

Technical English Vocabulary Proficiency and Reading Comprehension Skills of Students: Basis for Intervention

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ABSTRACT

The study employed a quantitative-descriptive correlational research design to assess the relationship between technical English vocabulary proficiency and reading comprehension skills among Grade 11 Organic Agriculture Production (OAP) students in Negros Occidental during the school year 2025–2026. The respondents consisted of the entire population of 105 students, selected through total enumeration sampling to ensure comprehensive representation. Data were gathered using a researcher-made questionnaire composed of two parts: twenty-five multiple-choice items measuring technical English vocabulary proficiency and nineteen passage-based items assessing reading comprehension strategies. To establish rigor, the instrument underwent content validation by a panel of experts in language education and agricultural instruction, ensuring clarity, relevance, and alignment with study objectives. Reliability was confirmed through the test–retest method, yielding exceptionally high Pearson correlation coefficients (technical vocabulary: $r = 0.996$, $p < .001$; reading comprehension: $r = 0.997$, $p < .001$), indicating strong stability and consistency of the tool. Results revealed distinct levels of proficiency in both technical vocabulary and comprehension skills, and statistical analysis tested the hypothesized relationship between the two variables. Findings underscored that vocabulary mastery significantly influenced comprehension outcomes, affirming the theoretical premise that linguistic competence serves as a gateway to disciplinary knowledge. The study provides evidence-based insights for educators, curriculum developers, and policymakers, highlighting the need for integrated instructional approaches that strengthen technical language acquisition and comprehension skills to enhance academic success and professional readiness in agricultural education.

Keywords: Technical English, Vocabulary Proficiency, Reading Comprehension Skills, Students, Intervention

INTRODUCTION

In the specialized academic strand of Organic Agriculture Production (OAP), the mastery of technical English vocabulary and the application of effective reading comprehension skills have been indispensable for student success. Grade 12 learners were expected not only to demonstrate proficiency in practical farming skills but also to navigate the complex language embedded in organic standards, soil science reports, and sustainable farming manuals. A strong vocabulary foundation enabled students to move beyond surface-level memorization of terms toward deeper comprehension of agricultural texts. Schmitt et al. (2021) argued that vocabulary knowledge served as a gateway to understanding disciplinary content, allowing learners to focus on the science of farming rather than being hindered by linguistic barriers. When technical language flowed naturally, students were better positioned to excel both in academic tasks and in hands-on field assessments.

Despite this, a recurring challenge persisted in many classrooms: students' practical competencies in farming were not always matched by their ability to decode specialized English. Learners who excelled in tasks such as composting, crop management, and soil preparation often struggled with the dense language found in National Certification (NC II) guides and international agricultural journals. Al-Ahdal (2022) highlighted that technical-vocational students frequently encountered a bottleneck wherein progress was slowed not by a lack of skill, but

by the specialized English used to articulate those skills. This mismatch resulted in academic underperformance, where students' true potential was obscured by linguistic difficulties (Nation & Webb, 2021).

Given these realities, this study was conducted to assess the relationship between technical English vocabulary proficiency and reading comprehension skills among OAP students. While mastery of specialized language had increasingly been recognized as a vital tool for future farmers, there remained limited research that specifically addressed its impact within the senior high school context. By examining this connection, the study aimed to provide insights into how vocabulary instruction and comprehension skills could be integrated more effectively into agricultural education. Ultimately, the goal was to support educators in creating a learning environment where language functioned as a bridge, transforming students' passion for organic agriculture into academic achievement and professional readiness.

METHODOLOGY

The study employed a quantitative-descriptive correlational design to examine the technical English vocabulary proficiency and reading comprehension skills of Grade 11 Organic Agriculture Production (OAP) students in Negros Occidental during SY 2025–2026. Using total enumeration, all 105 students enrolled in the strand were included as respondents. Data were gathered through a researcher-made questionnaire consisting of twenty-five multiple-choice items on technical vocabulary and nineteen comprehension items based on short passages. To ensure validity, the instrument was subjected to expert evaluation by five specialists in language education and assessment, resulting in a validity index of 1.00, which confirmed that all items were highly relevant and aligned with the study's objectives. Reliability was further established through the test–retest method with thirty comparable respondents, yielding exceptionally high correlation coefficients (Vocabulary: $r = 0.996$; Reading: $r = 0.997$, $p < .001$), thereby confirming the stability and consistency of the instrument.

Prior to administration, formal approval was secured from school authorities, and orientations were conducted for teachers and students to clarify objectives, procedures, and confidentiality measures. The survey was then administered, and responses were systematically organized for analysis. Statistical tools were employed to interpret the data: mean and standard deviation were used to determine levels of vocabulary proficiency and reading comprehension, while Pearson's correlation coefficient was applied to examine the relationship between the two variables. This methodological framework, supported by a perfect validity index and exceptionally high reliability coefficients, ensured that the study generated credible, consistent, and meaningful insights into the interplay between technical English vocabulary proficiency and reading comprehension skills among senior high school students.

RESULTS AND DISCUSSIONS

Technical English Vocabulary Proficiency

Table 1. Level of Technical English Vocabulary Proficiency of Grade 11 Students.

Level of Technical English Vocabulary Proficiency	N	Mean	Standard Deviation	Interpretation
Very High	29	17.92	4.21	High
High	51			
Average	19			
Low	5			
Very Low	1			
Total	105			

Legend: (21-25)-Very High; (16-20)-High; (11-15)-Moderate; (6-10)-Low; (0-5)-Very Low

The results presented in table 1 indicate that Grade 11 students generally achieved a high level of technical English vocabulary proficiency, with a computed mean of 17.92 and a standard deviation of 4.21, which indicates a moderate spread of scores around the mean. This suggests that while most students clustered within the high

proficiency range, there was noticeable variability in performance. The distribution shows that nearly half of the respondents (48.6%) fall under the high category, while 27.6% reached very high. Only a small proportion of students (5.7%) were classified as low or very low, suggesting that while the majority demonstrate strong vocabulary acquisition, a minority still struggle.

This finding aligns with Ayana et al. (2024), who demonstrated that explicit vocabulary learning strategies significantly improved students' proficiency levels, while Corpuz et al. (2024) found a strong correlation between vocabulary knowledge and reading comprehension, reinforcing the idea that vocabulary mastery enhances broader language skills. Conversely, other studies highlight challenges that contradict the present findings. Waluyo and Bucol (2021) reported that many students still struggle with vocabulary acquisition, particularly those with lower proficiency, and recommended gamified interventions to address these gaps. Similarly, Dimla et al. (2021) argued that reliance on social media exposure does not necessarily lead to improved vocabulary proficiency, suggesting that external factors may hinder vocabulary growth despite classroom instruction.

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Reading Comprehension Skills

Table 2. Level of Reading Comprehension Skills of Grade 11 Students.

Extent of Reading Comprehension Strategies	N	Mean	Standard Deviation	Interpretation
Very Good	36	13.49	3.75	Good
Good	52			
Fair	12			
Poor	5			
Total	105			

Legend: (19-16)-Very Good; (15-11)-Good; (10-6)-Fair; (5-1)-Poor

The data presented in table 2 indicate that Grade 11 students generally demonstrate a good level of reading comprehension strategies, with a mean score of 13.49 interpreted as good. The distribution shows that the majority of students fall within the good (52) and very good (36) categories, while only a small proportion are in the fair (12) and poor (5) ranges. This suggests that most learners are capable of employing effective strategies such as summarizing, inferring, and evaluating texts, which are essential for academic success. However, the presence of students in the lower categories highlights the need for targeted interventions to support struggling readers. The standard deviation of 3.75 reflects moderate variability in performance, indicating that while many students are clustered around the good level, there is still a noticeable spread in comprehension abilities across the cohort.

These findings are consistent with studies that affirm the effectiveness of reading strategies among senior high school learners. For instance, Devera (2021) reported that explicit instruction in reading strategies significantly improved comprehension among Filipino students, while Manggasang and Belasoto (2021) found that Grade 11 learners in Iloilo exhibited good comprehension at both literal and interpretive levels. Such results support the conclusion that strategic reading instruction contributes to positive comprehension outcomes.

On the other hand, some studies challenge these findings. Sun et al. (2021), in a meta-analysis, argued that while strategy use correlates with comprehension, the effect sizes are not always strong, suggesting that strategies

alone may not guarantee high comprehension outcomes. Similarly, García-Sánchez and García-Martín (2021) observed that Latin American students often struggle with advanced comprehension skills such as critical and evaluative reading, contradicting the uniformly good interpretation seen in this dataset.

Relationship Between Technical English Vocabulary Proficiency and Reading Comprehension Skills

Table 3. Relationship Between Technical English Vocabulary Proficiency and Reading Comprehension Skills.

Variable	Test Statistics (r _s)	P-value	Decision for Ho	Interpretation
Technical English Vocabulary Efficiency vs Reading Comprehension Skills	0.608	<.001	Reject Ho	Significant

The statistical analysis presented in table 3 demonstrates a correlation ($r_s = 0.608$) between technical English vocabulary proficiency and reading comprehension strategies, with a p-value less than 0.001. This result indicates that the relationship is statistically significant, leading to the rejection of the null hypothesis. In practical terms, students who possess stronger technical vocabulary are more likely to employ effective comprehension strategies, thereby enhancing their overall reading performance. This finding underscores the critical role of vocabulary mastery as a foundation for strategic reading and comprehension development.

The result is supported by Aratea et al. (2023), who found that vocabulary mastery significantly influenced reading comprehension among English majors, emphasizing that vocabulary knowledge directly enhances comprehension performance. Similarly, Fabillaran (2024) reported that vocabulary skills were strong predictors of reading comprehension profiles among junior high school learners, highlighting the interplay of fluency, vocabulary, and comprehension as essential components of reading proficiency.

However, the result contradicts the findings of Tantalie (2021), who, in a study of bilingual Grade 10 students, reported no significant relationship between vocabulary proficiency and reading comprehension, suggesting that contextual factors such as language preference may weaken the correlation. Likewise, Lawrence et al. (2021) observed that while vocabulary and reading are related, the strength of the relationship varied depending on word complexity and frequency, indicating that vocabulary alone does not consistently predict comprehension outcomes.

CONCLUSIONS

Grounded on the findings of the study, the following conclusions are drawn:

The Grade 11 students demonstrate a high level of technical English vocabulary proficiency, with most of them categorized at high and very high levels.

The students exhibit a good level of reading comprehension skills, signifying their ability to grasp and process textual information with competence.

A significant relationship exists between technical English vocabulary proficiency and the level of reading comprehension skills, confirming that vocabulary proficiency is associated with comprehension levels.

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