

Critical Thinking Skills of Accountancy Students using RED Model: Insights for Teaching Strategies

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ABSTRACT

This convergent parallel mixed-methods study determined and described the critical thinking skills of Accountancy students at Capiz State University using the RED Model of Critical Thinking, comprising Recognize Assumptions, Evaluate Arguments, and Draw Conclusions, operationalized through five subskills: inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments. The study involved 46 Accountancy students who had completed Financial Accounting and Reporting under the same instructor. Total population sampling was used for quantitative analysis, while purposive sampling selected 12 participants for qualitative thematic analysis. Data were gathered using a researcher-developed instrument comprising 25 items and 4 open-ended questions, validated by a Certified Public Accountant and a psychometrician, and pilot-tested with 30 Accountancy students. Quantitative data were analyzed using descriptive statistics, and qualitative responses were analyzed using deductive thematic analysis. Findings showed the strongest performance in interpretation and deduction, indicating the ability to understand accounting concepts and apply rules systematically. However, recognition of assumptions emerged as the weakest skill, with most students struggling to identify unstated premises. Performance in inference, argument evaluation, and overall critical thinking varied widely. Qualitative analysis revealed heavy reliance on memorization and pattern-matching rather than analytical reasoning, though students demonstrated awareness of their limitations. The practical implication is that students may struggle with professional situations that require systematic questioning of management assertions and logical reasoning beyond memorized patterns, potentially limiting professional skepticism. The study concluded that accounting education may benefit from active learning approaches explicitly teaching reasoning processes through structured instruction, guided practice, and institutional support for evidence-based teaching innovations.

1. Introduction

Critical thinking has become essential in accounting due to technological advancements, complex financial reporting standards, and ethical challenges. Modern accountants must not only perform technical computations but also interpret financial information, evaluate evidence, and exercise professional judgment (Wilkin, 2017). These higher-order cognitive abilities are particularly essential in Financial Accounting and Reporting (FAR), the foundation of accounting practice. In FAR, practitioners must analyze assumptions, assess arguments, and draw logical and defensible conclusions. Despite its importance, literature continues to highlight inconsistent levels of critical thinking skills among accounting students, raising concerns about their readiness for professional practice (Rebele & St. Pierre, 2019).

The Commission on Higher Education (CHED) Memorandum Order No. 27 (2017) mandates that Philippine Bachelor of Science in Accountancy (BSA) programs cultivate higher-order thinking skills, including critical thinking, problem-solving, and informed judgment aligned with professional and ethical standards. However, recent studies indicate that accounting students often rely heavily on memorization and procedural learning rather than engaging in deeper conceptual reasoning (Sinnewe et al., 2023). This mismatch between policy expectations and actual student performance underscores a persistent gap in developing the analytical skills needed to handle increasingly complex accounting tasks.

This study adopts the RED Model of Critical Thinking (Pearson TalentLens, 2019), selected for its comprehensive approach to assessing reasoning abilities in accounting education. Rooted in the Watson-Glaser Critical Thinking Appraisal, the RED Model emphasizes three interrelated cognitive processes: Recognize Assumptions, Evaluate Arguments, and Draw Conclusions. These components describe how individuals identify premises, assess evidence, and construct logically supported judgments. The model is further operationalized through five core sub-skills. Inference, interpretation, and deduction fall under the Draw Conclusions component, as they require deriving logical outcomes from available information. Recognition of assumptions corresponds to the

Recognize Assumptions element, while evaluation of arguments reflects the Evaluate Arguments component. This classification illustrates the model's comprehensive structure and its relevance in assessing the reasoning processes required for effective decision-making in professional accounting practice. Although numerous international studies have explored the development of critical thinking among accounting students, limited empirical evidence exists on applying the RED Model in the Philippine educational context, particularly in analyzing students' reasoning abilities in FAR. Understanding not only the level of critical thinking students possess but also how they apply and express these skills in context is essential for developing targeted instructional interventions. This gap highlights the need to examine how accountancy students demonstrate these critical thinking competencies and how instructional practices can be enhanced to strengthen analytical and evaluative skills. Addressing this issue is crucial, as the ability to think critically not only contributes to improved academic performance but also ensures students' preparedness to tackle the complex, judgment-based demands of the accounting profession. This study aimed to determine and describe the critical thinking skills of Accountancy students at Capiz State University using the RED Model of Critical Thinking. Employing a convergent parallel mixed-methods design, the study collected quantitative data through a 25-item researcher-adapted assessment measuring five subskills: inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments, and qualitative data through written interview questions exploring students' reasoning processes and self-reflection on their thinking approaches in Financial Accounting and Reporting. Both datasets were analyzed independently and subsequently integrated through triangulation to determine and describe how students demonstrate critical thinking comprehensively and to generate evidence-based insights for teaching strategies that enhance analytical reasoning in accounting education.

1.1 Statement of the Problem

This study aims to determine and describe the critical thinking skills of Accountancy students using the RED Model of Critical Thinking developed by Pearson TalentLens (2019), comprising Recognize Assumptions, Evaluate Arguments, and Draw Conclusions. (1) What are the critical thinking skills of Accountancy students in the Financial Accounting and Reporting subject as a whole and in terms of the five subskills of the RED Model: inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments? (2) How do Accountancy students demonstrate their critical thinking skills, as reflected in their written interview responses, in terms of the five subskills of the RED Model: inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments? (3) What insights on teaching strategies can be drawn based on the results of the study?

1.2 Theoretical Framework

This study is anchored on the RED Model of Critical Thinking (Pearson TalentLens, 2019), which provides a structured framework for analyzing how individuals process information and make reasoned judgments. The acronym RED represents the three core components of critical thinking: Recognize Assumptions, Evaluate Arguments, and Draw Conclusions. These components collectively explain individuals' ability to identify implicit premises, assess the credibility and relevance of information, and draw logical conclusions from evidence. The model emphasizes that effective critical thinking involves both cognitive skills and the reflective application of these skills in decision-making contexts.

In accounting education, the RED Model is relevant because students must analyze financial information, verify assumptions, evaluate competing interpretations, and draw sound conclusions in accordance with accounting standards. The model comprises five measurable sub-skills: inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments. These sub-skills provide a comprehensive basis for assessing students' analytical and reasoning abilities in Financial Accounting and Reporting and guide both quantitative assessment and qualitative interpretation of reasoning patterns.

Supporting the RED Model is Dewey's (1933) Reflective Thinking Theory, which defines critical thinking as the active, persistent, and careful consideration of beliefs or claims in relation to their supporting evidence. Dewey highlighted the role of reflection in bridging doubt and understanding, allowing learners to scrutinize assumptions and reach justified conclusions. This reflective process is particularly relevant in accounting, where students must move beyond memorizing rules to understanding the principles underlying financial reporting standards. This theory complements the RED framework by reinforcing the importance of reflective judgment in evaluating arguments and forming evidence-based decisions, skills essential in analyzing complex accounting scenarios.

Additionally, Vygotsky's (1978) Constructivist Learning Theory provides the pedagogical foundation supporting the development of critical thinking in educational settings. Constructivism suggests that learners actively construct knowledge through meaningful interactions, collaboration, and engagement with authentic tasks. In accounting education, this theory underscores the value of engaging students in analytical discussions, problem-solving activities, and real-life accounting situations where they can apply and strengthen critical thinking skills. Vygotsky's theory, therefore, complements the RED Model by explaining how students develop and refine their reasoning processes through guided learning experiences.

Together, the RED Model of Critical Thinking, Dewey's Reflective Thinking Theory, and Vygotsky's Constructivist Learning Theory establish the theoretical foundation of this study. These frameworks collectively explain how critical thinking skills are formed, applied, and evaluated, thereby providing a strong basis for examining the analytical and reasoning abilities of Accountancy students in Financial Accounting and Reporting.

2. Literature Review

Critical thinking is recognized as essential in 21st-century education, particularly in professional programs. Facione (2015) defines it as a purposeful, self-regulatory judgment that results in interpretation, analysis, evaluation, and inference, along with the explanation of the evidential, conceptual, methodological, or contextual considerations underlying that judgment. This definition

emphasizes that critical thinking is not merely a cognitive skill but a deliberate, reflective reasoning process that guides decision-making and problem-solving. In higher education, critical thinking enables students to move beyond surface-level learning and engage with complex ideas, challenge assumptions, and construct well-reasoned arguments (Abrami et al., 2015). Research demonstrates that critical thinking is recognized as essential in 21st-century education, particularly in professional programs. Facione (2015) defines it as a purposeful, self-regulatory judgment that results in interpretation, analysis, evaluation, and inference, along with the explanation of the evidential, conceptual, methodological, or contextual considerations underlying that judgment. This definition emphasizes that critical thinking is not merely a cognitive skill but a deliberate, reflective reasoning process that guides decision-making and problem-solving. In higher education, critical thinking enables students to move beyond surface-level learning and engage with complex ideas, challenge assumptions, and construct well-reasoned arguments (Abrami et al., 2015). Research demonstrates that critical thinking

2.1 Critical Thinking in Accounting

The accounting profession demands more than technical proficiency; it requires analyzing complex financial situations, identifying underlying assumptions, evaluating evidence, and making informed judgments in accordance with professional standards (Sithole et al., 2017). The AICPA has consistently identified critical thinking as a core competency, emphasizing that accountants must recognize problems, evaluate alternatives, and develop well-reasoned conclusions (AICPA, 2019). Wilkin (2017) argues that the evolution of the accounting profession, characterized by increasingly complex financial reporting standards, technological disruption, and ethical challenges, has intensified the need for accountants who can think critically and adaptively. Traditional accounting education, which often emphasizes procedural knowledge and rule memorization, may not adequately prepare students for the analytical demands of contemporary practice. This concern is supported by research indicating that many accounting graduates enter the profession with insufficient critical thinking skills (Sinnewe et al., 2023). Research demonstrates that accounting students often struggle to apply critical thinking skills in practical contexts, particularly in areas that require professional judgment, such as revenue recognition, lease accounting, and fair value measurement. These findings suggest that while students may perform well on technical examinations, they may lack the broader analytical skills necessary to interpret standards, evaluate competing arguments, and justify professional decisions. The integration of critical thinking into accounting education has been the subject of ongoing discussion among educators and practitioners. Flood and Wilson (2020) emphasize that accounting curricula should explicitly teach critical thinking skills through case studies, ethical dilemmas, and real-world problem-solving activities. Similarly, Apostolou, Dorminey, Hassell, and Hickey (2019) advocate for teaching methods that move beyond passive learning and engage students in active inquiry, reflection, and argumentation.

2.2 RED Model of Critical Thinking

The RED Model (Pearson TalentLens, 2019) provides a structured framework for understanding and assessing critical thinking through three core components: Recognize Assumptions, Evaluate Arguments, and Draw Conclusions. This model is rooted in the Watson-Glaser Critical Thinking Appraisal, a widely used and validated instrument for measuring critical thinking (Pearson, 2019).

Recognize Assumptions refers to the ability to identify implicit statements, presuppositions, or unstated beliefs underlying arguments or information. In accounting, this skill is essential for identifying the premises on which financial statements are based, such as the going-concern assumption, the accrual basis of accounting, and management's estimates and judgments (Turner & Tyler, 2023). Students who can recognize assumptions are better equipped to question the validity of information, challenge unstated premises, and understand the limitations of financial data.

Evaluating Arguments involves assessing the credibility, relevance, logical strength, and evidentiary support of statements or reasons used to support a conclusion. This component is particularly relevant in accounting practice, where professionals must determine whether financial reporting decisions are supported by appropriate evidence and whether proposed treatments comply with accounting standards. Evaluating arguments enables students to distinguish between strong and weak reasoning, identify logical fallacies, and assess the quality of evidence presented in accounting scenarios. Draw Conclusions encompasses the ability to derive logical outcomes from available information through processes such as inference, deduction, and interpretation. In Financial Accounting and Reporting, this skill is applied when students must determine the appropriate accounting treatment for a transaction, interpret financial ratios, or predict the financial implications of business decisions (Tan & Laswad, 2018). Drawing sound conclusions requires students to synthesize information, apply accounting principles, and construct logically defensible judgments.

The RED Model defines and measures these three components through five observable sub-skills: inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments. This structure provides a comprehensive basis for determining, describing, and assessing students' analytical and reasoning abilities in accounting education (Pearson, 2019).

3. Methodology

The study employed a convergent parallel mixed-methods design grounded in a pragmatist worldview to determine and describe Accountancy students' critical thinking skills using the RED Model. According to Creswell and Creswell (2018), this design involves collecting quantitative and qualitative data simultaneously, analyzing them independently, and integrating results through triangulation. The quantitative component measured students' performance across five subskills (inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments) through a researcher-adapted assessment, which was analyzed using descriptive statistics (frequencies, percentages, and ranks). The qualitative component explored reasoning processes and self-reflections through written interviews, which were analyzed using deductive thematic analysis following Braun

and Clarke's (2022) six-phase framework. Both datasets were triangulated to validate findings and generate actionable teaching strategies, consistent with pragmatism's emphasis on practical problem-solving.

3.1 Participants of the Study

The study was conducted at Capiz State University, Main Campus, located along Fuentes Drive, Roxas City, Capiz, during Academic Year 2025 to 2026. The researchers selected this locale because the university offers a Bachelor of Science in Accountancy program under the College of Management that provides a supportive learning environment for developing analytical and reasoning skills essential to the accounting profession.

The study involved 46 Accountancy students, 24 third-year and 22 fourth-year, from a total population of 50 students at Capiz State University, Main Campus, during Academic Year 2025–2026. The four researchers, who were fourth-year students, were excluded to maintain objectivity. All participants had completed Financial Accounting and Reporting under the same instructor, ensuring consistent instructional exposure.

For the quantitative phase, total-population sampling was used, including all eligible students to maximize data representativeness and richness. For the qualitative phase, purposive sampling selected 12 participants, 6 third-year students and 6 fourth-year students, who provided detailed and reflective responses for in-depth thematic analysis. This equal distribution across year levels ensured balanced representation of perspectives from both groups. The number 12 was chosen based on recommendations in qualitative research literature, which suggest that 10–15 participants are generally sufficient to achieve data saturation, allowing the researchers to capture rich, in-depth insights while maintaining manageable data for thematic analysis (Creswell & Poth, 2018; Braun & Clarke, 2022; Guest, Bunce, & Johnson, 2006).

The participants of this study were 46 Bachelor of Science in Accountancy students from the College of Management, Capiz State University, Main Campus. This group consisted of 24 third-year and 22 fourth-year students, all of whom had completed the Financial Accounting and Reporting course under the same instructor. This ensured that the participants had comparable academic exposure and were evaluated under similar instructional conditions. The inclusion of both third-year and fourth-year students provided diversity in accumulated accounting knowledge while maintaining comparability through the shared instructional context. All 46 eligible students voluntarily agreed to participate and completed both the quantitative assessment and qualitative written interview components, resulting in a 100 percent participation rate. The researchers adhered to ethical principles throughout the study to protect participants' rights and welfare. Participation was entirely voluntary with no coercion, and participants were informed that their decision would not affect their academic standing. Electronic informed consent was obtained from all 46 participants through the Data Privacy Consent Form embedded in Google Forms, in accordance with the Data Privacy Act of 2012 (Republic Act No. 10173), which explained the study's purpose, procedures, voluntary nature, confidentiality measures, and the right to withdraw. All data were treated with strict confidentiality, using anonymous identifiers from R1 to R46, stored in password-protected files on secure devices, with backup copies in encrypted cloud storage. The instruments posed no physical or psychological harm and contained only academic content related to accounting. Findings are reported in aggregate form with quotes identified only by anonymous codes. The researchers secured approval from the research adviser, the advising committee, and institutional authorities prior to data collection, and treated all participants with respect and dignity throughout the study.

3.2 Data Gathering and Data Analysis Procedures

The researchers followed a systematic data collection protocol, beginning with securing institutional permissions from the thesis adviser, the College of Management Dean, and the university administration. After obtaining approval, the researchers personally contacted all 46 eligible participants through class group chats, explaining the study's purpose, procedures, voluntary nature, confidentiality measures, and compliance with the Data Privacy Act. The instrument was administered online via Google Forms over five days, providing flexibility for participants while maintaining standardized conditions through an automated one-hour time limit for both the quantitative and qualitative components. The integrated Google Forms document included the Data Privacy Consent Form, a demographic information section, a 25-item quantitative test, and four qualitative written interview questions presented immediately after the test to capture fresh reflections. The researchers monitored submissions daily, sent reminders to non-responders, and were available to answer questions or provide technical assistance. All 46 participants completed both components within the five days, achieving a 100 percent response rate. Data were securely stored in the researchers' password-protected Google Forms account, immediately downloaded to password-protected files, backed up in encrypted cloud storage, and de-identified using participant codes (R1 to R46) for all analysis and reporting to ensure confidentiality. The researchers analyzed data using both quantitative descriptive and qualitative methods, consistent with the convergent parallel mixed-methods design, with each dataset analyzed independently before triangulation. For quantitative analysis, raw Google Forms data were exported to Microsoft Excel, where responses were verified for completeness and coded as correct (1 point) or incorrect (0 points). Subskill scores were calculated by summing correct responses (maximum 5 points per subskill), overall scores by summing all subskill scores (maximum 25 points), and rank ranges were assigned based on overall scores. Descriptive statistics, including frequencies and percentages, were computed for each score level, and data were organized into tables presenting individual participant score distributions, frequencies, percentages, and rank ranges for each subskill and overall performance. For qualitative analysis, all 46 written interview responses were compiled and organized by participant code. Twelve participants who provided detailed responses were purposively selected for in-depth thematic analysis. Following Braun and Clarke's (2022) six-phase framework, the researchers conducted deductive thematic analysis guided by the R.E.D. Model: familiarization through repeated reading, systematic coding using predetermined codes derived from the R.E.D. Model, collating codes into potential themes, reviewing and refining themes, defining and naming themes with illustrative quotations, and producing a comprehensive thematic organization of

six major themes. Finally, the researchers systematically triangulated quantitative and qualitative data by comparing score distributions with reasoning characteristics, ensuring consistency across datasets and supporting the interpretation of critical thinking skills and reasoning processes.

4. Findings

4.1 Overall Critical Thinking Performance

The quantitative analysis revealed substantial variation in students' critical thinking performance across the five subskills operationalizing the R.E.D. Model. In inference, 52.1% of students scored 4 or 5 points out of 5, with the modal score being 4 points (47.8%). However, 30.5% scored 2 points or below, indicating difficulty deriving logical conclusions from accounting premises. Recognition of assumptions presented the greatest challenge, with only 21.7% scoring 4 or 5 points, the lowest proportion among all subskills. The modal score was 3 points (43.5%), with more than one-third (34.8%) scoring 2 points or below. Deduction showed the strongest performance, with 58.7% scoring 4 or 5 points and 37.0% achieving perfect scores, the highest proportion across all subskills. Interpretation demonstrated the highest overall performance, with 67.4% scoring 4 or 5 points and 39.1% achieving perfect scores. Evaluation of arguments revealed a complex bimodal pattern, with 60.9% scoring 4 or 5 points but 6.5% scoring zero, the only subskill where complete failure occurred. Overall critical thinking performance showed substantial variation, with scores ranging from 7 points (28%) to 23 points (92%) out of a maximum of 25 points. The distribution revealed that 47.8% scored 18 points or above (ranked 1st to 22nd), 34.8% scored 13 to 17 points (ranked 23rd to 38th), and 17.4% scored 7 to 12 points (ranked 39th to 46th), indicating that while nearly half scored above 18 points, more than half (52.2%) scored below this level.

4.2 How Students Demonstrate Critical Thinking Skills

The qualitative thematic analysis of 12 participants' written interview responses, guided by the R.E.D. The model framework revealed six major themes characterizing students' critical thinking processes. First, students demonstrated limited explicit recognition of assumptions, tending to accept stated information at face value and focus on applying remembered standards rather than probing underlying premises, with emphasis on "compliance" and "matching" rather than critical examination. Second, students employed dual-process reasoning, combining attempted systematic analysis based on accounting standards with reliance on intuition, gut feeling, or instinct when facing uncertainty or incomplete knowledge. Third, students demonstrated standard recall and logical application, with the quality of their conclusions heavily dependent on the accuracy and completeness of memory retrieval; when recall was incomplete, they resorted to general logic or intuition. Fourth, students demonstrated notable metacognitive awareness, recognizing gaps between intended analytical approaches and actual reasoning processes, acknowledging over-reliance on memorization and intuition, and expressing commitment to improvement despite lacking concrete strategies for change. Fifth, confidence interacted critically with reasoning quality: a lack of confidence triggered shifts from attempted systematic analysis to intuitive judgment, and self-doubt reduced the depth of analytical engagement. Sixth, students emphasized memorization and recall over conceptual understanding, with their predominant strategy being to recall memorized accounting standards and match them to scenarios, an approach reflecting surface-level learning rather than deep conceptual understanding. These themes collectively revealed that students are aware of appropriate analytical strategies but lack the consistent ability to execute them, particularly when facing uncertainty, complexity, or situations where memorized knowledge proves insufficient.

4.3 Integration of Quantitative and Qualitative Findings

The convergent parallel mixed-methods design enabled triangulation of quantitative performance data with qualitative reasoning processes, revealing five major integrated findings through patterns of convergence and complementarity. The Memorization Paradox emerged as a central finding, with students demonstrating procedural competence in interpretation (67.4%) and deduction (58.7%) when questions aligned with memorized standards but struggling with assumption recognition (21.7%) and showing instability in argument evaluation (6.5% scoring zero), explained by surface-level learning prioritizing recall over deep conceptual understanding. The Confidence Crisis revealed that approximately 48% scored 18 points or above. However, performance appeared fragile and context-dependent, collapsing under uncertainty when students lacked confidence, regardless of their actual knowledge level, with confidence serving as the critical juncture that determined whether students maintained systematic analysis or retreated to intuition, rationalized as "professional judgment." The Assumption Recognition Gap emerged from the convergence of both data sources, independently confirming that assumption recognition is the most critical weakness: students accept information at face value, focus on compliance rather than critical examination, and fail to identify unstated premises, threatening their capacity for professional skepticism and ethical reasoning, which are essential to accounting practice. Metacognitive Awareness Without Strategic Competence revealed that students possessed substantial self-awareness about limitations but lacked alternative strategies to address identified weaknesses, continuing to employ unsuccessful approaches because they did not know how to engage in systematic assumption recognition, rigorous argument evaluation, or principle-based reasoning when standards were not immediately recalled. Adaptive but Inadequate Dual-Process Reasoning showed that students developed a practical but ultimately insufficient approach of attempting standards-based analysis supplemented by intuitive judgment when systematic approaches failed, with this retreat to intuition representing an adaptive response that nevertheless undermined critical thinking development by preventing students from building tolerance for ambiguity and developing robust analytical strategies.

4.4 Teaching Strategies to Enhance Critical Thinking

Based on the integrated findings, seven evidence-based teaching strategies emerged to address specific patterns of weakness, instability, and shallow learning identified through triangulation. Explicit Assumption Recognition Training was identified as the highest priority, given that only 21.7% scored 4 or 5 points; recommended approaches include assumption mapping activities, think-aloud modeling of expert reasoning, and scenarios deliberately embedded with questionable assumptions. Building Conceptual Understanding Beyond Memorization addressed the finding that strong performance masked surface-level learning, recommending pedagogical shifts from “What is the rule?” to “Why does this rule exist?” through case-based learning, principle-based reasoning, and “explain to a novice” exercises. Confidence-Building Through Scaffolded Mastery addressed the confidence crisis by recommending progressive complexity sequences, frequent low-stakes formative assessments with detailed feedback, and collaborative problem-solving that normalizes uncertainty. Teaching Strategic Reasoning for Uncertainty targeted students’ metacognitive awareness without strategies by recommending explicit decision-making heuristics, reasoning frameworks, and productive struggle sessions that modeled expert thinking when facing uncertain situations. Systematic Argument Evaluation Training addressed the bimodal distribution by recommending explicit evaluation criteria, argument evaluation templates, debate exercises, and peer review activities. Integration Across the Curriculum addressed overall performance variation by recommending embedding R.E.D. Model components explicitly across all accounting courses using consistent language, vertical integration to increase complexity across program years, and portfolio assessments to track development. Metacognitive Reflection and Strategy Development addressed inadequate dual-process reasoning by recommending structured reflection, error-analysis activities, strategy journals, and self-questioning techniques that become habitual through explicit instruction. These strategies collectively emphasize the need for explicit instruction in critical thinking processes, conceptual understanding development, strategic competence building, and confidence cultivation, moving beyond content transmission toward systematic cultivation of each R.E.D. Model component across the accounting curriculum.

4.5 Critical Thinking Skills and Reasoning of Accountancy Students in Financial Accounting and Reporting in Terms of Inference Inference, which measures students’ ability to draw logical conclusions from accounting information as part of the Draw Conclusions component of the Recognize Assumptions, Evaluate Arguments, and Draw Conclusions (RED) Model, ranked fourth among the five subskills. Table 1 shows that only 2 students (4.3%) achieved perfect scores of 5 points, ranking 1-2. The majority, 22 students (47.8%), scored 4 points, ranking 3-24. Eight students (17.4%) scored 3 points, ranking 25-32, while another 8 students (17.4%) scored 2 points, ranking 33-40. Five students (10.9%) scored 1 point, ranking 41-45, and 1 student (2.2%) scored 0 points, ranking 46th. This distribution shows that while about half of the students demonstrated strong inference abilities, scoring 80 percent or higher, a large portion struggled to draw accurate logical conclusions from accounting data consistently.

Table 1: Frequency Distribution of Accountancy Students’ Scores in Inference

Score	f	%	Rank Range
5 (100%)	2	4.3	1-2
4 (80%)	22	47.8	3-24
3 (60%)	8	17.4	25-32
2 (40%)	8	17.4	33-40
1 (20%)	5	10.9	41-45
0 (0%)	1	2.2	46
TOTAL	46	100.0	

Source: Data from the researchers.

Qualitative analysis showed that students relied heavily on memorized accounting rules rather than step-by-step logical reasoning when making inferences. Participant 5 stated, “I was not fully sure sometimes, but I tried to relate the conclusion to what I have learned from my studies. I just based my answer on the accounting rules that I still remember.” Similarly, Participant 7 explained, “I checked if the conclusion matched the accounting principles and if the information given supported it logically and accurately.” These responses show that students approached inference tasks by matching conclusions to remembered rules rather than by analyzing the logical relationships between facts and conclusions. Participant 13’s description, “After analyzing the situation, there was a conclusion. So if it agreed with what the accounting rule says (as far as I remembered it), then the ‘conclusion follows.’ If it went against the rule, then the ‘conclusion does not follow,’” shows a pattern-matching approach rather than genuine logical reasoning. Students also recognize their reliance on memory rather than careful analysis. Participant 5 added, “I realized that I still need to understand the concepts deeper because sometimes I just rely on memory or guessing. I also noticed that I tend to decide quickly, so I should take more time to analyze the situation and connect it with the right accounting principle before answering.” This self-awareness shows that students know they depend on memorization, but may not know how to do step-by-step logical reasoning. The practical implications of these findings suggest that students may struggle when faced with new accounting situations that require reasoning beyond memorized examples. In professional practice, accountants frequently encounter unique scenarios that require the logical extension of principles to new contexts, such as determining revenue recognition for new business models or drawing conclusions about the substance of complex contractual arrangements. Reliance on memory-based pattern matching rather than step-by-step reasoning may limit students’ ability to handle judgment-based tasks effectively. This finding is strongly supported by research highlighting the distinction between rule memorization and logical reasoning in accounting education. Facione (2015) defined inference as the cognitive ability to draw logical conclusions from given premises, facts, or evidence by identifying and securing the elements needed to formulate reasonable conclusions. This process requires

active analysis rather than simple recall of memorized patterns. This is precisely what students in this study struggled to demonstrate when they relied on “matching conclusions with remembered rules” rather than analyzing logical relationships. Wolcott and Sargent (2021) found that undergraduate students commonly demonstrate different stages of cognitive development, with many holding beliefs about knowledge that hinder the development of critical thinking. The authors emphasized that students who view knowledge as fixed rules rather than as principles requiring interpretation tend to struggle with inference tasks, exactly the pattern observed in this study, where students like Participant 13 described their approach as checking “if it agreed with what the accounting rule says” rather than engaging in logical analysis of the relationship between premises and conclusions. Apostolou et al. (2019) emphasized that effective development of critical thinking requires teaching methods that move beyond passive learning and engage students in active inquiry, reflection, and argumentation. Sinnewe et al. (2023) found that accounting students often demonstrated adequate recall of technical concepts but struggled with higher-order reasoning skills, such as inference, suggesting that this pattern is linked to teaching approaches that emphasize procedural knowledge over deeper conceptual understanding. This pattern is clearly evident in the present study, where 47.8% of students scored 4 points but relied on memorized rules rather than step-by-step logical reasoning. Flood and Wilson (2020) reinforced this concern by emphasizing that critical thinking must be taught explicitly and systematically rather than assumed to develop naturally through exposure to accounting content. They advocate instructional approaches that make thinking processes visible and provide opportunities for guided practice. This directly addresses the gap revealed by students’ self-awareness that they “need to understand the concepts deeper” but may lack the teaching support to move beyond memorization toward step-by-step reasoning. The present study’s findings align closely with these observations, as students’ responses revealed a preference for pattern-matching to memorized rules rather than engaging in the active, step-by-step logical analysis that Facione’s definition of inference requires and that Apostolou et al.’s framework of active inquiry emphasizes. This suggests that inference skill development requires deliberate teaching strategies that explicitly address students’ beliefs about the nature of accounting knowledge, provide structured practice in logical reasoning processes that extend beyond pattern recognition, and create opportunities for the careful, persistent analysis that genuine inference demands rather than the quick, memory-based decisions students currently employ.

Table 1.1: Deductive Thematic Analysis

Themes	Description	Sample Quotes	Participants
Inference	Students’ ability to determine what conclusions are supported by given accounting data and to make logical interpretations of accounting information, contributing to the Draw Conclusions component of the RED Model.	<p>“I was not fully sure sometimes, but I tried to relate the conclusion to what I have learned from my studies. I just based my answer on the accounting rules that I still remember. (P5)”</p> <p>“I checked if the conclusion matched the accounting principles and if the information given supported it logically and accurately. (P7)”</p> <p>“After analyzing the situation, there was a conclusion. So if it agreed with the accounting rule (as far as I remember), then the “conclusion follows,” and if it went against the rule, then the “conclusion does not follow.” (P13).</p>	P4, P5, P7, P9, P13, P29, P31, P32, P38, P39, P42, P46
		<p>“I realized that I still need to understand the concepts deeper because sometimes I just rely on memory or guessing. I also noticed that I tend to make quick decisions, so I should take more time to analyze the situation and connect it to the appropriate accounting principle before answering. (P5)”</p>	

Source: Data from the researchers

4.6 Critical Thinking Skills and Reasoning of Accountancy Students in Financial Accounting and Reporting in Terms of Recognition of Assumptions

Recognition of assumptions, part of the Recognize Assumptions component, was the weakest subskill, ranking fifth overall. As shown in Table 2, only 2 students (4.3%) achieved a perfect 5-point score (ranking 1–2), while 8 students (17.4%) scored 4 points (ranking 3–10). The largest group, 20 students (43.5%), demonstrated moderate performance with 3 points (ranking 11–30). Meanwhile, 13 students (28.3%) scored 2 points (ranking 31–43), and 3 students (6.5%) scored 1 point (ranking 44–46); no students received zero points. This distribution shows that 78.3% of students scored at or below 60%, highlighting widespread difficulty in identifying unstated assumptions in accounting scenarios.

Table 2: Frequency Distribution of Accountancy Students’ Scores in Recognition of Assumptions

Score	f	%	Rank Range
5 (100%)	2	4.3	1-2
4 (80%)	8	17.4	3-10

RESEARCH ARTICLE

3 (60%)	20	43.5	11-30
2 (40%)	13	28.3	31-43
1 (20%)	3	6.5	44-46
0 (0%)	0	0.0	-
TOTAL	46	100.0	

Legend: f = frequency; % = percentage. Source: Data from the researchers

Qualitative analysis showed that students struggled to distinguish between clearly stated information and hidden assumptions, often confusing surface-level similarities in wording with deeper conceptual distinctions. Participant 4 explained, “When the statements seemed similar or confusing, I decided which one was more correct or reasonable by checking which of the two was constructed in a clear and precise manner.” This response suggests the student focused on linguistic clarity rather than identifying underlying assumptions. Participant 13 described a similar approach: “When two statements seemed similar or confusing, I focused on the key terms and the exact meaning of the accounting rule. Then, I would compare both statements carefully and choose the one that clearly matched the correct accounting standard.” Participant 29 added, “I carefully examined the wording of each statement, then I matched them with the provisions of the standards, and I tried to remember which one accurately reflected the concept.” These responses show that students approached assumption recognition primarily as a matching exercise, comparing clear statements to memorized rules rather than probing beneath the surface to identify unstated premises. Students are aware of the difference between truly understanding a concept and merely being familiar with it. Participant 46 reflected, “I realized that it is really important to know about the standards related to the topics, and I must know the concept of the topics so that it will be my basis to answer whether the question is theory or problem solving. I also realized that it is important to really understand what the standards are telling us and not just memorize and be familiar.” This shows the gap between surface-level knowledge of standards and the deeper understanding needed to find hidden assumptions.

The practical implication of weak assumption recognition skills is particularly concerning for accounting practice. Professional accountants must routinely identify and challenge the assumptions underlying financial reporting judgments, such as management’s assumptions in fair value measurements, going-concern assessments, and revenue recognition criteria. Failure to recognize unstated assumptions can lead to acceptance of inappropriate accounting treatments, inadequate professional skepticism, and compromised audit quality. Students who cannot effectively identify assumptions in structured educational scenarios may face greater challenges when confronted with unclear real-world situations that require critical evaluation of management representations and financial reporting decisions.

These findings are strongly supported by research highlighting the critical importance of assumption recognition in professional accounting practice. Paul and Elder (2019) identified intellectual standards such as clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness as criteria for evaluating thinking quality. The present study reveals that students successfully applied some of these standards, particularly clarity in analyzing statement wording, as described by Participant 4, who focused on checking “which of the two was constructed in a clear and precise manner”, but struggled to simultaneously apply the deeper standards of breadth and depth needed to probe beneath explicit information and identify unstated premises. This suggests that students have developed a skill in surface-level textual analysis but have not yet extended their analytical standards to implicit content. This gap limits their ability to recognize the assumptions underlying accounting information.

Nolder and Kadous (2018) argued that professional skepticism, frequently cited by regulators as lacking in audit failures, requires cognitive processing characterized by systematic questioning and critical assessment of evidence. The authors emphasized that professional skepticism, as a mindset, involves not only the cognitive ability to identify unstated premises but also the disposition to question what is taken for granted systematically. This framework directly explains the present study’s findings, as students’ responses revealed a tendency to accept surface-level information without probing for underlying assumptions. For example, Participants 13 and 29 described approaches focused on “comparing statements carefully” and “matching them with the provisions of the standards” rather than identifying the unstated premises underlying those standards. While such responses demonstrate engagement with explicit content, they suggest that students may not have developed the questioning disposition central to professional skepticism; however, it should be noted that task performance alone cannot definitively establish the presence or absence of dispositional characteristics. Turner and Tyler (2023) noted that recognizing assumptions is essential for identifying the premises on which financial statements are based, such as the going-concern assumption, the accrual basis of accounting, and management’s estimates and judgments. The present study’s finding that 78.3% of students scored at or below 60% on this subskill suggests significant gaps in this foundational competency, particularly given that students approached the task by matching statements with remembered standards rather than identifying the unstated premises underlying those standards. Terblanche and De Clercq (2021) identified assumption recognition as one of the most challenging critical thinking competencies, requiring learners to question unstated beliefs rather than accepting information at face value. Their research emphasized that assumption recognition requires explicit instructional attention and does not develop naturally through exposure to technical content alone. Facione (2015) emphasizes that effective critical thinking requires cognitive skills alongside dispositions like truth-seeking and systematicity. This study’s performance patterns suggest gaps in these areas, as students often approached assumption recognition as a mechanical matching exercise rather than a systematic inquiry. This is evidenced by Participant 29’s reliance on “matching wording with the provisions of the standards” and Participant 46’s acknowledgment of needing to “really understand” rather than memorize. While this study’s methodology only suggests these dispositional patterns, the findings highlight a significant developmental need within the Philippine accounting context. Consequently, instructional strategies should shift from

pattern-matching toward training students to systematically identify and question the unstated premises underlying accounting judgments and financial reporting assertions.

Table 2.1: Deductive Thematic Analysis

Themes	Description	Sample Quotes	Participants
Recognition of Assumption	How students identify unstated assumptions in accounting situations and determine whether information they rely on is based on valid premises, directly addressing the Recognize Assumptions component of the RED Model.	<p>“When the statements seemed similar or confusing, I decided which one was more correct or reasonable by assessing which of the two was constructed in a clear and precise manner. (P4)”</p> <p>“When two statements seemed similar or confusing, I focused on the key terms and the exact meaning of the accounting rule. Then, I would carefully compare both statements and choose the one that most closely matched the applicable accounting standard. (P13)”</p> <p>“I carefully examined the wording of each statement, then I matched them with the provisions of the standards. I tried to remember to see which one accurately reflected the concept. (P29)”</p>	P4, P5, P7, P9, P13, P29, P31, P32, P38, P39, P42, P46
		I realized that it is really important to know the standards for the topics, and I must understand the concepts so I can use them as a basis for determining whether the question is about theories or problem-solving. I also realized that it is important to really understand what the standards are telling us and not just memorizing and being familiar...(P46).”	

Source: Data from the researchers

Notes: Themes were derived through deductive thematic analysis following Braun and Clarke’s (2022) six-phase framework, guided by the RED Model components. Representative quotations appear in the narrative analysis.

4.7 Critical Thinking Skills and Reasoning of Accountancy Students in Financial Accounting and Reporting in Terms of Deduction
 The findings identified an adaptation gap that contributed to NESTA’S Food Center’s eventual decline. Participants explained th at the business struggled to integrate digital technologies, online ordering systems, digital marketing, and modern operational tools during the post-pandemic shift toward digital consumption. While competitors rapidly adapted to online platforms and convenience-based services, the establishment remained heavily dependent on traditional walk-in customers and manual systems. This inability to balance tradition with modernization created operational rigidity and limited growth opportunities. The study demonstrated that survival techniques that were effective in the past eventually became barriers to innovation as market demands changed rapidly.

Table 3: Frequency Distribution of Accountancy Students’ Scores in Deduction

Score	f	%	Rank Range
5 (100%)	17	37.0	1-17
4 (80%)	10	21.7	18-27
3 (60%)	9	19.6	28-36
2 (40%)	5	10.9	37-41
1 (20%)	5	10.9	42-46
0 (0%)	0	0.0	-
TOTAL	46	100.0	

Legend: f = frequency; % = percentage. Source: Data from the researchers.

Qualitative analysis showed that students approached deduction tasks by comparing given statements with remembered accounting standards to assess logical consistency. Participant 9 explained, “By comparing what I have remembered on accounting standards and the given statement, then analyzing which is more consistent and logical.” Participant 29 described a similar process: “I compared the conclusion or statement with the relevant accounting standards and checked if it was consistent with the principles and data given in the problem.” Participant 32 provided additional insight: “I checked if the conclusion matched the facts and the relevant accounting standard. If it aligned with the principle, it was logical; if it contradicted the standard, it was not. I also relied on past lessons and sometimes my gut feeling.” These responses show that students showed ability with rule-based deductive reasoning, successfully applying remembered principles to evaluate logical relationships, though some supplemented systematic analysis with intuition. Students are aware that they use a mix of approaches. Participant 9 added, “I have realized that when I analyze and make decisions in choosing an answer, it always has a basis like ‘it was based on PAS 2, PAS 40, etc.’, being

consistent with it and going with gut feel.” This mix of standards-based reasoning and gut feeling suggests that, while students have basic deductive skills, they may benefit from learning when to apply principles strictly and when to exercise professional judgment.

The practical implication of relatively strong deduction performance is that students possess foundational skills for systematically applying accounting standards when the principles are clearly defined. This ability is essential for determining appropriate accounting treatments for transactions with clear guidance, such as straightforward revenue recognition or lease classification under well-defined criteria. However, the reliance on remembered rules and occasional use of intuition rather than principles-based reasoning may limit students’ effectiveness when standards require interpretation or when new situations demand reasoning beyond straightforward rule application.

These findings are partially consistent with but also extend research examining the distinction between technical competence and professional judgment in accounting education. While students demonstrated relatively strong deductive performance, with 58.7% scoring 80 percent or higher, their approaches to deduction reveal important limitations. Facione (2015) emphasized that deduction as a reasoning process requires not merely applying memorized rules but systematically determining whether specific cases meet established criteria through logical analysis. The present study’s finding that students performed well on deduction yet relied heavily on “comparing what I have remembered on accounting standards,” as described by Participant 9, reveals an approach more dependent on memory retrieval than on the systematic application process Facione’s framework requires. This distinction matters because success in controlled, structured assessment conditions may not predict performance in the unclear situations characteristic of professional practice. Turner and Tyler (2023) examined critical thinking competencies in accounting students. They found that while students may demonstrate technical competence in structured scenarios, employers increasingly require graduates who can exercise professional judgment when standards require complex interpretation or when multiple principles appear to conflict. The present study’s finding that students performed well on deduction but relied heavily on memorized rules supports an important nuance: strong performance in this study’s controlled assessment conditions may not fully reflect students’ capacity to handle the uncertain real-world scenarios characteristic of professional practice, where deductive reasoning must be combined with professional judgment and principles-based interpretation. This observation is particularly evident in students’ acknowledgment of relying on “past lessons and sometimes my gut feeling,” as described by Participant 32, suggesting that even high-performing students may supplement systematic reasoning with intuition when uncertainty arises. Tan and Laswad (2018) found that employers increasingly value graduates who can evaluate evidence, recognize underlying assumptions, and draw sound conclusions in complex professional scenarios rather than simply applying memorized rules. The present study’s observation that students like Participant 32 relied on both “past lessons and sometimes gut feeling” when applying deductive reasoning suggests a gap between current educational outcomes and employer expectations. This gap becomes particularly concerning when considering that 37% of students achieved perfect scores, yet may still lack the principled reasoning required for situations that demand professional judgment beyond straightforward rule application. Wolcott and Sargent (2021) argued that effective professional reasoning requires not merely the ability to apply rules correctly but the capacity to determine which principles are relevant and how they should be interpreted in new contexts. The students’ responses, revealing reliance on remembered standards and occasional use of intuition rather than systematic, principle-based reasoning, demonstrate that, while they have developed competence in rule-based deductive logic, they may not yet possess the more advanced reasoning capabilities required for complex professional judgments involving the interpretation of principles in novel situations. Apostolou et al. (2019) emphasized that effective development of critical thinking requires teaching approaches that move beyond passive learning and engage students in active inquiry, reflection, and the application of reasoning to authentic contexts. The gap observed in this study between students’ demonstrated ability to apply remembered rules in structured scenarios and their acknowledged resort to “gut feeling,” as noted by Participant 9, suggests the need for learning experiences that explicitly bridge rule-based deduction and principles-based professional judgment through authentic scenarios that require interpretation beyond straightforward application. This highlights the need for assessment experiences that extend beyond straightforward rule application to include realistic scenarios requiring the interpretation of principles, the reconciliation of potentially conflicting guidance, and the application of professional judgment to new and complex situations where memorized patterns may not provide adequate guidance.

Table 3.1 Deductive Thematic Analysis

Themes	Description	Sample Quotes	Participants
Deduction	How students determine whether conclusions logically follow from given premises or accounting standards, contributing to the Draw Conclusions component of the RED Model.	<ul style="list-style-type: none"> • “By comparing what I have remembered on accounting standards and the given statement, then analyzing which one is more consistent and logical. (P9)” • “I compared the conclusion or statement with the relevant accounting standards and checked if it was consistent with the principles and data given in the problem. (P29)” • “I checked if the conclusion matched the facts and the relevant accounting standard. If it aligned with the principle, it was logical; if it contradicted the standard, it was not. I also relied on past 	P4, P5, P7, P9, P13, P29, P31, P32, P38, P39, P42, P46

		lessons and sometimes my gut feeling. (P32)” • “I have realized that when I analyze and make decisions in choosing an answer, it always has a basis like ‘it was based on PAS 2, PAS 40, etc.’, being consistent with it, and going with gut feel. (P9)”	
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Source: Data from the researchers.

Notes: Themes were derived through deductive thematic analysis following Braun and Clarke’s (2022) six-phase framework, guided by the RED Model components. Representative quotations appear in the narrative analysis.

4.8 Critical Thinking Skills and Reasoning of Accountancy Students in Financial Accounting and Reporting, in terms of Interpretation

Interpretation, which contributes to the Draw Conclusions component by assessing students’ ability to understand and express the meaning of accounting information, ranked first and showed the strongest performance among all five subskills. Table 4 shows that 18 students (39.1%) achieved perfect scores of 5 points, ranking 1-18, the highest frequency of perfect scores across all subskills. Thirteen students (28.3%) scored 4 points, ranking 19-31, while 11 students (23.9%) scored 3 points, ranking 32-42. Only 4 students (8.7%) scored 2 points, ranking 43-46. No students scored 1 point or 0 points. This distribution shows that an overwhelming majority (67.4%) scored 80% or higher, indicating a strong ability to understand and explain accounting information, relationships, and concepts.

Table 4: Frequency Distribution of Accountancy Students’ Scores in Interpretation

Score	f	%	Rank Range
5 (100%)	18	39.1	1-18
4 (80%)	13	28.3	19-31
3 (60%)	11	23.9	32-42
2 (40%)	4	8.7	43-46
1 (20%)	0	0.0	-
0 (0%)	0	0.0	-
TOTAL	46	100.0	

Legend: f = frequency; % = percentage, Source: Data from the researchers.

Qualitative analysis showed that students approached interpretation tasks through careful reading, recall of standard requirements, and assessment of logical consistency. Participant 31 explained, “I tried to recall the requirements of each standard or principle so that I would be able to determine if such a conclusion conforms with the given standard.” Participant 38 described a comprehension-focused approach: “I made sure I fully understood the statements first, then I thought about whether the conclusion actually made sense based on the given statements, because I really based it on the given statements.” Participant 39 provided insight into visualization and sense-making processes: “I was not completely sure if my conclusions fully aligned with the accounting information or standards. I tried to visualize the situation, interpret the given data, and assess which conclusion seemed most logical and applicable to the problem.” These responses show that students used effective comprehension strategies, including careful reading, visualization, and logical assessment, enabling them to understand and explain accounting information successfully. Students show growing awareness about how they interpret information. Participant 38 added, “I realized that I am more logical than I thought, but I rely a lot on instinct when I am unsure. I need to study and apply concepts more effectively. I also realized I should take the time to read the instructions well.” This self-awareness suggests that, while interpretation is a strength, students see room for improvement in using systematic analytical strategies rather than relying on gut feeling when they are uncertain.

The practical implication of strong interpretation performance suggests that students possess foundational skills for understanding financial reporting standards, understanding transaction characteristics, and explaining relationships among financial statement elements. This ability is essential for effective communication with stakeholders, preparation of clear financial statement disclosures, and explanation of accounting policy applications. However, interpretation strength combined with weaker assumption recognition suggests that students may excel at understanding clear content while struggling to identify hidden premises, potentially limiting the depth of analysis in situations that require examination of information beyond surface-level interpretation.

These findings align with and extend research on the foundational role of interpretation in the development of critical thinking. Facione (2015) emphasized that interpretation is a foundational critical thinking skill that involves comprehending, clarifying, and explaining the meaning of information presented in various forms. He argued that while interpretation is necessary for critical thinking, it is not sufficient on its own, as effective reasoning requires combining interpretation with other cognitive skills, including analysis, inference, and evaluation. The present study’s finding that interpretation demonstrated the strongest performance among all subskills confirms that accounting education at Capiz State University effectively develops students’ ability to understand and explain accounting concepts, likely through repeated exposure to technical content and instructional

emphasis on comprehending standard requirements. This foundational competency provides an important base for developing more advanced analytical skills. Wilkin (2017) examined the changing skills requirements in the accounting profession and found that while technical comprehension skills remain necessary, the ability to interpret standards, evaluate evidence, and exercise professional judgment has become increasingly central to accounting practice. The present study’s finding that 67.4% of students scored 80% or higher on interpretation suggests strong foundational comprehension skills. Nevertheless, the contrast with weaker-assumption recognition, where only 21.7% scored 80% or higher, reveals that students who “tried to recall the requirements of each standard,” as described by Participant 31, excel at understanding explicit content while struggling to probe beneath the surface for unstated premises. This pattern suggests that comprehension skills have developed more fully than analytical skills, requiring deeper interrogation of information. Sithole et al. (2017) noted that professional practice requires the combination and integration of multiple reasoning processes rather than reliance on isolated comprehension skills. The contrast between students’ strong interpretation performance and their weaker assumption recognition and inference abilities suggests a potential imbalance in skill development, where students have developed proficiency in understanding clearly stated information but have not equally developed the analytical abilities required to probe beneath surface-level content or to reason systematically from premises to conclusions. This imbalance may reflect teaching approaches that successfully develop comprehension through content exposure while providing less systematic attention to higher-order analytical processes. Flood and Wilson (2020) emphasized that critical thinking development requires intentional instructional design with explicit teaching of reasoning skills rather than assuming complex analytical abilities develop naturally through content exposure alone. The present study’s pattern of strong interpretation alongside weak assumption recognition suggests that while students like Participant 38, who “made sure I fully understood the statements first,” have developed comprehension skills through repeated content exposure, they have not received equivalent explicit instruction in the more complex analytical processes required to identify unstated premises or draw step-by-step logical conclusions. This finding highlights an important teaching challenge: effective content comprehension does not automatically translate into the development of higher-order analytical reasoning skills. Rebele and St. Pierre (2019) observed that accounting curricula often emphasize technical knowledge comprehension while providing insufficient attention to higher-order analytical reasoning skills, resulting in graduates who can understand accounting standards but struggle with the complex judgment-based reasoning required in professional practice. The present study’s finding of strong interpretation combined with weaker performance on other critical thinking subskills provides empirical support for this observation within the Philippine accounting education context, suggesting that while students develop solid foundational comprehension abilities, they require additional instructional support to extend these skills into the deeper analytical reasoning demanded by professional accounting practice.

Table 4.1: Deductive Thematic Analysis

Themes	Description	Sample Quotes	Participants
Interpretation	How students comprehend accounting information and interpret relationships or patterns to make meaningful judgments, contributing to the Draw Conclusions component of the RED Model.	<ul style="list-style-type: none"> • “I tried to recall the requirements of each standard or principle so that I would be able to determine if such a conclusion conforms with the given standard. (P31)” • “I made sure I fully understood the statements first, then I thought about whether the conclusion actually made sense based on the given statements. I really based it on the given statements. (P38)” • “I was not completely sure if my conclusions fully aligned with the accounting information or standards. I tried to visualize the situation, interpret the given data, and assess which conclusion seemed most logical and applicable to the problem. (P39)” • “I realized that I am more logical than I thought, but I rely a lot on instinct when I am unsure. I need to study and apply concepts more effectively. I also realized I should take the time to read the instructions well. (P38)” 	P4, P5, P7, P9, P13, P29, P31, P32, P38, P39, P42, P46

Source: Data from the researchers

Notes: Themes were derived through deductive thematic analysis following Braun and Clarke’s (2022) six-phase framework, guided by the RED Model components. Representative quotations appear in the narrative analysis.

4.9 Critical Thinking Skills and Reasoning of Accountancy Students in Financial Accounting and Reporting in Terms of Evaluation of Arguments

Evaluation of arguments directly addresses the Evaluate Arguments component by assessing students’ ability to distinguish between strong and weak arguments, ranking third among the five subskills. Table 5 shows that 15 students (32.6%) achieved

perfect scores of 5 points, ranking 1-15. Thirteen students (28.3%) scored 4 points, ranking 16-28, while 7 students (15.2%) scored 3 points, ranking 29-35. 8 students (17.4%) scored 2 points, ranking 36-43; no students scored 1 point; and 3 students (6.5%) scored 0 points, ranking 44-46. This distribution shows that while a majority (60.9%) scored 80 percent or higher, showing ability in evaluating argument strength, a considerable minority struggled significantly, with some students unable to evaluate any arguments correctly

Table 5: Frequency Distribution of Accountancy Students' Scores in Evaluation of Arguments

Score	f	%	Rank Range
5 (100%)	15	32.6	1-15
4 (80%)	13	28.3	16-28
3 (60%)	7	15.2	29-35
2 (40%)	8	17.4	36-43
1 (20%)	0	0.0	-
0 (0%)	3	6.5	44-46
TOTAL	46	100.0	

Legend: f = frequency; % = percentage, Source: Data from the researchers.

Qualitative analysis showed diverse approaches to argument evaluation, ranging from systematic analytical processes to heavy reliance on intuition and memory. Participant 4 openly acknowledged limitations: "As I answered the test, I analyzed the accounting situation in accordance with the applicable standards that I can recall from our class discussion. Honestly, I am not confident I recalled the concepts correctly. In choosing my final answer, I relied heavily on my professional judgment and chose the answer closest to my heart." Participant 29 described a more systematic approach: "I first identified the key details in the problem, determined which accounting concepts or standards applied, then analyzed the transactions step by step before selecting the most logical answer." Participant 31 provided the most complete description of analytical reasoning: "Before answering, it is important to read the instructions clearly first. Since the possible answers are not presented in a traditional multiple-choice format, I have to make sure I am doing the right thing. When answering, I tried to understand each situation first. Each situation presents different standards or principles. I applied all the knowledge I learned from our previous accounting subjects. Although I could not remember it all, I realized some of the questions were already leading me to the answers. I just compared whether the conclusion or argument complies with the requirements of each standard or principle." These varied responses suggest large differences in analytical advancement, with some students showing structured evaluation processes while others relied primarily on memory and intuition. Students recognize the need for more systematic evaluation approaches. Participant 29 added, "I realized that my decision-making process is a mix of recalling accounting principles and logical reasoning. I tend to break down the problem first, but when I am unsure, I rely more on my judgment of which option sounds most reasonable. I need to focus on consistently applying specific standards rather than just general logic." This awareness shows that students recognize the difference between gut-feeling assessment and systematic evaluation, but may need clear instruction on structured frameworks for evaluating argument strength.

The practical implication of moderate performance in argument evaluation is significant for professional practice. Accountants must routinely assess the strength of arguments supporting accounting treatments, evaluate the adequacy of audit evidence, and determine whether management's claims are well-supported. The finding that some students achieved perfect scores. In contrast, others struggled dramatically, suggesting that argument evaluation skills may develop unevenly depending on students' analytical tendencies, prior learning experiences, or understanding of professional skepticism. Students who cannot effectively distinguish between strong and weak arguments may be vulnerable to accepting unsupported claims or inadequate justifications in professional contexts.

These findings are strongly supported by research highlighting the complexity of developing argument evaluation skills and the importance of explicit instructional strategies. Paul and Elder (2019) emphasized that effective evaluation of arguments requires not only cognitive skills but also the application of intellectual standards such as clarity, accuracy, precision, relevance, depth, breadth, logic, and fairness. They argued that students must learn to apply these standards systematically rather than relying on surface impressions or intuitive judgments. The present study documented substantial variation in student approaches, with some students demonstrating structured analytical processes while others relied primarily on intuition and memory. For example, Participant 31 described a systematic approach of trying "to understand each situation first" and comparing "if the conclusion or argument complies with the requirements of each standard or principle." At the same time, Participant 4 candidly acknowledged relying "heavily on my professional judgment and chose the answer closest to my heart." This variation suggests that some students have internalized systematic evaluation strategies. In contrast, others have not, highlighting the need for more explicit instruction in argumentation principles and structured frameworks for assessing argument quality. Facione (2015) emphasized that evaluating arguments requires both cognitive skills and critical thinking dispositions, including systematicity, analyticity, and truth-seeking, that enable individuals to assess evidence and reasoning quality objectively. The present study's finding of highly varied performance, with 60.9% scoring 80% or higher while 6.5% scored zero points, combined with responses such as Participant 4's admission of relying on answers "closest to my heart" rather than systematic evaluation criteria, suggests patterns consistent with uneven disposition development. However, it is important to recognize that this study measured task performance rather than underlying dispositions directly, and poor performance on evaluation tasks may reflect skill gaps, knowledge limitations, or contextual factors rather than necessarily indicating the absence of analytical dispositions. The observed variation

might indicate that some students possess both the skills and dispositions for systematic evaluation while others are still developing these capabilities. However, definitive dispositional conclusions would require additional assessment methods beyond performance data alone. Flood and Wilson (2020) found that argument evaluation skills develop most effectively through explicit instruction in argumentation principles, modeling of expert reasoning processes, guided practice with immediate feedback, and reflective activities helping students examine and improve their own evaluation strategies. Their research demonstrated that without such explicit instruction, students often default to intuitive judgments based on surface features rather than systematic evaluation of argument strength based on logical criteria and evidentiary support. The present study’s finding of highly varied performance, with some students achieving perfect scores while others could not correctly evaluate any arguments, suggests that current instructional approaches may not provide sufficient explicit guidance on systematic argument-evaluation strategies for all students. The contrast between students who demonstrated structured analytical approaches and those who relied primarily on intuition indicates that teaching interventions explicitly teaching evaluation frameworks could benefit students who have not yet developed these capabilities. Apostolou et al. (2019) found that case-based learning, problem-based learning, and collaborative learning activities consistently improved critical thinking outcomes by engaging students in authentic inquiry that requires systematic evaluation of alternative arguments and solutions, with explicit attention to reasoning quality. The contrast in the present study between Participant 31’s structured approach and Participant 4’s reliance on intuitive judgment suggests that students who have encountered instructional strategies emphasizing systematic evaluation, such as case discussions requiring explicit comparison of competing arguments, have developed stronger argument assessment capabilities than those exposed primarily to content-delivery approaches without explicit attention to argumentation principles. This aligns with Nolder and Kadous’s (2018) observation that professional skepticism, which fundamentally requires the ability to critically evaluate the strength of arguments and evidence supporting financial reporting assertions, must be deliberately developed through educational experiences that provide explicit instruction, modeling of evaluation processes, and structured practice in systematic assessment rather than assuming these capabilities will develop naturally through exposure to technical content alone. Terblanche and De Clercq (2021) emphasized that effective critical thinking requires not only cognitive skills but also dispositions and habits of mind that support analytical reasoning, noting that these must be cultivated through intentional teaching strategies rather than assumed to emerge through content exposure. The performance disparity observed in this study, alongside Participant 29’s acknowledgment of the need to “focus on consistently applying specific standards rather than just general logic,” indicates uneven development of systematic analytical habits. This variation may stem from differences in instructional exposure, prior skill development, or individual approaches to ambiguous tasks. Regardless of the cause, the documented performance gap underscores the importance of argument evaluation as a critical area for targeted interventions. Such support would significantly benefit students who have not yet established consistent, systematic methods for assessing argument strength and evidentiary support.

Table 5.1 Deductive Thematic Analysis

Themes	Description	Sample Quotes	Participants
Evaluation of Arguments	How students evaluate the soundness of accounting arguments and determine whether conclusions are reasonable and well supported, directly addressing the Evaluate Arguments component of the RED Model.	<ul style="list-style-type: none"> • “As I answered the test, I analyzed the accounting situation in accordance with the applicable standards that I can recall from our class discussion. Honestly, I am not confident I recalled the concepts correctly. In choosing my final answer, I relied heavily on my professional judgment and chose the answer closest to my heart. (P4)” • “I first identified the key details in the problem, determined which accounting concepts or standards applied, then analyzed the transactions step by step before selecting the most logical answer. (P29)” • “Before answering, it is important to read the instructions clearly first. Since the possible answers are not presented in a traditional multiple-choice format, I have to make sure I am doing the right thing. When answering, I tried to understand each situation first. Each situation presents different standards or principles. I applied all the knowledge I learned from our previous accounting subjects. Although I could not remember it all, I realized some of the questions were already leading me to the answers. I just compared the conclusion or argument to the requirements of each standard or principle. (P31)” 	P4, P5, P7, P9, P13, P29, P31, P32,
		<ul style="list-style-type: none"> • “I realized that my decision-making process is a mix of recalling accounting principles and logical reasoning. I tend to break down the problem first, but when I am 	P38, P39, P42, P46

		<p>unsure, I rely more on my judgment of which option sounds most reasonable. I need to focus on consistently applying specific standards rather than just general logic. (P29)”</p>	
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Source: Data from the researchers.

Notes: Themes were derived through deductive thematic analysis following Braun and Clarke’s (2022) six-phase framework, guided by the RED Model components. Representative quotations appear in the narrative analysis.

4.10 Overall Critical Thinking Performance

Table 6 presents overall critical thinking scores representing combined performance across all five subskills implementing the RED Model. With a maximum possible score of 25 points, the highest score achieved was 23 points (92%) by 2 students (4.3%), ranking 1-2, while the lowest score was 7 points (28%) by 1 student (2.2%), ranking 46th. Qualitative analysis revealed that students demonstrated significant self-awareness about their thinking processes and recognized the gap between their current abilities and professional requirements. Many participants acknowledged heavy reliance on memory and intuition rather than step-by-step analytical reasoning. Participant 5 reflected, “I realized that I still need to understand the concepts deeper because sometimes I just rely on memory or guessing. I also noticed that I tend to decide quickly, so I should take more time to analyze the situation and connect it with the right accounting principle before answering.” Participant 46 added, “I realized that it is really important to know about the standards related to the topics, and I must know the concept of the topics so that it will be my basis to answer whether the question is about theories or problem solving. I also realized that it is important to really understand what the standards are telling us and not just memorize and be familiar.” Participant 9 described a similar awareness: “I have realized that when I analyze and make decisions in choosing an answer, it always has a basis like ‘it was based on PAS 2, PAS 40, etc.’, being consistent with it and going with gut feel.” Participant 38 noted the need for more careful approaches: “I realized that I am more logical than I thought, but I rely a lot on instinct when I am unsure. I need to study and apply concepts more effectively. I also realized I should take the time to read the instructions well.” Participant 29 summarized the challenge: “I realized that my decision-making process is a mix of recalling accounting principles and logical reasoning. I tend to break down the problem first, but when I am unsure, I rely more on my judgment of which option sounds most reasonable. I need to focus on consistently applying specific standards rather than just general logic.” These responses show that students are aware of their reliance on memory and intuition rather than step-by-step reasoning, and recognize the need for a deeper understanding of concepts and a more consistent use of analytical strategies.

This overall performance spread reflects the varied patterns observed across individual subskills. The relatively strong performance in interpretation and deduction contributed to higher overall scores for many students. In contrast, widespread difficulty recognizing assumptions and moderate performance in inference and argument evaluation limited overall achievement. The wide gap between the highest and lowest scores demonstrates substantial variation in critical thinking development: no students achieved complete mastery across all critical thinking areas, while some struggled significantly across multiple sub skills. The qualitative reflections confirm that students recognize their dependence on memorization and gut feeling rather than on systematic analytical processes, and they understand the need for more careful reasoning in professional accounting contexts. The practical implications of this overall performance pattern suggest that while some students have developed reasonably strong critical thinking foundations, a substantial portion require focused support to strengthen analytical reasoning capabilities essential to professional accounting practice. The variation in performance also suggests that critical thinking development has been uneven, possibly reflecting teaching approaches that successfully develop some skills, such as interpretation and deduction, while placing insufficient emphasis on others, such as the recognition of assumptions and step-by-step inference. For students entering professional practice or pursuing CPA licensure, the gaps identified in this study represent potential weaknesses in handling complex, judgment-based scenarios that require the combined use of multiple reasoning processes.

These findings align with broader research on the development of critical thinking in accounting education and highlight important teaching challenges. Rebele and St. Pierre (2019) conducted a comprehensive analysis of accounting education research. They found that accounting programs often underemphasize critical thinking and analytical reasoning skills relative to technical knowledge, potentially because teaching practices prioritize content coverage over questioning and independent inquiry. Their analysis revealed that traditional lecture-based instruction, while efficient for transmitting technical content, often fails to develop the higher-order reasoning skills essential for professional practice. The present study’s finding that students performed relatively well on interpretation and deduction but struggled significantly with assumption recognition and inference suggests a similar pattern, where teaching approaches effectively develop understanding and rule-application capabilities but provide insufficient attention to the more complex analytical skills required for professional judgment. Sinnewe et al. (2023) found that accounting students often demonstrated adequate recall of technical concepts but struggled with higher-order reasoning skills, linking this pattern to teaching approaches emphasizing procedural knowledge over deeper conceptual understanding. The present study’s finding that students like Participant 5 acknowledged, “I still need to understand the concepts deeper because sometimes I just rely on memory or guessing,” confirms this pattern, revealing that students recognize the gap between memorization and genuine analytical understanding but may lack the instructional support needed to bridge it systematically. Apostolou et al. (2019), in their detailed examination of the accounting education literature, identified that active learning strategies, including case-based instruction, problem-based learning, collaborative learning, and reflective writing, were consistently associated with improved

critical thinking outcomes across diverse educational contexts. They emphasized that critical thinking skills develop most effectively through authentic learning experiences that require students to apply reasoning processes to realistic, ambiguous scenarios rather than through passive reception of technical content. Flood and Wilson (2020) reinforced this perspective by emphasizing that critical thinking must be taught explicitly and systematically rather than assumed to develop naturally through exposure to accounting content, and they advocate for teaching approaches that make thinking processes visible and provide opportunities for guided practice. The present study’s pattern of uneven skill development, with strengths in interpretation and deduction but weaknesses in assumption recognition and inference, combined with students’ repeated acknowledgments of relying on “gut feel” and memory rather than systematic analysis, suggests that current teaching approaches may successfully transmit technical content but provide insufficient explicit instruction in the analytical reasoning processes that students like Participant 46 recognize they need to “really understand what the standards telling us and not just memorizing and being familiar.” The present study’s findings suggest that Capiz State University’s accounting program may benefit from increased implementation of active learning approaches that clearly target the weaker subskills identified in this research, particularly recognition of assumptions and step-by-step inference processes. Kimmel (2015) found that reflective writing assignments helped accounting students develop awareness of their own thinking and improve their ability to monitor and regulate their own thinking processes, resulting in enhanced recognition of assumptions, improved evaluation of evidence, and more systematic drawing of conclusions. The students’ qualitative reflections in this study, which revealed awareness of their reliance on memory and intuition rather than step-by-step reasoning, suggest readiness for reflective practices that could help them develop the metacognitive skills needed to move beyond memory-based pattern matching toward genuine analytical reasoning, as evidenced by Participant 29’s recognition that “I need to focus on consistently applying specific standards rather than just general logic.” The students’ qualitative reflections suggest readiness for teaching approaches that clearly teach analytical strategies and provide structured practice in applying them to progressively complex accounting scenarios, moving beyond the transmission of technical knowledge toward the development of integrated professional reasoning capabilities.

Table 6: Frequency Distribution of Accountancy Students' Overall Critical Thinking Scores

Score	f	%	Rank Range
23 (92%)	2	4.3	1-2
22 (88%)	5	10.9	3-7
21 (84%)	9	19.6	8-16
20 (80%)	2	4.3	17-18
19 (76%)	3	6.5	19-21
18 (72%)	1	2.2	22
17 (68%)	5	10.9	23-27
16 (64%)	3	6.5	28-30
15 (60%)	4	8.7	31-34
14 (56%)	2	4.3	35-36
13 (52%)	2	4.3	37-38
12 (48%)	1	2.2	39
11 (44%)	3	6.5	40-42
10 (40%)	2	4.3	43-44
9 (36%)	1	2.2	45
7 (28%)	1	2.2	46
TOTAL	46	100.0	

Legend: f = frequency; % = percentage, Source: Data from the researchers

Table 7: Ranking of Critical Thinking Subskills

Subskill	Rank
Inference	4
Recognition of Assumption	5
Deduction	2
Interpretation	1
Evaluation of Arguments	3

Source: Data from the researchers.

5. Conclusion and Recommendations

5.1 Conclusion

Based on the findings of the study, the following conclusions were drawn:

This study found that Accountancy students at Capiz State University show mixed results in critical thinking skills. Students perform well in understanding accounting concepts and following standard rules, but face challenges in identifying hidden assumptions and drawing conclusions beyond what they have memorized. Student scores varied widely, with some achieving above 84% while others scored below 56%, showing that different students need different types of support.

The results show that students often rely on memorization rather than analytical thinking when solving accounting problems. This approach creates difficulties when students face new situations where standard rules do not directly apply. The weakness in recognizing assumptions is especially important because professional accountants, particularly auditors, must regularly question what is not directly stated. Current teaching methods that focus mainly on content and procedures may not fully prepare students for the decision-making required in professional practice.

The findings suggest that accounting education should shift from lecture-based teaching to methods that actively develop reasoning skills. This includes showing students how to think through problems step by step, providing practice with feedback, and creating opportunities for students to work together and learn from each other's approaches. Students demonstrated awareness of their limitations and a willingness to improve, suggesting they may respond well to teaching methods designed to strengthen their reasoning abilities. Developing critical thinking requires ongoing attention throughout the accounting program rather than expecting these skills to develop naturally from studying content alone.

5.2 Recommendations

For Accountancy Students. Students may start by being honest with themselves about which parts of critical thinking feel hardest, especially when it comes to spotting hidden assumptions or drawing careful conclusions from facts. Instead of rushing through problems to get the right answer, students can slow down and try to explain out loud why they chose each step, as if teaching it to a friend. Forming small study groups where classmates work through tricky accounting problems together is a simple and free way to sharpen thinking, since hearing how others reason can open new ways of seeing the same situation. Keeping a short personal journal of "how I solved this" after difficult exercises also helps build the habit of reflecting on one's own thinking for the Accounting Faculty. Faculty members may think about weaving critical thinking lessons into their everyday classes, not just in Financial Accounting and Reporting, but across all accounting subjects. Instead of only asking students to memorize rules, teachers can try asking "why do you think that?" or walking students through a problem out loud so they can see how an expert actually thinks step by step. Using real-life case stories, group problem-solving activities, and short reflection writing assignments gives students practice in reasoning rather than just recalling. When giving feedback, teachers may focus on the quality of the student's thinking process, not just whether the final answer was correct, because this teaches students that the "how" matters as much as the "what." **For the College of Management.** The College may seek ways to support teachers experimenting with new and more effective teaching approaches, such as organizing regular sessions where faculty share what is working in their classrooms. Creating a small community of teachers who meet to discuss teaching challenges and ideas helps everyone improve together rather than each teacher figuring things out on their own. Regularly reviewing the entire program's curriculum also helps ensure that critical thinking is not left to a single course but is built gradually and consistently from the first year to the last, for Capiz State University. The university may consider providing real support for teaching improvements, such as allocating funds for faculty training and establishing a center where teachers can receive guidance and attend workshops on effective teaching practices. Creating rooms designed for group discussion, with movable chairs that students can pull into circles or clusters, makes it much easier for students to talk to each other rather than listen to a lecture. The university may also consider extending critical thinking development beyond accounting, since the skill of reasoning carefully and logically is useful in any field. Bringing together teachers from different departments to share ideas is a low-cost way to multiply good teaching practices across the whole school, for Future Researchers. Future researchers may consider following a group of students over several years to see how their critical thinking develops, since a single snapshot may not capture the full story. Conducting studies that test specific teaching methods or compare how students across different accounting schools develop their reasoning can help build a clearer picture of what truly works. Talking to students in real time as they solve problems and asking them to think out loud can reveal insights that written tests alone cannot capture. Researchers may also consider developing critical thinking tools specifically designed for Filipino students and accounting contexts, since local settings have unique challenges and strengths worth studying.

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