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Analyzing Students' Critical Thinking Skills in SWOT-Based Problem-Solving

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Abstract: This study aims to analyze students' critical thinking skills in SWOT-based problem-solving within the context of the Educational Administration Study Program at Universitas Pendidikan Indonesia. Using a qualitative descriptive design, this study involved ten students who had completed more than six semesters of study. Data were collected through a problem-based task related to educational management and policy, in which participants were asked to identify strengths, weaknesses, opportunities, and threats, and then propose possible solutions. The data were analyzed using NVivo 12 with reference to Costa's (1985) critical thinking indicators: Elementary Clarification, Basic Support, Inference, Advance Clarification, and Strategies and Tactics. The findings show that in the self-assessment stage, two participants were categorized under Basic Support, six under Inference, and two under Advance Clarification. In the SWOT-based problem-solving task, all participants demonstrated Elementary Clarification, Basic Support, and Inference, indicating their ability to identify problems, support arguments, and draw logical conclusions. However, only two participants reached Advance Clarification and Strategies and Tactics, suggesting that students' critical thinking remained largely procedural, namely focused on completing analytical steps rather than consistently questioning assumptions, evaluating alternatives, and formulating strategic actions. The study contributes to the application of Costa's critical thinking framework in Educational Administration learning and shows that SWOT-based tasks can serve as diagnostic tools for identifying students' reasoning patterns. The findings imply that learning activities should integrate TOWS-based strategy formulation, reflective memos, case-based discussion, and reasoning-oriented assessment rubrics to strengthen students' reflective and strategic critical thinking.

Keywords: Critical Thinking Skills; Problem-Solving; SWOT Analysis; Higher Education.

INTRODUCTION

In the twenty-first century, higher education institutions are increasingly expected to prepare graduates who are able to think critically, adapt to complex changes, and solve uncertain problems in academic, social, and professional contexts. The rapid development of digital learning environments, global academic mobility, and changing demands in higher education has strengthened the need for students to master competencies that go beyond content knowledge (Nazarenko et al., 2023; Rumbley, 2023). This expectation is also consistent with the Framework for 21st Century Learning, which identifies critical thinking as one of the core learning and innovation skills required for

students to analyze information, evaluate evidence, and make reasoned decisions (Battelle for Kids, 2019; Weng, 2022; Nasran & Zakaria, 2025). In this context, critical thinking becomes an essential intellectual capacity because it enables students to interpret problems logically, examine alternative explanations, and formulate judgments based on relevant evidence (Abbas et al., 2025; Pogrebnaya & Mikhailova, 2023).

Critical thinking refers to the ability to analyze, evaluate, and synthesize information through logical reasoning and evidence-based judgment (Abbas et al., 2025; Razak et al., 2022). It includes processes such as interpretation, analysis, inference, evaluation, and reflection, which allow individuals to question assumptions and draw rational conclusions. Within higher education, critical thinking is closely related to Higher Order Thinking Skills (HOTS), because it requires students not only to understand information but also to examine the relationships among ideas, evaluate the strength of arguments, and make decisions in complex situations (Lam, 2019; Permadi & Zakiyah, 2021). Therefore, critical thinking is not merely a general academic skill, but a fundamental competency for students who are expected to participate in decision-making, problem analysis, and professional judgment.

Despite its importance, the development of higher-order thinking in university learning remains a continuing challenge. Several studies indicate that university learning often still emphasizes factual recall, procedural understanding, and task completion rather than reflective analysis and evaluative reasoning (Fisher, 2011; Lai, 2011; Zubaidah, 2018). This condition may limit students' ability to deal with open-ended problems that require them to identify core issues, justify arguments, assess evidence, and formulate adaptive solutions. Recent studies have also emphasized the importance of designing learning experiences that encourage students to engage in problem-oriented, reflective, and inquiry-based activities (Capetola et al., 2022; Neo, 2025; Shelley et al., 2018). Similarly, Golden (2023) shows that reflective learning practices can strengthen university students' critical thinking, while Bouckaert (2023) highlights that the assessment of critical thinking has become an important concern in higher education systems. These studies suggest that critical thinking should be examined not only as a theoretical competency but also as a practical ability demonstrated through authentic problem-solving tasks.

Problem-solving activities provide an appropriate context for examining students' critical thinking because they require learners to interpret situations, identify relevant information, compare possible explanations, and formulate reasoned conclusions. In higher education, problem-based tasks allow students to demonstrate how they organize ideas, evaluate contextual factors, and connect evidence with proposed solutions (Anwar et al., 2024; Darma et al.,

2021). As Davies (2015) explains, students' reasoning patterns in problem-solving contexts can reflect their intellectual maturity and their ability to move from basic understanding toward more complex forms of judgment. In this regard, problem-solving is not only a learning activity but also an analytical context through which students' critical thinking skills can be observed and interpreted.

One structured tool that can be used in problem-solving activities is SWOT analysis. Through the identification of strengths, weaknesses, opportunities, and threats, SWOT analysis helps students organize internal and external factors before proposing possible strategies. In educational management contexts, this framework is particularly relevant because many institutional problems require students to examine resources, constraints, opportunities, risks, and strategic alternatives simultaneously. For Educational Administration students, the ability to conduct this kind of analysis is important because their field of study is closely related to school management, policy analysis, institutional planning, and educational decision-making. Therefore, examining critical thinking through SWOT-based problem-solving is relevant to the academic and professional competencies expected in Educational Administration programs.

However, empirical studies that specifically examine how Educational Administration students demonstrate critical thinking in SWOT-based problem-solving remain limited, particularly in the context of Indonesian higher education management programs. Previous studies have discussed critical thinking, higher-order thinking, and problem-solving in various educational settings, but there is still a need for more focused evidence on how students in educational management-related programs identify problems, support arguments, draw inferences, clarify assumptions, and formulate strategies when dealing with structured analytical tasks. This gap is important because Educational Administration students are expected to become future educational planners, managers, and decision-makers who must be able to respond to institutional problems critically and strategically.

Therefore, this study aims to analyze students' critical thinking skills in SWOT-based problem-solving. Specifically, this research investigates how students interpret educational management problems, justify their arguments, draw conclusions, clarify assumptions, and formulate strategic responses. By focusing on students' responses to a structured problem-solving task, this study is expected to contribute empirical evidence on the manifestation of critical thinking in Educational Administration learning contexts. The findings are also expected to provide practical insights for designing learning activities that

strengthen students' ability to move beyond procedural analysis toward more reflective and strategic forms of critical thinking.

RESEARCH METHODOLOGY

Research Design

This study employed a qualitative descriptive research design to analyze students' critical thinking skills in SWOT-based problem-solving. This approach was selected because it enables the researcher to examine students' reasoning processes, interpretation of problems, argument justification, and formulation of solutions in an open-ended academic task (Eraković & Radić-Bojanić, 2023; Rizal et al., 2021). The descriptive design was also appropriate for identifying variations in students' critical thinking as reflected in their written responses and follow-up explanations (Creswell & Poth, 2018). The analysis was guided by Costa's (1985) critical thinking indicators, namely Elementary Clarification, Basic Support, Inference, Advance Clarification, and Strategies and Tactics.

Participants

The participants were ten students from the Educational Administration Study Program at Universitas Pendidikan Indonesia. They were selected purposively based on the criterion that they had completed more than six semesters of study. This criterion was used because students at this stage were assumed to have sufficient academic exposure to educational management, policy analysis, and problem-solving activities. The participants were coded as Participant 1 to Participant 10 to protect their identities.

Participation was voluntary, and informed consent was obtained before data collection. The study did not use demographic variables such as gender, GPA, or academic performance as analytical categories because the main focus was the manifestation of critical thinking indicators in students' responses. Therefore, the findings are interpreted as context-specific analytical insights rather than statistical generalizations. The small number of participants was considered acceptable for qualitative inquiry, which prioritizes depth of interpretation over generalization (Patton, 2015). Information sufficiency was indicated by the repeated appearance of the same critical thinking indicators across participants' responses, especially Elementary Clarification, Basic Support, and Inference.

Data Collection Procedures

Data were collected through a problem-based task related to educational management and policy. Each participant was asked to analyze the problem using the SWOT framework by identifying strengths, weaknesses, opportunities,

and threats, and then proposing possible solutions. This task was used to examine how students organized information, justified arguments, drew conclusions, clarified assumptions, and formulated strategies.

The primary data consisted of students' written responses. Brief follow-up interviews were conducted to clarify unclear statements and to confirm the reasoning behind their answers. Field notes and analytic memos were also used to record contextual information and preliminary interpretations during the data collection process. All data were organized using participant codes to maintain confidentiality.

Data Analysis

The data were analyzed using NVivo 12 qualitative data analysis software, which facilitated the process of coding, categorization, comparison, and visualization. The analysis followed the thematic content analysis framework of Braun and Clarke (2019), but the coding process was conducted deductively using Costa's (1985) indicators of critical thinking. This deductive approach was used because the study aimed to examine students' responses based on an established critical thinking framework rather than to generate new themes inductively.

The analysis was conducted in six stages. First, data familiarization was carried out by reading and rereading the participants' written responses and follow-up interview notes to understand the overall meaning of the data. Second, meaningful segments were coded into five indicators of critical thinking: Elementary Clarification, Basic Support, Inference, Advance Clarification, and Strategies and Tactics. Third, the coded data were reviewed by comparing responses across participants to ensure that each segment was placed under the most appropriate indicator. Fourth, the categories were refined by checking the consistency between participant responses, NVivo nodes, and the operational definition of each critical thinking indicator. Fifth, interpretation was conducted by linking the coded findings with Costa's (1985) framework and Facione's (2015) conceptualization of analysis, inference, evaluation, and judgment. Sixth, NVivo-generated visualizations were used to present the distribution of critical thinking indicators across participants.

To strengthen analytical transparency, the findings were reported through participant-level distribution, NVivo visualization, and interpretive explanation for each indicator. Elementary Clarification was used to code statements related to identifying issues and defining problems. Basic Support was used to code statements that provided evidence, examples, or factual justification. Inference was used to code statements that connected information and drew conclusions. Advance Clarification was used to code statements that

examined assumptions, clarified relationships, or considered alternative perspectives. Strategies and Tactics was used to code statements that formulated strategic and action-oriented solutions.

Trustworthiness

Several strategies were used to ensure trustworthiness. Triangulation was conducted by comparing written responses, follow-up interview explanations, and researcher field notes. Peer debriefing was carried out with two experts in educational psychology and qualitative research to review the consistency of coding and the accuracy of interpretation. Member checking was also conducted by sharing summarized interpretations with participants to confirm that their meanings were represented accurately.

An audit trail was maintained through coding notes, analytic memos, and NVivo node descriptions. These procedures were used to support the credibility and confirmability of the findings. The methodology enabled the study to capture not only the surface content of students' answers but also the reasoning patterns underlying their critical thinking in SWOT-based problem-solving.

RESULTS AND DISCUSSION

Results

This section presents the findings of students' critical thinking skills in SWOT-based problem-solving. The analysis was conducted using NVivo 12 and guided by Costa's (1985) indicators of critical thinking: Elementary Clarification, Basic Support, Inference, Advance Clarification, and Strategies and Tactics. The findings are presented in two parts: students' self-assessment of critical thinking and students' demonstrated critical thinking skills in the SWOT-based problem-solving task.

Self-Assessment of Critical Thinking Skill

The first analysis examined how participants perceived their own critical thinking skills. Based on the NVivo analysis, three indicators emerged in the self-assessment responses: Basic Support, Inference, and Advance Clarification. As shown in Figure 1, Basic Support appeared in the responses of two participants, Inference appeared in the responses of six participants, and Advance Clarification appeared in the responses of two participants. This distribution indicates that most participants perceived critical thinking primarily as the ability to connect information and draw logical conclusions, while fewer participants associated it with evidence-based support or deeper clarification of assumptions.

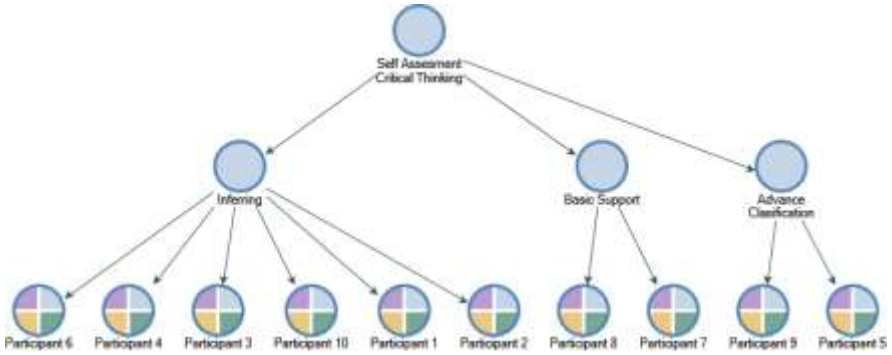

Figure 1. Self-Assessment of Critical Thinking Skill

The NVivo model shows that participants positioned their critical thinking at different levels of reasoning complexity. The largest group was found in the Inference category, followed by Basic Support and Advance Clarification. Based on Figure 1, Inference was represented by six participants, namely Participant 1, Participant 2, Participant 3, Participant 4, Participant 6, and Participant 10. Basic Support was represented by two participants, namely Participant 7 and Participant 8. Advance Clarification was represented by two participants, namely Participant 5 and Participant 9.

Table 1. Distribution of Critical Thinking Indicators in Students' Self-Assessment

Indicator	Participants	Number of Participants	Interpretation
Basic Support	P7, P8	2	Participants viewed critical thinking as the ability to support opinions using facts, references, or general experience.
Inference	P1, P2, P3, P4, P6, P10	6	Participants viewed critical thinking as the ability to connect information and draw logical conclusions.
Advance Clarification	P5, P9	2	Participants viewed critical thinking as the ability to clarify problems, examine assumptions, and consider different perspectives.

The Basic Support category reflects a foundational understanding of critical thinking. Participants in this category tended to associate critical thinking with the ability to provide factual support or justify an opinion using trusted

information. This indicates that they understood the importance of evidence in reasoning, although their responses still focused mainly on supporting claims rather than evaluating the quality of the evidence.

The Inference category was the most dominant in the self-assessment data. Participants in this category described critical thinking as the ability to connect different pieces of information, compare perspectives, and draw conclusions. This indicates that most participants perceived critical thinking as a process of making logical connections between ideas. However, their self-assessment still emphasized conclusion-making more strongly than reflective evaluation.

The Advance Clarification category appeared in only two participants. These participants showed a more reflective understanding of critical thinking by emphasizing the need to clarify the core problem, examine assumptions, and consider multiple perspectives before making a judgment. This suggests that only a small number of participants perceived critical thinking as a deeper process of questioning and evaluating the basis of an argument.

Students' Critical Thinking Skills in SWOT-Based Problem-Solving

The second analysis examined students' demonstrated critical thinking skills through a SWOT-based problem-solving task. In this task, participants analyzed an educational management problem by identifying strengths, weaknesses, opportunities, and threats, and then proposing possible solutions. The task was designed to reveal how participants identified problems, supported arguments, drew conclusions, clarified assumptions, and formulated strategies.

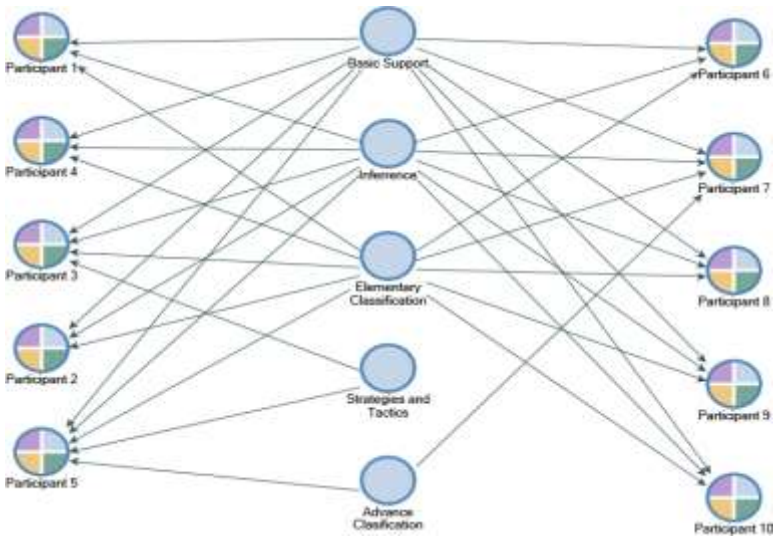

Figure 2. Students' Critical Thinking Skills in SWOT-Based Problem-Solving

As shown in Figure 2, all participants demonstrated the three foundational indicators of critical thinking: Elementary Clarification, Basic Support, and Inference. This means that all participants were able to identify the main problem, provide basic justification, and draw conclusions from the information available in the case. However, the higher-order indicators, namely Advance Clarification and Strategies and Tactics, appeared only among a smaller number of participants.

Table 2. Distribution of Critical Thinking Indicators in SWOT-Based Problem-Solving

Indicator	Participants	Number of Participants	Interpretation
Elementary Clarification	P1–P10	10	All participants identified the main problem and relevant information in the case.
Basic Support	P1–P10	10	All participants provided factual support, examples, or logical justification for their SWOT analysis.
Inference	P1–P10	10	All participants connected information and drew logical conclusions from the SWOT categories.
Advance Clarification	Limited participants	2	A few participants examined assumptions, clarified relationships, or considered alternative perspectives.
Strategies and Tactics	Limited participants	2	A few participants formulated strategic and action-oriented solutions.

Elementary Clarification appeared in all participants' responses. This indicator was reflected in their ability to identify and define the key elements of the problem presented in the case. Through the SWOT framework, participants were able to classify information into strengths, weaknesses, opportunities, and threats. This shows that they could recognize relevant information and organize the problem systematically. However, their clarification often remained descriptive because they tended to restate the visible elements of the case rather than examine the underlying causes of the problem.

Basic Support was also found across all participants. This indicator appeared when participants provided reasons, examples, or factual explanations to justify their analysis. In the SWOT-based task, participants were generally able to explain why certain factors were categorized as strengths, weaknesses, opportunities, or threats. This indicates that they were able to support their arguments with relevant information. Nevertheless, the support provided was mostly procedural because participants rarely evaluated the reliability, sufficiency, or limitations of the evidence used.

Inference was consistently demonstrated by all participants. This indicator appeared when participants connected internal and external factors and drew conclusions from the SWOT analysis. Participants were able to make logical relationships between strengths and opportunities or between weaknesses and threats. This finding indicates that students were not merely listing information but were also able to synthesize it into conclusions. Therefore, Inference can be considered one of the strongest indicators in students' SWOT-based problem-solving.

Advance Clarification appeared only among a limited number of participants. Participants who reached this indicator demonstrated the ability to go beyond identifying and supporting information. They showed awareness of the need to clarify assumptions, examine relationships among factors, and consider different perspectives before deciding on a solution. This indicates a more reflective form of critical thinking. However, because only two participants demonstrated this indicator, the findings suggest that most students had not yet consistently developed reflective evaluation in problem-solving.

Strategies and Tactics also appeared only among a limited number of participants. This indicator represents the ability to transform analysis into strategic and feasible actions. Participants who reached this level were able to move from problem diagnosis toward solution planning. They connected the results of SWOT analysis with possible actions and practical decision-making. However, the limited appearance of this indicator shows that most participants were stronger in analyzing and concluding than in formulating strategic responses.

Overall, the results show that students demonstrated adequate foundational critical thinking skills in SWOT-based problem-solving. All participants were able to identify problems, provide basic support, and draw logical conclusions. However, only a small number of participants demonstrated higher-order indicators, particularly Advance Clarification and Strategies and Tactics. This pattern indicates that students' critical thinking was largely procedural, meaning that they were able to follow analytical steps and produce

logical explanations, but were less consistent in questioning assumptions, evaluating alternative perspectives, and developing strategic solutions.

Discussion

The findings of this study indicate that students' critical thinking in SWOT-based problem-solving is more strongly represented at the foundational and procedural levels than at the reflective and strategic levels. All participants were able to demonstrate Elementary Clarification, Basic Support, and Inference, but only a limited number reached Advance Clarification and Strategies and Tactics. This pattern suggests that the students were not lacking critical thinking entirely; rather, their critical thinking was concentrated on identifying problems, organizing information, supporting arguments, and drawing conclusions. In Costa's (1985) taxonomy, these abilities are important foundations of critical thinking, but they do not yet fully represent the higher-order processes of examining assumptions, evaluating alternatives, and designing strategic action. This finding is consistent with Facione's (2015) view that critical thinking involves not only analysis and inference but also evaluation and self-regulation. It also aligns with Ennis (2011), Brookhart (2010), and Davies (2015), who emphasize that mature critical thinking requires reflective judgment, not merely the ability to produce logical answers.

The dominance of Basic Support and Inference shows that students were able to perform structured reasoning when the task provided a clear analytical framework. This finding is important because it demonstrates that students had already developed procedural competence in problem analysis. However, procedural competence should not be equated with advanced criticality. Abrami et al. (2015) argue that critical thinking instruction becomes more effective when students are explicitly guided to practice reasoning, reflection, and transfer across contexts. Similarly, Tiruneh et al. (2014) and Tiruneh et al. (2018) show that critical thinking does not automatically emerge from exposure to complex tasks; it needs systematic instructional design, explicit modeling, opportunities for dialogue, and feedback. Therefore, the limited appearance of Advance Clarification and Strategies and Tactics in this study may reflect not only students' individual reasoning ability but also the extent to which learning experiences have trained them to move beyond description and inference toward evaluation and strategic judgment.

The self-assessment findings also reveal an important conceptual issue. Most students perceived critical thinking primarily as the ability to connect information and draw conclusions. This confirms that students' understanding of critical thinking tends to be associated with logical reasoning rather than metacognitive reflection. Bezanilla et al. (2023) explain that university students

and teachers may conceptualize critical thinking differently, and students often understand it in practical terms such as analyzing, arguing, or concluding. Golden (2023) similarly found that students may demonstrate analytical reasoning without fully developing awareness of how they think, why they choose certain evidence, and how they evaluate the assumptions behind their conclusions. In this study, only a small number of participants associated critical thinking with clarifying assumptions and considering alternative perspectives. This indicates that reflective criticality has not yet become a dominant part of students' thinking disposition.

The use of SWOT analysis in the problem-solving task also requires careful interpretation. On one hand, SWOT analysis functioned as a useful scaffold because it helped students organize internal and external factors systematically. The framework encouraged students to classify information, identify relationships among factors, and formulate conclusions. This supports previous studies showing that problem-based and structured analytical tasks can strengthen students' reasoning and problem-solving ability (Anwar et al., 2024; Darma et al., 2021; Razak et al., 2022; Yurniwati & Utomo, 2020). In this sense, SWOT-based problem-solving provided a meaningful context for observing critical thinking because it required students to move from information identification to interpretation and decision-making.

On the other hand, SWOT analysis may also constrain students' thinking if it is used only as a categorization tool. The findings show that most students were able to identify strengths, weaknesses, opportunities, and threats, but only a few transformed these categories into reflective evaluation or strategic action. This suggests that SWOT can support procedural reasoning but does not automatically generate deeper critical thinking. Students may complete the four SWOT categories correctly while still failing to question the reliability of information, examine hidden assumptions, compare alternative interpretations, or formulate long-term strategies. This point is consistent with Bouckaert (2023), who notes that higher education assessment often emphasizes the correctness of analytical outputs rather than the quality of reasoning processes. It also aligns with Butler (2012) and Halpern (1998), who argue that critical thinking must be connected to real-world judgment and transfer, not only to classroom tasks.

The findings should also be understood within the broader context of higher education learning culture. Reviewer concerns regarding procedural reasoning are relevant because critical thinking development is shaped by curriculum design, assessment culture, pedagogical tradition, and instructor preparedness. In many university contexts, students are frequently trained to complete assignments by following formats, identifying concepts, and producing

acceptable answers. Such practices can strengthen procedural fluency but may limit reflective inquiry if students are rarely asked to defend assumptions, challenge evidence, or revise their reasoning. Fisher (2011), Lai (2011), and Zubaidah (2018) have emphasized that higher-order thinking requires a shift from recall-oriented learning to inquiry, evaluation, and argumentation. In the Indonesian context, As'ari et al. (2017) also show that prospective teachers may still struggle to demonstrate critical thinking, indicating the need for curricular and instructional reform. Similarly, Umam et al. (2022) highlight the potential of project-based learning to promote critical thinking in Indonesian higher education, while Ahrari et al. (2016) show that active engagement in Malaysian higher education can deepen students' critical thinking. These studies suggest that the pattern found in this research is not merely an individual student issue, but may reflect a broader pedagogical challenge in developing reflective and strategic reasoning.

For Educational Administration students, this issue is particularly important. Their academic and professional preparation is closely related to school management, policy analysis, institutional planning, and educational decision-making. These areas require more than the ability to identify problems and draw conclusions. Future educational administrators must be able to evaluate competing evidence, consider stakeholder perspectives, anticipate risks, and formulate feasible strategies. Therefore, the limited appearance of Advance Clarification and Strategies and Tactics indicates a gap between analytical competence and the decision-making competence expected in educational management. This gap supports Bezanilla et al. (2019), who found that active methodologies such as debate, case analysis, problem-based learning, and reflective writing are viewed as important for teaching critical thinking in higher education. Bezanilla et al. (2021) further note that teachers recognize the importance of critical thinking but often face difficulties in designing effective learning activities to develop it.

The implication is that SWOT-based learning should be redesigned so that students do not stop at identifying categories. In Educational Administration courses, SWOT analysis should be followed by activities that require students to justify the quality of their evidence, compare alternative interpretations, and convert SWOT findings into strategic decisions. One possible strategy is to combine SWOT with TOWS-based strategy formulation, where students must connect strengths with opportunities, weaknesses with threats, and then propose realistic institutional actions. Another strategy is to require reflective memos after the SWOT task, asking students to explain which assumptions they used, what evidence they considered weak, and how their conclusions might change if new information emerged. Such reflective activities

are consistent with Golden (2023), Campo et al. (2023), and Galindo-Domínguez et al. (2023), who emphasize that critical thinking develops through active, reflective, and explicitly guided learning experiences.

Assessment practices also need to be aligned with these goals. If students are assessed only on the completeness of SWOT categories, they may focus on producing neat classifications rather than deeper reasoning. Rubrics should therefore include indicators such as clarity of problem identification, relevance of evidence, quality of inference, assumption testing, stakeholder consideration, and feasibility of proposed strategies. This is consistent with Brookhart's (2010) argument that higher-order thinking assessment should evaluate reasoning quality rather than surface-level answers. Niu et al. (2013) and Abrami et al. (2015) also show that instructional interventions have stronger effects when critical thinking is taught and assessed explicitly. Thus, improving students' critical thinking requires alignment among learning tasks, lecturer feedback, assessment criteria, and opportunities for revision.

Overall, this study contributes to the understanding of how students demonstrate critical thinking in a structured educational management problem-solving task. The findings show that SWOT-based problem-solving can reveal students' ability to identify, support, and infer, but it also exposes weaknesses in assumption clarification and strategic reasoning. Theoretically, the study extends the use of Costa's indicators by applying them to Educational Administration learning, particularly in a SWOT-based task. Practically, it suggests that higher education programs should move from procedural problem analysis toward reflective and strategic learning designs. However, the interpretation of the findings should remain context-specific because the study involved ten students from one study program. Rather than offering statistical generalization, the study provides analytical insight into how critical thinking appears when Educational Administration students engage with structured problem-solving. Future research may expand the number of participants, compare different academic programs, or integrate richer interview data to examine how students develop reflective and strategic critical thinking over time.

CONCLUSION

This study concludes that students' critical thinking skills in SWOT-based problem-solving were generally strong at the foundational level but remained limited at the reflective and strategic levels. All participants demonstrated Elementary Clarification, Basic Support, and Inference, indicating their ability to identify problems, support arguments, and draw logical conclusions. However, only a few participants reached Advance Clarification and Strategies and Tactics, showing that students were less consistent in

questioning assumptions, evaluating alternative perspectives, and transforming analysis into strategic action. These findings suggest that SWOT-based problem-solving can serve as a useful diagnostic tool for identifying students' critical thinking patterns, particularly in Educational Administration learning contexts. Nevertheless, the findings should be interpreted as context-specific insights from a small qualitative sample rather than broad generalizations. To strengthen students' higher-order critical thinking, Educational Administration courses should not stop at SWOT categorization, but should integrate follow-up activities such as TOWS-based strategy formulation, reflective memos, case-based discussion, and assessment rubrics that evaluate evidence quality, assumption testing, stakeholder consideration, and feasibility of proposed solutions.■

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