

Lexical Cohesion in Undergraduate Theses: A Quantitative Study in an Indonesian University



Hidayati¹, Jaya²

^{1,2}Universitas Madako Tolitoli, Central Sulawesi, Indonesia

ABSTRACT: This study undertook a detailed analysis of the representation of lexical cohesion within the research background sections of undergraduate theses at an Indonesian university. Utilizing a quantitative approach, the research aimed to investigate the frequency and percentage distribution of lexical cohesion devices employed by students in their writing. The primary data collection tool was note-taking, with data drawn from a selection of undergraduate theses submitted by students of English Language Education. The study revealed that repetition was the predominant lexical cohesion strategy, accounting for 93% of instances. It was followed by lesser-used strategies, such as synonym use (4%), collocation (2%), and superordinate terms (1%). However, the research has its limitations; the findings were specific to one group of students within a single university context and based solely on theses, thus potentially lacking wider applicability. The implications of the study highlight the necessity to increase students' awareness and application of diverse lexical cohesion devices. While repetition was a primary strategy, the sparse use of synonyms, collocations, and superordinates indicates areas for enhanced teaching and practice in academic writing. By encouraging a more varied use of these strategies, we can promote improved coherence, richness, and sophistication in student academic writing. This research underscores the importance of diversifying cohesive devices to enrich students' academic writing skills.

KEYWORDS: lexical cohesion, cohesive device, writing, background of the research

I. INTRODUCTION

Maintaining a logical and connected flow between sentences or paragraphs has been a crucial factor when composing a unified piece of writing. To facilitate this, writers have often made use of two primary types of cohesive devices: lexical and grammatical. According to Baker (2018), these devices served to weave together different parts of a text, thereby fostering an integral connection and facilitating superior organization of the content. This process, in turn, simplified the task for readers, making it easier for them to comprehend the text's purpose and direction (Albana et al., 2020; Baker, 2018). Moreover, cohesive devices acted as a support system for writers, assisting them in structuring and interlinking the various ideas they wished to convey in their written products. Baker (2018) emphasized that proficient use of cohesive devices not only enhanced the coherence of a text but also significantly improved its readability. This sentiment was echoed by McCarthy (1991) and Rets et al. (2022), who posited that these devices enhanced the overall structure of a text, making it more accessible and intuitive for the reader. Furthermore, these cohesive devices played a vital role in the comprehension of a text. They allowed readers to establish connections between different pieces of information, leading to a better understanding of the text's main ideas and themes. Therefore, their importance could not be understated when it came to producing high-quality, effective, and coherent writing (Amperawaty & Warsono, 2019; Carrell, 1982; Lebanoff et al., 2020).

Lexical and grammatical cohesive devices, however, were not used in isolation. They were often combined and interrelated, creating a complex network of relations within a text that guided both the writing and reading processes (Hamel & Benzitouni, 2022; Hoey, 1991). Thus, a solid understanding and correct application of these devices have been key to achieving a polished, effective piece of writing (Hoey, 1991). The application of cohesive devices held critical significance in academic writing, acting as a reflection of students' thought processes and organizational skills. By dissecting undergraduate theses, it was possible to glean insights into the quality of the students' reasoning and structuring of their academic writing. Indeed, numerous studies have attested to the connection between the effective use of cohesive devices and academic performance (Albana et al., 2020; Halliday & Hasan, 1976; McCarthy, 1991; Uz Bilgin & Gul, 2020).

Lexical Cohesion in Undergraduate Theses: A Quantitative Study in an Indonesian University

This study focused explicitly on the implementation of lexical cohesion within the introductory sections of undergraduate theses. These theses have been composed by a group of English as a Foreign Language (EFL) students from a public university in Indonesia. The background of the research is an integral section of any academic paper, as it sets the stage for the rest of the research, effectively representing the entirety of the study (Swales, 1990). Hence, its crucial nature has prompted its selection as the focus of this research. By delving into the use of lexical cohesive devices in these backgrounds of research, we aimed to discern patterns, preferences, and possibly, areas of improvement. Not only could this inform pedagogical practices, but it could also provide a model for future students writing their theses (Hyland, 2005). As such, the study of lexical cohesion within these research backgrounds is an important endeavor, with potential benefits for both educators and students alike.

Specifically, this research focused on two core areas: the use of cohesive devices, particularly in the background sections of undergraduate theses from English Language Education students at an Indonesian university, and the specific preferences these students demonstrate in their writing. To extract meaningful results, a quantitative methodology was utilized, assessing the frequency and percentage of use or occurrence of lexical cohesion devices in the analyzed texts. To achieve a comprehensive and nuanced analysis, the categorization of cohesion - specifically lexical cohesion - as proposed by Halliday and Hasan (1976) was adopted. According to these scholars, lexical cohesion can be divided into two types: reiteration and collocation. Understanding these types and their application in the students' writing was a focal point of this research. In terms of outcomes, this research aimed to contribute theoretically and practically. Theoretically, it seeks to enhance the field of language evaluation and testing by providing insights into the analysis of lexical cohesion in writing skill. This could offer a new lens through which to assess writing abilities, especially in the realm of academic writing. On a practical level, this research offered benefits for both teachers and readers. For teachers, the research could have served as a tool to bolster their abilities in assessing the use of lexical cohesion in student writing. This could have led to more effective teaching strategies and an improved understanding of students' writing abilities. For readers, particularly those interested in academic writing or language studies, this research offers a wealth of knowledge and a new perspective. It can also serve as a point of reference for future studies delving into the analysis of lexical cohesion in writing. Ultimately, the goal was to illuminate the critical role of lexical cohesion in producing high-quality academic writing, which could then be harnessed to improve both teaching and learning practices.

Guiding this research were two main questions: firstly, how was lexical cohesion represented in the research background of students' theses? And secondly, what did lexical cohesion, coherence, and continuity in these backgrounds signify about the students' academic writing capabilities? With these queries as our guiding lights, this research aimed to offer fresh perspectives on the significance of lexical cohesion in academic writing.

II. LITERATURE REVIEW

The Concept of Writing

Writing is often perceived as the embodiment of articulating thoughts onto paper, and it serves as a critical skill across various contexts. Writing extends beyond the mere act of transcribing symbols or letters onto a medium; it involves the meaningful organization of these symbols to communicate ideas, stories, or instructions (Gallistel, 2021; Overmann, 2023). Brown (2000) argued that writing is a cognitive process of developing and logically structuring ideas onto paper. This perspective highlights the integral role that intellectual engagement plays in writing, emphasizing the importance of mental preparation and organization of thoughts (Alharbi, 2020; Brown, 2000; Dreisoerner et al., 2021; Selvaraj & Aziz, 2019). On the other hand, Langan (2001:76) posited that writing is akin to converting spoken language into written form. This conception underscores the correlation between oral and written communication, asserting that the principles and structures of spoken language provide a foundation for writing. However, this process is not a direct conversion but a thoughtful process of recontextualizing, as the conventions and nuances differ between oral and written communication (Alexander et al., 2020; Kress & Van Leeuwen, 2001; Lew & Mejía-Ramos, 2019; Selvaraj & Aziz, 2019).

The various definitions converge on the point that writing is not merely a mechanical task but an intricate process of thinking and organizing ideas. It involves several steps, including brainstorming, drafting, revising, and editing, each with its unique set of challenges (Flower & Hayes, 1981). For instance, a writer may encounter writer's block during the brainstorming phase or struggle to maintain coherence during the drafting phase (Rose, 2009). Thus, writing is not an effortless task; it requires mental effort and endurance to navigate the challenges it presents. Nonetheless, the final reward of a well-structured piece makes the effort worthwhile, underscoring the significance of mastering this productive language skill (Murray, 2012).

Oshima and Hogue (2007) proposed a fundamental framework for the writing process that encompasses four primary stages: prewriting, organizing, writing, and polishing. This systematic approach allows writers to break down the complex task of writing into more manageable subtasks, making the process more efficient and effective. The prewriting stage is the initial platform where writers select a topic and generate ideas to support it, often through brainstorming, researching, or other ideation

Lexical Cohesion in Undergraduate Theses: A Quantitative Study in an Indonesian University

techniques (Elbow, 1998). The organizing stage follows, where writers structure their generated ideas into a simplified outline, ensuring the coherence of thoughts and logical progression of ideas in the subsequent draft (Flower & Hayes, 1981). During the writing stage, writers convert their structured ideas from the outline into a preliminary draft, prioritizing the transfer of thoughts onto paper over perfection (Flower & Hayes, 1981). Lastly, during the polishing stage, writers refine the draft into a finished piece by revising the content, structure, and flow and then editing for grammatical accuracy, spelling, and punctuation (Oshima & Hogue, 2007).

Moreover, Gerot and Wignell (1994) highlighted various genres or text types that writers can utilize, such as spoof, recount, report, analytical exposition, narrative, descriptive, hortatory exposition, explanation, reviews, discussion, procedure, and news items. Each genre has unique characteristics and purposes, serving to enrich and diversify the ways writers can express their thoughts and ideas (Hyland, 2005).

Cohesion

Cohesion in writing plays a pivotal role in the construction of comprehensive and meaningful texts. Through the use of linguistic devices, it effectively interconnects ideas and ensures a logical progression throughout a piece of writing. These cohesive devices, including both lexical and grammatical structures, serve as the binding thread of a text, fostering its clarity and coherence. Notably, examining cohesion within a student's writing can provide educators valuable insights into areas where students may face difficulties, aiding them in guiding their pupils towards creating well-structured, cohesive texts.

Halliday and Hasan (1976), renowned linguists, introduced a detailed framework for understanding cohesion in English. They outlined five primary linguistic devices that contribute to establishing cohesion in both spoken and written English, which include reference, conjunction, substitution, ellipsis, and lexical cohesion. Reference, as a cohesive device, involves using pronouns, demonstratives, and definite articles to refer back to entities previously mentioned within a text. This technique helps maintain continuity and avoids unnecessary repetition. For instance, we might use 'she' to refer to 'Mary' after the first mention. Conjunctions, another cohesive device, connect ideas across sentences and phrases, thereby enhancing the connectedness and logical flow within a text. Conjunctions include coordinating, subordinating, and correlative forms, used as per the context and the relationship between the ideas they are connecting. Substitution, on the other hand, prevents repetition by replacing redundant elements with more generic terms. For instance, we might use 'it' to replace 'tea' in the following sentences: "I prefer tea to coffee because it tastes better". Ellipsis is a cohesion strategy that avoids redundancy by omitting elements from a sentence when their meaning can be inferred from the context. For instance, we might simply reply, "I did," instead of "I took the last cookie," with the omitted information understood from the question asked. Lastly, lexical cohesion is achieved when semantically related words are used throughout the text. This includes the use of synonyms, antonyms, hyponyms, or words related by collocation. For example, a text about fitness might strategically include related words like "exercise," "workout," "gym," "healthy," "nutrition," and "well-being." In essence, understanding and effectively employing these cohesive devices are integral to producing high-quality, coherent writing, making them invaluable tools for both writers and educators in the pursuit of mastering and teaching the art of writing.

Alarcon & Morales (2011) noted that reference, as a cohesive device, can be thought of not only in terms of grammatical elements, like pronouns and demonstratives, but also in terms of semantic relations. Such semantic relations can include repetition of the same word or use of synonyms, helping the reader to understand the connections between different parts of the text. As for conjunctions, Trebits (2009) provided a comprehensive categorization of conjunctions based on their function. They highlight how these function words serve to link ideas across sentences and phrases, thereby enhancing the connectedness and logical flow within a text. The concepts of substitution and ellipsis have been explored by many linguists. For instance, Vujević (2012) explain that substitution involves replacing a word or phrase with a "pro-form" to avoid repetition, while ellipsis involves the omission of elements that are contextually recoverable. Finally, lexical cohesion, as a concept, extends far beyond the framework proposed by Halliday and Hasan (1976) and Hoey (1991) provide a more nuanced understanding of lexical cohesion, demonstrating that it involves more than just the use of synonyms or related words. He proposes the concept of "lexical chaining," where words that share a semantic field are used in close proximity to each other in the text, creating a sense of cohesion and unity. In summary, the framework of cohesion in writing is complex and multifaceted, with a range of researchers contributing to our understanding of how linguistic devices help create coherent and effective texts. These diverse perspectives enrich our understanding and offer a multitude of strategies for enhancing the clarity and unity of our writing.

Lexical Cohesion

Lexical cohesion, as detailed by Halliday and Hasan (1976), forms a substantial part of creating coherence in a text. This linguistic device is constructed through the strategic selection of vocabulary and the crucial role of semantic relationships between words.

Lexical Cohesion in Undergraduate Theses: A Quantitative Study in an Indonesian University

When the elements of a text - words or sentences - bear a clear relationship to each other, lexical cohesion is achieved. Halliday and Hasan break down lexical cohesion into two primary types: Reiteration and Collocation.

Reiteration, as a form of lexical cohesion, can be further broken down into different categories. For instance, repetition can be exact, where the same word or phrase is used again, or it can be indirect, where a synonym or a near synonym is used. Furthermore, the use of a superordinate term, such as "animal" for "dog," or an instance of a general noun, for instance, "creature" for "dog," can create a chain of meanings, giving the text a sense of unity and coherence (Maybin and Tusting (2011). Notably, reiteration can also be achieved by using a pronoun to refer back to a previously introduced entity. For instance, "The dog chased its tail." Here, "its" refers back to "the dog," creating a connection between the two parts of the sentence. Similarly, demonstrative pronouns like "this" or "that" can be used to point back to something previously mentioned or forward to something that is about to be mentioned, thereby establishing coherence within the text (Hinkel, 2003). On the other hand, Collocation, the second type of lexical cohesion, involves more than just the use of antonyms, complementary terms, and converses. Collocation also includes words that are typically found together because they belong to the same lexical field or have a habitual co-occurrence in language. For instance, "bread" and "butter," "fish" and "chips," or "law" and "order" are words that collocate because they frequently appear together. Similarly, words that share a semantic field, such as "rain," "umbrella," and "wet," can create a sense of collocation in a text, as they are often associated with each other (Sinclair, 1991). Additionally, idiomatic expressions are also considered collocations because they are fixed, often non-literal phrases made up of words that are typically found together. For example, "kick the bucket" is an idiomatic expression where "kick" and "bucket" collocate to mean "die" (Nattinger & DeCarrico, 1992). By strategically using reiteration and collocation, writers can create texts that are not only cohesive and coherent but also rich in meaning and stylistically engaging. It's these delicate networks of lexical relationships that enable the text to 'hang together' and resonate with the readers, ultimately enhancing their reading experience (Hoey, 1991).

III. METHODOLOGY

This particular study falls under the category of quantitative research, which is typically characterized by its scientific nature, focus on verifiable facts, and the rigorous analysis of data. Quantitative research is commonly employed to gather, analyze, and condense numerical data. Its primary objective is to measure various aspects of phenomena, such as scale, range, and frequency (Neville, 2007). In this study, we analyzed the frequency at which lexical cohesion occurred in the writing of students. Lexical cohesion involves the use of specific words or phrases that establish connections and coherence within a text. It encompasses the repetition of related terms, synonyms, antonyms, pronouns, and other cohesive devices. By investigating the frequency of lexical cohesion in student writing, we gained valuable insights into the effectiveness with which they established and maintained coherence in their compositions.

To conduct our quantitative analysis, we systematically gathered a representative sample of students' written work and employed numerical methods for examination. Various statistical techniques were employed to quantify and summarize the occurrence of different types of lexical cohesion in the texts. These methods included calculating frequencies, percentages, and measures of central tendency such as means or medians. By utilizing these techniques, we aimed to provide a comprehensive overview of the data. In order to ensure the reliability and validity of our research, we established clear criteria for identifying and categorizing instances of lexical cohesion. This involved the development of a coding scheme and utilization of established linguistic frameworks for cohesive device analysis. Additionally, we considered factors such as sample size, diversity, potential confounding variables, and appropriate statistical tests to derive meaningful conclusions from the data.

The data utilized in this research consists of undergraduate theses from students enrolled in the English Language Education program at an Indonesian university. The primary aim of the study is to analyze how students employ lexical cohesion devices in their writing. To ensure the novelty of the data, a set of 10 theses from three years ago was selected for analysis. The selection process involved employing a simple random sampling technique, using a lottery method due to the abundance of available student writing. This approach aimed to ensure that the chosen theses represent the entire pool of work.

The data collection procedure involved the following steps:

1. Selecting the theses using a simple random sampling technique.
2. Assigning numerical identifiers to the selected theses to facilitate their identification and subsequent analysis.
3. Reading the theses, with particular emphasis on the Background section, to develop familiarity with the content.
4. Identifying and collecting all words that indicate the presence of lexical cohesion devices.
5. Organizing the collected data in a tabular format to facilitate ease of analysis.

The analysis of the data in this research employed the categorization of cohesion proposed by Halliday and Hasan (1976), specifically focusing on lexical cohesion. Within lexical cohesion, two primary types were examined: reiteration and collocation. Reiteration refers to instances where the writer refers back to something mentioned in previous sentences or paragraphs. To

Lexical Cohesion in Undergraduate Theses: A Quantitative Study in an Indonesian University

investigate reiteration, the researcher analyzed the use of repetition, synonyms, superordinate items, and general words employed by the students. Additionally, the study explored the presence of collocation in the students' writing. As a quantitative research study, the data underwent analysis using quantitative calculations to determine the frequency and percentage of usage or occurrence of lexical cohesion devices. This quantitative approach allowed the researcher to obtain a comprehensive understanding of how students utilized lexical cohesion in their theses.

IV. FINDINGS AND DISCUSSIONS

This section provided the representation of lexical cohesive devices used by the students in the introductions of their undergraduate theses. There were four components of lexical cohesion that were presented as follows:

Table 1. Numbers of Lexical Cohesion

No	Samples	Repetition	Synonym	Superordinate	General Word	Collocation	Total
1	Thesis 1	35	2	0	0	0	37
2	Thesis 2	42	3	0	0	3	48
3	Thesis 3	61	1	0	0	2	64
4	Thesis 4	77	4	2	0	1	84
5	Thesis 5	96	0	2	0	1	99
6	Thesis 6	40	4	0	0	1	45
7	Thesis 7	38	3	1	0	2	44
8	Thesis 8	27	2	0	0	0	29
9	Thesis 9	48	3	0	0	2	53
10	Thesis 10	58	2	0	0	0	60
Total							563

Based on the table 1 presented above, We identified four main components of lexical cohesion employed by the students in their writing, namely: repetition, synonym, superordinate, and collocation. The findings were intriguing and told a lot about the writing style of the students. Repetition was the most frequently utilized form of lexical cohesion, with 522 instances recorded across the 15 introduction texts analyzed. This suggested that the students preferred to repeat certain words or phrases to create cohesion and maintain the continuity of their ideas. Meanwhile, the use of synonyms, another form of lexical cohesion where different words with similar meanings were used, was found to be significantly less common with only 25 instances recorded. This lower frequency may have indicated a lack of vocabulary breadth among the students or a preference for exact repetition over synonym use for achieving cohesion. Superordinate terms, words that were more general and could include other words under them, were used even less frequently with only 5 instances identified. This relatively low number might have indicated students' preferences for explicit repetition and synonym use rather than implying relationships through the use of superordinate terms. Interestingly, the research found no instances of general words, a subcategory of superordinate terms, being used. This could be a topic of future exploration: why these were not used and how their inclusion might impact the cohesion and comprehensibility of the texts. Finally, collocation, or the use of words that often go together, was found in 12 instances. This indicated a modest use of this cohesive device, showing that some students were aware of and able to utilize this type of lexical cohesion. In total, across the 15 introduction texts used for the research, there were 563 instances of lexical cohesion elements. These findings highlighted the tendency of students to rely heavily on repetition as a means of creating cohesion, with lesser use of synonyms, superordinates, and collocations. These patterns offered valuable insights into students' writing habits and skills and pointed towards areas that could be targeted for improvement in teaching and learning.

Lexical Cohesion in Undergraduate Theses: A Quantitative Study in an Indonesian University

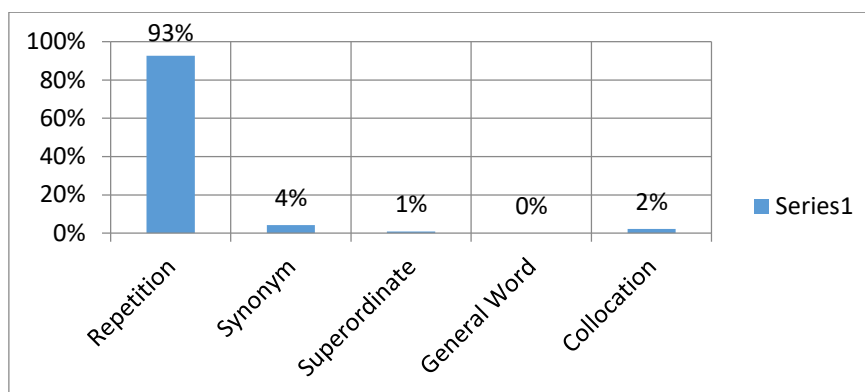


Figure 1. The Percentage of Lexical Cohesive Devices

The graphic provided a clear, quantitative representation of the students' usage of different forms of lexical cohesion in their academic writing. The findings were particularly striking in the dominant use of repetition as a cohesive device. With a commanding 93% share, repetition emerged as the most favored method of creating lexical cohesion among the students. This method, involving the direct recurrence of a word or phrase, was significantly more prevalent than any other form of lexical cohesion. This finding reinforces the observation that students tend to rely on the simple and straightforward strategy of repeating keywords to maintain continuity in their writing. Following far behind repetition was the use of synonyms, representing just 4% of the total cohesive devices used. This relatively low percentage suggests that while some students do employ synonyms as a cohesive strategy, it is considerably less favored than repetition. Collocation, the practice of using words that typically appear together, represented 2% of the total. This suggests that only a small fraction of students make use of this advanced form of lexical cohesion in their writing. Superordinate terms were used least frequently, making up only 1% of the total cohesive devices employed. This suggests that the usage of more general terms that can encompass a range of more specific ones is not a common strategy among the students. Lastly, the use of general words was not observed at all in the data set, accounting for 0% of the total. The lack of general words suggests that students might prefer explicit repetition or direct synonyms over a more abstract and indirect cohesive device. The disparity between the use of repetition and the other forms of lexical cohesion suggests that future instruction might benefit from focusing on expanding students' understanding and usage of synonyms, collocation, superordinate terms, and general words, thereby diversifying their strategies for achieving cohesion in their academic writing.

V. DISCUSSION

The findings of this current study are consistent with prior research, such as that conducted by Fatimah and Yunus (2014), Rokhanyah et al. (2022) and Warna et al. (2019), which also identified repetition as the most commonly used lexical cohesive device among students. This observation reveals a significant trend in student writing practices, suggesting a reliance on repetition as a primary strategy for achieving cohesion. However, while repetition can be an effective tool in certain contexts for maintaining the thematic continuity of a text, an over-reliance on it can result in monotonous and unengaging writing, as warned by Wang (2019). This can lead to reader fatigue, as encountering the same words or phrases repeatedly can diminish reader engagement and comprehension. In contrast, other studies have stressed the importance of diversifying the range of lexical cohesive devices used in writing. Durrant and Brenchley (2019), for instance, highlight that lexical diversity is a mark of mature and sophisticated writing. Using a variety of lexical cohesive devices, such as synonyms, superordinates, and collocations, can not only maintain cohesion but also increase reader interest and comprehension. Moreover, the use of synonyms, superordinates, and collocations has been identified as particularly effective in enhancing the complexity and richness of a text. Halliday and Hasan (1976), in their foundational work on cohesion, noted that these devices often contribute to a deeper level of cohesion and coherence, and that proficient writers tend to use these devices more frequently. Therefore, while this research aligns with Fatimah and Yunus (2014), Rokhanyah et al. (2022) and Warna et al. (2019) in identifying repetition as the primary lexical cohesive device used by students, it also underscores the need, highlighted by other researchers, for students to diversify their use of cohesive devices. It suggests that instruction in academic writing should include a focus on teaching a broader range of lexical cohesion strategies, to help students produce more engaging, coherent, and sophisticated texts.

Synonym usage is an integral part of lexical cohesion, functioning as a powerful tool to avoid repetition and maintain the reader's interest. In this study, synonym usage was found to be the second most frequently used form of lexical cohesion, albeit far behind repetition. The researcher found a total of 24 instances of synonym usage across the 15 examined student texts, which constituted 4% of all lexical cohesive devices. This finding corresponds with earlier research that recognized the importance of

Lexical Cohesion in Undergraduate Theses: A Quantitative Study in an Indonesian University

synonyms as a mechanism for lexical cohesion. Fatimah and Yunus (2014) found a similar pattern in their analysis of TESL postgraduate students' academic writing, with synonym usage trailing repetition. However, our research contrasts with some recent studies which have emphasized a higher rate of synonym usage. For instance, a study conducted by Saputra and Hakim (2020), looking at lexical cohesion in a broad range of texts, found that synonyms were employed more frequently, reflecting a higher level of language proficiency and awareness of textual cohesion. Similarly, Lee et al (2021) argued that effective use of synonyms is a distinguishing feature of advanced writers, allowing them to increase lexical variety and complexity without disrupting cohesion. According to them, proficient writers tend to utilize synonyms to avoid redundancy and maintain the reader's engagement.

Superordinate terms, which belong to a higher level of a taxonomic hierarchy, offer another method of achieving lexical cohesion. However, in this research, only five instances of superordinate usage were identified across the student writings, making it the least frequently used among all lexical cohesive devices. This lack of superordinate usage is consistent with previous studies that have looked at lexical cohesion in student writing. For instance, Fatimah and Yunus (2014) also found that the use of superordinates was one of the least common strategies employed by students in their writing. Similarly, Lee et al. (2021) observed that less experienced writers tend to underutilize this cohesive device. Conversely, other studies have highlighted the importance of superordinate usage in writing. For example, Wang (2022) argued that using superordinate terms could help establish abstract relationships and concepts, thereby enhancing the overall coherence and depth of the text. Additionally a study by López-Serrano et al. (2019) found that proficient writers frequently use superordinates as a way of enhancing the conceptual complexity of their writing. Thus, the results of this research echo previous studies' findings about the infrequent use of superordinates by less experienced writers. However, they also underscore the need, indicated by other researchers, to promote the use of superordinates among students. This can aid in improving the overall coherence and sophistication of their writing, aligning them more closely with the practices of advanced writers.

Collocation, a form of lexical cohesion, involves the habitual co-occurrence of words with specific meanings. Collocations are used in academic writing to communicate ideas more precisely and efficiently, and they often arise organically from the subject matter being discussed. The use of collocation can help convey a deeper understanding of a particular topic or concept. In this study, students used collocations when discussing interrelated concepts or elements under the same topic. The observed usage of collocation in this research aligns with previous studies. For instance, (Eguchi and Kyle (2023) underscored the importance of collocations in second language writing, arguing that they play a key role in the naturalness and fluency of written texts. Similarly, Estaji and Montazeri (2022) contended that collocations can enhance the richness and precision of students' academic writing, thereby augmenting their ability to communicate complex ideas. However, this research contrasts with studies showing a relatively low usage of collocations among less experienced or non-native writers. For instance, Glass (2022) found that non-native speakers of English often struggle with the appropriate use of collocations. In a similar vein, Alangari (2019) suggested that novice academic writers tend to employ fewer collocations, possibly due to their lack of familiarity with specific disciplinary discourses. This study's findings, while corroborating the recognized significance of collocations in academic writing, underline the need for greater emphasis on their usage in student writing. There appears to be an opportunity for students to use collocations more frequently and effectively to enhance the cohesiveness and precision of their academic writing. Given the importance of collocations, it would be beneficial to incorporate explicit instruction on their usage in writing curricula. This would not only help students in becoming more adept at writing within their specific disciplines but also broaden their overall language competency.

VI. CONCLUSION

The present research has provided critical insights into the application of lexical cohesion elements in student writing, with an exclusive focus on the research background section of the papers. The study found that students predominantly relied on the mechanism of repetition, which was discernible in all student writings. In stark contrast, other lexical cohesive devices, such as synonyms, superordinates, and collocations, were seldom used. In some cases, students completely omitted the use of these elements in their writing. The overuse of repetition, while providing a degree of cohesion, may inadvertently induce reader fatigue due to the incessant recurrence of the same words. The repetitive nature of the writing potentially compromises the variety and richness that can be attained through a balanced utilization of different lexical cohesive devices. Furthermore, lexical cohesion plays a pivotal role in maintaining the flow and continuity of meaning throughout a piece of writing. Therefore, the importance of its proper use cannot be overstressed. The significance of this research lies in its potential to improve pedagogical practices in teaching academic writing. The study's findings emphasize the need for teaching methodologies that encourage students to diversify their use of lexical cohesive devices, thus contributing to more engaging and high-quality academic writing.

The limitations of the present study include the narrow focus on research background sections of student papers only. Therefore, the results might not be generalized to other parts of academic writing. Additionally, the research did not consider the potential

Lexical Cohesion in Undergraduate Theses: A Quantitative Study in an Indonesian University

influence of students' linguistic backgrounds, which might affect their use of lexical cohesive devices. For future research, it would be beneficial to explore the use of lexical cohesion in different sections of academic papers (e.g., literature review, methods, results, and discussion) to obtain a more comprehensive understanding of students' writing practices. Additionally, investigating the impact of students' linguistic backgrounds on their use of lexical cohesive devices could be a fruitful area of exploration. Such research would contribute to more personalized and effective teaching approaches in academic writing. The influence of teaching interventions on the use of different lexical cohesive devices could also be a potential area of inquiry. By investigating these avenues, future researchers can contribute to improving academic writing skills among students, ultimately leading to enhanced academic performance.

REFERENCES

- 1) Alangari, M. A. (2019). *A corpus-based study of verb-noun collocations and verb complementation clause structures in the writing of advanced Saudi learners of English*. University of Reading.
- 2) Alarcon, J. B., & Morales, K. N. S. (2011). Grammatical cohesion in students' argumentative essay. *Journal of English and Literature*, 2(5), 114–127.
- 3) Albana, H. H., Marzuki, A. G., Alek, A., & Hidayat, D. N. (2020). Cohesive Devices in Student's Writing (A Discourse Analysis on Argumentative Text). *Jurnal Pendidikan Humaniora*, 8(1), 6–11.
- 4) Amperawaty, A., & Warsono, W. (2019). The use of cohesive devices to achieve coherence in the background section of the students' formal writing. *English Education Journal*, 9(1), 34–40.
- 5) Baker, M. (2018). *In other words: A coursebook on translation*. Routledge.
- 6) Carrell, P. L. (1982). Cohesion is not coherence. *TESOL Quarterly*, 16(4), 479–488.
- 7) Durrant, P., & Brenchley, M. (2019). Development of vocabulary sophistication across genres in English children's writing. *Reading and Writing*, 32(8), 1927–1953.
- 8) Eguchi, M., & Kyle, K. (2023). L2 collocation profiles and their relationship with vocabulary proficiency: A learner corpus approach. *Journal of Second Language Writing*, 60, 100975.
- 9) Estaji, M., & Montazeri, M. R. (2022). The representation of collocational patterns and their differentiating power in the speaking performance of Iranian IELTS test-takers. *Frontiers in Education*, 7, 827927.
- 10) Glass, C. (2022). Collocational proficiency: The effects of 'target language input' and 'age.' *Cognition and Second Language Acquisition: Studies on Pre-School, Primary School and Secondary School Children*, 4, 309.
- 11) Halliday, M. A. K., & Hasan, R. (1976). *1976: Cohesion in English*. London: Longman.
- 12) Hamel, R., & Benzitouni, A. O. (2022). *Investigating the use of grammatical cohesive devices in Algerian EFL students' essays*.
- 13) Hinkel, E. (2003). *Teaching academic ESL writing: Practical techniques in vocabulary and grammar*. Routledge.
- 14) Hoey, M. (1991). *Patterns of lexis in text* (Vol. 299). Oxford University Press Oxford.
- 15) Hyland, K. (2005). *Metadiscourse: Exploring interaction in writing*. Continuum. London, UK.
- 16) Lebanoff, L., Muchovej, J., Derroncourt, F., Kim, D. S., Wang, L., Chang, W., & Liu, F. (2020). Understanding points of correspondence between sentences for abstractive summarization. *ArXiv Preprint ArXiv:2006.05621*.
- 17) Lee, C., Ge, H., & Chung, E. (2021). What linguistic features distinguish and predict L2 writing quality? A study of examination scripts written by adolescent Chinese learners of English in Hong Kong. *System*, 97, 102461.
- 18) López-Serrano, S., de Larios, J. R., & Manchón, R. M. (2019). Language reflection fostered by individual L2 writing tasks: Developing a theoretically motivated and empirically based coding system. *Studies in Second Language Acquisition*, 41(3), 503–527.
- 19) Maybin, J., & Tusting, K. (2011). Linguistic ethnography. In *The Routledge handbook of applied linguistics* (pp. 535–548). Routledge.
- 20) McCarthy, M. (1991). *Discourse analysis for language teachers* (Vol. 8, Issue 1). Cambridge University Press Cambridge.
- 21) Nattinger, J. R., & DeCarrico, J. S. (1992). *Lexical phrases and language teaching*. Oxford University Press.
- 22) Neville, C. (2007). Effective learning service: Introduction to research and research methods. *Bradford University School of Management*, 5(3), 1–44.
- 23) Rets, I., Astruc, L., Coughlan, T., & Stickler, U. (2022). Approaches to simplifying academic texts in English: English teachers' views and practices. *English for Specific Purposes*, 68, 31–46.
- 24) Rokhaniyah, H., Adila, W., & Yulianti, D. A. B. (2022). Cohesive Devices Used in Argumentative Essays by Undergraduate EFL Learners. *Langkawi: Journal of The Association for Arabic and English*, 32–44.
- 25) Saputra, A., & Hakim, M. A. R. (2020). The usage of cohesive devices by high-achieving EFL students in writing

Lexical Cohesion in Undergraduate Theses: A Quantitative Study in an Indonesian University

- argumentative essays. *Indonesian TESOL Journal*, 2(1), 42–58.
- 26) Swales, J. M. (1990). *Genre analysis: English in academic and research settings*. Cambridge university press.
- 27) Trebits, A. (2009). Conjunctive cohesion in English language EU documents—A corpus-based analysis and its implications. *English for Specific Purposes*, 28(3), 199–210.
- 28) Uz Bilgin, C., & Gul, A. (2020). Investigating the effectiveness of gamification on group cohesion, attitude, and academic achievement in collaborative learning environments. *TechTrends*, 64(1), 124–136.
- 29) Vujević, V. M. (2012). Ellipsis and substitution as cohesive devices. *Katedra Za Engleski Jezik I Književnost*, 407–416.
- 30) Wang, Y. (2019). A functional analysis of text-oriented formulaic expressions in written academic discourse: Multiword sequences vs. single words. *English for Specific Purposes*, 54, 50–61.
- 31) Wang, Y. (2022). Lexical Cohesion Patterns of Natural Science Academic Text and Implications for Lexical Teaching: Textual Analysis of IELTS Reading Passages. *Theory and Practice in Language Studies*, 12(5), 836–845.
- 32) Warna, D., Wijaya, B., Sartika, E., & Riznanda, W. A. (2019). Cohesive devices used in argumentative essays of undergraduate EFL students in Indonesia. *ENGLISH FRANCA: Academic Journal of English Language and Education*, 3(02), 125.



There is an Open Access article, distributed under the term of the Creative Commons Attribution – Non Commercial 4.0 International (CC BY-NC 4.0) (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits remixing, adapting and building upon the work for non-commercial use, provided the original work is properly cited.