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The Effect of the Guided Discovery Learning Method on Students' Critical Thinking Skills in Terms of Learning Motivation

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ABSTRACT

This research is aimed to know the effect of guided discovery learning method toward the level of critical thinking of students on economic subjects in SMA Negeri 6 Cimahi with moderator variable of learning motivation. This research was conducted on experimental class that carried out learning with guided discovery learning method and control class using conventional method. The research method used quasi experiment with factorial design model. The result of the analysis shows that (1) there is a difference of students' critical thinking level in the experimental class between before and after learning using guided discovery learning method where the students' critical thinking level after learning is higher than before implementing learning, (2) there is difference of students' between classes that learned to use guided discovery learning methods with classes using conventional methods in which the increase (n-gain) of the experimental class was higher when compared to the control class. (3) Highly motivated students have higher levels of critical thinking than low motivated students in both guided discovery learning and conventional classes, (4) there is an interaction between learning methods and learning motivation to the students' critical thinking level.

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INTRODUCTION

After participating in the learning process, students are expected to attain outcomes that reflect their comprehensive development across multiple domains, including knowledge acquisition, skill proficiency, and attitudinal growth. These outcomes are collectively referred to as academic achievement or learning outcomes, and they serve as critical indicators of educational success at both individual and institutional levels. Academic achievement encompasses not only cognitive competencies, such as understanding concepts, applying knowledge, and critical thinking, but also affective competencies, including motivation, emotional engagement, and attitudes toward learning. Furthermore, it includes psychomotor skills, which involve the ability to perform tasks that require physical coordination and application of techniques in real-life contexts.

In the context of formal education, learning outcomes are used to assess the degree to which students have internalized and mastered the curriculum content that has been presented by the teacher. They provide tangible evidence of students' progress and are often evaluated through a combination of formative assessments, summative evaluations, and performance-based tasks. Moreover, learning outcomes are not only important for tracking individual student performance, but they also function as key metrics for evaluating the quality and effectiveness of the overall instructional process conducted within educational institutions.

According to Vieluf et al. (2025), academic achievement is a multidimensional construct that reflects how effectively students can transform instructional input into meaningful understanding, application, and personal development. Therefore, measuring academic achievement is essential for informing curriculum design, teaching strategies, and educational policy, as well as for identifying gaps that require intervention. In essence, learning outcomes serve as a bridge between educational objectives and student performance, capturing the core purpose of teaching to enable students to grow intellectually, socially, and ethically.

In the context of economics education, learning outcomes are not limited to the acquisition of theoretical knowledge, but also involve the development of higher-order thinking skills, including critical thinking. The subject of economics has strong relevance to daily life, particularly in understanding economic problems faced by individuals and communities. Hence, academic performance in economics reflects not only students' comprehension but also their ability to apply this knowledge in solving real-life economic problems and making rational decisions (Molina et al., 2020).

One essential aspect of learning outcomes that requires particular attention is students' critical thinking skills. Critical thinking is the ability to analyze, evaluate,

and synthesize information logically and systematically. In today's era of globalization and the Fourth Industrial Revolution, critical thinking is considered a fundamental competency that every individual must possess in order to compete at both the national and global levels (Talamás-Carvajal et al., 2024).

However, based on preliminary research conducted with Grade X Social Science students at SMA Negeri 6 Cimahi, it was found that the students' critical thinking ability in economics was relatively low, with an average score of 43. This finding points to a significant issue within the current learning process. One of the underlying factors contributing to this low level of critical thinking is the traditional teaching methods employed, which tend to limit students' opportunities to develop their abilities actively and independently.

Various factors influence students' learning outcomes, both internal and external. According to Samsudai et al., (2024), these factors include physical condition, motivation, interest, family environment, and learning methods. In addition, the curriculum and instructional strategies implemented by teachers greatly affect the success of the learning process (Samsudi et al., 2024). Goodyear & Dudley (2015a) emphasize the important role of the teacher as a facilitator and classroom manager in selecting instructional strategies that align with the characteristics of the material and the students' needs.

Therefore, teachers are required to carefully select and apply appropriate teaching methods to foster students' critical thinking abilities. One effective approach is the *guided discovery learning* method. This method encourages students to actively explore, discover, and construct their own knowledge through guided facilitation by the teacher and collaboration with peers (Shukla & Singh, 2024).

The *guided discovery learning* method is rooted in the discovery learning theory developed by Jerome Bruner. Bruner (as cited in Dahar, 2011) argued that the essence of learning lies in the active process of selecting, retaining, and transforming information. This method emphasizes direct student involvement in the learning process, allowing them to use their cognitive abilities to discover concepts or principles being studied (Bergmark & Westman, 2018).

Eggen and Kauchak (2012) describe guided discovery learning as a teaching approach in which the teacher provides specific examples of a topic and guides students to understand the concept. Huang et al. (2024) outlines four key components of guided discovery learning: (1) a structured learning framework for students, (2) students' responsibility in seeking and understanding material, (3) guidance from the teacher, and (4) application of learning to problem-solving situations.

In practice, this method aligns with the constructivist perspective on learning. John Dewey (as cited in Santrock, 2007) stated that students learn more effectively when they actively construct their own knowledge and understanding. Goodyear & Dudley (2015b) also emphasized that teachers should act as facilitators who create environments that enable students to explore, experiment, and reflect on their experiences.

Aside from teaching methods, motivation also plays a critical role in enhancing students' learning outcomes, particularly in the development of critical thinking. Motivation can be defined as an internal or external drive that directs and sustains behavior toward achieving a goal. Vu et al. (2022) argue that motivation transforms energy within an individual into concrete actions for achieving desired academic outcomes.

Carolina (2014) asserted that positive emotions can improve students' academic performance, but this improvement will not occur spontaneously without being mediated by motivation and self-regulated learning. Cabrera et al. (2023) proposed several indicators of student motivation, such as perseverance, resilience, interest in various problems, independence, and the ability to maintain opinions and solve problems.

Critical thinking, as a high-order thinking skill, is an essential competence that students are expected to acquire during the learning process. This competence is especially crucial for progressing to higher levels of education and for navigating complex problems in the era of globalization. Sharma et al. (2022) defined critical thinking as reasonable and reflective thinking focused on deciding what to believe or do. According to Dong et al. (2023a), indicators of critical thinking ability include: (1) basic clarification, (2) providing reasons and evidence, (3) drawing conclusions, (4) advanced clarification, and (5) strategies and tactics.

The above insights indicate that critical thinking involves the cognitive processes of analyzing problems in depth, making judgments, and solving problems based on evidence and students' learning experiences.

Based on the aforementioned background, the present study is designed to systematically examine the effect of the guided discovery learning (GDL) method and student motivation on the development of critical thinking skills in the context of Economics instruction at SMA Negeri 6 Cimahi. Recognizing the increasing emphasis on higher-order thinking skills in the 21st-century educational landscape, this research seeks to explore how innovative pedagogical approaches particularly GDL can be effectively implemented to promote deeper cognitive engagement among high school students.

Furthermore, this study acknowledges the crucial role of motivation as a mediating factor that influences students' responsiveness to instructional strategies. The interaction between pedagogical methods and students' intrinsic or extrinsic motivation is expected to yield valuable insights into how teaching can be optimized to foster critical, independent, and reflective learners.

By focusing on the intersection of instructional design and student psychological readiness, this research aspires to contribute not only to the theoretical discourse on teaching and learning but also to the practical improvement of classroom practices. The findings of this study are anticipated to provide empirical evidence that can inform educators, curriculum developers, and school administrators on how best to design learning environments that nurture critical thinking an essential skill for academic success and lifelong learning.

Ultimately, this study aims to support efforts in enhancing the overall quality of Economics education at the senior high school level, while also offering a replicable model for instructional innovation that may be applicable across various disciplines and educational contexts.

METHODS

This research employed a quasi-experimental method with a 2x2 factorial design model, chosen to investigate the effect of the *guided discovery learning* method and learning motivation on students' critical thinking ability. The quasi-experimental approach was appropriate because it allowed the implementation of treatments in a real classroom setting using pre-existing groups, which reflects authentic educational conditions (Yao et al., 2025). The independent variable in this study was the learning method, consisting of *guided discovery learning* and conventional instruction, while the dependent variable was students' critical thinking ability. Learning motivation functioned as a moderating variable to examine whether it strengthened or weakened the effect of the teaching method on critical thinking outcomes.

The factorial design used in this research allowed simultaneous analysis of two independent variables and the interaction between them. According to Kintu et al. (2017), a factorial design is effective for testing the effects of more than one independent variable at the same time, providing a more comprehensive understanding of the factors influencing learning outcomes.

The design of the study is outlined as follows:

Table 1. Research Design Based on Instructional Method and Motivation Level

Motivation Level	Guided Discovery Learning (X_1)	Conventional Method (X_2)

High Learning Motivation (Z_1)	X_1Z_1	X_2Z_1
Low Learning Motivation (Z_2)	X_1Z_2	X_2Z_2

The study was conducted over three instructional meetings for both the experimental and control groups. The experimental group received instruction using the *guided discovery learning* method, while the control group was taught using traditional teacher-centered approaches Woods & Copur-Gencturk (2024) **.**Both groups covered the same economics material, adapted to suit the characteristics of each instructional method. The procedures began with a pre-test to determine the students' initial critical thinking ability, followed by the administration of a motivation questionnaire to categorize students based on their level of motivation high or low.

Before the teaching sessions were conducted, the research instruments were developed and validated. The validation process included content validation by expert judgment, construct validation through item analysis, and reliability testing using Cronbach's Alpha. In addition, item difficulty and item discrimination indices were calculated to ensure the appropriateness of each test item . Only items meeting acceptable psychometric criteria were used in the final instruments.

The data collection instruments consisted of two main tools: a critical thinking test and a motivation questionnaire. The critical thinking test included essay-type questions based on Ennis's (1985) critical thinking indicators, such as basic clarification, inference, advanced clarification, and the use of strategies and tactics. The motivation questionnaire was adapted from Sardiman's (2014) indicators of learning motivation, which included perseverance, independence, curios and consistency in facing challenges Sardiman. Responses were scored using a Likert scale, and students were grouped based on their motivation levels as determined by the total score.

Following the validation of the instruments, the actual implementation phase began. The pre-test was administered to all students before the treatment. The intervention then proceeded with three sessions of instruction, with the experimental group engaged in *guided discovery learning* activities involving exploration, observation, discussion, and reflection under teacher guidance, while the control group participated in conventional lecture-based learning (Bamiro, 2015a). At the end of the sessions, a post-test was conducted to assess the students' critical thinking improvement.

To analyze the data, several statistical tests were conducted using SPSS version 21. A paired sample t-test was used to examine whether there was a significant difference in critical thinking ability before and after the intervention in the experimental group. An independent sample t-test was employed to compare the post-test results between the experimental and control groups, as well as to evaluate differences in normalized gain scores. In addition, a two-way ANOVA was conducted to examine the effect of learning motivation on students' critical thinking ability and to determine the interaction effect between the instructional method and learning motivation.

Through this research design and method, the study aimed to evaluate not only the effectiveness of the *guided discovery learning* approach but also how students' motivation levels might influence or interact with that effectiveness in shaping critical thinking skills in economics learning at the high school level.

RESULT

In this section, the author outlines the main findings of the research in a descriptive and systematic manner. All the data discovered are presented objectively, without any interpretation or additional explanation, which will be discussed further in the discussion section. The purpose of writing the results is to provide a clear overview of the research findings through the presentation of relevant data, including figures, statistical values, observed trends, and comparisons between groups or variables being tested.

This chapter presents a detailed account of the statistical analyses performed to examine the effectiveness of the *Guided Discovery Learning* (GDL) method and the moderating role of students' learning motivation on their critical thinking abilities. The data were analyzed using several statistical techniques, namely the paired sample t-test, independent sample t-test, and two-way ANOVA. These analyses aimed to determine both the main effects and the interaction effects of instructional method and motivation level on students' learning outcomes.

The first stage of analysis focused on determining whether the implementation of the guided discovery learning method led to a significant improvement in students' critical thinking within the experimental group. The students were given a pretest prior to the intervention and a posttest after the completion of the learning sessions. The results of the paired samples t-test are presented in Table 2.

Table 2. *Paired Samples t-Test: Pretest and Posttest in Experimental Class*

Data	Mean	Mean Difference	t-value	Sig. (2-tailed)	Hypothesis

Pretest	38.57	38.213	33.170	0.000	Rejected
Posttest	76.78				

The statistical results demonstrate a substantial and statistically significant improvement in students' critical thinking performance following the use of guided discovery learning. The average posttest score (76.78) increased by approximately 38 points compared to the pretest score (38.57). With a t-value of 33.170 and a p-value of 0.000 ($p < 0.05$), the null hypothesis of no difference is confidently rejected. This strongly indicates that the guided discovery learning method effectively enhanced students' critical thinking skills.

This result reflects the theoretical underpinnings of discovery-based learning models, which emphasize student agency in constructing knowledge. By involving students in active cognitive engagement such as generating hypotheses, asking questions, conducting observations, and working collaboratively to draw conclusions students are immersed in a learning environment that promotes deeper understanding and long-term cognitive retention (Xu et al., 2023). Such engagement is particularly aligned with the higher-order thinking processes embedded in critical thinking frameworks.

To determine the relative effectiveness of guided discovery learning compared to conventional teaching approaches, an independent samples t-test was performed to compare the critical thinking gain scores between the experimental group (using GDL) and the control group (using traditional teaching methods). Table 3 presents the comparative findings

Table 3. *Independent Samples t-Test: Experimental vs. Control Groups*

Method	Mean Gain	Mean Difference	t-value	Sig. (2-tailed)	Hypothesis
GDL	0.6251	0.09153	3.291	0.002	Rejected
Control	0.5336				

The data reveal a statistically significant difference in the normalized gain scores (n-gain) between the two groups. Students in the experimental group achieved a higher mean gain (0.6251) compared to the control group (0.5336). With a t-value of 3.291 and a p-value of 0.002 ($p < 0.05$), it can be concluded that the GDL method significantly outperformed the traditional teaching approach in fostering students' critical thinking skills.

This finding is consistent with pedagogical theories emphasizing student-centered instruction. While traditional lecture-based methods tend to prioritize

content delivery, guided discovery encourages active exploration, questioning, and conceptual integration all of which are essential for critical thinking development (Bamiro, 2015b). Furthermore, the guided discovery model likely stimulated students' metacognitive awareness, enabling them to monitor, evaluate, and adjust their thinking processes during problem-solving tasks.

The next analysis investigated how learning motivation influenced the effectiveness of the guided discovery learning method. Students in the experimental group were categorized into high- and low-motivation subgroups based on their responses to a learning motivation questionnaire administered before the intervention. The results are presented in Table 4.

Table 4. *Critical Thinking Gains in Experimental Group by Motivation Level*

Motivation Level	Mean Gain	Mean Difference	t-value	Sig. (2-tailed)	Hypothesis
High	0.6822	0.11752	5.302	0.000	Rejected
Low	0.5647				

The results show a statistically significant difference in the critical thinking gains between students with high and low motivation within the experimental group. High-motivation students obtained an average n-gain of 0.6822, compared to 0.5647 for their lower-motivation counterparts. The p-value of 0.000 indicates that this difference is highly significant.

This suggests that students' motivation levels considerably influenced the extent to which they benefited from the guided discovery approach. Motivation appears to play a crucial role in maximizing the advantages of active, inquiry-driven learning. Highly motivated students were likely more eager to participate in discussions, explore concepts, and persist through challenges, thus deepening their understanding and honing their critical thinking abilities (Manganelli et al., 2019)

To explore wheth.er this trend was consistent in the control group, a similar analysis was conducted. The findings are shown in Table 5.

Table 5. *Critical Thinking Gains in Control Group by Motivation Level*

Motivation Level	Mean Gain	Mean Difference	t-value	Sig. (2-tailed)	Hypothesis
High	0.6400	0.21389	7.010	0.000	Rejected
Low	0.4260				

Once again, students with high learning motivation outperformed their peers with lower motivation. The difference in mean gain (0.21389) is substantial, and the

p-value of 0.000 confirms statistical significance. However, when comparing these results to those of the experimental group, it becomes evident that the guided discovery learning method yields more consistent benefits across motivation levels.

In fact, the n-gain for low-motivation students in the experimental group (0.5647) still exceeded that of high-motivation students in the control group (0.6400 vs. 0.6822), indicating the robustness and inclusivity of the GDL approach. This implies that while motivation is a key driver of academic performance, the instructional method itself plays a critical role in supporting all learners especially those who may lack intrinsic motivation (Bälter et al., 2024)

To assess whether the instructional method and student motivation interact to influence critical thinking, a two-way ANOVA was conducted. The results are displayed in Table 6

Table 6. *Two-Way ANOVA: Interaction between Learning Method and Motivation*

Source	Sum of Squares	df	Mean Square	F-value	Sig.	Hypothesis
Learning Method	0.143	1	0.143	22.492	.000	Rejected
Motivation	0.487	1	0.487	76.492	.000	Rejected
Learning Method * Motivation	0.041	1	0.041	6.468	.013	Rejected

The ANOVA results reveal that both instructional method and learning motivation had statistically significant main effects on students' critical thinking. More importantly, the interaction term (Learning Method * Motivation) was also statistically significant ($F = 6.468$, $p = .013$), indicating that the impact of the instructional method on critical thinking depends on the level of student motivation.

This interaction underscores the importance of aligning teaching strategies with student characteristics. While guided discovery is effective on its own, its benefits are amplified when paired with motivated learners. However, its strength lies in its ability to engage and support even those with lower motivation, offering an equitable learning environment that fosters cognitive growth across diverse learner profiles (Xiaobing & Yijun, 2025).

In sum, the data suggest that *guided discovery learning* is not only superior to traditional teaching methods in promoting critical thinking but also more adaptive to individual differences in student motivation. This highlights the need for educators to adopt pedagogical approaches that combine structured inquiry with learner-

centered engagement, particularly in efforts to cultivate higher-order thinking skills in diverse classroom settings

DISCUSSION

The discussion section should focus on the interpretation of the findings and link them to existing literature. The author should explain why the findings are significant and how they contribute to enhancing theoretical understanding in the researched field. Additionally, the discussion should include an analysis of any contradictions or differences with previous studies, as well as provide practical and theoretical implications.

The results of the first hypothesis test revealed a statistically significant increase in students' critical thinking abilities following instruction using the Guided Discovery Learning (GDL) method. This improvement is not incidental but rather the outcome of a pedagogical design that intentionally engages students in active learning processes. Unlike traditional instruction, which often relies heavily on the one-way transmission of factual knowledge from teacher to student, the GDL approach creates a dynamic learning environment in which students are encouraged to explore, question, discover, analyze, and synthesize information independently and collaboratively. These cognitive processes are closely aligned with the core dimensions of critical thinking, which include interpretation, analysis, inference, explanation, and evaluation (Dong et al., 2023b).

The GDL model emphasizes student-centered learning, where learners are not passive recipients of information but are actively involved in constructing their understanding through meaningful learning tasks. In the experimental class observed in this study, students frequently engaged in asking open-ended and convergent questions, formulating hypotheses based on initial observations, collecting and interpreting data, and discussing their findings with peers before drawing reasoned conclusions. This pedagogical strategy resonates with Vygotsky's Zone of Proximal Development (ZPD), which asserts that learners achieve optimal cognitive growth when they are supported in performing tasks that exceed their current ability level, through guidance and collaboration with more capable peers or instructors (Eun, 2019). Within this framework, the teacher's role shifts from a knowledge-giver to a learning facilitator, providing the necessary scaffolding to help students progress toward higher cognitive competencies.

This finding aligns with the conclusions of Wale & Bishaw (2020), who argued that guided discovery learning has a statistically significant effect on enhancing students' critical thinking across educational contexts and disciplines. The structured yet flexible nature of GDL, which encourages iterative learning and exploratory problem-solving, promotes deep cognitive engagement and helps learners connect

new knowledge with prior understanding. This fosters not only comprehension but also the ability to transfer knowledge to novel and complex situations an essential aspect of critical thinking in the 21st-century learning environment (Jiang et al., 2023).

Further comparison between the experimental group and the control group reinforced the advantages of the GDL approach. Students exposed to guided discovery learning consistently outperformed those taught using conventional instructional methods, as reflected in higher normalized gain scores. During the experimental treatment, students were more visibly engaged and demonstrated a greater sense of curiosity and academic ownership. They displayed initiative in asking questions, collaborated with peers in meaningful dialogue, and actively participated in the discovery process. Conversely, students in the control group, who were subjected to traditional lecture-based instruction, had fewer opportunities for active engagement and critical inquiry. Aba-Oli et al. (2025) emphasized that discovery-oriented instruction supports the development of higher-order thinking skills such as fluency, creativity, and the ability to generate and interpret meaning capacities that are often neglected in traditional learning environments.

Although some improvement in critical thinking was also observed in the control group, the magnitude of this improvement was significantly lower. This underscores the notion that while traditional instruction may be effective in facilitating rote learning and surface-level understanding, it is less capable of nurturing students' analytical, evaluative, and inferential thinking skills. This gap is particularly relevant in light of global educational standards that now emphasize the development of metacognitive and problem-solving abilities over mere content acquisition.

Mayer (as cited in Eggen & Kauchak, 2012) argued that discovery-based approaches yield deeper and more durable learning because students engage more actively with the material. When learners construct knowledge through hands-on experiences, rather than simply receiving information through passive listening, the resulting learning is more meaningful and memorable. Eggen and Kauchak further noted that the transfer of learning is more likely to occur when students are encouraged to explore, reflect, and solve problems autonomously. These assertions were substantiated in this study, where students in the experimental class not only achieved higher test scores but also showed a greater ability to articulate reasoning, justify conclusions, and engage in metacognitive reflection key indicators of critical thinking (Cortázar et al., 2021).

Beyond instructional methods, the role of students' learning motivation was also found to be a critical determinant of success in cultivating critical thinking. The data revealed a consistent pattern: students with high intrinsic motivation

demonstrated significantly greater learning gains than their less motivated peers. This pattern was evident in both experimental and control groups, though it was more pronounced in the GDL cohort. This suggests that motivation functions as a powerful moderator, amplifying the effectiveness of student-centered pedagogies.

Educational theorists and researchers, such as Hamzah (2016), have long emphasized the multifaceted influence of motivation on learning. Motivation helps to determine the direction, intensity, and persistence of learning behaviors. It influences the types of learning strategies students choose, how they allocate their cognitive resources, and how they respond to feedback and setbacks . In the present study, highly motivated students were more likely to take initiative, engage in self-directed inquiry, and exhibit resilience when faced with academic challenges. These behaviors facilitated deeper engagement and contributed to superior critical thinking performance. In contrast, students with lower motivation levels were less inclined to participate actively, and their learning outcomes reflected this lack of engagement.

The results of the two-way ANOVA analysis revealed a statistically significant interaction effect between learning method and motivation. This means that the effectiveness of the guided discovery learning method was not uniform across all students but was contingent on their motivational state. Specifically, students with high motivation who were exposed to the GDL method achieved the highest critical thinking scores. This finding is consistent, who posited that positive emotions and instructional strategies have a stronger impact when accompanied by intrinsic motivation and self-directed learning tendencies.

What is particularly noteworthy, however, is that even students with low motivation experienced greater benefits from GDL compared to those in the control group. This finding positions GDL not only as an effective instructional method but also as an inclusive and equitable approach. By offering structured opportunities for exploration, inquiry, and dialogue, GDL compensates to some extent for the motivational deficits that often hinder student performance. In this sense, guided discovery learning serves as a pedagogical equalizer, reducing the disparity in learning outcomes between students of differing motivational profiles (Aldalur & Perez, 2023).

These findings yield several significant pedagogical implications that are highly relevant for curriculum designers, classroom practitioners, and education policymakers. First and foremost, the evidence strongly supports the broader adoption of guided discovery learning (GDL) as a core instructional strategy, particularly in disciplines such as economics, where complex reasoning, decision-making, and critical analysis are integral to academic success and real-world application. Economics, by its nature, involves interpreting data, evaluating policy

outcomes, solving multifaceted problems, and understanding abstract theoretical frameworks. GDL aligns seamlessly with these demands by promoting student-centered inquiry, reflective exploration, and evidence-based reasoning, all of which foster a more meaningful and lasting understanding of economic concepts.

Moreover, the GDL model is highly consistent with the competencies outlined in 21st-century learning frameworks, which emphasize the "4Cs": creativity, collaboration, critical thinking, and communication. These competencies are no longer optional; they are essential for navigating an increasingly complex, interconnected, and innovation-driven world. By encouraging learners to ask questions, explore alternative solutions, and articulate their reasoning, GDL not only deepens subject knowledge but also enhances transferable skills that are applicable across disciplines and contexts. Its process-oriented nature helps students become adaptive problem-solvers who are capable of independent judgment and collaborative learning.

Second, this study highlights the critical importance of student motivation as a mediating variable in determining instructional effectiveness. Motivation is not merely a background factor; it is an essential psychological force that drives student engagement, persistence, and academic success. Therefore, motivation should be proactively addressed during instructional planning, rather than treated as a static trait. Teachers must adopt strategies that nurture curiosity, autonomy, and a sense of purpose among students. These include providing opportunities for goal-setting, delivering autonomy-supportive instruction that offers meaningful choices, offering timely and constructive feedback, and recognizing student effort and progress. Such strategies create a motivational climate that enhances learners' willingness to engage in cognitively demanding tasks, including those found in guided discovery learning environments.

Third, the findings suggest a pressing need to reconceptualize teacher professional development. Traditional training programs that focus exclusively on content mastery and delivery techniques are no longer sufficient. Instead, teacher education should adopt a dual focus that includes both disciplinary pedagogy and motivational psychology. Educators must be equipped not only with effective teaching strategies but also with the ability to understand and respond to the affective needs of learners. By cultivating both instructional and emotional intelligence, teachers can design and implement lessons that are challenging, supportive, and inspiring, thereby optimizing both learning outcomes and student well-being.

In conclusion, the integration of guided discovery learning with motivation-sensitive instructional practices represents a robust, holistic, and forward-looking pedagogical approach to fostering critical thinking among high school students. The

results of this study underscore that effective teaching strategies, while indispensable, yield optimal outcomes when they resonate with students' internal motivational states. GDL, by its constructivist and exploratory design, naturally fosters active learning, self-reflection, and conceptual clarity core attributes of critical thinking. When such instruction is paired with high levels of student motivation, the cognitive and academic benefits are significantly magnified. Even in cases where motivation is initially low, the structured yet engaging nature of GDL can provide the necessary scaffolding to stimulate interest and encourage participation.

Therefore, GDL emerges not only as an effective instructional method but also as an equitable and inclusive educational strategy capable of uplifting diverse learners. It empowers students to become critical, independent, and resilient thinkers, capable of navigating ambiguity, making informed decisions, and contributing meaningfully to society. In an era defined by rapid technological change, global interdependence, and complex societal challenges, such educational outcomes are not merely desirable they are imperative.

CONCLUSION

Based on the comprehensive analysis and thorough interpretation of the research findings, it can be concluded with confidence that the guided discovery learning (GDL) method has a statistically significant, educationally impactful, and pedagogically transformative influence on the development of students' critical thinking skills, particularly within the domain of economics education at the senior high school level. This conclusion is supported by the empirical evidence observed in the experimental group, where posttest scores demonstrated a substantial improvement compared to pretest scores. Furthermore, these gains were not only statistically significant but also consistently higher than those observed in the control group that received conventional, lecture-based instruction. This suggests that GDL fosters both immediate cognitive gains and deeper, more enduring skill development.

The pedagogical design of GDL, which places students at the center of their own learning journey through exploratory activities, problem-solving, reflective dialogue, and structured inquiry, directly contributes to the enhancement of higher-order thinking abilities. These abilities include the capacity to analyze relationships, synthesize information across contexts, evaluate evidence, and form reasoned conclusions skills that are essential for economic literacy, civic responsibility, and informed decision-making. Unlike conventional instruction, which often emphasizes content transmission and memorization, GDL encourages learners to engage in meaningful, self-directed construction of knowledge, guided by teacher scaffolding and collaborative classroom dynamics.

One of the most noteworthy findings in this research is the superior performance of students in the experimental group, not only in test scores but also in qualitative feedback, demonstrating increased intellectual curiosity, engagement, and enjoyment in learning. These results validate the core tenets of constructivist learning theory, which posits that students learn best when they are actively involved in making sense of new information rather than passively receiving it. Through guided discovery, learners are given the cognitive tools and autonomy to formulate questions, explore hypotheses, revise their understandings, and co-construct meaning with peers and instructors ultimately fostering deep learning rather than surface-level memorization.

Equally significant is the study's finding regarding the moderating role of student motivation particularly intrinsic motivation in shaping the outcomes of instructional interventions. Students who entered the classroom with high levels of curiosity, self-discipline, and internal drive tended to achieve stronger gains in critical thinking, regardless of the instructional model. However, the most profound improvements were observed in those who combined high motivation with exposure to GDL, suggesting a synergistic relationship between student affect and pedagogical approach. This interaction effect, confirmed through two-way ANOVA analysis, indicates that GDL is especially powerful when aligned with the psychological readiness of learners.

From a psychological perspective, motivation acts as a cognitive amplifier: it enhances attention, perseverance, and metacognitive monitoring, all of which are vital for success in inquiry-based learning environments. When students feel intellectually stimulated and emotionally supported, they are more likely to take intellectual risks, persist through cognitive challenges, and engage in complex reasoning processes. Moreover, the GDL structure itself through its emphasis on challenge, autonomy, and purpose can help cultivate motivation even in students who initially show lower levels of engagement. This makes GDL not only a cognitively effective strategy but also a psychologically inclusive one.

In terms of instructional implications, this study strongly suggests that effective teaching is multidimensional. Educators must not only select robust, evidence-based teaching strategies but also create motivational climates that foster resilience, autonomy, and a growth mindset. These findings underscore the necessity of teacher professional development programs that prepare educators to become facilitators of learning, rather than mere transmitters of content. Such a shift in role requires skill in scaffolding inquiry, managing classroom dialogue, providing constructive feedback, and designing tasks that are both intellectually rigorous and personally meaningful.

In practical classroom terms, the successful application of GDL depends on several critical teacher competencies. These include the ability to diagnose students' prior knowledge, pose effective guiding questions, provide timely and tailored scaffolding, and cultivate a classroom culture of respectful discourse and intellectual risk-taking. When executed well, this approach not only improves measurable academic outcomes but also nurtures a wide range of 21st-century skills, including collaboration, communication, self-regulation, and critical creativity.

In light of these findings, schools and education policymakers are encouraged to integrate GDL into mainstream instructional practices, particularly in content areas that demand conceptual depth and real-world application, such as economics, science, and social studies. Simultaneously, schools should implement strategies to assess and nurture student motivation, including differentiated instruction, meaningful feedback, and opportunities for student voice and choice. By addressing both the cognitive and emotional dimensions of learning, educators can maximize the potential of every learner.

To summarize, the guided discovery learning method stands out as a holistic, learner-centered instructional model that promotes both academic excellence and lifelong learning competencies. Its effectiveness is magnified when aligned with high levels of learner motivation, resulting in a powerful, synergistic effect that elevates critical thinking across diverse student populations. As such, GDL should be considered not only as a method of instruction but as a philosophy of education one that empowers students to become active, thoughtful, and self-motivated participants in their own intellectual growth. Through such pedagogical innovation, we take a decisive step toward preparing students who are capable of navigating the complexities of the modern world with intelligence, independence, and integrity.

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