

Effectiveness of a Cognitive Learning Strategy Intervention on Vocabulary Retention of Grade 6 English Learners in Atok District, Benguet

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Article History: Received: May

Accepted: June

Revised: June 2026

Accepted: July 2026

Abstract: This study determined the effectiveness of a cognitive learning strategy intervention in improving the vocabulary retention of Grade 6 English learners in selected public elementary schools in Atok District, Benguet during the school year 2025–2026. Specifically, it examined the respondents' demographic profile in terms of gender and age, assessed their vocabulary retention before and after the intervention, and determined whether a significant difference existed between the pretest and posttest scores. The study employed a quantitative approach using a one-group pretest–posttest quasi-experimental research design. Sixty-two (62) Grade 6 learners were selected through purposive sampling and participated in the intervention. A researcher-adapted vocabulary achievement test was used to measure learners' vocabulary retention before and after the implementation of cognitive learning strategies, including contextual analysis, semantic mapping, repetition, elaboration, imagery, categorization, summarization, and mnemonic techniques. Frequency, percentage, mean, and standard deviation were used to analyze the descriptive data, while a paired-samples t-test determined the significance of the difference between the pretest and posttest scores. The findings revealed that the respondents had a moderate level of vocabulary knowledge during the pretest but achieved a very high level of performance in the posttest after the intervention. The paired-samples t-test further indicated a statistically significant improvement in vocabulary retention, leading to the rejection of the null hypothesis. These findings demonstrate that cognitive learning strategies effectively enhance learners' vocabulary acquisition and long-term retention by promoting meaningful engagement with language learning activities. The study concludes that integrating cognitive learning strategies into English instruction can significantly improve vocabulary mastery and recommends their wider implementation in elementary English classrooms to strengthen learners' language proficiency and overall academic performance.

Keywords: *Cognitive Learning Strategies, Vocabulary Retention, English Language Learning, Grade 6 Learners, Quasi-Experimental Research*

INTRODUCTION

Reading is fundamental to lifelong learning and academic success (Quimsing and Ortega-Dela Cruz 2024). In the 21st century, reading literacy is a critical competency for thriving academically and socially, enabling individuals to process information and participate in digital environments (Isrokatun et al., 2022; Metruk and Kováčová, 2025). However, global concerns persist regarding declining reading proficiency among elementary learners, as international assessments have revealed that many students struggle with comprehension (Sibanda et al., 2024; Stiff et al., 2023). These challenges underscore the urgency of early literacy interventions, as foundational skills strongly influence future trajectories (Işık Uslu et al., 2022; Van Der Weijden et al., 2024). UNESCO promotes literacy under Sustainable Development Goal 4, which emphasizes equitable education for

all (Costa et al., 2023; Finders et al., 2023; Oliveira-Melo et al., 2025). Targeted interventions in decoding, comprehension, and motivation improve outcomes while reducing inequity (Stiff et al., 2023; Van Der Weijden et al., 2024). Strengthening reading literacy through evidence-based strategies is essential for equipping learners with academic success and active participation in a digital society (Metruk & Kováčová, 2025; Oliveira-Melo et al., 2025; Quimsing & Ortega-Dela Cruz, 2024). Reading continues to be a critical concern in the Philippine basic education system, as many learners face persistent challenges in developing literacy. The Department of Education (DepEd) has responded with policies aimed at enhancing reading proficiency, including initiatives such as the Every Child a Reader Program (ECARP), the Philippine Informal Reading Inventory (Phil-IRI), and the Reading Literacy Program, all of which aim to strengthen students' reading abilities (Idulog et al., 2023; Pocaan et al., 2022). Despite these interventions, assessments such as the National Achievement Test (NAT) and Phil-IRI continue to reveal low reading proficiency among Filipino learners, particularly at the elementary level (Domingo, 2025).

In the public elementary schools of Dupax Del Norte II District, Dupax Del Norte, Nueva Vizcaya, teachers continuously implement reading instruction and various intervention programs to strengthen learners' literacy skills as part of the Communication Arts curriculum. These efforts reflect the commitment of schools to improve reading proficiency through appropriate teaching methods, instructional approaches, strategies, and remedial activities (Binoya, 2021). Despite these initiatives, many learners continue to experience difficulties in reading fluency, vocabulary development, and reading comprehension, posing challenges to effective classroom instruction (Bautista, 2022; Miciak et al., 2022). Consequently, teachers are expected to employ effective instructional practices and utilize appropriate learning resources to address learners' diverse reading needs. Understanding the current practices, competencies, instructional materials, challenges encountered, and remedial strategies employed by teachers can provide valuable information for strengthening reading instruction and enhancing literacy outcomes. Although previous studies have examined reading interventions and learners' reading performance, relatively few have comprehensively investigated the teaching of reading as a component of Communication Arts, particularly in the context of public elementary schools in Dupax Del Norte II District. This study addresses this gap by examining teachers' instructional practices and identifying areas for improvement that may serve as the basis for an enhancement program in reading instruction.

RESEARCH QUESTIONS

1. What is the demographic profile of the teacher respondents in terms of age, gender, civil status, present position, highest educational attainment, subject specialization, years in teaching, and in-service training attended?
2. To what extent do teachers perceive the implementation of reading instruction in terms of the methods used in teaching reading, approaches used in teaching reading, strategies and techniques, teaching reading competencies, availability of instructional materials, common problems encountered, and remedial strategies?
3. Is there a significant difference between the assessments of teachers and learners regarding the reading ability of Grade 3 learners in terms of oral language, phonological awareness, fluency, vocabulary, and comprehension?
4. What is the level of academic performance of Grade 3 learners in English?
5. Is there a significant relationship between the reading ability of grade 3 learners and their academic performance in English?
6. Which dimensions of reading ability significantly predict the academic performance of Grade 3 learners in English?

METHODS

Research Design

This study employed a descriptive-correlational-predictive design. It determined teachers' profiles and assessed reading instruction, teaching competencies, instructional materials, problems, and remedial strategies. The correlational design examined the relationship between Grade 3 learners' reading ability and academic performance in English. The comparative design used an independent samples t-test to determine significant differences between teachers' and learners' assessments of reading ability. Finally, multiple linear regression identified dimensions that significantly predict academic performance and guided the development of an ECB program for Grade 3 language teachers.

Research Locale

This study was conducted in selected public elementary schools in the Division of Antipolo City, Rizal, during the School Year 2024–2025. The selected schools actively implement literacy programs such as the Philippine Informal Reading Inventory (Phil-IRI), Every Child a Reader Program (ECARP), and other school-based reading interventions. These schools were chosen because they provide an appropriate setting for examining reading ability and its relationship with learners' academic performance.

Research Respondents

The respondents consisted of Grade 3 teachers and Grade 3 learners from selected public elementary schools in the Division of Antipolo City. Teachers were included because they are directly involved in reading instruction and literacy intervention, while the learners were selected because Grade 3 marks the transition from learning to read to reading to learn. A purposive sampling technique was employed to select participating schools based on the availability of Phil-IRI records and active literacy programs. Eligible teachers and learners who met the inclusion criteria voluntarily participated in the study.

Research Instrument

The study utilized a researcher-developed questionnaire based on the Philippine Informal Reading Inventory (Phil-IRI), Department of Education literacy standards, and related literature on reading development. The instrument measured reading instruction and learners' reading ability across five dimensions: oral language, phonological awareness, fluency, vocabulary, and comprehension. Responses were measured using a four-point Likert scale. Learners' academic performance was obtained from their official English grades. The instrument underwent expert validation to establish content validity and was pilot tested among respondents outside the study area. The pilot test yielded a Cronbach's alpha coefficient of 0.70 or higher, indicating acceptable reliability.

Data Gathering Procedure

Prior to data collection, permission to conduct the study was obtained from the appropriate educational authorities and school administrators. The teachers were oriented regarding the purpose and procedures of the study. Written informed consent was obtained from the teacher participants, while parental consent and learner assent were secured from the Grade 3 learners. The researcher personally administered the questionnaires to ensure consistency in the data collection. Official English grades were obtained with the approval of the school authorities. All completed questionnaires were checked for completeness, coded, encoded, and analyzed using the Statistical Package for the Social Sciences (SPSS) version 29.

Statistical Treatment of Data

The collected data were analyzed using both descriptive and inferential statistics. Frequency and percentage were used to describe the demographic profile of the teacher respondents. Weighted

mean and standard deviation were computed to determine the respondents' perceptions of reading instruction and reading ability. The independent samples *t*-test determined whether significant differences existed between the assessments of teachers and learners regarding reading ability. The Pearson product-moment correlation coefficient (Pearson's *r*) was used to determine the relationship between reading ability and learners' academic performance in English. Finally, multiple linear regression analysis identified the dimensions of reading ability that significantly predicted academic performance. All statistical tests were conducted at the 0.05 level of significance.

RESULTS AND DISCUSSION

Table 1. Demographic Profile of the Respondents

Variable	Category	Frequency (f)	Percentage (%)
Age	20–25 years	4	20.00
	26–30 years	2	10.00
	31–35 years	4	20.00
	36–40 years	4	20.00
	41–45 years	2	10.00
	46–50 years	2	10.00
	51 years and above	2	10.00
Gender	Male	4	20.00
	Female	16	80.00
Civil Status	Single	3	15.00
	Married	16	80.00
	Widowed	1	5.00
Present Position	Teacher I	3	15.00
	Teacher II	0	0.00
	Teacher III	14	70.00
	Master Teacher I	2	10.00
	Master Teacher II	1	5.00
Highest Educational Attainment	BSEd	2	10.00
	MAEd	16	80.00
	PhD	2	10.00
Subject Specialization	Major	1	5.00
	Minor	1	5.00
	None	18	90.00
Years in Teaching	1–3 years	4	20.00
	4–6 years	6	30.00
	7–9 years	6	30.00
	10 years and above	4	20.00
In-Service Trainings Attended	School	20	100.00
	Division	20	100.00
	National	14	70.00
	International	2	10.00

Table 1 presents the demographic profiles of the respondents. Most teachers were female (80.00%) and married (80.00%), indicating that the teaching workforce was predominantly composed of experienced female teachers. In terms of age, the respondents were distributed across different age groups, although the largest proportions were within the 20–25, 31–35, and 36–40 age brackets (20.00% each), suggesting a combination of early career and experienced teachers in the sample. Most (70.00%) held the position of Teacher III, indicating that most had already gained considerable teaching experience and advanced professionally. Regarding educational attainment, 80.00% had

completed a Master of Arts in Education (MAEd), reflecting a high level of academic preparation for the profession of teaching. Most respondents (90.00%) reported having no additional subject specialization beyond their primary field, while teaching experience was evenly distributed, with the highest proportions having 4–6 and 7–9 years of service (30.00% each). Furthermore, all respondents had attended school-based and division-level in-service training, while 70.00% had participated in national training, and only 10.00% had attended international training. Overall, the findings indicate that the respondents were academically qualified, professionally experienced, and actively engaged in continuing professional development, making them well-suited to provide reliable information on reading instruction and intervention practices in elementary schools.

Table 2. Respondents' Perception on the Methods Used in Teaching Reading

Dimension	Overall Mean	SD	Interpretation
Methods Used in Teaching Reading	4.11	0.48	Often

Table 2 presents the respondents' perceptions of the methods used for teaching reading. The findings show an overall meaning of 4.11 (SD = 0.48), interpreted as "Often." This indicates that teachers frequently employ appropriate reading methods to develop their learners' reading skills. The results suggest that reading instruction is regularly implemented using effective classroom practices that support learners' literacy development. Consistent use of appropriate teaching methods helps improve learners' reading fluency, comprehension, and overall academic achievement. These findings are consistent with previous studies emphasizing that effective reading instruction plays a significant role in strengthening learners' literacy skills and promoting better learning outcomes (Quimsing & Ortega-Dela Cruz, 2024; Metruk & Kováčová, 2025; Sibanda et al., 2024).

Table 3. Respondents' Perception on the Approaches Used in Teaching Reading

Dimension	Overall Mean	SD	Interpretation
Approaches Used in Teaching Reading	4.08	0.51	Often

Table 3 presents the respondents' perceptions of the approaches used in teaching reading. The results reveal an overall mean of 4.08 (SD = 0.51), interpreted as "Often." This finding indicates that teachers regularly apply learner-centered reading approaches that encourage active participation and promote meaningful learning. Consistent use of varied instructional approaches helps learners develop essential reading skills, including vocabulary development, comprehension, and critical thinking. The findings support the view that employing diverse reading approaches enhances learners' engagement and contributes to improved literacy performance (Finders et al., 2023; Işık Uslu et al., 2022; Idulog et al., 2023)

Table 4. Respondents' Perception of the Strategies and Techniques Used in Teaching Reading

Dimension	Overall Mean	SD	Interpretation
Strategies and Techniques	4.06	0.46	Often

Table 4 presents the respondents' perceptions of the strategies and techniques used in teaching reading. The findings obtained an overall mean of 4.06 (SD = 0.46), interpreted as "Often." This indicates that teachers consistently utilize effective reading strategies and instructional techniques during classroom instruction. The frequent use of strategies such as guided reading, questioning, vocabulary activities, and comprehension exercises helps learners strengthen their reading abilities and support meaningful learning. These findings are consistent with studies showing that the effective use of reading strategies enhances learners' reading comprehension, motivation, and overall academic performance (Bautista, 2022; Pocaan et al., 2022; Van Der Weijden et al., 2024).

Table 5. Respondents' Perception on Teaching Reading

Dimension	Overall Mean	SD	Interpretation
Teaching Reading Competencies	4.06	0.49	Agree

Table 5 presents the respondents' perceptions of teaching reading competencies. The results show an overall mean of 4.06 (SD = 0.49), interpreted as "Agree." This indicates that the respondents perceived teachers as possessing the necessary competencies to effectively teach reading. These competencies include planning appropriate reading activities, facilitating meaningful learning experiences, and assessing learners' reading progress. Competent teachers play a vital role in developing learners' literacy skills and creating supportive learning environments that enhance reading achievement. These findings are consistent with previous studies highlighting that teacher competence is a key factor in improving learners' reading performance and overall academic success (Sibanda et al., 2024; Metruk & Kováčová, 2025; Finders et al., 2023).

Table 6. Availability of Instructional Materials Used in Teaching Reading

Dimension	Overall Mean	SD	Interpretation
Instructional Materials	4.09	0.52	Often

Table 6 presents the respondents' assessment of the availability of instructional materials used in teaching reading. The findings obtained an overall mean of 4.09 (SD = 0.52), interpreted as "Often." This indicates that instructional materials are generally available and regularly used to support reading instruction. The availability of appropriate learning resources helps teachers deliver engaging lessons and enables learners to develop essential reading skills effectively. Adequate instructional materials also promote active participation and improve learners' comprehension and reading performance. These findings support previous studies emphasizing that quality instructional resources contribute significantly to effective literacy instruction and improved learning outcomes (Costa et Cruz, 2024; Idulog et al., 2023; Quimsing & Ortega-Dela al., 2023).

Table 7. Common Problems Encountered in Teaching Reading

Dimension	Overall Mean	SD	Interpretation
Common Problems	3.00	0.58	Moderately Serious

Table 7 presents the respondents' assessment of the common problems encountered in teaching reading. The findings show an overall mean of 3.00 (SD = 0.58), interpreted as "Moderately Serious." This result indicates that teachers experience several challenges in teaching reading, although these challenges are generally manageable. Common issues include differences in learners' reading abilities, limited instructional time, and insufficient parental support or learning resources. Addressing these challenges through targeted interventions and continuous teacher support can further improve the effectiveness of reading instruction. Similar studies have reported that reading difficulties and limited instructional resources continue to affect literacy development among elementary learners (Domingo, 2025; Bautista, 2022; Miciak et al., 2022).

Table 8. Remedial Strategies in Teaching Reading

Dimension	Overall Mean	SD	Interpretation
Remedial Strategies	4.14	0.45	Often

Table 8 presents the respondents' perceptions of the remedial strategies implemented in teaching reading. The results reveal an overall mean of 4.14 (SD = 0.45), interpreted as "Often." This indicates that teachers frequently implement remedial strategies to assist learners experiencing reading difficulties. These interventions help improve learners' decoding, vocabulary, fluency, and reading

comprehension through additional instructional support and individualized learning activities. The findings suggest that remedial instruction is an essential component of literacy programs and contributes to improving learners' reading achievement. Previous studies have emphasized that timely and appropriate reading interventions significantly enhance learners' literacy development and academic performance (Bautista, 2022; Pocaan et al., 2022; Van Der Weijden et al., 2024).

Table 9 Significant Difference Between the Assessments of Teachers and Learners on the Reading Ability of

Variable	Teacher Mean	Learner Mean	t	p-value	Decision	Interpretation
Oral Language	4.18	4.06	1.26	.211	Fail to Reject H_0	Not Significant
Phonological Awareness	4.15	4.01	1.58	.117	Fail to Reject H_0	Not Significant
Fluency	4.21	4.10	1.34	.182	Fail to Reject H_0	Not Significant
Vocabulary	4.13	3.99	1.82	.071	Fail to Reject H_0	Not Significant
Comprehension	4.19	4.05	1.51	.133	Fail to Reject H_0	Not Significant

Table 9 presents the significant differences between the assessments of teachers and learners regarding the reading ability of grade 3 learners. The findings revealed that all dimensions—oral language ($p = .211$), phonological awareness ($p = .117$), fluency ($p = .182$), vocabulary ($p = .071$), and comprehension ($p = .133$)—obtained p-values greater than the 0.05 level of significance. Consequently, the null hypothesis was not rejected, indicating no significant difference between teachers and learners' assessments across all reading dimensions. These findings suggest that both groups shared similar perceptions of the learners' reading abilities, reflecting consistency in evaluating learners' literacy skills. The agreement between teachers' and learners' assessments strengthened the reliability of the findings and indicated a common understanding of learners' reading performance. Similar studies have reported that consistent assessments from different respondents provide a more accurate basis for planning literacy interventions and improving reading instruction (Finders et al., 2023; Metruk & Kováčová, 2025; Sibanda et al., 2024).

Table 10. Academic Performance of Grade 3 Learners in English

Academic Performance	Mean	SD	Interpretation
English Grade	89.76	3.84	Very Satisfactory

Table 10 presents the academic performance of Grade 3 learners in English. The respondents obtained a mean grade of 89.76 (SD = 3.84), interpreted as "Very Satisfactory." This finding indicates that the learners generally performed well in English despite the reading challenges identified in the study. The relatively small standard deviation also suggests that the learners' academic performance was fairly consistent. This result implies that while the learners achieved satisfactory academic outcomes, further improvement in reading ability may contribute to even higher academic achievement. Previous research has consistently shown that strong reading skills are closely associated with improved academic performance, particularly in language-related subjects (Martinez, 2022; Domingo, 2025; Quimsing & Ortega-Dela Cruz, 2024)

Table 11. Relationship Between Reading Ability and Academic Performance of Grade 3 Learners

Reading Ability	r	p-value	Decision	Interpretation
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Oral Language	0.58	<.001	Reject H ₀	Moderate Positive
Phonological Awareness	0.62	<.001	Reject H ₀	Strong Positive
Fluency	0.69	<.001	Reject H ₀	Strong Positive
Vocabulary	0.74	<.001	Reject H ₀	Strong Positive
Comprehension	0.81	<.001	Reject H ₀	Very Strong Positive
Overall Reading Ability	0.77	<.001	Reject H ₀	Strong Positive

Table 11 presents the relationship between reading ability and academic performance. The findings revealed that all dimensions of reading ability were positively and significantly correlated with learners' academic performance ($p < .001$). Oral language showed a moderate positive relationship ($r = 0.58$), whereas phonological awareness ($r = 0.62$), fluency ($r = 0.69$), vocabulary ($r = 0.74$), and comprehension ($r = 0.81$) demonstrated strong to very strong positive relationships. Overall reading ability obtained a strong positive correlation ($r = 0.77$), indicating that learners with better reading skills generally achieved higher English academic performance. These findings emphasize that reading ability is an important contributor to academic success and highlight the need to strengthen foundational literacy skills through effective instructional practices and reading interventions (Bautista, 2022; Idulog et al., 2023; Van Der Weijden et al., 2024).

Table 12. Predictors of Academic Performance Based on the Dimensions of Reading Ability

Predictor	β	t	p-value	Interpretation
Oral Language	0.18	2.81	.006	Significant
Fluency	0.24	3.42	.001	Significant
Vocabulary	0.31	4.73	<.001	Significant
Comprehension	0.38	5.91	<.001	Significant

Table 12 presents the regression analysis identifying the predictors of academic performance based on the dimensions of reading ability. The findings indicate that oral language ($\beta = 0.18$, $p = .006$), fluency ($\beta = 0.24$, $p = .001$), vocabulary ($\beta = 0.31$, $p < .001$), and comprehension ($\beta = 0.38$, $p < .001$) were significant predictors of learners' academic performance. Among these variables, comprehension emerged as the strongest predictor, followed by vocabulary, fluency, and oral language skills. These results suggest that improvements in learners' reading comprehension and vocabulary are likely to produce the greatest gains in academic achievement. These findings reinforce the importance of implementing comprehensive reading programs that develop multiple dimensions of literacy to enhance learners' overall academic success (Miciak et al., 2022; Metruk & Kováčová, 2025; Pocaan et al., 2022).

CONCLUSION

The study concluded that the reading ability of Grade 3 learners is closely associated with their academic performance in English. Teachers frequently employed effective reading methods, instructional approaches, strategies, and remedial interventions, and adequate instructional materials were generally available to support literacy instruction. Although teachers encountered moderately serious challenges in teaching reading, these did not hinder the consistent implementation of reading programmes. The findings also revealed no significant difference between the assessments of teachers and learners regarding reading ability, indicating a shared understanding of learners' literacy skills. Furthermore, the learners demonstrated a very satisfactory level of academic performance in English. Correlation analysis confirmed that all dimensions of reading ability were significantly and positively related to academic performance, while regression analysis identified oral language, fluency, vocabulary, and comprehension as significant predictors of learners' academic achievement, with comprehension emerging as the strongest predictor. Overall, the findings emphasize that strengthening learners' foundational reading skills is essential for improving academic performance and provide a sound basis for developing an Enhancement

RECOMMENDATIONS

Based on these findings, schools should continue to strengthen reading instruction by providing teachers with continuous professional development on evidence-based reading methods, learner-centered approaches, and effective remedial strategies to help struggling readers. School administrators should ensure the availability of quality instructional materials and provide sufficient support for literacy intervention programs, particularly for learners who experience difficulties in reading. Teachers are encouraged to place greater emphasis on developing oral language, fluency, vocabulary, and reading comprehension, as these factors significantly influence learners' academic performance. Parents should also be encouraged to support reading activities at home to reinforce literacy development beyond the classroom. Finally, the proposed Enhancement Capacity Building Program should be implemented and evaluated to determine its effectiveness in improving learners' reading ability. Future researchers may replicate this study in other school divisions or educational contexts using larger samples and additional variables to validate and expand the findings.

LIMITATIONS OF THE STUDY

This study was limited to selected Grade 3 teachers and learners from public elementary schools in the Division of Antipolo City during the School Year 2024–2025. Therefore, the findings may not be generalizable to other grade levels, schools, or divisions. The study relied on the respondents' perceptions and learners' English grades, which may have been influenced by individual responses and school assessment practices. In addition, only the variables included in the study were examined, while other factors that may affect reading ability and academic performance were not considered.

FUTURE RESEARCH DIRECTIONS

Future researchers may replicate this study in other school divisions or include learners from different grade levels to validate the findings. Additional variables, such as parental involvement, socioeconomic status, motivation, and home learning environment, may also be examined. Experimental or longitudinal studies may be conducted to evaluate the effectiveness of reading intervention programs and capacity-building initiatives in improving learners' reading ability and academic performance.

ETHICS STATEMENT

This study involved human participants and was conducted in accordance with the established ethical principles of educational research. Permission to conduct the study was obtained from the relevant educational authorities and participating schools. Written informed consent was obtained from all teacher participants, while parental consent and learner assent were secured for the Grade 3 learners prior to the data collection. Participation was voluntary, confidentiality and anonymity were maintained, and all data were used solely for research purposes in compliance with the Philippine Data Privacy Act of 2012 (Republic Act No. 10173).

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AI DISCLOSURE STATEMENT

While working on this manuscript, the author(s) got some help from ChatGPT (OpenAI) to draft text, polish grammar and language, sharpen academic writing, organize ideas, and generally make the manuscript look better. The AI was just a tool to support writing and did not take over the authors' intellectual input, interpretation of findings, or final decisions. After using the tool, the author(s) thoroughly reviewed, checked, and edited everything it generated, taking full responsibility for the accuracy, integrity, and originality of the published work.

How to cite:

Ce-Ing, J. K., & Sabado, A. G. (2026). Effectiveness of a cognitive learning strategy intervention on vocabulary retention of Grade 6 English learners in Atok District, Benguet. *BAMBOO NEXUS: Journal of Innovation, Education, and Climate Action (BN-JECA)*, 1(1), 12-22. DOI 10.67691/bnjeca.v1i1.002
