychkovska, T., & Lee, J. J. (2023). Nominalization in high-and low-rated L2 undergraduate writing. *International Journal of English for Academic Purposes: Research and Practice*, 3(2), 135-158.
- Crossley, S. A. (2020). Linguistic features in writing quality and development: An overview. *Journal of Writing Research*, 11(3), 415-443. <https://doi.org/10.17239/jowr-2020.11.03.01>

- Crossley, S., & McNamara, D. (2010). Cohesion, coherence, and expert evaluations of writing proficiency. In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 32, No. 32). <https://escholarship.org/uc/item/6n5908qx>
- Crossley, S. A., & McNamara, D. S. (2011). Understanding expert ratings of essay quality: Coh-Metrix analyses of first and second language writing. *International Journal of Continuing Engineering Education and Life Long Learning*, 21(2-3), 170–191. <https://doi.org/10.1504/IJCEELL.2011.040197>
- Crossley, S. A., & McNamara, D. S. (2012). Predicting second language writing proficiency: The roles of cohesion and linguistic sophistication. *Journal of Research in Reading*, 35(2), 115–135. <https://doi.org/10.1111/j.1467-9817.2010.01449.x>
- Crossley, S. A., & McNamara, D. S. (2016). Say more and be more coherent: How text elaboration and cohesion can increase writing quality. *Journal of Writing Research*, 7(3), 351–370. <https://doi.org/10.17239/jowr-2016.07.3.02>
- Crossley, S. A., Kyle, K., & Dascalu, M. (2019). The Tool for the Automatic Analysis of Cohesion 2.0: Integrating semantic similarity and text overlap. *Behavior research methods*, 51, 14–27. <https://doi.org/10.3758/s13428-018-1142-4>
- Crossley, S. A., Kyle, K., & McNamara, D. S. (2016). The development and use of cohesive devices in L2 writing and their relations to judgments of essay quality. *Journal of Second Language Writing*, 32, 1–16. <https://doi.org/10.1016/j.jslw.2016.01.003>
- Crossley, S. A., Kyle, K., & McNamara, D. S. (2016). The tool for the automatic analysis of text cohesion (TAACO): Automatic assessment of local, global, and text cohesion. *Behavior research methods*, 48, 1227–1237. <https://doi.org/10.3758/s13428-015-0651-7>
- Crossley, S. A., Roscoe, R., & McNamara, D. S. (2011). Predicting human scores of essay quality using computational indices of linguistic and textual features. In *Artificial Intelligence in Education: 15th International Conference, AIED 2011, Auckland, New Zealand, June 28–July 2011 15* (pp. 438–440). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-21869-9_62
- Crossley, S., & McNamara, D. (2010). Cohesion, coherence, and expert evaluations of writing proficiency. In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 32, No. 32). <https://escholarship.org/uc/item/6n5908qx>
- De Wilde, V. (2023). Lexical characteristics of young L2 English learners' narrative writing at the start of formal instruction. *Journal of Second Language Writing*, 59, 100960. <https://doi.org/10.1016/j.jslw.2022.100960>
- Ellis, R., & Yuan, F. (2004). The effects of planning on fluency, complexity, and accuracy in second language narrative writing. *Studies in Second Language Acquisition*, 26(1), 59–84. [doi:10.1017/S0272263104026130](https://doi.org/10.1017/S0272263104026130)
- Engber, C. A. (1995). The relationship of lexical proficiency to the quality of ESL compositions. *Journal of Second Language Writing*, 4(2), 139–155. [https://doi.org/10.1016/1060-3743\(95\)90004-7](https://doi.org/10.1016/1060-3743(95)90004-7)
- Graesser, A. C., McNamara, D. S., Louwerse, M. M., & Cai, Z. (2004). Coh-Metrix: Analysis of text on cohesion and language. *Behavior research methods, instruments, & computers*, 36(2), 193–202. <https://doi.org/10.3758/BF03195564>

- Grant, L. & Ginther, A. (2000). Using computer-tagged linguistic features to describe L2 writing differences. *Journal of Second Language Writing*, 9, 123–145. [https://doi.org/10.1016/s1060-3743\(00\)00019-9](https://doi.org/10.1016/s1060-3743(00)00019-9)
- Halliday, M. A. K., & Hasan, R. (2014). *Cohesion in english*. Routledge.https://doi.org/10.1007/978-3-642-21869-9_62
- Hao, Y., Wang, X., Bin, S., Yang, Q., & Liu, H. (2024). How syntactic complexity indices predict Chinese L2 writing quality: An analysis of unified dependency syntactically-annotated corpus. *Assessing Writing*, 61, 100847.<https://doi.org/10.1016/j.asw.2024.100847>
- Jarvis, S. (2002). Short texts, best-fitting curves, and new measures of lexical diversity. *Language Testing*, 19 (1), 57–84. <https://doi.org/10.1191/0265532202lt220oa>
- Jarvis, S., Grant, L., Bikowski, D., & Ferris, D. (2003). Exploring multiple profiles of highly rated learner compositions. *Journal of second language writing*, 12(4), 377-403.<https://doi.org/10.1016/j.jslw.2003.09.001>
- Kyle, K. (2016). Measuring syntactic development in L2 writing: Fine-grained indices of syntactic complexity and usage-based indices of syntactic sophistication [Doctoral dissertation, Georgia State University]. https://scholarworks.gsu.edu/alesl_diss/35
- Lin, Y., Su, Y., Peng, Y., & Liu, H. (2024). Profiling text cohesion in developing L2 Chinese reading materials: variation by text level and genre. *Reading and Writing*, 1-36. <https://doi.org/10.1007/s11145-024-10585-w>
- Lu, X. (2011). A corpus-based evaluation of syntactic complexity measures as indices of college-level ESL writers' language development. *Tesol Quarterly*, 36–62. <https://doi.org/10.5054/tq.2011.240859>
- Mazgutova, D., & Kormos, J. (2015). Syntactic and lexical development in an intensive English for Academic Purposes program. *Journal of Second Language Writing*, 29, 3-15. <https://doi.org/10.1016/j.jslw.2015.06.004>
- McNamara, D. S., Crossley, S. A., & Roscoe, R. (2013). Natural Language Processing in an Intelligent Writing Strategy Tutoring System. *Behavior Research Methods*, 45 (2), 499–515. <https://doi.org/10.3758/s13428-012-0258-1>
- Miller, G. A. (1995). WordNet: A lexical database for English. *Communications of the ACM*, 38, 39–41.[doi/10.1145/219717.219748](https://doi.org/10.1145/219717.219748)
- Norris, J. M., & Ortega, L. 2009. Towards an organic approach to investigating CAF in instructed SLA: The case of complexity. *Applied linguistics*, 30(4), 555-578.<https://doi.org/10.1093/applin/amp044>
- Ortega, L. (2003). Syntactic complexity measures and their relationship to L2 proficiency: A research synthesis of college-level L2 writing. *Applied linguistics*, 24(4), 492–518.<https://doi.org/10.1093/applin/24.4.492>
- Ortega, L. (2015). Syntactic complexity in L2 writing: Progress and expansion. *Journal of Second Language Writing*, 29, 82–94. <https://doi.org/10.1016/j.jslw.2015.06.008>
- Peng, Y., Zheng, Y., Sun, J., Jiang, Y., Lin, J., & Zhang, H. (2024). Modeling relationships among large-grained, fine-grained absolute syntactic complexity and assessed L2 writing quality: An SEM approach. *Assessing Writing*, 61, 100875.<https://doi.org/10.1016/j.asw.2024.100875>

- Song, R. (2022). A Scientometric Review of Syntactic Complexity in L2 writing based on Web of Science (2010-2022). *International Journal of Linguistics, Literature and Translation*, 5(1), 18–27. doi:10.32996/ijllt.2022.5.1.3
- Stockwell, G. & Harrington, M. (2003). The incidental development of L2 proficiency in NS-NNS email interactions. *CALICO Journal* 20(2), 337–359. <https://doi.org/10.1558/cj.v20i2.337-359>
- Stockwell, G. (2005). Syntactical and lexical development in NNS-NNS asynchronous CMC. *The JALT CALL Journal*, 1(3), 33–49. <https://doi.org/10.29140/jaltcall.v1n3.16>
- Tabari, M. A., & Johnson, M. D. (2023). Exploring new insights into the role of cohesive devices in written academic genres. *Assessing Writing*, 57, 100749. <https://doi.org/10.1016/j.asw.2023.100749>
- Abdi Tabari, M., & Wind, A. M. (2025). Dynamic development of cohesive devices in English as a second language writing. *International Review of Applied Linguistics in Language Teaching*, 63(1), 433-469. <https://doi.org/10.1515/iral-2022-0205>
- Abdi Tabari, M., Johnson, M. & Gao, J. (2024). Using automated indices of cohesion to explore the growth of cohesive features in L2 writing. *International Review of Applied Linguistics in Language Teaching*. <https://doi.org/10.1515/iral-2023-0185>
- Treffers-Daller, J., Parslow, P., & Williams, S. (2018). Back to basics: How measures of lexical diversity can help discriminate between CEFR levels. *Applied Linguistics*, 39(3), 302–327. <https://doi.org/10.1093/applin/amw009>
- Vyatkina, N., Hirschmann, H., & Golcher, F. (2015). Syntactic modification at early L2 German writing development stages: A longitudinal learner corpus study. *Journal of Second Language Writing*, 29, 28-50. <https://doi.org/10.1016/j.jslw.2015.06.006>
- Wolfe-Quintero, K., Inagaki, S., & Kim, H. Y. (1998). Second language development in writing: *Measures of fluency, accuracy, & complexity* (No. 17). University of Hawaii Press.
- Wondemagegne, E., Simegn, B. & Adugna, E.T. (2024). Exploring syntactic complexity and its relationship with writing quality in EFL argumentative essays. *Journal of Language Research - I*(2), 13-35. <https://doi.org/10.14302/issn.2998>
- Yang, W., & Sun, Y. (2012). The use of cohesive devices in argumentative writing by Chinese EFL learners at different proficiency levels. *Linguistics and Education*, 23(1), 31–48. <https://doi.org/10.1016/j.linged.2011.09.004>
- Zhang, J., & Zhang, L. J. (2023). Lexical cohesion development in English as a foreign language learners' argumentative writing: A latent class growth model approach. *Linguistics and Education*, 78, 101255. <https://doi.org/10.1016/j.linged.2023.101255>
- Zhang, L. & liu, H. (2021). Genre Effect on L2 Syntactic Complexity and Holistic Rating for Writing Quality of Intermediate EFL Learners. *Chinese Journal of Applied Linguistics*, 44(4), 451-469. <https://doi.org/10.1515/CJAL-2021-0029>
- Zhang, X., & Lu, X. (2024). Testing the Relationship of Linguistic Complexity to Second Language Learners' Comparative Judgment on Text Difficulty. *Language Learning*. <https://doi.org/10.1111/lang.12633>

Geniş Özet

Giriş

Bu çalışma, Yabancı Dil Olarak İngilizce (EFL) öğrenenlerin yazma becerilerinde metin bağlaşıklığı ve sözdizimsel karmaşıklığın yazı kalitesine etkisini araştırmayı amaçlamaktadır. Metin bağlaşıklığı, metin içindeki fikirlerin düzenli bir şekilde birbirine bağlanmasını sağlarken, sözdizimsel karmaşıklık, yazıda kullanılan dilbilgisel yapının derinliği ve çeşitliliğini ifade etmektedir. Çalışma, bu iki temel unsurun öğrenci yazılarına ne ölçüde katkı sağladığını belirlemek için tasarlanmıştır. Otomatik metin analizi araçları olan TAACO ve TAASSC kullanılarak yazılardaki bağlaşıklık ve sözdizimsel karmaşıklık ölçütleri detaylı bir şekilde incelenmiştir.

Yabancı dil yazma becerilerinde hem metin bağlaşıklığı hem de sözdizimsel karmaşıklığın etkileri üzerine yapılan araştırmalar, bu unsurların yazı kalitesine farklı şekillerde katkıda bulunduğunu göstermektedir. Ancak, özellikle EFL bağlamında, bu iki faktörün yazma kalitesine ne ölçüde katkıda bulunduğu belirsizdir. Literatürde, bağlaşıklığın metin akıcılığını ve anlaşılabilirliğini artırabileceği, sözdizimsel karmaşıklığın ise daha gelişmiş bir dil becerisini yansıtarak yüksek yazma puanlarına yol açabileceği öne sürülmüştür. Bu çalışma, bu iki unsuru birlikte değerlendirerek yazma kalitesini etkileyen temel dilsel özellikleri ortaya koymayı amaçlamaktadır.

Yöntem

Çalışma, nicel araştırma yöntemleri kullanılarak tasarlanmıştır. Araştırmanın veri seti, bir devlet üniversitesinde İngilizce Öğretmenliği Bölümü'nde öğrenim gören 204 lisans öğrencisinin yazılarından oluşmaktadır. Öğrencilerden, belirlenen bir konuda betimleyici türde yazılar yazmaları istenmiştir. Yazılar, TAACO kullanılarak yerel, küresel ve metinsel düzeyde bağlaşıklık ölçütleri ile analiz edilmiş, TAASSC ile sözdizimsel karmaşıklık ölçütleri değerlendirilmiştir. Ayrıca, yazıların kalitesi, iki uzman değerlendirici tarafından bir rubrik kullanılarak puanlanmıştır. Elde edilen veriler, korelasyon ve regresyon analizleriyle incelenmiştir.

Bulgular

Çalışma bulguları, metin bağlaşıklığının yazı kalitesiyle anlamlı bir ilişki göstermediğini ortaya koymuştur. Yerel bağlaşıklık ölçütlerinin aşırı kullanımı, metnin doğal akışını bozarak yazı kalitesini olumsuz etkileyebilmektedir. Buna karşın, sözdizimsel karmaşıklığın belirli ölçütleri, özellikle karmaşık nominal kullanımı ve uzun cümle yapıları, daha yüksek yazma kalitesi ile ilişkilendirilmiştir. Ancak, fazla karmaşık cümle yapılarının okuyucunun metni anlamasını zorlaştırabileceği ve bu nedenle yazı kalitesini düşürebileceği de gözlemlenmiştir. Ayrıca, metin uzunluğu ve öğrencilerin dil seviyeleri, yazı kalitesini etkileyen en önemli faktörler olarak öne çıkmıştır. Uzun metinlerin daha çeşitli dil yapılarına ve bağlaşıklık stratejilerine olanak tanıdığı, bu nedenle daha yüksek yazma puanları ile ilişkilendirildiği görülmüştür.

Sonuç ve Tartışma

Bu çalışma, yazı kalitesini etkileyen unsurlar arasında sözdizimsel karmaşıklığın bağlaşıklığa göre daha güçlü bir gösterge olduğunu ortaya koymaktadır. Eğitimcilerin, öğrencileri bağlaşıklık cihazlarını stratejik bir şekilde kullanmaları konusunda eğiterek metnin akıcılığını ve fikirlerin mantıksal akışını destekleyebileceği önerilmektedir. Aynı zamanda, uzun metinlerin yazma kalitesine olumlu etkisi, öğrencilere daha gelişmiş dil becerileri

kazandırma açısından değerlidir. Çalışmanın bulguları, gelecekteki araştırmalarda, farklı tür ve bağlamlarda bağlaşıklık ve sözdizimsel karmaşıklık etkilerinin incelenmesine olanak sağlayabilir. Ayrıca, TAACO ve TAASSC gibi otomatik analiz araçlarının yazma değerlendirme süreçlerinde daha adil ve detaylı analizler sunarak, değerlendirme kalitesini artırabileceği vurgulanmıştır.