

Vocabulary Knowledge, Metacognitive Strategies and Figurative Language Understanding as Enablers of Pre-Service Teachers' Interpretive Reading Skills

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Abstract

This study examined the role of vocabulary knowledge, metacognitive strategies, and figurative language understanding as key enablers of interpretive reading skills among pre-service teachers. Grounded in Constructivist Theory, Nation's Multi-Component Model, Metacognition Theory, Self-Regulated Learning Theory, and theories of figurative language processing, the study explored how linguistic and cognitive factors interact in higher-order reading. A descriptive-correlational research design was employed, involving 138 pre-service teachers from a faith-based teacher education institution in Cagayan de Oro City, Philippines. Data were collected using a researcher-developed questionnaire consisting of a vocabulary test, metacognitive strategies inventory, figurative language assessment, and interpretive reading test. Descriptive statistics and multiple linear regression analysis were used to analyze the data. Findings revealed that participants demonstrated outstanding vocabulary knowledge, high levels of metacognitive strategies, and very good figurative language understanding, resulting in overall very good interpretive reading skills. Among the variables, vocabulary knowledge emerged as the most significant predictor of interpretive reading, while metacognitive strategies and figurative language understanding served as supportive but non-significant predictors. Regression results indicated that the variables collectively explained 25.3% of the variance in interpretive reading skills. Despite generally strong performance, challenges were identified in citing evidence, recognizing tone and mood, and variability among learners in higher-order reading tasks. The study concludes that interpretive reading is a complex skill shaped by the interaction of linguistic and cognitive factors, with vocabulary knowledge playing a central role. It recommends strengthening vocabulary development, integrating metacognitive and figurative language instruction, and enhancing evidence-based reasoning in teacher education. This study aligns with SDG 4 (Quality Education) by strengthening literacy and teacher competence, and SDG 8 (Decent Work and Economic Growth) through improved workforce readiness in education. It contributes to sustainability by supporting institutional, cognitive, and socio-educational development through enhanced teacher preparation and literacy instruction.

Keywords: Collocational Knowledge, Figurative Language Understanding, Interpretive Reading Skills, Metacognitive Strategies, Pre-Service Teachers, Vocabulary Knowledge

1. Introduction

Reading is a foundational skill that supports academic success, critical thinking, and communication, particularly for pre-service teachers who are expected to model effective reading practices. However, global and local evidence indicates persistent challenges in higher-order reading, especially interpretive reading. This study examines how vocabulary knowledge, metacognitive strategies, and figurative language understanding function as key enablers of interpretive reading skills among pre-service teachers, addressing existing research gaps and contributing to teacher education and literacy development.

1.1 Background of the Study on Vocabulary Knowledge, Metacognitive Strategies, Figurative Language Understanding, and Interpretive Reading Skills of Pre-Service Teachers

Reading extends beyond word recognition to meaning construction, enabling learners to develop knowledge, critical thinking, and communication skills (Vaughn et al., 2024). For pre-service teachers, strong reading competence is essential because they must both understand academic texts and model effective reading practices for future learners. Globally, reading proficiency has been linked to academic achievement and higher-order thinking, yet international assessments such as the Programme for International Student Assessment (PISA) show that many learners struggle with interpretive and analytical reading (OECD, 2023). In the Philippines, similar challenges persist, with Filipino learners consistently performing low in reading literacy (Acido & Caballes, 2023). These issues highlight the need to strengthen reading competencies among future educators. Interpretive reading represents an advanced level of comprehension involving inferencing, theme identification, tone analysis, and evaluation of author intent (ERIC, 2020; Philips, 2023). For pre-service teachers, this skill is both academic and professional, as effective teaching of reading depends on their own interpretive competence (Boshoff, 2023).

1.2 Themes and Insights from Related Literature on Cognitive and Linguistic Enablers of Interpretive Reading

Literature consistently identifies vocabulary knowledge, metacognitive strategies, and figurative language understanding as key contributors to interpretive reading. Vocabulary knowledge provides access to meaning, with both breadth and depth supporting comprehension and interpretation (Tong et al., 2022; Gallagher, 2023). Metacognitive strategies enable learners to plan, monitor, and evaluate their reading, promoting self-regulated and strategic comprehension (Misa, 2023; Nilforoushan et al., 2023). Figurative language understanding further enhances interpretive reading by enabling readers to interpret non-literal meanings such as metaphors and idioms (Liu & Saad, 2025; Sugita, 2021). Studies show that learners with strong figurative competence demonstrate better inferencing, thematic understanding, and critical interpretation (Liu & Saad, 2025). Research also highlights that interpretive reading involves multiple dimensions, including making inferences, identifying themes, citing evidence, recognizing tone and mood, and interpreting figurative language (Assiri, 2020; Karim & Nassaji, 2020). These skills require the integration of linguistic knowledge and strategic processing, reinforcing the interdependence of the study variables.

1.3 Local, National, and Global Context of Interpretive Reading among Pre-Service Teachers

At the global level, reading difficulties in higher-order comprehension remain evident in large-scale assessments (OECD, 2023). In multilingual contexts, interpretive reading is further complicated by limited vocabulary and cultural differences in language use (Dardjito et al., 2023). In the Philippine context, persistent low performance in reading literacy (Acido & Caballes, 2023) underscores the urgency of improving teacher preparation. Pre-service teachers play a dual role as learners and future educators, and their reading competence directly affects classroom instruction and student outcomes (Can & Bicer, 2021). Despite growing research internationally, studies focusing on pre-service teachers in the Philippines, particularly in faith-based institutions, remain limited (Baluyos et al., 2024; Comia et al., 2024; Napanoy et al., 2021).

1.4 Theoretical or Conceptual Basis of Vocabulary Knowledge, Metacognitive Strategies, Figurative Language Understanding, and Interpretive Reading

This study is grounded in Constructivist Theory, which views reading as an active meaning-making process where readers construct understanding through interaction with text and prior knowledge (Bruner, 1986; Vygotsky, 1978). Nation's Multi-Component Model explains vocabulary as a multidimensional construct involving breadth, depth, form, and use (Nation, 2001), supporting its role in interpretation. Flavell's Metacognition Theory (Flavell, 1979) and Zimmerman's Self-Regulated Learning Theory (Zimmerman, 2000) emphasize planning, monitoring, and evaluating as essential processes for effective comprehension. Theories of figurative language processing highlight the cognitive demands of interpreting non-literal expressions, requiring integration of linguistic and contextual knowledge (Gibbs, 1994; Sugita, 2021). Together, these frameworks explain how vocabulary knowledge, metacognitive strategies, and figurative language understanding interact to support interpretive reading.

1.5 Research Gaps and Rationale on the Combined Influence of Vocabulary Knowledge, Metacognitive Strategies, and Figurative Language Understanding

Existing studies often examine vocabulary knowledge, metacognitive strategies, and figurative language understanding separately, with limited research exploring their combined influence on interpretive reading (Amato, 2024; Liu & Saad, 2025; Sugita, 2021). Additionally, inconsistencies in defining key constructs such as inference and evidence-based interpretation create challenges in research and instruction (Pearce, 2025). There is also a lack of localized studies focusing on pre-service teachers in Philippine teacher education, particularly within specific institutional contexts. These gaps justify the need for an integrative investigation examining how cognitive and linguistic factors collectively shape interpretive reading skills among pre-service teachers.

1.6 Alignment with Relevant Sustainable Development Goals (SDGs)

This study aligns primarily with SDG 4 – Quality Education, which promotes inclusive and equitable education and lifelong learning (UNESCO, 2020). Strengthening interpretive reading skills among pre-service teachers enhances their ability to develop critical thinkers and independent learners. It also supports SDG 8 – Decent Work and Economic Growth, as improving teacher competence contributes to workforce quality and educational effectiveness. Additionally, elements of SDG 17 – Partnerships for the Goals are reflected in the study's potential to inform collaboration among teacher education institutions and stakeholders.

1.7 Importance of the Study to Multidisciplinary Sustainability in Teacher Education and Literacy Development

This study contributes to educational sustainability by improving teacher preparation and literacy instruction, ensuring long-term development of critical reading skills among learners. It supports socio-economic sustainability by strengthening human capital through improved educational outcomes. The study also advances community and institutional sustainability by providing evidence-based insights for curriculum development, instructional design, and policy formulation in teacher education institutions. Furthermore, it contributes to cognitive and literacy sustainability, promoting higher-order thinking and lifelong learning skills essential in modern education.

2. Material and methods

2.1 Research Design

The study utilized a descriptive-correlational research design to examine relationships among vocabulary knowledge, metacognitive strategies, figurative language understanding, and interpretive reading skills without manipulating variables. This design allowed the researcher to describe variables and determine the strength and direction of relationships using quantitative data (Johnson and Christensen, 2020). It was appropriate because it examined naturally occurring variables in an educational setting. Vocabulary knowledge was assessed through breadth, receptive vocabulary, and collocations; metacognitive strategies through planning, monitoring, and evaluating; and figurative language understanding as a separate variable. Interpretive reading skills were measured through inference-making, theme identification, citing evidence, recognizing tone and mood, and interpreting figurative language. Data were collected through survey questionnaires and analyzed using descriptive statistics such as frequency, mean, and standard deviation.

2.2 Locale of the Study

The study was conducted in a faith-based teacher education institution in Cagayan de Oro City, Philippines, during the Academic Year 2025–2026. This setting was selected because it provided access to pre-service teachers undergoing formal teacher training, making it appropriate for examining the variables related to interpretive reading skills in an authentic educational environment.

2.3 Respondents of the Study

The respondents were 138 pre-service teachers from first-year to fourth-year levels enrolled in the selected institution. These participants represented different stages of teacher preparation and provided data on vocabulary knowledge, metacognitive strategies, figurative language understanding, and interpretive reading skills.

2.4 Sample and Sampling Procedure

The study population consisted of 198 pre-service teachers, from which participants were selected using systematic random sampling to ensure representativeness. A sampling interval was computed, a random starting point was chosen, and every n th student was selected until the required sample size was reached. Inclusion criteria required participants to be enrolled pre-service teachers who provided informed consent, while exclusion criteria removed those not enrolled, those who declined participation, or those who submitted incomplete responses. A pilot test involving 30 non-participating pre-service teachers was conducted to refine the instrument and ensure clarity, validity, and reliability before full implementation.

2.5 Research Instrument

The study used a researcher-developed questionnaire designed to measure vocabulary knowledge, metacognitive strategies, figurative language understanding, and interpretive reading skills, ensuring alignment with the research objectives (Cohen et al., 2021). The instrument consisted of four parts: a vocabulary test adapted from Nation (2001) and Webb, Sasao, and Balance (2017); a metacognitive strategies questionnaire based on MARS (Mokhtari and Reichard, 2002); a figurative language test; and an interpretive reading assessment consisting of passages and questions measuring higher-order reading skills. Validity was established through expert review and face validation, while reliability testing using Cronbach's Alpha showed coefficients ranging from 0.782 to 0.924, indicating acceptable to excellent internal consistency (George & Mallery, 2003; Santos & Rodriguez, 2021). Additional reliability testing using McDonald's Omega confirmed satisfactory to high consistency across subscales. Construct validity was further examined through Confirmatory Factor Analysis, which refined the indicators of planning, monitoring, and evaluating. The model demonstrated strong factor loadings and meaningful relationships among constructs, indicating that the observed variables accurately represented the latent variables. Model fit indices including CMIN/DF, CFI, SRMR, RMSEA, and PClose met acceptable criteria, confirming that the measurement model fit the data well (Hu and Bentler, 1999). The results of the model fit indices indicated excellent fit, as all values fell within acceptable thresholds. These findings confirmed the construct validity of the instrument and supported its use for subsequent statistical analyses. Scoring procedures involved a five-point Likert scale for metacognitive strategies and objective scoring for test-based sections, where correct responses were assigned one point and incorrect responses received zero. Mean scores and percentage equivalents were computed to describe performance levels, with higher scores indicating stronger competencies.

2.6 Data Gathering Procedure

Ethical approval was obtained from the Lourdes College Research Ethics Committee, guided by the Belmont Report principles of respect for persons, beneficence, and justice (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Permission was secured from institutional authorities, and participants were provided informed consent detailing the study's purpose, procedures, confidentiality, and voluntary participation. Data were collected during class hours using paper-based questionnaires. Participants were oriented before administration and assured of anonymity through coded responses. Data were securely stored in both physical and digital formats, with strict

confidentiality measures implemented. No conflicts of interest were declared, and all procedures ensured participant protection, transparency, and compliance with ethical standards.

2.7 Data Analysis Techniques

Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to describe the levels of vocabulary knowledge, metacognitive strategies, figurative language understanding, and interpretive reading skills. To examine relationships among variables, Multiple Linear Regression Analysis was employed, allowing the identification of significant predictors of interpretive reading skills and the strength of their influence (Field, 2020). The coefficient of determination (R^2) was used to determine the proportion of variance explained by the independent variables. All analyses were conducted using SPSS, with a significance level of 0.05 to ensure statistical accuracy and reliability.

3. Results and Discussion

3.1 Vocabulary Knowledge

3.1.1 Breadth of Vocabulary

The results show that participants demonstrated an outstanding level of vocabulary breadth, with a mean score of 8.58 (SD = 2.13). A large majority (68.84%) performed at the highest level, while only a small proportion fell into the lower categories. This indicates that most pre-service teachers possess a wide range of vocabulary, enabling them to recognize and understand words across different contexts. This finding suggests that strong vocabulary breadth supports reading comprehension and interpretive ability, as learners with wider vocabularies can process texts more efficiently and engage in higher-level reading tasks. This aligns with Zano (2022), who emphasized that vocabulary breadth is fundamental to comprehension. However, the presence of a small group with limited vocabulary highlights the need for targeted instructional support, consistent with Formosa Publisher (2024) and RSIS International (2024), who noted that limited vocabulary restricts inferential comprehension.

3.1.2 Receptive Vocabulary

The findings indicate that participants achieved an outstanding level of receptive vocabulary, with a mean score of 8.01 (SD = 2.17). Most participants were classified in the highest categories, showing strong ability to recognize and understand words encountered in texts. This result implies that strong receptive vocabulary enhances learners' ability to comprehend texts and engage in higher-order processes such as interpretation. This supports Rabadi (2023) and Rot Vrhovec and Godec Soršak (2024), who found that vocabulary knowledge predicts comprehension. However, a small group with lower performance suggests that insufficient vocabulary may hinder inferencing and meaning-making, consistent with Hwang, Cabell, and Joyner (2023) and Teng and Xu (2025).

3.1.3 Collocational Knowledge

Participants demonstrated a very good level of collocational knowledge, with a mean of 7.81 (SD = 1.90). Most participants were in the higher categories, indicating strong familiarity with common word combinations. This suggests that collocational knowledge supports reading fluency and comprehension by enabling learners to process language in meaningful chunks rather than isolated words. This finding aligns with Husin and Rawian (2025) and Lu and Dang (2023), who emphasized that collocations enhance comprehension. However, some participants with lower performance may struggle with interpreting lexical patterns, supporting Askari (2024) and de la Viña et al. (2026).

3.1.4 Overall Vocabulary Knowledge

Overall, participants demonstrated an outstanding level of vocabulary knowledge ($M = 24.41$, $SD = 5.24$), with most scoring in the highest categories. This indicates that pre-service teachers possess strong lexical competence that supports comprehension and interpretation. This finding supports Schneider et al. (2022) and Rot Vrhovec and Godec Soršak (2024), who highlighted vocabulary as a strong predictor of reading ability. However, a small number of learners still require support, consistent with Zhang (2024) and Huang (2026).

3.2 Metacognitive Strategies

3.2.1 Planning Strategies

The results show a high level of planning strategies ($M = 4.17$, $SD = 0.61$), with most participants frequently applying pre-reading strategies such as setting goals and previewing texts. This indicates that planning supports comprehension by helping learners prepare for reading tasks. This aligns with Artino, Simons, and Konopasky (2022) and Teng (2023), who emphasized the role of planning in self-regulated learning. However, slightly lower emphasis on text-type identification suggests a need for improvement, consistent with Crisologo (2025).

3.2.2 Monitoring Strategies

Participants demonstrated a high level of monitoring strategies ($M = 4.35$, $SD = 0.57$), indicating frequent use of strategies such as adjusting reading speed and clarifying unfamiliar words. This suggests that monitoring enhances comprehension

by allowing learners to regulate understanding during reading. This finding is consistent with Dignath et al. (2023) and Rivers-Ingram (2024), who highlighted monitoring as essential for detecting misunderstandings. However, reflective monitoring needs strengthening, as noted by Rivers-Ingram (2024).

3.2.3 Evaluating Strategies

The results indicate a high level of evaluating strategies ($M = 4.27$, $SD = 0.59$), with participants frequently reflecting on comprehension and assessing understanding after reading. This implies that evaluation supports deeper comprehension and critical thinking. This aligns with Vaughn et al. (2025) and Kristensen et al. (2025), who emphasized the importance of reflection. However, critical evaluation skills such as identifying inconsistencies require further development, consistent with Hu and Shu (2025).

3.2.4 Overall Metacognitive Strategies

Overall, participants demonstrated a high level of metacognitive strategies ($M = 4.26$, $SD = 0.53$), with monitoring as the strongest component. This indicates that learners actively regulate their comprehension through planning, monitoring, and evaluation. This supports Zepeda (2023) and Achamyeleh (2025), who emphasized metacognition as essential for comprehension. However, strengthening planning strategies would create a more balanced approach, as suggested by Teng (2023).

3.3 Figurative Language Understanding

Participants demonstrated a very good level of figurative language understanding ($M = 6.42$, $SD = 2.62$), with many performing at higher levels but some showing difficulty. This suggests that figurative language competence supports deeper comprehension and interpretation of texts. This aligns with Ferguson (2024) and Kritsotakis et al. (2025), who emphasized its role in advanced reading. However, variability among learners reflects the cognitive complexity of figurative interpretation, consistent with Banou (2025).

3.4 Interpretive Reading Skills

3.4.1 Making Inferences

Participants demonstrated a very good level in making inferences ($M = 3.64$, $SD = 1.19$), with most performing at higher levels. This indicates that learners can construct meaning beyond literal understanding. This supports Liu and Saad (2025), who emphasized the role of inferencing in comprehension. However, some learners still struggle, indicating uneven development of higher-order skills.

3.4.2 Identifying Theme

The results show a very good level in identifying themes ($M = 4.17$, $SD = 1.34$), with many participants achieving outstanding performance. This suggests strong ability to synthesize information and determine central ideas, consistent with Zhang and Wang (2023). However, some learners still experience difficulty, reflecting differences in higher-order processing.

3.4.3 Citing Evidence to Support Interpretation

Participants demonstrated a good level ($M = 2.96$, $SD = 1.06$), indicating moderate ability to justify interpretations using textual evidence. This suggests that citing evidence is a more challenging skill requiring higher-level analysis. This aligns with Karim and Nassaji (2020), who emphasized its complexity. The results indicate a need for further development in evidence-based reasoning.

3.4.4 Recognizing Tone and Mood

The results indicate a good level ($M = 2.96$, $SD = 1.11$), showing moderate ability to identify emotional and attitudinal elements. This suggests that learners can recognize tone and mood but may struggle with deeper interpretation. This aligns with Lee and Kim (2023), who noted the complexity of this skill.

3.4.5 Interpreting Figurative Language

Participants demonstrated a very good level ($M = 4.09$, $SD = 1.42$), with many achieving outstanding performance. This indicates strong ability to interpret non-literal language, supporting deeper comprehension. This aligns with Zhao and Uccelli (2023), who emphasized its role in interpretive reading.

3.4.6 Overall Interpretive Reading Skills

Overall, participants demonstrated a very good level of interpretive reading skills ($M = 17.83$, $SD = 5.02$). This suggests that pre-service teachers possess strong higher-order reading abilities, consistent with Liu and Saad (2025). However, variability indicates that some learners still require support in complex interpretive tasks.

3.5 Relationship Between Variables

The regression analysis revealed that vocabulary knowledge, metacognitive strategies, and figurative language understanding significantly influence interpretive reading skills, $F(3, 134) = 15.132$, $p < .001$, explaining 25.3% of the variance ($R^2 = 0.253$). This leads to the rejection of H_{01} . This indicates that interpretive reading is shaped by the interaction of linguistic and cognitive factors. This supports Liu and Saad (2025), who emphasized the integration of multiple processes in comprehension. However, the remaining unexplained variance suggests that other factors such as motivation and prior knowledge also play a role, consistent with Guthrie and Wigfield (2000). Additionally, vocabulary knowledge was shown to significantly predict interpretive reading, supporting Schneider et al. (2022), who identified vocabulary as a key determinant of comprehension.

4. Conclusion & Recommendations

The study found that pre-service teachers demonstrated strong vocabulary knowledge, high use of metacognitive strategies, and very good figurative language understanding, resulting in overall very good interpretive reading skills. Among the variables, vocabulary knowledge emerged as the most significant predictor of interpretive reading, highlighting its central role in meaning construction and higher-order comprehension. While metacognitive strategies and figurative language understanding were evident, they did not directly predict interpretive reading performance, suggesting that they function as supportive processes rather than primary drivers. The findings further indicate that interpretive reading is a complex and dynamic skill influenced by the interaction of linguistic and cognitive factors, with variability among learners reflecting differences in their ability to process and interpret texts.

It is recommended that pre-service teachers continuously enhance their vocabulary knowledge through exposure to varied texts and improve their collocational competence while consistently applying metacognitive strategies before, during, and after reading. They should also strengthen interpretive reading skills, particularly in citing evidence, recognizing tone and mood, and connecting ideas. Teacher education institutions are encouraged to integrate vocabulary development, figurative language instruction, and interpretive reading tasks across courses, while providing scaffolded learning experiences that support strategic reading processes. Future researchers are recommended to explore additional variables, conduct studies in broader contexts, utilize diverse research approaches, and develop intervention programs focusing on identified areas needing improvement.

The study was limited to pre-service teachers from a single faith-based teacher education institution, which restricts the generalizability of the findings to other populations and contexts. It focused only on selected variables, namely vocabulary knowledge, metacognitive strategies, and figurative language understanding, without considering other factors such as prior knowledge, motivation, language proficiency, and cognitive engagement that may influence interpretive reading. Additionally, the use of survey questionnaires and tests without qualitative methods limited deeper exploration of participants' actual reading processes.

Compliance with ethical standards

The authors declare no conflict of interest, and this study received no external funding. Ethical approval was obtained from the Lourdes College Research Ethics Committee, and the study was conducted in a faith-based teacher education institution in Cagayan de Oro City, with gratitude extended to the participating pre-service teachers and the institution. Participation was voluntary, with informed consent obtained prior to data collection using non-invasive survey and test instruments. All data were treated with strict confidentiality, and no identifying information was disclosed.

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