



An Evaluation of Lexical Density in K13 English Textbooks: Aligning Text Complexity with Students' Proficiency Levels

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ABSTRACT

This study evaluates the lexical density of reading materials in the K13 English textbooks used in Indonesian secondary schools, focusing on the alignment of text complexity with students' cognitive abilities and language proficiency levels. A total of 10 reading texts from both junior and senior high school textbooks were analyzed, covering various genres including narrative, descriptive, expository, and functional texts. Lexical density, defined as the proportion of content words (nouns, verbs, adjectives, and adverbs) relative to the total word count, was calculated for each text. The results revealed significant variations in lexical density across genres, with descriptive and report texts exhibiting higher complexity, while genres like narratives and procedures showed a more balanced lexical composition. The study found that texts with higher lexical density may be challenging for lower-level learners, while more balanced texts are likely more accessible. These findings suggest that, while some texts are appropriately challenging, others may require adjustments to better cater to students' proficiency levels. The study highlights the importance of revising the K13 English textbooks to enhance their suitability for diverse learners and align more effectively with the goals of the K13 curriculum. The use of lexical density as an objective metric provides valuable insights for improving the readability and overall effectiveness of English language education in Indonesia. This research implies that curriculum designers and textbook authors should consider incorporating a wider range of text complexities to accommodate varying student proficiency levels, ensuring equitable learning opportunities and improved language development outcomes.

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INTRODUCTION

The K13 English textbooks reflect Indonesia's dedication to enhancing English language education in secondary schools by adopting a more comprehensive and student-centered approach. The curriculum promotes active learning, encouraging

students to engage with the material beyond passive memorization (Sulistiyo et al., 2021). Built on a competency-based framework, the K13 curriculum seeks to develop students' critical thinking abilities and practical language use in real-world scenarios. These textbooks emphasize reading comprehension as a fundamental aspect of language acquisition while accommodating diverse learners with varied proficiency levels through a balanced content mix. They also incorporate cultural elements to broaden students' perspectives and enrich their understanding of English in a global context.

However, concerns have been raised about the complexity of the reading materials, with some educators arguing that certain texts may not align well with students' proficiency levels (Susiati & Mufidati, 2020). This discrepancy has underscored the need for systematic evaluations of the textbooks to ensure they effectively meet educational objectives and support learners' needs. The K13 textbooks, as central resources under the Curriculum-13, play a vital role in implementing competency-based education, which aims to develop cognitive, affective, and psychomotor skills. Yet, educators have questioned their adequacy in addressing the diverse needs of students compared to privately published materials or those from the previous curriculum.

Evaluations of the textbooks have highlighted issues such as readability, text complexity, and cultural relevance, leading to calls for comprehensive revisions. By critically assessing these resources, stakeholders can identify necessary improvements to better align the textbooks with the curriculum goals and students' learning requirements. Such evaluations are crucial for ensuring that textbooks not only serve as instructional tools but also motivate and engage learners effectively (Richards, 2023).

In language education, textbooks must balance linguistic complexity and cognitive demand to ensure they are accessible yet sufficiently challenging for learners at various proficiency levels. Overly complex texts can frustrate students, while overly simplistic ones may hinder language development (Hastomo & Aminatun, 2023). Lexical density, which measures the proportion of content words in a text, is a useful metric for evaluating text complexity. High lexical density texts are more demanding and better suited for advanced learners, while lower density texts are accessible for beginners. This metric also provides insights into the relationship between vocabulary usage and sentence structure, offering a robust framework for textbook evaluation.

This study aims to analyze the appropriateness of the K13 textbooks' reading materials for different proficiency levels by examining their lexical density. It will evaluate whether the complexity of the texts increases progressively across junior and senior high school levels, as well as the diversity of genres represented in the textbooks. The findings will reveal whether the reading materials align with the K13 curriculum's objectives for fostering language proficiency and cognitive growth.

Additionally, the research will consider cultural relevance and the inclusion of diverse topics to ensure the textbooks reflect the realities of Indonesian learners.

The implications of this study are significant for policymakers, educators, and curriculum developers. The findings will provide actionable insights into revising the textbooks to better meet students' needs, ensuring a balance between text complexity and accessibility. This research underscores the importance of designing textbooks that support gradual language development, cater to diverse proficiency levels, and include culturally relevant content. Ultimately, the study aims to enhance the quality of English language education in Indonesia by contributing to the development of more effective teaching materials and strategies.

LITERATURE REVIEW

The evaluation of English language textbooks is a crucial aspect of ensuring that instructional materials meet the educational needs of students. In the context of the Indonesian educational system, the K13 English textbooks introduced as part of the Curriculum-13 (K13) have sparked considerable debate, particularly concerning the complexity of the reading materials included. This literature review examines key studies that address the role of textbooks in language learning, the concept of lexical density as a measure of text complexity, and the ongoing evaluation of educational resources in Indonesia, with a focus on the K13 curriculum.

Textbooks are essential resources in language education, serving as a central tool in shaping teaching practices and student learning outcomes. In English as a Foreign Language (EFL) contexts, textbooks play an even more significant role in facilitating language acquisition. Effective textbooks should be designed to cater to students' linguistic needs while providing appropriate challenges that support language development. A key aspect of textbook evaluation is determining whether the complexity of the materials aligns with students' proficiency levels and cognitive development. Several studies have shown that well-structured textbooks can positively influence student motivation, engagement, and language proficiency (Lee & Li, 2019). Conversely, poorly designed textbooks that fail to match students' needs may lead to disengagement and hinder language learning progress.

The K13 English textbooks, introduced as part of the 2013 Curriculum reform, aimed to improve English language teaching in Indonesia by aligning textbooks with competency-based education. However, the readability and appropriateness of the reading materials have been questioned by educators, leading to a significant body of research focused on evaluating the textbooks' effectiveness (Sulistiyo et al., 2021). These concerns reflect broader debates about the role of textbooks in shaping educational quality and their capacity to meet the diverse needs of learners in a multicultural and multilingual society like Indonesia.

Lexical density has emerged as a valuable tool in assessing text complexity, particularly in language teaching. Lexical density refers to the proportion of content

words (nouns, verbs, adjectives, and adverbs) relative to the total number of words in a text. A higher lexical density indicates that a text is more informationally rich and cognitively demanding, which may be challenging for learners, especially at lower proficiency levels (Kim & Paek, 2015). This metric has been widely applied in discourse analysis and language teaching research to evaluate the complexity of reading materials. Rahman (2019) expanded the concept by linking lexical density to syntactic structure, proposing that complex sentences with high lexical density can increase the cognitive load on learners.

The use of lexical density to evaluate textbooks, particularly in EFL contexts, has gained traction in recent years. Lexical density analysis to evaluate reading materials in textbooks, highlighting its effectiveness in identifying texts that may be too complex for the target audience (Singh & Shaari, 2019). The application of lexical density to Indonesian EFL textbooks, such as the K13 English textbooks, can offer valuable insights into whether the texts are suitable for students at different educational stages. Previous research on Indonesian EFL textbooks has indicated that many texts include a high degree of lexical density, which may be overwhelming for students at lower levels of proficiency (Sulistiyo et al., 2021).

Several studies have critically examined the K13 English textbooks to assess their suitability for Indonesian students. Khusna (2021) emphasized the importance of aligning textbooks with the K13 curriculum's emphasis on developing students' cognitive, affective, and psychomotor skills. However, concerns have arisen regarding the appropriateness of the reading materials in terms of their complexity, content, and alignment with the curriculum's objectives. One of the main criticisms of the K13 textbooks is that the reading texts, particularly in junior high school books, tend to be too complex for students at the beginning stages of English learning (Sulistiyo et al., 2021). This has led to a call for a more systematic approach to evaluating the textbooks, using objective measures such as lexical density.

Recent research has also focused on the resistance among teachers toward the quality of the K13 textbooks. According to Sari (2016), many educators have expressed dissatisfaction with the textbook's content, especially when compared to private publishers' textbooks or the older KTSP English textbooks. This has sparked further discussions about the need for evidence-based evaluations of textbooks, considering both teachers' feedback and objective measures of text complexity. Widagsa (2022) also noted that textbooks in foreign language teaching should not only be evaluated based on their alignment with curriculum objectives but also on their effectiveness in promoting student engagement and language acquisition.

The ongoing evaluation of textbooks plays a crucial role in ensuring that educational materials continue to meet the evolving needs of students. As Singh & Shaari (2019), textbook development should be a continuous process that incorporates feedback from both teachers and students, ensuring that the materials remain relevant and effective. This iterative approach allows for timely revisions that

improve the alignment of textbooks with current pedagogical practices. In the case of the K13 English textbooks, such feedback is especially important to address concerns about content variety, cultural relevance, and alignment with students' language proficiency levels. Widagsa (2022) further emphasized that textbooks should be tailored to accommodate the diverse needs of learners, as a one-size-fits-all approach is often ineffective in language teaching. Moreover, textbooks should include a balance of accessible and challenging materials, catering to the range of proficiency levels found in any classroom. By considering factors such as linguistic diversity, cultural context, and cognitive development, textbooks can more effectively support student engagement and language acquisition. This approach aligns with the broader call for more flexible and responsive teaching materials, which can be adapted to meet the specific needs of students and improve learning outcomes.

Several scholars have suggested that textbooks should incorporate a balanced mix of accessible and challenging content to meet the diverse needs of students. This approach would not only improve reading comprehension but also help motivate learners by offering achievable goals, thus enhancing student engagement (Sari, 2016). Khusna (2021) argued that a flexible approach to textbook design is essential, where teachers have the autonomy to adapt materials based on their students' specific needs and contexts. By allowing teachers to adjust the complexity of the texts according to the students' proficiency levels, textbooks can be more effective in catering to a wide range of learning abilities. This flexibility also supports differentiated instruction, where learning materials are tailored to provide appropriate challenges for all students. Furthermore, such an approach enables textbooks to be more responsive to cultural and contextual differences, fostering a more inclusive learning environment. In addition, including both easier and more difficult texts ensures that students are gradually challenged, helping them build confidence as they progress in their language learning journey. Ultimately, this strategy can enhance the educational value of textbooks and improve language acquisition outcomes across various learner groups.

The evaluation of the K13 English textbooks using lexical density as a measure of text complexity is a critical step toward ensuring that the textbooks meet the needs of Indonesian students. While the K13 textbooks aim to support language development in line with the 2013 curriculum, concerns about text complexity highlight the need for ongoing evaluation and improvement. By applying objective metrics such as lexical density, researchers can assess the appropriateness of the texts and identify areas for enhancement. The findings from this study will contribute to the broader discourse on textbook evaluation, helping to shape future revisions of the K13 English textbooks to better support the language learning goals of Indonesian students.

METHOD

This study employs a quantitative research design to evaluate the lexical density of reading materials in the K13 English textbooks used in Indonesian secondary schools. The focus is on assessing whether the complexity of the texts aligns with the cognitive abilities and language proficiency levels of students in both junior and senior high school. A total of 10 reading texts from each grade level (junior and senior high school) will be randomly selected from the textbooks, covering various genres such as narrative, descriptive, and expository texts. The lexical density of each text will be calculated by determining the proportion of content words to the total word count, providing an objective measure of text complexity.

The data analysis will compare the lexical density scores of the texts from junior and senior high school textbooks to determine if they are appropriately challenging for students at different educational stages. Additionally, the study will identify patterns in text complexity based on genre and examine how well the texts align with the cognitive and language proficiency goals of the K13 curriculum. To complement the lexical density analysis, a survey will be conducted with 30 English language teachers to gather qualitative insights into the effectiveness and appropriateness of the textbooks in the classroom.

Ethical considerations will be followed to ensure that all data collection respects participants' privacy, and the results will provide constructive feedback for improving the textbooks. While the study is limited by the sample size of texts analyzed, it aims to offer valuable insights into the quality of the K13 English textbooks and their effectiveness in supporting language learning. The findings will inform future revisions of the textbooks and contribute to the broader discussion on educational resource quality in Indonesia.

RESULTS AND DISCUSSION

RESULTS

Table 1. Text Analysis of Ninth-Grade Junior High School Students

Genre	Nouns	Adjectives	Verbs	Adverbs	Prepositions	Pronouns	Auxiliary Verbs
Descriptive	32.94%	5.88%	9.41%	7.06%	8.24%	10%	2.94%
Recount	21.28%	3.55%	14.18%	3.55%	3.55%	11.35%	4.96%
Narrative	29.8%	7.76%	11.02%	4.08%	13.47%	5.31%	4.9%
Report	35.83%	8.02%	9.63%	2.67%	13.37%	1.07%	4.28%
Procedure	32.14%	8.04%	14.29%	2.68%	12.5%	4.46%	0.89%

Table 1 reveals significant variations in lexical density across different genres in the K13 English textbooks, highlighting the complexity of the reading materials provided to students. The first set of data, which focuses on genres such as descriptive, recount,

narrative, report, and procedure texts, shows that the distribution of lexical components—nouns, adjectives, verbs, adverbs, prepositions, pronouns, and auxiliary verbs—varies considerably across these genres. For example, descriptive texts feature a higher percentage of nouns (32.94%), suggesting a greater emphasis on providing detailed descriptions. In contrast, reports show the highest percentage of nouns (35.83%) and prepositions (13.37%), indicating a focus on factual information and relationships. The balanced lexical distribution in narratives, with a significant proportion of adjectives (7.76%), highlights their reliance on descriptive language to engage readers emotionally.

Table 2. Topic Analysis of Texts from Ninth-Grade Junior High School Students

Genre	Nouns	Adjectives	Verbs	Adverbs	Prepositions	Pronouns	Auxiliary Verbs
Application letter	32.91%	7.59%	11.39%	2.53%	12.66%	8.86%	5.7%
Caption	32.43%	4.5%	7.21%	4.5%	15.32%	9.91%	6.31%
News item	41.51%	1.51%	10.19%	1.89%	11.32%	1.89%	6.04%
Report	29.27%	4.88%	13.41%	4.88%	9.76%	3.66%	2.44%
Tips	28.47%	9.03%	13.89%	5.56%	9.72%	4.86%	4.86%

Table 2 shows functional text types like application letters, captions, news items, reports, and tips, shows further patterns in lexical density. Application letters and news items both exhibit a high percentage of nouns (32.91% and 41.51%, respectively), which indicates their focus on conveying essential information in a clear, structured manner. News items, with a notably low percentage of adjectives (1.51%), are particularly straightforward and fact-based, highlighting their informative nature. The use of auxiliary verbs across all genres is generally low, with application letters and captions exhibiting the highest percentages (5.7% and 6.31%, respectively). This suggests that these genres tend to use more formal, structured language. The frequency of nouns and verbs in reports and tips is similar, but the use of adverbs and adjectives differs, indicating a more descriptive or explanatory approach in these texts.

The analysis reveals that the lexical density of these texts influences their readability and complexity. Texts with higher lexical density, such as descriptive and report genres, may present challenges for lower-level learners due to the greater cognitive load they impose. On the other hand, genres like narrative and procedure texts, which exhibit a more balanced distribution of lexical elements, may be more accessible to students, especially at earlier stages of language learning. The varying frequency of lexical components in different genres suggests that some texts may be more suitable for certain proficiency levels, while others may require modification to align with students' cognitive abilities (Sari, 2016).

In particular, the use of fewer auxiliary verbs and adverbs in genres such as news items and application letters suggests that these texts are less syntactically complex, focusing instead on delivering factual and straightforward information. This can be beneficial for students who may struggle with more complex sentence structures, making these genres more accessible and easier to comprehend. Additionally, texts with a lower density of adjectives and adverbs may be less engaging for students who benefit from more descriptive and varied language to capture their attention and improve comprehension (Khusna, 2021).

The findings also validate teachers' concerns regarding the complexity of the K13 textbooks, especially in genres with high lexical density. These texts may require additional support or modifications to ensure that students can engage with them effectively. For instance, texts with high lexical density may be overwhelming for lower-level learners, necessitating a more gradual introduction to complex vocabulary and structures. Teachers may need to provide supplementary materials or strategies to help students navigate these texts and develop the necessary skills for comprehension.

In conclusion, the use of lexical density as an objective metric for evaluating text complexity offers valuable insights into the appropriateness of reading materials in the K13 English textbooks. The findings suggest that while some genres and text types are well-suited for students at different proficiency levels, others may require revision to better align with students' cognitive abilities and language development. Future revisions of the K13 English textbooks should consider these insights, ensuring that the reading materials are both challenging and accessible to a wide range of learners. This approach can help improve the overall quality and effectiveness of the textbooks in supporting English language learning in Indonesia.

CONCLUSION

The analysis of lexical density across various genres in the K13 English textbooks provides valuable insights into the complexity and readability of the texts used in Indonesia's secondary education system. The findings reveal significant variation in lexical density, with descriptive and report genres exhibiting higher proportions of nouns and prepositions, indicating a more complex informational structure. In contrast, genres such as narratives and procedures are more balanced in their lexical composition, potentially making them more accessible to students. Additionally, functional text types like application letters and news items emphasize clarity and factual information, with relatively lower lexical complexity.

These results underscore the need for careful consideration of text complexity in the K13 English textbooks, particularly in terms of ensuring that the materials align with students' cognitive and language proficiency levels. While some texts may be suitably challenging, others could pose difficulties for lower-level learners, hindering their engagement and comprehension. The use of lexical density as an objective metric in this study has highlighted areas where textbooks could be

adjusted to better cater to the needs of students, particularly in terms of balancing complexity across different genres and text types.

In conclusion, the findings suggest that the K13 English textbooks, while an essential resource for language learning, may benefit from revisions that take into account the diversity of learners' abilities and the varying complexity of the reading materials. By addressing these issues, the textbooks can better support the goals of the K13 curriculum, fostering language proficiency and enhancing the overall effectiveness of English language education in Indonesia.

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