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Cultivating 21st-Century Skills: A Comparative Study of Critical Thinking Development Across Higher Education Disciplines

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Abstract. This study examined the challenges instructors face in developing critical thinking skills across various disciplines in higher education. A quantitative descriptive correlational research design was employed, involving college instructors from multiple fields, including Science Education, Social Science, English Education, Agriculture Sciences, and Mathematics, in Isabela, Philippines. The study identified common challenges, including students' struggles with higher-order thinking tasks, a preference for memorization over critical analysis, time constraints, and limitations in curriculum structure. Practical strategies for enhancing essential thinking include collaborative learning, problem-based learning, and the use of digital tools. The extent of critical thinking incorporation varies across disciplines, with some fields exhibiting stronger integration than others. While instructors generally perceive adequate institutional support, there are differences in their perceptions of training and professional development opportunities across disciplines. This study highlights the need for targeted interventions to address discipline-specific challenges and enhance the development of critical thinking across various academic fields. Recommendations include implementing specialized professional development for instructors, restructuring curricula to accommodate more essential thinking activities, developing transition programs to help students shift to higher-order thinking, standardizing the integration of critical thinking across disciplines, and regularly assessing and sharing best practices among faculty members.

Keywords: 21st-century skills; Critical thinking skills; Disciplines; Higher education; Instructional strategies.

1.0 Introduction

In today's rapidly changing world, critical thinking is recognized as an essential skill, particularly in higher education, where it is integrated into national university graduate outcomes and international declarations. It empowers individuals to make informed decisions based on available information and is recognized as a vital 21st-century skill (O'Reilly et al., 2022; Yorgancı, 2016). Critical thinking involves complex cognitive abilities such as reasoning, reflection, evaluation, and analysis (Kerruish, 2023; Kleemola et al., 2021). It requires analyzing, organizing, reasoning, arguing, questioning, evaluating, taking positions, and acting on decisions. Key elements include creative, rational, logical, reflexive, and metacognitive thinking (Solodikhina & Solodikhina, 2019). These

skills are applicable across academic disciplines and crucial for acquiring disciplinary skills in higher education (Kleemola et al., 2021).

Globally, critical thinking has become a cornerstone of educational policies deemed essential for the 21st century. It is vital for academic quality, employability, competitiveness, and fostering democratization and social integration (Altinyelken, 2021). The inclusion of critical thinking in formal school curricula is nearly universal, with institutions highlighting it as one of the most essential competencies (Galindo-Domínguez et al., 2023). Organizations such as The Partnership for 21st Century Skills (P21) advocate for curricula that emphasize critical thinking, reasoning, communication, and literacy in media, information, and technology (Yorgancı, 2016). Despite this focus, instructors encounter challenges in developing critical thinking skills. One challenge is the diversity of student populations, as illustrated by a study of non-formal Islamic education in the Netherlands, where traditional pedagogical approaches, discouraging attitudes, a lack of language proficiency, and a young age impede the development of critical thinking (Altinyelken, 2021). Disciplinary requirements also present challenges, as evidenced by the specific critical thinking needs in mathematics education (Yorgancı, 2016). The integration of new technologies, including AI, further complicates the development of critical thinking as educators must adapt their teaching strategies (Walter, 2024; Zhou et al., 2024).

In higher education, critical thinking instruction has concentrated mainly on defining concepts, assessing their significance, and evaluating various teaching methods. However, there remains a lack of understanding of the specific challenges instructors face across different disciplines and the strategies they employ to overcome these hurdles. This study seeks to fill this gap by examining the obstacles instructors encounter in cultivating critical thinking skills and exploring the diverse approaches employed across various academic fields. This research aims to investigate the challenges instructors face in fostering critical thinking skills across disciplines and to identify the practical strategies they use. The study presents six research questions that delve into instructors' demographic profiles, the challenges and strategies involved in developing critical thinking skills, the extent of incorporation of essential thinking activities, significant obstacles to integration, commonly used teaching strategies, and the assessment of institutional support. These questions are crucial for gaining a comprehensive understanding of critical thinking instruction in higher education and for identifying areas for improvement. The findings of this study have the potential to significantly enhance critical thinking instruction by providing insights into practical strategies, addressing common challenges, and informing institutional policies. In turn, this could lead to improved student learning outcomes across various disciplines and better prepare graduates for the complex challenges of the modern workforce and society.

2.0 Methodology

2.1 Research Design

This study employed a quantitative descriptive-correlational research design to investigate the challenges faced by instructors in developing students' critical thinking skills across various disciplines—the descriptive component aimed to identify the common challenges, instructional practices, and strategies. The correlational aspect investigated the relationships among variables, including teaching experience, institutional support, and the extent of integration of critical thinking in instruction.

2.2 Research Locale

This research was conducted in the province of Isabela, Philippines, focusing on both public and private higher education institutions (HEIs), including state universities and colleges. These institutions offer diverse undergraduate and graduate programs in Science Education, Social Sciences, English, Agriculture, and Mathematics, providing a rich environment for exploring various instructional contexts and support systems related to critical thinking.

2.3 Research Participants

The participants consisted of 34 college instructors from a wide range of academic disciplines, including Science Education, Social Science, English Education, Agriculture Sciences, and Mathematics. Stratified sampling was used to ensure proportional representation from each field. Participants varied in terms of teaching experience, highest educational attainment, and institutional affiliation (public vs. private), allowing for a comprehensive and diverse perspective on the instructional challenges and strategies related to critical thinking.

2.4 Research Instrument
A structured questionnaire was used as the primary research instrument in this study. It was adapted from established frameworks and scholarly works, including Abrami et al. (2008), Tsui (2002, and Facione's (1990) Delphi Report. The instrument contained both Likert-scale items and closed-ended questions covering challenges, strategies, and institutional factors related to critical thinking. A Cronbach's alpha value of 0.886 was obtained, indicating a strong internal consistency and reliability.

2.5 Data Gathering Procedure
To ensure equitable participation, surveys were distributed both online and in person, based on participant access and preference. Before data collection, participants were informed about the study's purpose, the use of their data, and their rights. Informed consent was obtained from all the respondents. All completed surveys were anonymized, encoded, and prepared for statistical analysis.

2.6 Ethical Considerations
This research strictly adhered to ethical standards in educational research. Approval was obtained from the Institutional Ethics Review Board of the lead institution. The participants were assured of anonymity, voluntary participation, and their right to withdraw at any time. No personally identifiable information was collected, and all the data were used exclusively for academic purposes.

3.0 Results and Discussion
This section presents findings on the challenges and strategies faced by college instructors in teaching critical thinking skills across various disciplines in higher education institutions in Isabela. Data were analyzed using descriptive statistics and Pearson's correlation to determine patterns, relationships, and insights into instructional practices. This section provides evidence-based insights to support effective teaching methods and curriculum planning.

3.1 Field of Teaching among the Respondents
Table 1 consisted of instructors from diverse academic backgrounds. Science Education had the highest representation (38.2%), followed by Social Sciences (26.5%), English Education (14.7%), Agricultural Sciences (11.8%), and Mathematics (8.8%). Regarding teaching experience, 41.2% had 1–3 years, 29.4% had 7–9 years, 20.6% had 10 years or more, and 8.8% had 4–6 years. In terms of educational attainment, most participants held postgraduate degrees, with 32.4% having a master's degree and 26.5% holding a Ph.D. degree. Public institutions accounted for 61.8% of the total, while private institutions accounted for 38.2%.

Table 1. *Field of Teaching among the Respondents*

Field of Study	Frequency	Percentage
Agriculture Sciences	4	11.80
Social Science	9	26.50
Science Education	13	38.20
English Education	5	14.70
Mathematics	3	8.80

3.2 Teaching Experience among the Respondents
The data revealed a diverse distribution of teaching experience among the respondents, with the largest group (41.2%, 14 respondents) having one to three years of experience. The second-largest group (29.4%, 10 respondents) comprised those with 7–9 years of experience, followed by educators with 10 years or more (20.6%, seven respondents), and finally, those with 4–6 years of experience (8.8%, three respondents). This mix of early career and experienced educators provides a comprehensive perspective on the teaching landscape. The respondents' fields of study were equally diverse, with Science Education representing the largest group (38.2%, 13 respondents), followed by Social Sciences (26.5%, nine respondents), English Education (14.7%, five respondents), and Agricultural Sciences (11.8%, four respondents). This broad representation across academic disciplines, particularly in science and social science, offers a rich and varied dataset for analysis, potentially yielding insights into different teaching approaches and experiences across various subject areas.

Table 2. *Teaching Experience among the Respondents*

Years of Teaching Experience	Frequency	Percentage
1 to 3 years	14	41.20
4 to 6 Years	3	8.80
7 to 9 Years	10	29.40
10 years Above	7	20.60

3.3 Educational Attainment among the Respondents

The data presented a diverse range of educational attainment among the respondents. The largest group, comprising 32.4% (11 individuals), completed master's units. This was followed by 26.5% (9 individuals) who had PhD units. Master's graduates made up 20.6% (7 individuals) of the respondents, while those with a baccalaureate degree accounted for 14.7% (5 individuals). The smallest group consisted of PhD graduates, representing 5.9% (2 individuals) of the total. This distribution indicated a high level of educational achievement among the respondents, with the majority pursuing postgraduate studies. The prevalence of individuals with master's and Ph.D. degrees suggests a strong commitment to ongoing education and professional development within this group.

Table 3. *Educational Attainment among the Respondents*

Highest Educational Attainment	Frequency	Percentage
Baccalaureate	5	14.70
With Masters Unit	11	32.40
Masters Graduate	7	20.60
With PhD Units	9	26.50
PhD Graduate	2	5.90

3.4 Institution Types among the Respondents

The data reveal the distribution of institution types among the respondents. Public institutions accounted for 61.8% (21 institutions) of the total. Private institutions comprised the remaining 38.2% (13 institutions). The total sample size included 34 institutions. This breakdown indicates a higher representation of public institutions in the study, suggesting that the findings may be reflective of the public education sector. However, including a significant proportion of private institutions provides a balanced perspective, allowing for potential comparisons between the two types of educational establishments. This distribution is important to consider when interpreting the results, as it may influence factors such as funding, governance, and operational practices within the institutions studied.

Table 4. *Institution Types among the Respondents*

Institution Type	Frequency	Percentage
Public	21	61.80
Private	13	38.20
Total	**34**	**100.00**

3.5 Challenges in Developing Critical Thinking Skills among Students

College instructors face various challenges in developing critical thinking skills among students across disciplines. In the Agriculture Sciences, instructors strongly agree that students prefer memorization over essential activities of thinking ($\bar{x}$ = 4.50) and struggle with higher-order thinking tasks ($\bar{x}$ = 4.25). Social Sciences instructors found the curriculum structure to be limiting ($\bar{x}$ = 3.44) and noted students' preference for memorization ($\bar{x}$ = 3.67). Science Education instructors agreed that time constraints hindered the integration of critical thinking ($\bar{x}$ = 3.54) and observed students' difficulties with higher-order thinking ($\bar{x}$ = 3.92). English Education instructors strongly agree that time constraints are a significant challenge ($\bar{x}$ = 4.00) and find the curriculum structure to be limiting ($\bar{x}$ = 3.80). Mathematics instructors strongly agree that students struggle with higher-order thinking tasks ($\bar{x}$ = 4.33), but face less agreement on other challenges. Across disciplines, the most consistent challenges are students' struggles with higher-order thinking and preference for memorization, while institutional support and assessment methods show more variation in perceived challenges.

Table 5. *Challenges in Developing Critical Thinking Skills among Students*

No.	Indicators	Agriculture Sciences			Social Sciences			Science Education			English Education			Mathematics		
		Mean	SD	I	Mean	SD	I	Mean	SD	I	Mean	SD	I	Mean	SD	I
1	Time constraints prevent me from integrating critical thinking activities.	3.50	0.58	A	3.00	1.12	N	3.54	1.05	A	4.00	0.71	A	3.00	1.73	N
2	The curriculum structure limits opportunities for critical thinking development.	3.25	0.96	N	3.44	1.13	A	2.77	1.17	N	3.80	1.10	A	3.00	1.73	N
3	Students struggle with higher-order thinking tasks.	4.25	0.50	SA	3.67	0.71	A	3.92	0.64	A	4.00	1.41	A	4.33	0.58	SA
4	Students prefer memorization over critical thinking activities.	4.50	0.58	SA	3.67	1.41	A	3.85	0.90	A	3.60	0.89	A	3.00	1.73	N
5	There is insufficient institutional support for critical thinking initiatives.	3.50	1.29	A	2.89	0.60	N	2.85	1.14	N	3.20	1.64	N	3.67	1.53	A
6	Assessment methods in my subject do not effectively measure critical thinking skills.	3.00	1.15	N	2.56	1.13	D	2.31	1.32	D	3.20	0.45	N	2.67	2.08	N

Legend: Interpretation (I): 1.00 – 1.79: Strongly Disagree (SD) 1.80 – 2.59: Disagree (D) 2.60 – 3.39: Neutral (N) 3.40 – 4.19: Agree (A) 4.20 – 5.00: Strongly Agree (SA).

3.6 Strategies Employed to Develop Critical Thinking Skills

Table 6 presents the strategies employed by college instructors to develop critical thinking skills among students across different disciplines. Collaborative learning has emerged as a highly favored approach, with strong agreement across all disciplines, particularly in English Education, where it has received unanimous strong agreement. Problem-based learning (PBL) is also widely used, especially in Science Education and Mathematics. Digital tools and technology are strongly embraced in the Agricultural Sciences, Science Education, and English Education. Socratic questioning and case studies consistently revealed agreed-upon strategies across disciplines, with mathematics showing the strongest agreement. Overall, Mathematics instructors appear to strongly agree with the use of all listed strategies, while Social Sciences instructors tend to agree, but with less intensity, compared to other disciplines. These findings suggest a multifaceted approach to fostering critical thinking skills, with some variations in emphasis across different academic fields.

Table 6. *Strategies Employed to Develop Critical Thinking Skills*

No.	Indicators	Agriculture Sciences			Social Sciences			Science Education			English Education			Mathematics		
		Mean	SD	I	Mean	SD	I	Mean	SD	I	Mean	SD	I	Mean	SD	I
1	I use problem-based learning (PBL) to enhance critical thinking.	4.25	0.50	SA	3.67	1.12	A	4.54	0.52	SA	4.00	0.00	A	4.67	0.58	SA
2	I incorporate Socratic questioning in my classes.	3.50	1.00	A	3.89	0.33	A	3.54	1.27	A	4.00	1.22	A	4.67	0.58	SA
3	I use case studies to develop students' analytical skills.	3.50	1.00	A	3.56	1.13	A	4.00	0.58	A	4.00	0.71	A	4.33	0.58	SA
4	I encourage collaborative learning to improve critical thinking.	4.25	0.50	SA	4.22	0.67	SA	4.77	0.44	SA	5.00	0.00	SA	4.67	0.58	SA
5	I use digital tools and technology to support critical thinking activities.	4.75	0.50	SA	4.00	1.32	A	4.38	1.12	SA	4.80	0.45	SA	4.33	0.58	SA

Legend: Interpretation (I): 1.00 – 1.79: Strongly Disagree (SD) 1.80 – 2.59: Disagree (D) 2.60 – 3.39: Neutral (N) 3.40 – 4.19: Agree (A) 4.20 – 5.00: Strongly Agree (SA).

3.7 Incorporating Critical Thinking Activities

Table 7 shows a general trend of incorporating critical thinking activities across different disciplines, with some variations. Agriculture Sciences, English Education, and Mathematics had the strongest emphasis on critical thinking. In these disciplines, instructors strongly agree that critical thinking is essential, that their institutions emphasize its development, and that they frequently incorporate critical thinking activities into lessons (Maiorca & Mohr-Schroeder, 2020). This aligns with the findings that integrating critical thinking in STEM fields can enhance students' higher-order cognitive skills (Styers et al., 2018). Social Sciences and Science Education showed a slightly lower but still positive incorporation of critical thinking. Instructors in these fields agree on the importance of critical thinking, though to a lesser extent than in other disciplines (Maiorca & Mohr-Schroeder, 2020). This may reflect the challenges of implementing critical thinking pedagogies across different STEM disciplines, as noted by Styers et al. (2018). Interestingly, while all disciplines recognize the importance of critical thinking, there are differences in how frequently it is incorporated into lessons. English Education has the highest frequency of incorporation, whereas Science Education has the lowest (Maiorca & Mohr-Schroeder, 2020). This variation could be due to differences in subject matter or teaching approaches. While there is a general recognition of the importance of critical thinking across disciplines, the extent to which it is incorporated varies. STEM fields, such as Agricultural Sciences and Mathematics, demonstrate strong integration, aligning with efforts to enhance critical thinking in these areas (Carson, 2015; Styers et al., 2018). However, there is room for improvement, particularly in Science Education, to bridge the gap between recognizing the importance of critical thinking and consistently incorporating it into lessons.

Table 7. *Incorporating Critical Thinking Activities*

No.	Indicators	Agriculture Sciences			Social Sciences			Science Education			English Education			Mathematics		
		Mean	SD	I	Mean	SD	I	Mean	SD	I	Mean	SD	I	Mean	SD	I
1	Critical thinking is an essential skill for students in my discipline.	4.75	0.50	SA	3.78	1.72	A	4.00	1.73	A	5.00	0.00	SA	5.00	0.00	SA
2	My institution emphasizes the development of critical thinking in students.	4.25	0.50	SA	3.56	1.59	A	4.15	1.21	A	4.80	0.45	SA	4.67	0.58	SA
3	I frequently incorporate critical thinking activities in my lessons.	4.25	0.50	SA	3.89	1.17	A	3.69	1.60	A	5.00	0.00	SA	4.67	0.58	SA

Legend: Interpretation (I): 1.00 – 1.79: Strongly Disagree (SD) 1.80 – 2.59: Disagree (D) 2.60 – 3.39: Neutral (N) 3.40 – 4.19: Agree (A) 4.20 – 5.00: Strongly Agree (SA).

3.8 Challenges when Integrating Critical Thinking Activities among Instructors

Instructors faced several significant challenges when integrating critical thinking activities into their teaching. The most pressing issue was students' struggle with higher-order thinking tasks, ranking as the top concern with a mean score of 3.94. This was closely followed by students' preference for memorization over critical thinking activities ($\bar{x}$ = 3.76). Time constraints also posed a substantial obstacle, ranking third with a mean of 3.41. Although assessment methods that do not effectively measure critical thinking skills are a concern ($\bar{x}$ = 2.62), they rank lower than the challenges above. The curriculum structure ($\bar{x}$ = 3.18) and insufficient institutional support ($\bar{x}$ = 3.06) are perceived as neutral factors, suggesting that they may not be significant barriers compared to the other challenges. Overall, these findings suggest that student-related factors and time constraints are the primary hurdles instructors face when implementing critical thinking activities in their teaching practice.

Table 8. *Challenges when Integrating Critical Thinking Activities among Instructors*

No.	Indicators	Mean	SD	Interpretation
1	Time constraints prevent me from integrating critical thinking activities.	3.41	1.05	Agree
2	The curriculum structure limits opportunities for critical thinking development.	3.18	1.17	Neutral
3	Students struggle with higher-order thinking tasks.	3.94	0.78	Agree
4	Students prefer memorization over critical thinking activities.	3.76	1.1	Agree
5	There is insufficient institutional support for critical thinking initiatives.	3.06	1.13	Neutral
6	Assessment methods in my subject do not effectively measure critical thinking skills.	2.62	1.21	Neutral
	Overall Mean	**3.33**	–	–

3.9 Teaching Strategies Commonly Used by Instructors

Table 9 shows various ways to improve students' critical thinking skills. Collaborative learning was the most effective with a score of 4.59. Next, we used digital tools and technology, scoring 4.38, and problem-based learning (PBL), scoring 4.21. These results match those of the aforementioned studies. Many studies indicate that PBL is an effective method for developing critical thinking skills. Rehman et al. (2023) found that students using PBL demonstrated greater improvement in critical thinking than those in regular classes. Wei et al. (2023) also found that PBL helped nursing students improve their critical thinking skills. Tiwari et al. (2006) demonstrated that PBL students demonstrated improved critical thinking compared to lecture-based classes. Although collaborative learning is ranked highest, research has focused more on PBL. This difference suggests that teachers view collaborative learning as highly effective, whereas research focuses more on the effects of PBL. Digital tools and technology, ranked second, are supported by Patiño et al. (2023), who discuss the use of technology to enhance complex thinking skills. Both the data and research emphasize the importance of active, student-centered methods, such as PBL and collaborative learning, in developing critical thinking skills. The high ranking of digital tools indicates that technology is becoming increasingly important in supporting critical thinking and aligning with modern educational strategies.

Table 9. *Teaching Strategies Commonly Used by Instructors*

No.	Indicators	Mean	SD	Interpretation
1	I use problem-based learning (PBL) to enhance critical thinking.	4.21	0.77	Strongly Agree
2	I incorporate Socratic questioning in my classes.	3.79	1.01	Agree
3	I use case studies to develop students' analytical skills.	3.85	0.82	Agree
4	I encourage collaborative learning to improve critical thinking.	4.59	0.56	Strongly Agree
5	I use digital tools and technology to support critical thinking activities.	4.38	1.02	Strongly Agree
6	I use problem-based learning (PBL) to enhance critical thinking.	4.16	–	–
	Overall Mean	4.21	0.77	Strongly Agree

3.10 School Support

Teachers assess how much their schools support them in teaching critical thinking. They focused on three main aspects: training, workshops, and school rules. Most teachers thought they received sufficient training to teach critical thinking (average score = 3.76, standard deviation = 0.92). They also liked the workshops their schools offered on this topic (average score = 3.65, standard deviation = 1.12). Teachers strongly agreed that school rules help include critical thinking in lessons (average score = 3.97, standard deviation = 1.00). However, opinions differed by subject. Math teachers rated school support higher in all areas, while Social Sciences teachers were more neutral, especially regarding training and workshops.

Table 10. *School Support*

No	Indicators	Agriculture Sciences			Social Sciences			Science Education			English Education			Mathematics			Overall		
		$\bar{x}$	SD	I	$\bar{x}$	SD	I	$\bar{x}$	SD	I	$\bar{x}$	SD	I	$\bar{x}$	SD	I	$\bar{x}$	SD	I
1	I have received adequate training on teaching critical thinking.	3.75	0.50	A	3.11	1.05	N	3.92	0.86	A	4.00	0.71	SA	4.67	0.58	SA	3.76	0.92	A
2	My institution provides professional development workshops on critical thinking instruction.	4.25	0.50	SA	3.33	1.12	N	3.38	1.26	N	3.80	1.10	A	4.67	0.58	SA	3.65	1.12	A
3	There are institutional policies that support the integration of critical thinking in the curriculum	4.00	0.82	SA	3.78	1.20	A	3.92	1.19	A	4.20	0.45	SA	4.33	0.58	SA	3.97	1.00	A

Legend: Interpretation (I): 1.00 – 1.79: Strongly Disagree (SD) 1.80 – 2.59: Disagree (D) 2.60 – 3.39: Neutral (N) 3.40 – 4.19: Agree (A) 4.20 – 5.00: Strongly Agree (SA).

3.11 Pearson Correlation Analysis between Institutional Support and Critical Thinking Activities

The Pearson correlation analysis revealed significant positive relationships between institutional support and the frequency of critical thinking activities ($r = .51$, $p < .01$), as well as between problem-based learning and higher-order thinking ($r = .67$, $p < .01$). Notably, institutional support was also moderately correlated with the use of digital tools ($r = .38$, $p < .05$), suggesting that supportive environments may encourage the integration of technology in instruction. These results underscore the importance of institutional support and innovative pedagogy in promoting the integration of critical thinking across disciplines.

Table 11. *Pearson Correlation Analysis between Institutional Support and Critical Thinking Activities*

Variables	1	2	3	4	5
Teaching Experience	1				
Institutional Support	0.34*	1			
Frequency of Critical Thinking Activities	0.22	0.51**	1		
Use of Digital Tools	0.29*	0.38*	0.45*	1	
Problem-Based Learning and Higher-Order Thinking	0.18	0.27	0.67**	0.49**	1

Note: *p < .05, **p < .01

This study examined the challenges instructors face in developing critical thinking skills across various disciplines in higher education. A quantitative-descriptive correlational research design was employed, involving college instructors from various fields, including Science Education, Social Science, English Education, and Agricultural Sciences. The study found that common challenges include students' struggles with higher-order thinking tasks and a preference for memorization over critical analysis. Time and curriculum structure limitations were identified as significant barriers to effective learning. Practical strategies for enhancing critical thinking include collaborative learning, problem-based learning, and the use of digital tools. The extent of critical thinking incorporation varies across disciplines, with some fields exhibiting stronger integration than others. While instructors generally perceive adequate institutional support, there are differences in their perceptions of training and professional development opportunities across disciplines. These findings underscore the need for targeted interventions to address discipline-specific challenges and promote the development of critical thinking across various academic fields. This study highlights critical thinking as a vital 21st-century skill applicable across academic disciplines. Instructors face challenges in developing critical thinking skills owing to diverse student populations. This study examined the challenges and strategies involved in fostering critical thinking across various disciplines. A quantitative-descriptive correlational research design was used with college instructors from various fields. Students' struggles with higher-order thinking and a preference for memorization are common challenges. Collaborative learning, problem-based learning, and digital tools are effective strategies for enhancing critical thinking skills. Targeted interventions and institutional support are recommended to address discipline-specific challenges in developing critical thinking.

4.0 Conclusion

This study provides a comprehensive analysis of the challenges, strategies, and institutional factors involved in developing critical thinking skills across various academic disciplines. Utilizing a descriptive-correlational approach, it identifies student-related issues—particularly difficulties with higher-order thinking and reliance on rote memorization—as the most significant obstacles instructors encounter. System-level challenges such as time constraints and inflexible curricula further exacerbate these difficulties. Instructors across various disciplines reported the widespread use of collaborative learning, problem-based learning (PBL), and digital tools as effective methods for enhancing critical thinking skills. However, the degree of implementation and perceived support varied, with disciplines such as English Education and Mathematics demonstrating stronger integration than Science and Social Sciences. The findings underscore the vital role of institutional support, including comprehensive training, professional development workshops, and well-defined policy frameworks, in enabling instructors to foster critical thinking effectively. These correlational results further underscore the importance of supportive environments and innovative pedagogy. Ultimately, this research provides valuable empirical evidence that can inform educational policies and practices. Targeted interventions, strategic faculty training, and curriculum reforms are recommended to foster a culture of critical thinking across all disciplines of higher education.

5.0 Contribution of Authors

All authors contributed equally to the conception, planning, data collection, analysis, and writing of the study. Each author was involved in every stage of the research and approved the final manuscript version.

6.0 Funding

Each member contributed their financial resources.

7.0 Conflict of Interest

There is no conflict of interest in the preparation of this paper, "Challenges Faced by Instructors in Developing Critical Thinking Skills Across Different Disciplines.

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