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The Role of Critical Thinking Skills on Academic Performance of Grade Six Pupils in Dapitan City Central School

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ABSTRACT: This study aimed to determine the critical thinking skills and their relationship with the academic performance of Grade Six pupils in Dapitan City Central School and Polo Elementary School, Schools Division of Dapitan City, during School Year 2025–2026. The respondents of the study were three hundred thirty-two (332) Grade Six pupils. The study employed survey and descriptive-correlational research methods using an adopted questionnaire for critical thinking skills and pupils' actual academic performance taken from class advisers. The pupils' overall perceived level of critical thinking skills was average in terms of interpretation, analysis, evaluation, inference, explanation, and self-regulation. Their academic performance was generally described as good. The study also found no significant relationship between critical thinking skills and academic performance. Therefore, the study concluded that while pupils demonstrated average critical thinking skills and good academic performance, their perceived critical thinking skills did not significantly influence their academic performance. Based on the findings, DepEd officials and school heads may strengthen school-based programs that promote higher-order thinking skills, while teachers may integrate more activities that develop interpretation, analysis, evaluation, inference, explanation, and self-regulation. Parents may also support home-based learning activities that encourage reasoning and problem-solving, and future researchers may conduct similar studies involving other grade levels, schools, or related variables.

KEYWORDS: critical thinking skills, academic performance, Grade Six pupils, descriptive-correlational research, Dapitan City.

INTRODUCTION

Critical thinking skills serve as an important independent variable in understanding pupils' academic performance because they enable learners to interpret information, analyze ideas, evaluate evidence, draw conclusions, explain reasoning, and regulate their own learning. In the classroom setting, pupils who possess stronger critical thinking skills are more likely to understand lessons deeply, solve academic problems, organize their thoughts, and apply learned concepts in meaningful tasks. Thus, academic performance, as the dependent variable, may be influenced by the extent to which pupils demonstrate higher-order thinking skills during learning activities and assessments. Dwyer et al. (2016) emphasized that critical thinking supports learners in analyzing information, evaluating arguments, and making reasoned judgments, which are necessary for academic success. Similarly, Schneider and Preckel (2017) explained that academic achievement is shaped by learning strategies, instructional quality, motivation, and learner engagement, suggesting that critical thinking may contribute to performance but works together with other academic factors. Hence, examining the connection between critical thinking skills and academic performance is necessary in determining whether pupils' ability to think critically can help explain variations in their school achievement.

Critical thinking refers to the learner's ability to interpret information, analyze ideas, evaluate evidence, draw logical conclusions, explain reasoning, and regulate one's own thinking. It is considered an important skill in education because it helps pupils move beyond memorization and become more reflective, independent, and evidence-based learners. Alsaleh (2020) emphasized that critical thinking is one of the most important indicators of student learning quality and should be developed through curriculum content and appropriate teaching approaches. Similarly, Batdı et al. (2024) found that critical thinking training has a positive effect on both students' critical thinking skills and academic achievement, showing that learners who are guided to reason, evaluate, and make sound judgments tend to perform better academically. Thus, critical thinking is an essential learning competency that may strengthen pupils' understanding, problem-solving ability, decision-making, and academic performance.

In the Philippine context, the need to strengthen learners' critical thinking skills has become more urgent because recent national and international assessments have shown continuing challenges in higher-order thinking. The OECD (2024) reported that Filipino students scored significantly below the OECD average in creative thinking in PISA 2022, with a mean score of 14 compared with the OECD average of 33, suggesting gaps in learners' ability to generate, evaluate, and improve ideas. In response to these learning needs, the Department of Education's

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MATATAG Curriculum emphasizes the development of 21st-century skills, including learning and innovation skills that support reasoning, problem-solving, and lifelong learning.

Academic performance refers to the extent to which learners achieve the expected learning competencies, skills, and knowledge required in a particular grade level. It is commonly reflected through grades, test scores, classroom outputs, participation, and the ability to apply learned concepts in meaningful tasks. Schneider and Preckel (2017) emphasized that academic achievement is influenced by instructional quality, learning strategies, prior knowledge, motivation, and student engagement. Similarly, Lei, Cui, and Zhou (2018) found that student engagement is positively related to academic achievement, suggesting that learners who actively participate, focus on learning tasks, and show interest in classroom activities tend to perform better academically. In the context of Grade Six pupils, academic performance may therefore be improved when learners are provided with supportive instruction, meaningful learning activities, and opportunities to develop thinking skills that help them understand, analyze, and apply lessons effectively.

A growing body of evidence has demonstrated a positive correlation between critical thinking skills and academic achievement across educational settings. Orhan (2022) reported, through a meta-analysis, a moderate but consistent relationship between critical thinking and academic performance, indicating that learners with stronger analytical and evaluative abilities tend to score higher academically. Similarly, Er (2024) found significant associations between critical thinking and scholastic achievement among secondary learners, suggesting that the constructs are closely linked. These studies reinforce the notion that critical thinking skills serve as strong correlates and potential predictors of academic outcomes.

Despite the growing body of literature on critical thinking skills and academic performance, a clear research gap remains in the elementary education context, particularly among Grade Six pupils in Philippine public schools. Many previous studies have examined critical thinking among secondary, senior high school, college, or general student populations, leaving younger learners less explored even though they are still developing foundational skills in reasoning, problem-solving, decision-making, and self-regulated learning. Furthermore, existing studies commonly focus on describing the level of critical thinking skills or determining their relationship with academic achievement, but fewer studies examine whether critical thinking skills can predict pupils' academic performance. This creates a methodological and contextual gap because correlation alone does not fully explain the extent to which specific critical thinking skills may account for variations in learners' school performance. In the local setting, no available study has specifically investigated the predictive role of critical thinking skills on the academic performance of Grade Six pupils in Dapitan City Central School and Polo Elementary School under the Schools Division of Dapitan City. Hence, this study is necessary to provide localized evidence on whether interpretation, analysis, evaluation, inference, explanation, and self-regulation serve as meaningful predictors of academic performance among elementary learners within the socio-educational context of Dapitan City.

LITERATURE

Critical thinking skills

Critical thinking skills have been increasingly emphasized in elementary education as essential components of higher-order thinking. Masithoh and Widodo (2025) found that elementary pupils demonstrate varied levels of critical thinking abilities, with many students showing only moderate proficiency in analyzing and evaluating information. Similarly, Chusni and Saputro (2021) reported that discovery learning integrated with e-learning significantly enhanced pupils' critical thinking performance, although many learners still struggled with higher-level reasoning. These findings highlight that while CTS can be developed at the elementary level, pupils' abilities differ widely depending on instructional methods and learning environments.

Analysis

Analysis is a central element of critical thinking, enabling learners to break down information into meaningful components and examine relationships among ideas. Ennis (2018) emphasized that analytical thinking allows students to distinguish relevant information from extraneous details, identify underlying assumptions, and understand logical structures within academic tasks. Likewise, Halpern (2020) noted that analysis supports learners in evaluating evidence, comparing viewpoints, and detecting inconsistencies, which leads to more accurate interpretations and well-reasoned conclusions. These perspectives highlight the importance of analysis in helping students navigate complex academic material and strengthen their overall reasoning capabilities.

Evaluation

Evaluation is a key dimension of critical thinking because it involves assessing the credibility, relevance, and logical strength of information or arguments. Paul and Elder (2019) emphasized that evaluation enables learners to judge the quality of evidence, detect fallacies, and determine whether conclusions are well-supported, which is essential for sound decision-making in academic settings. Likewise, Facione (2020) noted that evaluation requires students to analyze claims, weigh alternative perspectives, and scrutinize reasoning processes to arrive at justified conclusions. These insights highlight that evaluation not only strengthens learners' reasoning abilities but also enhances their capacity to engage critically with academic content, ultimately influencing their overall academic performance.

Inference

Inference is a crucial component of critical thinking, allowing learners to draw logical conclusions based on available evidence. Facione (2020) described inference as the ability to connect information, formulate hypotheses, and derive justified conclusions, making it essential for problem-solving in academic tasks. Similarly, Halpern (2020) emphasized that strong inferential skills enable students to make predictions, interpret incomplete information, and evaluate the likelihood of different outcomes. Together, these studies highlight that inference strengthens reasoning and supports deeper comprehension, which are vital for success across subject areas.

Explanation

Explanation is another vital element of critical thinking, as it requires learners to articulate their reasoning clearly and justify their conclusions. Kuhn (2019) noted that explanation helps students demonstrate how they arrived at an answer by organizing their thoughts and presenting coherent arguments. Likewise, Paul and Elder (2019) emphasized that explanation involves presenting evidence, clarifying assumptions,

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and communicating reasoning in a structured manner, which enhances both understanding and academic discourse. These perspectives illustrate how explanation fosters meaningful learning and supports academic performance by improving clarity of thought.

Self-Regulation

Self-regulation is an advanced component of critical thinking that involves monitoring and controlling one's cognitive processes. Zimmerman (2017) defined self-regulation as the ability to plan, evaluate, and adjust one's learning strategies to achieve academic goals. In a similar vein, Facione (2020) noted that self-regulation includes reflecting on one's thinking, recognizing errors, and modifying approaches to improve outcomes. These studies highlight that self-regulation promotes independent learning, enhances problem-solving skills, and contributes significantly to students' academic success, making it an essential indicator of critical thinking.

Academic performance

Academic performance in the Philippine basic education system is influenced by multiple cognitive and contextual factors, including students' learning abilities, classroom environment, and curriculum standards. In a national study, Bernardo and Estrellado (2017) emphasized that Filipino learners' academic performance is shaped by both cognitive competencies and sociocultural influences, such as home support and school resources. Likewise, Jocson and Espinosa (2018) found that pupils' academic outcomes are closely linked to school readiness and foundational learning experiences, showing that early academic preparation significantly contributes to later performance. These studies highlight that academic achievement in the Philippines is multifaceted and requires strong cognitive skills and supportive learning conditions.

Conceptual Framework

The conceptual framework is illustrated in Figure 3. Part I outlines the profile of the respondents, categorized according to sex, age, and family/guardian income. Part II highlights the independent variable, critical thinking skills which is measured through six indicators, namely: interpretation; analysis; evaluation; inference; explanation; and self-regulation. This section consists of thirty-one (31) items designed to assess the respondents' level of critical thinking skills. Part III presents the dependent variable, students' academic performance, which is evaluated based on the DepEd grading system.

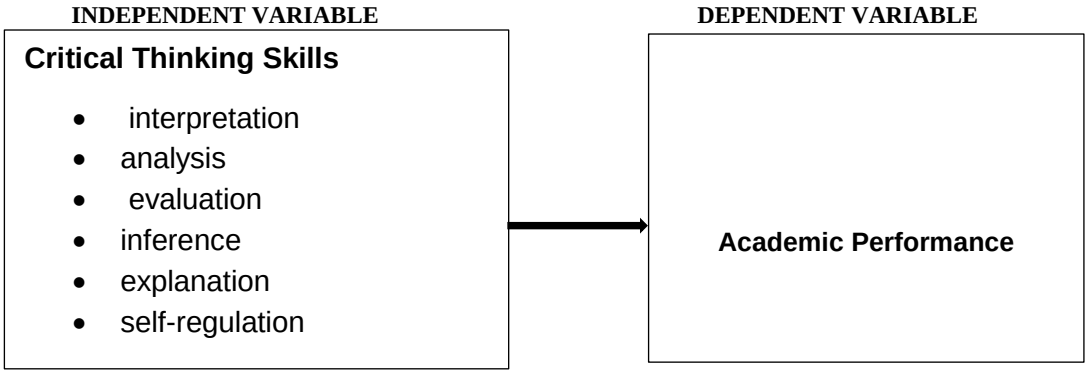


Figure 3. Conceptual Framework of the Study

Statement of the Problem

This study aimed to determine the critical thinking skills and its predictive influence on academic performance among grade six pupils in Dapitan City Central District, Schools Division of Dapitan City, for the School Year 2025–2026.

Specifically, it sought to answer the following questions:

1. What is the respondents' perceived level of critical thinking skills in terms of:
   2.1 interpretation;
   2.2 analysis;
   2.3 evaluation;
   2.4 inference;
   2.5 explanation; and
   2.6 self-regulation?
2. What is the respondents' level of academic performance?
3. Is there a significant relationship in the perceived level of critical thinking skills and level of academic performance?

Hypothesis

1. There is no significant relationship in the perceived level of critical thinking skills and level of academic performance.

Scope and Limitations of the Study

This study focused on examining the critical thinking skills and their predictive influence on the academic performance of three hundred thirty-two (332) Grade Six pupils enrolled at Dapitan City Central School and Polo Elementary School, Schools Division of Dapitan City, during School Year 2025–2026. Specifically, critical thinking skills were examined in terms of interpretation, analysis, evaluation, inference, explanation, and self-regulation, while academic performance was determined using the pupils' officially recorded grades. The study was limited to the identified respondents, variables, schools, and school year; therefore, the findings should be interpreted within the context of the participating schools and should not be generalized to all Grade Six pupils beyond the population covered by the study.

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RESEARCH METHODOLOGY

Method Used

The study employed a quantitative descriptive-correlational research design using the survey method. The survey method was utilized to gather data on the respondents' critical thinking skills through a structured questionnaire, while academic performance was obtained from the pupils' actual academic records. This approach was appropriate because it enabled the researcher to describe the existing levels of the variables and examine their statistical relationship without manipulating the study conditions. Check and Schutt (2017) explained that survey research provides a systematic approach to collecting information from respondents through questionnaires or interviews and is particularly useful for measuring characteristics, attitudes, and behaviors. Furthermore, Creswell and Guetterman (2019) described correlational research as a nonexperimental approach used to determine the degree and direction of relationships among variables as they naturally occur. Accordingly, the descriptive-correlational design was appropriate for determining the relationship between **critical thinking skills and academic performance** among Grade Six pupils and assessing the extent to which critical thinking skills may predict variations in their academic performance.

Research Instrument

The study utilized a structured questionnaire consisting of two parts. Part I measured the respondents' perceived critical thinking skills using an instrument adapted from the Critical Thinking Self-Assessment Scale–Short Form (CTSAS-SF) developed and validated by Payan-Carreira et al. (2022). The instrument assesses six dimensions of critical thinking: interpretation, analysis, evaluation, inference, explanation, and self-regulation. The original CTSAS-SF consists of 60 items and demonstrated strong psychometric properties, with an overall Cronbach's alpha coefficient of .969. For the present study, the instrument was adopted to suit the comprehension level and educational context of Grade Six pupils and was rated using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Part II covered the respondents' academic performance, which was based on their officially recorded grades obtained from their respective class advisers.

Ethical Consideration

The study adhered to established ethical principles governing research involving human participants, particularly minors. Prior to data collection, the researcher secured approval from the appropriate authorities, including the Research and Ethics Committee of Andres Bonifacio College, Inc., the Schools Division Office of Dapitan City, and the concerned school administrators. Since the respondents were Grade Six pupils, participation was voluntary, and appropriate consent procedures were observed before administering the research instrument. The respondents were informed of the purpose of the study and their right to decline or withdraw from participation without penalty. Confidentiality and anonymity were maintained by ensuring that personally identifiable information was not disclosed in the presentation, analysis, or reporting of the findings. The information gathered, including the pupils' academic performance, was treated with strict confidentiality and used solely for research purposes. The researcher also ensured that the questionnaire was understandable and appropriate for the respondents and that participation posed no unnecessary risk or discomfort. All collected data were securely handled and reported in aggregate form to protect the privacy and welfare of the pupil-respondents.

Statistical Treatment of the Data

The data gathered were organized, tabulated, and analyzed using appropriate descriptive and inferential statistical techniques. Average Weighted Value (AWV) and standard deviation (SD) were employed to determine the respondents' perceived level of critical thinking skills in terms of interpretation, analysis, evaluation, inference, explanation, and self-regulation, as well as to summarize the variability of their responses. Spearman's rank-order correlation coefficient (Spearman's rho) was utilized to determine the strength, direction, and statistical significance of the relationship between critical thinking skills and academic performance. All inferential statistical tests were evaluated at the 0.05 level of significance, and the data were processed using Microsoft Excel and IBM SPSS.

DATA PRESENTATION AND ANALYSIS

The data are presented following the statement of the problems of the current study. The study aimed to answer the following questions:

1. What is the respondents' perceived level of critical thinking skills in terms of: interpretation; analysis; evaluation; inference; explanation; and self-regulation?

Table 1: Summary of Respondents' perceived level of Critical Thinking Skills.

Statements	AWV	SD	Description	Interpretation
A. Interpretation	3.01	0.531	Somewhat Agree	Average
B. Analysis	3.03	0.474	Somewhat Agree	Average
C. Evaluation	3.04	0.581	Somewhat Agree	Average
D. Inference	2.99	0.446	Somewhat Agree	Average
E. Explanation	3.04	0.554	Somewhat Agree	Average
F. Self-Regulation	2.99	0.561	Somewhat Agree	Average
Overall	**3.016**	**0.287**	**Somewhat Agree**	**Average**

AWV-Average Weighted Value, SD-Standard Deviation

Table 1 presents the summary of the respondents' perceived level of critical thinking skills. The findings show that the overall AWV was 3.016 with an SD of 0.287, described as Somewhat Agree and interpreted as Average. Among the six indicators, Evaluation and Explanation obtained the highest AWV of 3.04, followed by Analysis with an AWV of 3.03, and Interpretation with an AWV of 3.01. Meanwhile, Inference and Self-Regulation obtained the lowest AWV of 2.99. These results indicate that the Grade Six pupils generally demonstrated an average level of critical thinking skills, with relatively stronger skills in evaluating and explaining ideas, but weaker skills in drawing conclusions and regulating their own thinking processes. This means that the pupils possess basic critical thinking skills, but these skills are not yet fully developed or

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consistently practiced at a high level. While they can somewhat interpret, analyze, evaluate, infer, explain, and regulate their thinking, they may still need more guidance and practice in using evidence, making sound conclusions, explaining reasoning, and monitoring their own learning. This implies that teachers should provide more meaningful learning activities that strengthen all dimensions of critical thinking skills, especially inference and self-regulation. Activities such as problem-based learning, inquiry-based tasks, reflective journals, evidence-based discussions, reading comprehension analysis, group problem-solving, and guided questioning may help pupils improve their reasoning abilities and academic performance.

The current finding is supported by Facione (2020), who explained that critical thinking involves interpretation, analysis, evaluation, inference, explanation, and self-regulation, which help learners make reasoned judgments and solve problems effectively. Similarly, Alsaleh (2020) emphasized that critical thinking can be developed when teachers use active learning strategies that encourage learners to question, analyze, evaluate, and justify ideas during classroom instruction.

2. What is the respondents' level of academic performance?

Table 2: Respondents' level of Student Academic Performance.

Scale	Grading Scale	Description	F	Percent	AWV	SD	Description
1	3.1-5.0	Failed	5	1.5%			
2	2.6-3.0	Fair	62	18.7%			
3	1.6-2.5	Good	113	34.0%	**3.40**	**1.010**	**Good**
4	1.1-1.5	Very Good	100	30.1%			
5	1.0	Excellent	52	15.7%			

F=Frequency, AWV=Average Weighted Value

3. Is there a significant relationship in the perceived level of critical thinking skills and level of academic performance?

Table 3: ***Test of relationship between the perceived level of critical thinking skills and respondents' level academic performance.***

Variables Correlated	rho-value	p-value	Interpretation
Critical Thinking Skills and Academic Performance	0.017	0.751	Negligible/slight positive correlation Not Significant

**Correlation is significant at the 0.05 level*

Table 3 presents the test of relationship between the respondents' perceived level of critical thinking skills and their level of academic performance. The result shows that the correlation coefficient was rho = 0.017, with a p-value of 0.751. Since the p-value is greater than the 0.05 level of significance, the relationship is not significant. The rho-value of 0.017 also indicates a negligible or slight positive correlation, which means that the association between critical thinking skills and academic performance was extremely weak. Therefore, the null hypothesis stating that there is no significant relationship between the perceived level of critical thinking skills and academic performance is accepted. This finding is consistent with the manuscript's result that the relationship between critical thinking skills and academic performance was not significant, with rho = 0.017 and p = 0.751. This means that the pupils' perceived critical thinking skills were not significantly related to their academic performance in this study. Although critical thinking skills are considered important in learning, the result suggests that higher or lower perceived critical thinking skills did not correspond to a meaningful increase or decrease in the pupils' academic performance. Thus, academic performance among the Grade Six pupils may have been influenced more by other learning-related factors, such as study habits, motivation, attendance, parental support, instructional strategies, classroom engagement, and access to learning resources. This implies that teachers should continue developing pupils' critical thinking skills, but they should not rely on critical thinking activities alone as the main approach to improving academic performance. Schools may need to provide broader academic support programs that also strengthen learners' study habits, reading comprehension, motivation, self-regulated learning, classroom participation, and home learning support. Since the result was not significant, school heads and teachers may also consider conducting further assessment to identify other factors that may better explain pupils' academic achievement.

The current finding contradicts Dwyer, Hogan, and Stewart (2016), who emphasized that critical thinking supports academic success because it enables learners to analyze information, evaluate evidence, and make reasoned judgments. However, the current finding is supported by Schneider and Preckel (2017), who explained that academic achievement is influenced by many interacting factors, such as instructional quality, learning strategies, motivation, and engagement; therefore, one skill area alone may not always show a significant relationship with academic performance.

DISCUSSION

The findings revealed that the Grade Six pupils demonstrated an average level of perceived critical thinking skills, with evaluation and explanation as relatively stronger areas and inference and self-regulation as weaker areas. This means that the pupils possessed basic critical thinking abilities but still required further development. This implies that teachers should provide more inquiry, problem-solving, reflective, and evidence-based learning activities. The finding is supported by Facione (2020) and Alsaleh (2020), who emphasized that critical thinking can be strengthened through activities that promote analysis, evaluation, reasoning, and reflection. The pupils also demonstrated a good level of academic performance. This means that they generally met expected academic requirements but still had room for improvement. This implies that appropriate instructional strategies, learner engagement, and academic support should be continuously strengthened. The finding is supported by Schneider and Preckel

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(2017) and Lei et al. (2018), who highlighted the importance of instructional quality, motivation, learning strategies, and engagement in academic achievement. Finally, there was no significant relationship between perceived critical thinking skills and academic performance; thus, the null hypothesis was retained. This means that higher perceived critical thinking skills did not necessarily correspond to better academic performance among the respondents. This implies that other factors, such as motivation, study habits, instructional practices, parental support, and learner engagement, may also contribute to academic achievement.

CONCLUSION

The study concludes that the Grade Six pupils demonstrated an **average level of perceived critical thinking skills** and a **good level of academic performance**. While the pupils possessed basic abilities in interpretation, analysis, evaluation, inference, explanation, and self-regulation, these skills still require further development. Moreover, perceived critical thinking skills were **not significantly related to academic performance**, indicating that academic achievement may be associated with other learner, instructional, and contextual factors. Thus, developing critical thinking should remain an important educational goal while being complemented by broader strategies that support pupils' overall learning and academic development.

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Conflict of interest statement: All authors declare no conflict of interest.
Ethical review statement: the research is submitted to the ethical review committee and approved for the conduct of the study. It does not involve human-sensitive issues.
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