

Do Reading Difficulty Factors Affect TOEFL Reading Scores? : A Study of Non-English Major Students

Eka Fajar Rahmani*, & Chandra Fauzi

Department of English Language Education, Universitas Tanjungpura, Indonesia

*Corresponding email: ekasastria10@fkip.untan.umm.ac.id

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Abstract: Reading comprehension is quite important for non-English major students especially in academic settings where access to English-language resources is required. Objective: The purpose of this study is to investigate among 143 non-English major students at Universitas Tanjungpura the relationship between the observed reading comprehension difficulties and TOEFL reading performance. Method: Using a descriptive correlational design, data were collected through a 25-item Likert-scale questionnaire measuring five key variables: vocabulary knowledge, grammatical complexity, prior knowledge, test anxiety, and time constraint. TOEFL reading scores were obtained from Educational Testing Service (ETS) practice tests. Findings: Pearson correlation analysis revealed a modest but statistically significant positive correlation between perceived difficulty factors and TOEFL reading scores ($r = 0.3497$, $p < .01$). Among the variables, vocabulary knowledge ($r = 0.428$, $p < .01$) and grammatical complexity ($r = 0.397$, $p < .01$) showed the strongest relationships with performance. Multiple regression analysis confirmed that all five factors accounted for 23.2% of the variance in TOEFL reading scores ($F(5,137) = 9.314$, $p < .001$), with vocabulary knowledge ($\hat{\alpha} = .259$, $p < .01$) and grammatical complexity ($\hat{\alpha} = .220$, $p < .05$) emerging as the most significant predictors. These results demonstrate how important it is to include psychological and language elements into reading instructions. This study offers a novel addition by linking students' perceived reading difficulties with actual exam performance in the understudied setting of Indonesian non-English majors. Conclusion: This study emphasizes also the importance of customized teaching strategies addressing particular challenges experienced by these students. Teachers or lecturers, in this situation, can better help non-English majors in raising their reading competence and general academic achievement by concentrating on strengthening vocabulary and grammatical knowledge. Future studies urged to investigate other elements including reading techniques and student motivation.

Keywords: correlational study, non-English major students, perceived difficulties, reading comprehension, TOEFL.

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■ INTRODUCTION

Reading comprehension is a crucial component of academic achievement for non-English major students whose areas of study require interaction with English-language resources. Research indicates that students with low reading comprehension abilities frequently

find it difficult to understand or comprehend academic materials that can support their study success (Arifin, 2020; Kazemi et al., 2020; Riadil, 2020; Saeedi et al., 2016) reading since much of textbooks, research papers, and reliable online resources are written in English. Good reading comprehension, instead, also promotes

critical thinking and analytical abilities, which are necessary for academic writing, research presentations, and overall academic success (Aloqaili, 2012; Astuti & Nurhayati, 2023; Oguntade, 2021; Suwanaroa, 2021; Wigfield et al., 2016).

Although important, many tertiary students especially those majoring outside English have significant difficulty developing effective reading comprehension skills. Combining psychological, cognitive, and linguistic factors, these challenges restrict students' ability to retain and recall content from English-language texts. Students' reading capacity can be raised only if they are aware of these challenges. Many theoretical models provide the conceptual foundation for this work and together help to clarify the complexity of reading comprehension. The Simple View of Reading by Hoover and Gough (1990) stresses that two basic components constitute reading comprehension: decoding that is, recognition of printed words and language comprehension that covers vocabulary and syntax. Any component has flaws that lead to less understanding. Complementing this, Schema Theory (Anderson & Pearson, 1984) emphasizes the critical role background knowledge plays in understanding text. Students especially non-English majors with little exposure to academic English have difficulty really relating to material without some prior understanding.

Complementing this approach are Test Anxiety Theory (Sarason, 1984) and Cognitive Load Theory (Sweller, 1994), which serve to clarify how situational and emotional factors further hinder knowledge. Although excessively intense cognitive demands such as complex syntax or new language under time pressure may stress working memory, elevated anxiety can disrupt attention and memory. These concepts taken together offer a whole lens through which to view the interaction of language competency, cognitive assembly, and emotional control in

reading comprehension. Interpreting how non-English major students do on examinations like the TOEFL Reading section calls specifically for this comprehensive perspective.

Proven by previous research, even tertiary students majoring in English struggle with this portion, resulting in worse grades that eventually affect their general academic performance (Alkhawaldeh, 2012; Arifin, 2020; Guntur & Rahimi, 2019; Jala, 2020; Rahmani et al., 2023; Riadil, 2020; Suwanaroa, 2021; Taladngoen et al., 2020). It is also reported to happen in TOEFL reading comprehension section (Fajri, 2019; Fitria, 2022; Friska, 2022; Girsang et al., 2019; Maizarah, 2019; Samad et al., 2017) TOEFL test-takers commonly report reading comprehension issues, including main idea identification, inference drawing, vocabulary understanding, and supporting detail reference recognition, and some difficulty factors, such as vocabulary and reading strategies. These studies, therefore, mostly depict the kinds of challenges students experience rather than looking into whether their TOEFL reading scores are really related to their reported challenges. Furthermore, most of the research has concentrated on EFL or English-majoring students, which results in a lack of knowledge about how non-English-major students view their reading difficulties and whether such views affect their test results.

Like many Indonesian universities, Universitas Tanjungpura requires students for thesis defense to pass the TOEFL test. However, non-English major students usually get only one semester of official English teaching, which greatly reduces their exposure to academic reading procedures and test-taking techniques. As a result, many of these students face considerable difficulty, particularly in the TOEFL reading section, which demands a high level of vocabulary, grammar, and comprehension under time constraints. Internal reports and anecdotal classroom observations indicate that a large

proportion of non-English major students either fail to meet the required TOEFL threshold or repeatedly struggle with the reading component. Particularly in relation to non-English majors in Indonesia, no study has precisely looked at the degree to which student's apparent reading comprehension problems correlate with their actual TOEFL reading scores.

Examining the relationship between perceived reading difficulty characteristics and TOEFL reading scores among non-English major students at Universitas Tanjungpura allows this study to close that gap. It especially looks at whether TOEFL performance can be much predicted by these reported obstacles spanning vocabulary knowledge, grammar, background knowledge, anxiety, and time constraints so offering data-driven insights into the difficulties these students experience. The study attempts to answer the following a research question in order to meet those objectives, which is To what extent do perceived reading difficulty factors relate to and predict TOEFL reading comprehension scores among non-English major students? This goal leads one to develop the following hypotheses: Null Hypothesis (H_0): There is no significant relationship between perceived reading difficulty factors and TOEFL reading comprehension scores among non-English major students; the factors do not significantly predict students' performance. Alternative Hypothesis (H_a): There is a significant positive relationship between perceived reading difficulty factors and TOEFL reading comprehension scores among non-English major students; the factors significantly predict students' performance.

■ **METHOD**

Research Design and Procedure

Using a quantitative correlational research design, this study investigated the relationship between five perceived reading difficulty factors vocabulary knowledge, grammatical complexity,

prior knowledge, test anxiety, and time constraints and TOEFL reading comprehension scores of non-English major students. Creswell (2014) advised a quantitative method be used to methodically evaluate and examine these factors without intervention. More especially, the degree and direction of correlations among the variables were ascertained using a descriptive correlational approach (Gall et al., 2007).

The research was carried out for three months from September to November 2024. The study followed these steps: (1) developing and validating a 25-item Likert-scale questionnaire based on theoretical frameworks; (2) piloting the questionnaire to ensure its reliability, which yielded a Cronbach's Alpha of 0.83; (3) administering the final questionnaire to 143 purposively selected non-English major students at Universitas Tanjungpura; (4) collecting TOEFL reading scores from students' performance on ETS-based TOEFL practice tests; and (5) analyzing the data using Pearson correlation and multiple regression techniques via Microsoft Excel. The objective of this systematic approach was to offer empirical analysis of how psychological, cognitive, and linguistic elements affect reading comprehension performance.

Participants

The participants of this research were non-English major students selected through a purposive sampling technique. A total of 81 Civic Education and 62 Sports and Health Education (PKO) students from Universitas Tanjungpura were chosen. These study programs were selected not only for their accessibility, based on the researchers's prior teaching experience, but also due to their relevance to the research context. Students from these programs typically receive minimal English instruction often limited to one semester and have little exposure to academic English texts, making them particularly susceptible to reading comprehension challenges in tests like the TOEFL. Their academic backgrounds, which

are not language-focused, present a valuable opportunity to examine how non-English major students perceive and perform in English reading tasks.

Although this selection approach includes aspects of convenience sampling, it remained deliberate as the participants met the inclusion criteria pertinent to the study goals (Patton, 2015). This convenience sampling may introduce potential bias. This limitation is acknowledged and will be discussed in the limitations section of the study, particularly in relation to the generalizability of the findings to other non-English major populations beyond the selected programs

Instrument

Two main instruments were used in data collecting: a Likert-scale questionnaire meant to assess perceived reading difficulty factors and a TOEFL reading comprehension score derived from Educational Testing Services (ETS) practice tests. To guarantee focused participation, the data collecting was place in two different phases between September and November 2024. First, each study program received a controlled, proctored environment for the ETS-based TOEFL reading practice test, which consists of 50 multiple-choice questions. While the Civic Education and PKO examinations were scheduled at separate times, both were under observation by the researchers to uphold test integrity.

Depending on the timing of their program, the students were requested to finish a 25-item questionnaire on the same day or within a few days following their testing session. To guarantee understanding and compliance, the questionnaire was responded in a classroom under researcher direction. This two-stage approach guaranteed that students' perceptions of reading challenges were faithfully matched to their test experience, therefore enabling more accurate analysis of the variables likely to affect their TOEFL reading performance.

The questionnaire, particularly, was developed based on the acknowledged theoretical frameworks, including Simple View of Reading consisting of assessing vocabulary knowledge and syntactic complexity (Hoover & Gough, 1990), prior knowledge derived from Schema Theory (Anderson & Pearson, 1984), test anxiety (Sarason, 1984), and cognitive load related to time constraints (Sweller, 1994). Using a five-point Likert Scale, the questionnaire consisted of closed-ended questions ranging from strongly disagree (1) to strongly agree (5). The questionnaire used Bahasa Indonesia to guarantee clarity and correctness in responses since the participants were non English major students. Dörnyei and Taguchi (2009) suggested that when assessing psychological and cognitive aspects influencing reading comprehension, using the native tongue reduces answer mistakes and improves validity. To give a clearer picture, here are sample items from the questionnaire:

“Saya kesulitan memahami bacaan TOEFL karena banyak kosakata yang tidak saya ketahui” (vocabulary knowledge) *“Saya merasa cemas saat mengerjakan bagian reading TOEFL meskipun saya sudah belajar sebelumnya”* (test anxiety) *“Saya kesulitan memahami isi bacaan karena tidak memiliki pengetahuan sebelumnya tentang topiknya”* (prior knowledge)

Before official distribution, the questionnaire was piloted to a small group on non-participant students to assess its validity and reliability. The instrument consisted of twenty-five items divided into five constructs (can be seen in the specification table in Table 1 in this section). The result of piloting showed high internal consistency with a Cronbach's Alpha value of 0.82, indicating strong reliability. Furthermore, construct validity tested using Pearson Product Moment correlation (r) resulted significant correlations ($r = 0.513 - 0.778$, $p < 0.01$), confirming that each item was valid and measured the intended construct. Moreover, to guarantee and ensure the regression value

Table 1. The specification of questionnaire items

Aspect	Question number	Total
Vocabulary knowledge	1.2.3.4.5	5
Syntactic complexity	6.7.8.9.10	5
Background knowledge and text familiarity	11.12.13.14.15	5
Test anxiety	16.17.18.19.20	5
Time constraints and cognitive load	21.22.23.24.25	5
Total		25

Data analysis

Pearson correlation analysis was used to examine the strength and direction of correlations between TOEFL reading scores and the identified factors. The results clarified which psychological, cognitive, or linguistic component students' reading comprehension performance most substantially correlated with. Multiple regression analysis was also done to evaluate how all of these factors taken together affect TOEFL reading levels. The overall importance of the regression model was determined using the F-statistic, which showed if the independent variables vocabulary knowledge, grammatical complexity, prior knowledge, reading strategies, test anxiety, and time constraints together predicted how well students understood what they read. By controlling for other variables, this study offered a more thorough understanding of the degree to which each factor specifically contributed to students' TOEFL reading results.

To ensure the reliability of the multiple regression analysis, the normality of the residuals as the necessary statistical assumption was tested. The normality of the residuals was tested using Saphiro-Wilk test, resulting the p – value of 0.187. This result suggested that the data were nearly normal distributed ($p > 0.05$). Then, for the hypothesis testing, the significance level (α) was set at 0.05. A p-value less than this ($p\text{-value} < 0.05$) showed a statistically significant outcome that resulted in the null hypothesis being rejected and hence established the presence of a significant correlation between the variables. On the other

hand, a p-value > 0.05 indicated no significant correlation; hence, the null hypothesis was accepted.

RESULT AND DISCUSSION

Pearson correlation analysis was conducted to examine the relationship between reading difficulty factors (X1-X6) and TOEFL reading scores (Y). The analysis results show that, in general, there is a significant positive relationship between reading difficulty factors and TOEFL reading scores. The average correlation between reading difficulty factors (X) and TOEFL reading scores (Y) is $r = 0.3497$, indicating that the perceived reading difficulty factors and TOEFL reading scores have a modestly positive correlation. It means that as participants report higher degrees of difficulty in vocabulary knowledge, grammatical complexity, prior knowledge, test anxiety, and time constraints, their TOEFL reading scores tend to vary in a rather predictable manner. Commonly, more perceived difficulty is associated with lower scores and less perceived difficulty with higher scores. Though these factors are correlated with reading performance, the weak correlation indicates that additional variables could potentially be impacting the TOEFL scores of the students. However, the positive correlation shows that apparent difficulties clearly influence reading comprehension performance. Referring to the hypothesis statement, the null hypothesis (H_0), which states TOEFL reading scores have no significant correlation with perceived reading difficulty factors, is rejected.

More specifically, as Table 2, Figure 1 and Figure 2 in this section show, all five independent factors (X1 – X5) showed significant positive correlations with TOEFL reading scores at the 0.01 significant level. Vocabulary knowledge exhibited the strongest correlation ($r = 0.428$, $p < .01$), followed by grammatical complexity ($r = 0.397$, $p < .01$), time constraints ($r = 0.288$, $p < .01$), and test anxiety ($r = 0.262$, $p < .01$). These results indicate that students who reported greater linguistic and cognitive resources, and lower test anxiety and time pressure, tended to achieve

higher TOEFL reading scores. The detailed results of the multiple regression analysis are summarized in Table 3, which includes unstandardized coefficients (B), standardized coefficients ($\hat{\alpha}$), standard errors, t-values, and p-values for each predictor. Although vocabulary knowledge ($\hat{\alpha} = .259$, $p < .01$) and grammatical complexity ($\hat{\alpha} = .220$, $p < .05$) emerged as the strongest individual contributors, all five factors were included in the model evaluation, regardless of their individual significance levels.

Table 2. r-Value of perceived reading difficulty factors

Factors	Correlation Coefficient (r)	Significance (p)
Vocabulary knowledge	0.428	< .01
Syntactic complexity	0.397	< .01
Background knowledge and text familiarity	0.373	< .01
Test anxiety	0.262	< .01
Time constraints and cognitive load	0.288	< .01

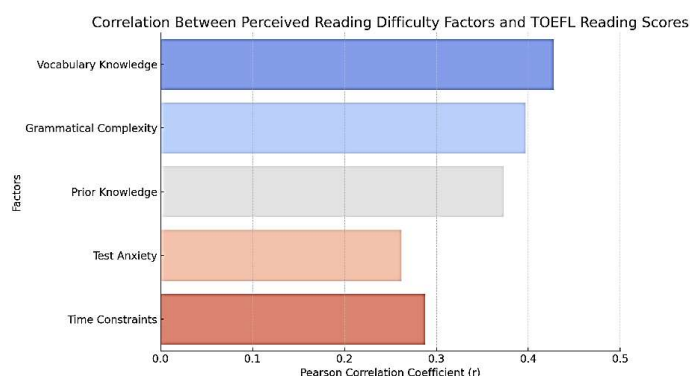


Figure 1. Visualization of the correlation between x and y variables

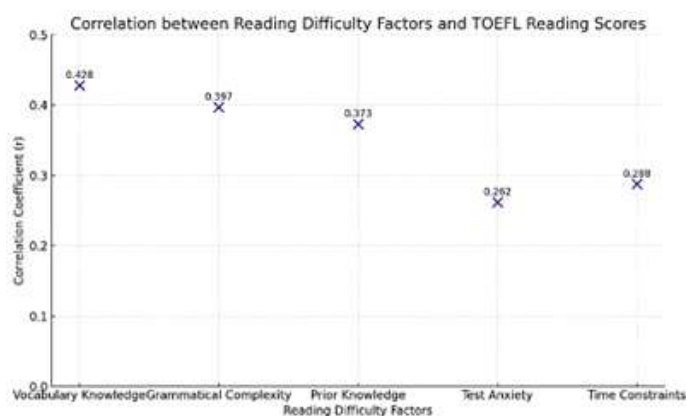


Figure 2. Scatter plot visualization

Table 3. Regression analysis summary for perceived reading difficulty factors predicting TOEFL reading scores

Predictor	B	SE	β	T	P
Vocabulary knowledge	8.542	2.721	.259	3.14	.002**
Syntactic complexity	7.413	3.018	.220	2.46	.015*
Background knowledge and text familiarity	5.312	2.888	.165	1.78	.077
Test anxiety	3.256	2.571	.118	1.27	.206
Time constraints and cognitive load	4.018	2.489	.130	1.61	.110
(Constant)	12.507	6.318	-	1.98	.050

To better grasp how these factors influence students' TOEFL reading results, a multiple regression analysis was performed. With $F(5,137) = 9.314$ and $p = .001$, the findings revealed the model to be statistically significant, indicating that the combination of vocabulary knowledge, grammatical complexity, prior knowledge, test anxiety, and time constraints contributed meaningfully to predicting reading scores. The model's adjusted R^2 value of 0.232 suggest that approximately 23.2% of the variance in TOEFL reading comprehension could be explained by these five perceived difficulty factors. This leaves around 78.6% of the variance unexplained implying that many other influences, such as motivation, metacognitive reading strategies, quality of prior English instruction, and reading fluency, likely play significant roles and warrant exploration in future research.

Among the predictors, vocabulary knowledge ($\hat{\alpha} = .259$, $p < .01$) and grammatical complexity ($\hat{\alpha} = .220$, $p < .05$) were the most important and clearly affected reading scores. This finding is consistent with psycholinguistic framework suggesting that vocabulary breadth and grammatical competence form the foundation of language comprehension processes (Fitria, 2022; Lesaux & Harris, 2017; Muziatun et al., 2024; Sevinj Huseynova, 2019; Suwanaroa, 2021). For non-English major students who typically have limited English exposure, a strong command of basic vocabulary and syntactic likely serves as the primary gateway to understanding

academic texts (Gunantar & Rosaria, 2023; Meladina & Dasril, 2021; Rahma et al., 2022; Yoestara & Putri, 2019). Without sufficient word recognition or syntactic parsing ability, these students may struggle to access deeper comprehension processes.

On the contrary, prior knowledge, test anxiety, and time constraints showed smaller and less significant predictive contributions. This could be attributed to the standardized nature of TOEFL reading passages, which often assume a baseline academic familiarity and offer contextual clues, reducing the impact of prior domain knowledge. Similarly, although test anxiety and time pressure are known to affect cognitive processing (Sarason, 1984; Sweller, 1994), their effects may have been less pronounced among this sample because reading comprehension tasks, compared to productive language tasks, like speaking, typically allow more controlled pacing. These findings point out that while emotional and cognitive factors matter, linguistic proficiency remains the dominant factors of reading comprehension of this sample. This emphasizes the requirement of assisting students in enhancing their grammar and vocabulary abilities as well as in creating techniques for time and anxiety management throughout the test.

The result of the r -value implies that students who were less anxious and time-constrained or who believe they are more competent in grammar and vocabulary frequently score better. Although the strength of the correlations was low, the

consistent significance across all the variables shows that students' opinions of their challenges are closely related to their performance. This validates the theory put up in the introduction that reading comprehension is an intricate procedure including not just language knowledge but also emotional and cognitive factors.

The regression study brought still more understanding. Demonstrating 23.32% of the variance in reading scores, the regression was statistically significant ($F(5, 137) = 0.314, p < .001$). In accordance with the Simple View of Reading, which stresses the relevance of language comprehension and decoding skills, vocabulary knowledge and grammatical complexity were the most important predictors of the ones available. Although the impact was not large, prior knowledge, test anxiety, and time restrictions also contributed to the model. These results confirm schema theory and cognitive load theory by showing how significant yet additional background knowledge and situational stresses are in determining reading performance. This study both validates and expands on earlier research results. Like other studies (Astuti & Nurhayati, 2023; Galloway & Lesaux, 2015; Oguntade, 2021; Suwanaroa, 2021; Taladngoan et al., 2020; Wigfield et al., 2016; etc.), the findings underline how important reading comprehension is for academic performance and how impacted it is by the several related factors.

Many of these earlier studies were mostly based on theories or focused on English majors or EFL students, often pointing out the reading mistakes students made, like having trouble with inferences, main ideas, or vocabulary (Alkhawaldeh, 2012; Arifin, 2020; Guntur & Rahimi, 2019; Jala, 2020; Rahmani et al., 2023; Riadil, 2020), but they did not look into whether these difficulties matched up with how well students performed on tests. This work fills that gap by providing real data that connects students' actual TOEFL reading scores to how they view their reading challenges. This work closes that

gap by offering factual, correlational data linking students' actual TOEFL reading results to their perceptions of their reading problems. Moreover, it draws attention to particular participants, non-English major students, who, despite different difficulties resulting from limited formal English education and less exposure to academic readings, are often underrepresented in the literature.

The practical implications of these findings are obvious and significant. They advise English language teaching for non-English major students to prioritize vocabulary growth and grammatical awareness, consistent with the Simple View of Reading (Hoover & Gough, 1990), which considers language comprehension a fundamental component of reading ability. In agreement with this, researchers (Brooks et al., 2021; Galloway & Lesaux, 2015; Girsang et al., 2019; I. S. P. Nation, 2013; P. Nation, 2006; Pramesti, 2023; Suwanaroa, 2021) emphasize how important vocabulary knowledge is for helping students understand texts, and Purpura (2014) supports this by saying that knowing grammar is crucial for understanding challenging learning materials.

Teachings should also cover time management and test-related anxiety, drawing on Test Anxiety Theory (Sarason, 1984), which shows how stress during tests compromises concentration and performance. Wigfield et al. (2016) also discovered that anxiety reduces students' cognitive processing and encouragement throughout reading assignments. Furthermore, advised by Cognitive Load Theory (Sweller, 1994), the overload of working memory is caused by too much information processing under time constraints, therefore impairing understanding. Research by Genç and Gülözer (2013); Karmapýk et al. (2024); and Oguntade (2021) supports this idea by showing that reading under time pressure usually leads to less deep understanding and lower accuracy in comprehension tasks. Targeting both cognitive (vocabulary, grammar, previous knowledge) and

affective (anxiety, time restrictions) factors can help teachers support students' reading growth. According to Koehler (2021) and Lewis (2001), knowing student perceptions and emotional reactions can greatly improve the quality of instruction. Therefore, including techniques that improve language knowledge while lowering emotional and situational obstacles will enable non-English major students to interact with greater confidence with English academic readings and perform more effectively on high-stakes tests like the TOEFL tests.

■ CONCLUSION

This study demonstrated a significant positive correlation between perceived difficulties in reading comprehension that is, vocabulary knowledge, grammatical complexity, prior knowledge, test anxiety, and time constraints and TOEFL reading scores among non-English major students at Universitas Tanjungpura. The findings imply that students' self-reported problems are actual causes affecting their academic reading performance rather than only personal impressions. Underlining the crucial part of language ability in supporting reading comprehension, grammatical complexity and vocabulary knowledge emerged as the strongest predictors among all the variables studied. These results support the knowledge that reading difficulties are complex and include emotional as well as cognitive aspects that together affect students' academic performance.

Still, certain limits of this research have to be admitted. The sample consisted just from one university and limited to Civic Education and PKO students, so possibly limiting the generalizability of the results to other student populations. Furthermore adding unpredictability in evaluating students' actual reading competency is the use of ETS practice TOEFL scores instead of authentic TOEFL results. Moreover, the correlational approach used avoids inferences on causality between reading skills and seeming difficulties. Furthermore deserving of careful

interpretation of the results are possible biases resulting from methods of purposeful and convenience sampling. Future studies should investigate other elements including digital reading environments, learning motivation, metacognitive reading strategies, and previous quality of English instruction, so addressing these constraints by involving different student groups across several institutions, using official TOEFL assessments where appropriate. More thorough and inclusive knowledge of the academic reading needs of non-English major students will result from increasing study in these directions.

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