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LEARNING PREFERENCES, RELIANCE AND CRITICAL THINKING ON AI-POWERED EDUCATIONAL PLATFORMS AMONG RADIOLOGIC TECHNOLOGY STUDENTS OF UPH-DJGTMU, BIÑAN, LAGUNA

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ABSTRACT

Today, AI is revolutionizing education, especially in medicine and allied health. With changing technologies, artificial intelligence (AI) now provides advanced tools to support students' individualized and personalized learning. Students often rely on AI based on its functional capabilities, utilizing AI-powered platforms for diverse academic tasks. AI can adapt content to accommodate different learning preferences, engaging students more deeply and fostering independent critical thinking. However, reliance on AI can potentially improve and stimulate critical thinking and also can hinder the acquisition of higher-order thinking skills, such as analysis, evaluation, and synthesis.

This study used a descriptive correlational research design to assess students' learning preferences and investigate the level of reliance and critical thinking skills on AI-powered educational platforms. Moreover, it explored the variables' correlation. The findings revealed that the respondents preferred a visual approach, among other learning preferences, and demonstrated a high level of cognitive reliance and critical thinking in utilizing AI tools.

In conclusion, the study underscores that most of the respondents preferred a visual learning approach with a high level of cognitive reliance and a high level of critical thinking within the AI-powered educational platform. Furthermore, the data revealed that when the respondents aligned their learning with their individual preferences, their cognitive reliance and critical thinking toward AI increased.

Keywords: Learning Preferences, Reliance, Critical Thinking and AI-Powered Educational Platforms.

1. INTRODUCTION

Imagine a classroom where learning is not only a process but an exciting journey tailored to students' needs, curiosity, and understanding. Today, AI is revolutionizing education, especially in medicine and allied health. One field that greatly benefits from AI-driven advancements is medical imaging**,** where accuracy, critical thinking, and lifelong learning are essential. Students thrive when given the freedom to choose when it comes to preferences in learning. With evolving technologies, artificial intelligence (AI) now provides powerful tools to support this individualized and personalized learning approach. AI can adapt content to suit various learning preferences, helping students engage more deeply with the material. According to Ridad and Sison (2023), Learning preferences vary in how students receive, process, understand, and recall information. Some acquire knowledge through listening, while others learn better through visual, experiential

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learning, reading, or asking questions. Nowadays, the ways students adapt, utilize, and integrate AI in the learning process matter. The integration of Artificial Intelligence (AI) in education has profoundly changed students' learning preferences, especially in disciplines like Radiologic Technology, where intricate information and decision-making are key.

According to Sami et al. (2025), Students rely on AI according to its function, where students utilize AI-powered platforms for common academic purposes. Such reliance aids time-saving methods and facilitates personalized learning, especially for diverse learners. Nonetheless, if left unbalanced, it has the potential to minimize students' interaction with core study habits, such as note-taking and critical reading. However, certain students demonstrate cognitive reliance on AI for support in thinking and decision-making, allowing AI to help students enhance understanding. Students usually use AI-created explanations to simplify tricky concepts or to aid research, sometimes having more faith in AI outputs than conventional academic resources. (Ali et al., 2024).

However, AI integration raises one key question: How does AI affect students' critical thinking? According to Huang (2023), AI can improve the speed of learning and also confidence; It can complement the knowledge gained from the instructor during class and has the potential to nurture independent critical thinking but can also impede and hinder the establishment of higher-order thinking processes such as analysis, synthesis, and autonomous judgment, depending on their integration into the classroom.

Given that many studies have examined the importance of AI in education, there was still a huge gap in recognizing how AI-powered learning platforms influenced medical-allied students, particularly in the field of medical imaging. This research aimed to determine the students' learning preference in utilizing AI-based learning systems, assess the extent of students' reliance on AI tools for learning, and evaluate the level of students' critical thinking concerning the utilization of AI-powered educational platforms. Furthermore, established the relationship between the aforementioned variables. Lastly, it provides an action plan regarding the balanced integration of AI tools in medical imaging education to improve learning outcomes while promoting independent thinking of radiologic technology at UPH-DJGTMU, Biñan, Laguna.

2. METHODOLOGY

This study used a descriptive correlational research design to assess the learning preferences, level of reliance, and level of critical thinking skills in AI-powered educational platforms among radiologic technology students. The study employed a simple random technique. targeting 155 radiologic technology students in University of Perpetual Help-DJGTMU from a total population of 257 respondents through the Rao soft calculator with a 5% margin of error and 95% confidence level.

This study utilized a self-made questionnaire as the primary tool for data gathering. The researcher created a three-section questionnaire to gather the required information. Part I focused on the students' learning preferences, Part II identified the students' reliance on AI-powered learning platforms, and Part III assessed the respondents' level of critical thinking skills. Cronbach's alpha was employed to measure its internal consistency. The results revealed that learning preference achieved a score of 0.942, classified as excellent; reliance received a score of 0.832, interpreted as good; and critical thinking obtained a score of 0.937, also considered excellent, as all values exceeded the acceptable threshold of 0.5. confirming that the instrument was both valid and reliable for use throughout the study.

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3. RESULT AND DISCUSSION

The following are the study's most relevant findings on Radiologic Technology students' learning preference, level of reliance, and level of critical thinking in an AI-powered educational platform.

Table 1. The Respondents' Learning Preferences in terms of Visual

Indicator: VISUAL	Weighted Mean	Verbal Interpretation	Rank
1. Infographics and diagrams within AI-created content help me learn scientific concepts better.	3.20	Highly Preferred	4
2. 3D models help me learn complex scientific concepts better.	**3.44**	**Highly Preferred**	**1**
3. I prefer interactive AI simulations over text-based information.	2.83	Preferred	8
4. I learn abstract scientific procedures better through AI video animations.	2.87	Preferred	7
5. Color-coded AI study materials help me retain information better.	3.10	Preferred	5
6. Step-by-step solutions with graphical representations by AI increase my learning experience.	3.26	Highly Preferred	2
7. AI-generated mind maps and concept maps enhance my learning and retention.	2.98	Preferred	6
8. Flashcards with AI-driven explanations assist me in comprehending complex subjects.	3.25	Highly Preferred	3
Average	**3.12**	**Preferred**	

Table 1 illustrates the respondents' learning preferences regarding visual approaches on AI-powered learning platforms. Most of the respondents highly preferred the use of 3D models to understand complex concepts on AI-powered learning platforms, as evidenced by a weighted mean of 3.44. This suggests that 3D models are seen as particularly effective in aiding comprehension of intricate topics.". This was closely followed by step-by-step solutions with graphical representations (3.26) and flashcards with AI-driven explanations (3.25), both ranked second and third, respectively, and also interpreted as highly preferred. Infographics and diagrams within AI-created content received a weighted mean of 3.20, interpreted as Strongly Agree and ranked fourth. Color-coded AI study materials followed, with a mean of 3.10 and a verbal interpretation of Agree, ranking fifth. Meanwhile, AI-generated mind maps and concept maps (2.98), AI video animations (2.87), and interactive AI simulations (2.83) were all rated as preferred, ranking sixth, seventh, and eighth, respectively.

In general, the overall weighted mean of 3.12 reveals that respondents preferred the visual learning AI-driven platforms, emphasizing a strong bias toward visual and interactive learning tools. Utilization of 3D models specifically enables students to learn complicated scientific principles more effectively.

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Teplá et al. (2022) provide empirical evidence supporting the effectiveness of 3D models in enhancing students' understanding of complex scientific concepts. knowledge among students who were exposed to dynamic visualizations compared to those who experienced traditional static visuals, as it positively affects students' understanding by simplifying abstract processes. The integration of dynamic visualizations not only enhances conceptual understanding but also fosters greater engagement and motivation among learners.

Table 2. The Respondents' Learning Preferences in terms of Auditory

Indicator: AUDITORY	Weighted Mean	Verbal Interpretation	Rank
1. I learn better from audiobooks or podcasts suggested by AI platforms.	2.62	Preferred	5
2. AI-powered voice assistants help me understand and remember study content.	2.65	Preferred	3
3. I learn more when the study material is narrated by AI rather than reading the text.	2.50	Preferred	7
4. AI-produced audio summaries assist me in quickly understanding key points.	2.64	Preferred	4
5. I prefer listening to study materials via AI-based apps over reading them.	2.47	Preferred	8
6. I like to learn through AI-based language learning applications with auditory practice and voice recognition.	2.55	Preferred	6
7. AI transcription services help me engage with content efficiently through text-to-speech.	**2.78**	**Preferred**	**1**
8. I am more focused on educational information through voice-based feedback.	2.67	Preferred	2
Average	**2.61**	Preferred	

Table 2 presents the respondents' learning preferences on AI-powered educational platforms in terms of Auditory. The data revealed that the respondents preferred all indicators corresponding to the auditory learning preferences. Among the auditory tools, AI transcription services received the highest rating (2.78), indicating that respondents preferred text-to-speech functionality to help engage with content efficiently. followed by the 2nd-ranked indicator, 8 "AI-powered voice assistants" (weighted mean: 2.65) . Similarly, AI-produced audio summaries (2.64) were well-received, highlighting their utility in helping students quickly grasp key concepts. However, features such as audiobooks or podcasts suggested by AI platforms (2.62) and AI-based language learning applications with auditory practice and voice recognition (2.55) received the 6th rankings. These tools provide accessible ways to engage with content, but they were not as highly rated as transcription or voice assistants, suggesting that students may still prioritize other methods of study over listening-based tools. The lowest-ranked features, narrated study material (2.50) and

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listening to study materials via AI-based apps over reading (2.47), indicate that while students appreciate auditory aids, they prefer reading the material themselves in many cases.

The data revealed that respondents preferred auditory features in AI-powered learning platforms, with an overall average weighted mean of 2.61. This suggests that auditory tools, such as AI transcription services, help engage students with content efficiently through text-to-speech. AI transcription services were particularly valued for enhancing accessibility and enabling hands-free interaction with study materials.

AI transcription services have proved to be valuable resources for more interaction with educational material through text-to-speech capability. The services offer increased student efficiency in learning since students can entirely focus on lessons without the distraction of note-taking because transcription is carried out effectively for auditory content. This can enable the learner to interact more with the material, with enhanced understanding and retention. (Transkriptor, 2024).

Table 3. The Respondents' Learning Preferences in terms of Kinesthetic

Indicator: KINESTHETICS	Weighted Mean	Verbal Interpretation	Rank
1. When reviewing, I prefer study notes, summaries, and transcripts that I digitally created	**3.25**	**Highly Preferred**	**1**
2. I learn best when participating in AI-based virtual labs or interactive simulations.	2.95	Preferred	4.5
3. AI-based platforms that provide augmented and virtual reality enable me to learn through interaction with 3D worlds.	2.95	Preferred	4.5
4. I learn best through hands-on activities, including AI-based platforms like Minecraft Education Edition.	3.20	Preferred	3
5. I prefer AI-based coding and robotics for hands-on learning and skill acquisition.	2.77	Preferred	8
6. I like to work on AI-facilitated platforms that direct m through real-world problem-solving exercises.	2.93	Preferred	6
7. I like AI-based learning games that force me to move around and engage with the material.	2.92	Preferred	7
8. I prefer interactive quizzes and learning games through mobile apps that require hands-on participation.	3.21	Preferred	2
Average	**3.02**	**Preferred**	

Table 2 presents the respondents' learning preferences in terms of the kinesthetic method of and AI-powered educational platforms. The highest-ranked indicator shows that respondents highly preferred study notes, summaries, and transcripts digitally created by the learners themselves, with a weighted mean of 3.25. This was followed by a preference for interactive

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quizzes and learning games through mobile apps requiring hands-on participation (3.21) and hands-on activities using AI-based platforms such as Minecraft Education Edition (3.20), both interpreted as Agree and ranked second and third, respectively. Respondents preferred AI-based virtual labs or interactive simulations (2.95) and AI platforms offering augmented and virtual reality experiences (2.95), sharing the same rank of 4.5. Real-world problem-solving exercises facilitated by AI platforms were rated next, with a weighted mean of 2.93, ranking sixth. AI-based learning games that encourage movement and engagement (2.92) and AI-based coding and robotics activities for skill acquisition (2.77) ranked seventh and eighth, respectively, indicating that, while these activities were not as highly ranked as others, they were still preferred by the respondents for hands-on, interactive learning experiences.

The data revealed that the overall weighted mean of 3.02 suggests that, on average, respondents preferred kinesthetic features on AI-powered platforms that support their learning preferences, like study notes, summaries, and transcripts that are digitally created, enhancing students' understanding and retention of content. This preference highlights the value of student-driven, practical interaction with digital learning tools in reinforcing kinesthetic learning experiences.

Calamlam (2023) found in his study that students who employed digital note-taking approaches outperformed students who employed the use of handwritten notes. This is a good validation of the kinesthetic learning style that focuses on learning through doing and hands-on involvement. Digital note-taking leads students to engage physically and mentally with information through generating, structuring, and altering notes, which resonates with the hands-on nature most favored by kinesthetic learners. Furthermore, students who employed digital notebooks effectively proved to exhibit superior academic performance, showing how kinesthetic approaches such as digital note-taking not only increase comprehension and recollection but also foster self-regulated learning and academic achievement.

Table 4. Summary Table of the Respondents' Learning Preferences on AI-powered Educational Platforms

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Visual	**3.12**	**Preferred**	**1**
2. Auditory	2.61	Preferred	3
3. Kinesthetic	3.02	Preferred	2
Overall Weighted Mean	**2.92**	**Preferred**	

Table 4 summarizes the respondents' learning preferences on AI-powered learning platforms, presenting the weighted mean, verbal interpretation, and rank for each learning modality: visual, auditory, and kinesthetic. The results show that most respondents preferred the visual approach as their learning preference in AI-powered learning platforms, with a weighted mean of 3.12. This was followed by kinesthetic learning, with a weighted mean of 3.02, and auditory learning, which ranked last with a weighted mean of 2.61 and was verbally interpreted as agree.

The overall weighted mean of 2.92 indicates that most of the respondents preferred a visual approach as their learning preference in the AI-powered learning platform. Visual tools like 3D models, diagrams, charts, videos, and pictures are greatly appreciated by learners while engaging

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with educational technology, as they enhance the capacity of the brain to process and store information better, as they activate cognitive routes associated with images and spatial perception.

The AI technologies tailor visual learning approaches like 3D Models diagrams, videos, and other digitally created content to the students' learning pace and preferences to maximize understanding and retention as learning becomes more interesting and more effective. Most of the individuals are visual learners, and the brain processes visuals 60,000 times quicker than text, making retention and understanding possible. Visual aids also activate cognitive processes and imagination, allowing information processing to be quicker and deeper. (Yan, 2024).

Level of Reliance of respondents on AI-powered educational platforms

Table 5. The Respondents' Reliance Level on AI-powered Learning Platforms

Indicator	Weighted Mean	Verbal Interpretation	Rank
Functional Reliance			
1. I usually study medical subjects primarily using AI-powered technologies.	2.85	High	1
2. Rather than making my study resources, I utilize AI-generated notes and summaries.	2.60	High	4
3. I always utilize AI-based learning tools over traditional textbooks and printed materials in my study routine.	2.58	High	5
4. Without access to AI-powered learning resources, studying or finishing assignments is challenging.	2.71	High	3.5
5. My main instrument for assessing my medical knowledge and exam readiness is AI-generated practice exams or mock tests.	2.71	High	3.5
6. I rely on AI-driven question-answering systems to clarify complex medical concepts instantly.	2.75	High	2
nctional Reliance: Weighted Mean	**2.70**	**High**	
Cognitive Reliance			
1. I depend on AI tools to assist my thinking and decision-making when completing assignments and conducting research.	2.70	High	2
2. I frequently accept AI-generated responses and analyze them afterwards.	2.42	High	3
3. I compare AI-generated responses to reliable additional sources to guarantee their accuracy.	**3.23**	**High**	**1**
4. In specific medical topics, I find AI-generated explanations to be a valuable complement to instructors or texts, enhancing my understanding and learning.	2.35	High	4

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ognitive Reliance: Weighted Mean	**2.68**	**High**
Overall Weighted Mean	**2.69**	**High**

Table 5 presents the respondents' level of reliance on AI-powered learning platforms in terms of functional and cognitive reliance, showing the weighted mean, verbal interpretation, and rank for each indicator. For sub-indicator Functional Reliance, the highest mean score (2.85, Rank 1) was recorded for the statement "I usually study medical subjects primarily using AI-powered technologies." The second highest indicator was indicator 6 (2.75, Rank 2). Indicators 4 and 5, with the statements "I rely on AI-driven question-answering systems to clarify complex medical concepts instantly," and "Without access to AI-powered learning resources, studying or finishing assignments is challenging," and "My main instrument for assessing my medical knowledge and exam readiness is AI-generated practice exams or mock tests," both tied with a mean of 2.71 (Rank 3.5). Meanwhile, lower-ranked but still "High" responses such as "Rather than making my study resources, I utilize AI-generated notes and summaries" (2.60, Rank 4) and "I always utilize AI-based learning tools over traditional textbooks and printed materials" (2.58, Rank 5). The overall weighted mean for Functional Reliance is 2.70, which falls under the "High" verbal interpretation category.

For Cognitive Reliance, among the specific indicators, the highest mean score (3.23, Rank 1) was recorded for the statement "I compare AI-generated responses with reliable additional sources to guarantee their accuracy." The second highest score (2.70, Rank 2) corresponds to the statement "I depend on AI tools to assist my thinking and decision-making when completing assignments and conducting research. However, the statement "I frequently accept AI-generated responses and analyze them afterwards" had a mean of 2.42 (Rank 3), and "In specific medical topics, I find AI-generated explanations to be a valuable complement to instructors or texts, enhancing my understanding and learning" received the lowest mean of 2.35 (Rank 4), While still falling under the "High" category. The overall weighted mean for Cognitive Reliance is 2.68, interpreted as High. This indicates that the respondents demonstrate a significant level of reliance on AI tools not just for accessing information but for processing, evaluating, and making academic decisions.

The overall weighted mean for respondents' reliance level was 2.69, interpreted as "High," suggesting that the respondents demonstrated a high level of cognitive reliance on AI-powered learning platforms for their academic tasks and knowledge building, as students compare AI-generated responses with reliable additional sources to guarantee accuracy.

Elkatat et al. (2023) underscore the importance of cross-referencing AI-generated content with reliable sources. The study highlights that AI tools may produce content containing inaccuracies, making it essential to verify this information against credible sources. Comparing and validating AI-generated content with other trusted references is a critical strategy for determining its accuracy. This approach not only corroborates the claims made by AI tools but also ensures the information remains trustworthy and reliable.

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Table 6. The Respondents' Level of Critical Thinking on AI-powered Learning Platforms

Indicator:	Weighted Mean	Verbal Interpretation	Rank
1. I critically evaluate AI-generated medical content instead of blindly accepting it.	3.07	High	6
2. I use logical reasoning to assess AI-generated explanations of medical terms.	3.19	High	3.5
3. Case studies and problem-solving exercises using AI based models improve my critical thinking skills in medical situations.	2.94	High	10
4. I first analyzed and cross-checked all AI-generated content with reliable sources before accepting it and drawing conclusions.	**3.21**	**High**	**1**
5. I verify AI-generated diagnoses or treatment plans with human experts or further research.	3.12	High	5
6. I employ AI-driven learning to improve my critical thinking to detect biases and inaccuracies in medical data.	2.99	High	9
7. AI enhances my critical thinking as I refine its responses until they align with the correct answer.	3.04	High	7
8. I critically evaluate AI-generated medical content instead of blindly accepting it.	3.19	High	3.5
9. AI-facilitated tools enable me to validate information effectively through conventional research processes.	3.02	High	8
10. I use logical reasoning to assess AI-generated explanations of medical terms.	3.20	High	2
Average	**3.10**	**High**	

The data presented in Table 6 reveals the level of critical thinking skills of the respondents in the AI-powered learning platform. The highest-ranked among all indicators was 4, "I first analyzed and cross-checked all AI-generated content with reliable sources before accepting it and drawing conclusions" (3.21). The highest-ranked indicator, "I cross-checked several AI-generated sources before deciding on medical subjects" (3.21). Following closely, the second-ranked indicator (10), "I use logical reasoning to assess AI-generated explanations of medical terms" (3.20). Additionally, indicator 8, "I critically evaluate AI-generated medical content instead of blindly accepting it" (3.19), ranks third. Indicator 5, "I verify AI-generated diagnoses or treatment plans with human experts or further research" (3.12). However, indicators such as "AI-facilitated tools enable me to validate information effectively through conventional research processes" (3.02) and "I employ AI-driven learning to improve my critical thinking to detect biases and inaccuracies in medical data" (2.99). Finally, the lowest-ranked indicator, "Case studies and

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problem-solving exercises using AI-based models improve my critical thinking skills in medical situations" (2.94).

The data revealed that the overall weighted mean for respondents' critical thinking was 3.10, which signifies that the respondents have a high level of critical thinking in using AI-based learning platforms. Respondents generally employ logical reasoning, evaluate AI-generated content critically, and verify it by cross-checking multiple sources.

In the study of Zou et al. (2023), the respondents exhibit robust critical thinking when interacting with AI-driven platforms, applying logical reasoning, critically assessing content, and authenticating it by cross-checking sources. The students often employ AI tools but are aware of their limitations, highlighting the significance of critical thinking and authenticating information for accuracy and reliability. This is consistent with the findings of the current study, wherein respondents ensure AI-generated content verification before acceptance. This practice must be promoted to facilitate well-informed and analytical usage of AI-based platforms.

Table 7. Relationship between the Respondents' Learning Preferences and their Level of Reliance on AI-Powered Educational Platforms

Learning preferences	Pearson r value	p-value	Interpretation
Visual	0.553** Moderate correlation	0.000	Significant
Auditory	0.644** Moderate correlation	0.000	Significant
Kinesthetic	0.655** Moderate correlation	0.000	Significant

**Significant @ 0.01

As shown in Table 7, the relationship between the respondents' Learning Preferences and their Level of reliance on AI-powered Learning Platforms. Pearson's r values of 0.0553, 0.644, and 0.655 were obtained, indicating a moderate correlation. Meanwhile, the probability value was .000, which was lower than the test of significance at .01. This shows that there is enough statistical evidence to reject the null hypothesis, indicating a significant relationship between the variables. The more the respondents aligned their learning with their individual preferences, the higher their level of reliance on AI-powered learning platforms.

In research by Agbong-Coates (2024), the application of AI tools such as ChatGPT was proved to greatly contribute to personalized learning outcomes among university students in the Philippines. The research shows that increased use of AI-based platforms tailored to students' learning preferences leads to greater engagement and improved learning. Analogously, Kanchon et al. (2024) investigated the use of AI's capacity to sense and adjust according to learners' preferred learning modalities—visual, auditory, and kinesthetic—which increases engagement and reliance on AI-augmented platforms.

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Table 8. Relationship between the Respondents' Learning Preferences and their Level of Critical Thinking on AI-powered Learning Platforms

Learning preferences	Pearson r value	p-value	Interpretation
Visual	0.539** Moderate correlation	0.000	Significant
Auditory	0.326** Low correlation	0.000	Significant
Kinesthetic	0.537** Moderate correlation	0.000	Significant

****Significant @ 0.01**

Table 8 presents the relationship between the respondents' Learning Preferences and their Level of critical thinking on AI-powered Learning Platforms

Pearson's r values of 0.0539, 0.326, and 0.539 were obtained, indicating a moderate correlation of visual and kinesthetic learning preferences to critical thinking and a low correlation for auditory. Meanwhile, the probability value was .000, which was lower than the test of significance at .01. This shows that there is enough statistical evidence to reject the null hypothesis, indicating a significant relationship between the variables. "The more respondents aligned their learning with their individual learning preferences on AI platforms, the higher their levels of critical thinking."

Berman (2025) explains that when the learning strategies of students align with their learning styles—visual, auditory, or kinesthetic—learning is more in-depth, which leads to improved critical thinking. Research indicates that AI-driven learning platforms are capable of increasing critical thinking through reflective and problem-solving capabilities. Additionally, the use of AI in learning facilitates the development of critical thinking abilities by providing tailored learning experiences and preferences that encourage learners to analyze, evaluate, and synthesize information effectively.

Table 9. Relationship between the Respondents' Level of Reliance on AI-powered Learning Platforms and their Level of Critical Thinking Skills

	Pearson r value		p-value	Interpretation
The Respondents' Level of Reliance on AI-powered Learning Platforms and their Level of Critical Thinking Skills	0.493** correlation	Moderate	0.000	Significant

****Significant @ 0.01**

Table 9 presents the relationship between the respondents' level of Reliance and their Level of critical thinking on AI-powered Learning Platforms. Pearson's r values of 0.493 were obtained, indicating a moderate correlation. Meanwhile, the probability value was .000, which was lower than the test of significance at .01. This shows that there is enough statistical evidence to reject the null hypothesis, indicating a significant relationship between the variables. The higher the respondents' level of reliance on AI-powered learning platforms, the higher their level of critical thinking.

AI can enhance critical thinking skills when used appropriately. Students who always engage with AI technologies show better problem-solving and analytical skills. The effectiveness

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of AI tools in enhancing critical thinking depends on their integration into the learning process (Risvold et al., 2024). Additionally, Galindez et al.'s (2024) study revealed that critical thinking scores consistently improved by 10% across subjects, with student feedback highlighting increased interest in learning and improved problem-solving and enhanced analytical abilities as they regularly used AI in their study. Overall, the study supports the idea that regular use of AI can significantly foster critical thinking and optimize learning outcomes.

Proposed Action Plan For Sustaining Students' Learning Preferences, Responsible AI Reliance, and Critical Thinking in AI-Powered Learning Platforms

Rationale:

This proposed action plan aimed to enhance learning efficiency by fostering students' preferences, managing reliance on utilizing AI tools responsibly, and strengthening critical thinking skills when engaging with AI-powered educational platforms. The proposed interventions are based on the indicators that obtained the lowest weighted mean and ranking in the study findings, highlighting specific areas needing improvement. Targeting the weaker areas per variable ensures that AI serves as a supportive tool for building genuine knowledge, fostering analytical skills, and promoting academic integrity in educational practices.

Table 10. Researcher's Proposed Action Plan

Areas of Concern	Objectives	Activities	Time Frame	Focal Person	Budget	Success Indicator
Learning Preferences	Enhance auditory learning through AI-based platforms	- Develop and promote AI-based audio study resources (e.g., podcasts, narrated summaries)- Integrate audio-assisted lessons in modules	Every Semester	Student E-learning Coordinator, Faculty Members	₱15,000 per semester	80% of students report better retention and preference for AI-based audio learning
Level of Reliance	Foster balanced trust and verification practices when using AI explanations	- Conduct seminars on critical evaluation of AI-generated medical content- Create a checklist for cross-validating AI medical information	Quarterly	Students Faculty Dean	₱10,000 per seminar	70% of students practice cross-referencing AI information with textbooks/instructors
Critical Thinking	Strengthen and maintain critical thinking skills through AI-supported problem-solving	- Implement case-based learning using AI simulations- Organize problem-solving workshops with AI diagnostic tools	Every Term	Student Faculty Dean	₱20,000 per term	75% of students demonstrate improved analysis in case-based assessments

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Recommendation

4. CONCLUSION

Visual learning emerged as the most preferred learning preference among respondents when engaging with AI-powered educational platforms. In this digital era, students demonstrated a high level of cognitive reliance on AI tools, and a high level of critical thinking was also observed among most respondents using AI-based platforms. The data suggest that greater alignment between students' learning preferences and instructional methods led to increased reliance on AI-powered educational platforms. Additionally, it is concluded that when students aligned their learning with their individual preferences, they exhibited higher levels of cognitive reliance and critical thinking. Therefore, a structured action plan must be implemented to ensure that students' learning preferences, reliance on AI tools, and critical thinking skills are effectively supported and enhanced.

5. RECOMMENDATION

To assist learners in sustaining high cognitive reliance and critical thinking while utilizing AI-based educational platforms while aligning with their learning preferences, the following are recommended. Radiologic Technology instructors and institutions should implement AI strategically into teaching while ensuring critical thinking capabilities are preserved. Professors should incorporate AI-based tools and audio materials to satisfy different learning modalities, particularly auditory and kinesthetic, and design tasks that integrate AI-generated material with traditional practice to prevent overreliance. Students, conversely, should use AI as an enhancement, not a substitute, applying professional judgment and curiosity. Clinical instructors can promote diagnostic thinking using AI-based case studies and simulations that simulate actual situations. The UPH-DJGTMU administrator must develop infrastructure, policies, and seminars that lead students to discover their learning styles and use AI responsibly, while faculty development courses must prepare instructors to craft fair, AI-aided learning experiences. The College Dean must lead these initiatives through the adoption of student and faculty programs that foster analytical thinking, clinical judgment, and intellectual integrity. Long-term effects of the use of AI on students' critical thinking and academic integrity must be studied by future research so that technological integration improves rather than undermines independent decision-making and problem-solving.

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