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Ai- Assisted Learning: Role Of Artificial Intelligence As A Support System In The Academic Experience Of Criminology Students at Aldersgate College Incorporated

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Abstract

This study examined the impact of Artificial Intelligence (AI) on the academic experiences and perceived academic performance of Bachelor of Science in Criminology students at Aldersgate College Incorporated, Solano, Nueva Vizcaya. Using a descriptive-comparative quantitative design, the researchers collected data from 217 respondents selected through stratified random sampling from a population of 494 students. The study used an adapted 4-point Likert scale questionnaire, and data were analyzed using frequencies and percentages, weighted mean, independent-samples t-test, one-way ANOVA, post hoc test, and eta squared. Findings revealed that AI positively influenced students' learning experience, academic performance, motivation, self-reliance, and social interaction. However, the study also observed a moderate level of AI dependency, particularly in idea generation and academic support tasks. Significant differences by sex were found in academic performance and AI dependency, and by gadget used in motivation. AI use frequency also differed significantly across several variables, but not by age or monthly family income. Post hoc analysis indicated that students who used AI more frequently demonstrated better academic outcomes than those who rarely used AI. The study concluded that AI generally positively affects students' academic experiences and perceived academic performance, although responsible and ethical use remains essential to prevent overdependence and promote balanced academic development.

Keywords: *artificial intelligence, academic performance, learning experience, criminology students, ai utilization, higher education*

INTRODUCTION

Advancing digital technologies have reshaped higher education, with Artificial Intelligence becoming one of the most influential innovations. Early AI applications such as intelligent tutoring systems and adaptive learning platforms demonstrated the potential for personalized instruction and immediate feedback. The release of generative AI tools like ChatGPT in 2022 accelerated adoption, as students began using them for information retrieval, summarization, and writing assistance. However, adoption often outpaced institutional policies, creating challenges for responsible use, and reports confirmed widespread AI use among Southeast Asian students, including those in the Philippines.

AI was broadly defined as the capability of computer systems to perform tasks associated with human intelligence, including reasoning, learning, and problem-solving [6]. In education, it was valued for improving efficiency and engagement through personalized support, adaptive feedback, and flexible access to information [7],[8]. Despite these benefits, concerns emerged about academic integrity, autonomy, and critical thinking. Scholars warned that overdependence on AI might encourage superficial learning and weaken independent problem-solving [9], while [10] emphasized the risks of unregulated AI use to students' ability to analyze and synthesize information independently. These issues were particularly relevant in criminology education, where students must develop analytical reasoning, ethical judgment, and investigative skills.

Beyond academic performance, AI influenced broader aspects of student life, including motivation, self-reliance, social interaction, and dependency on technology. Studies indicated that AI increased engagement and reduced stress through accessible support systems [11], but prolonged exposure risked dependency. While global research on AI in education has expanded, few empirical studies have examined its role in criminology, especially in the Philippine context, where discipline-specific implications remain underexplored. Thus, this study focused on Aldersgate College to determine how AI shaped criminology students' learning experience, academic performance, motivation, self-reliance, social interaction, and dependency, providing insights for the responsible integration of AI in criminology education.

METHODOLOGY

Research Design

This study employed a descriptive-comparative quantitative research design. A descriptive-comparative design was appropriate when the study aimed to describe a phenomenon and determine whether significant differences existed among groups without manipulating variables.

Population and Sample of the Study

The study respondents were Criminology students enrolled at Aldersgate College Incorporated during the Academic Year 2025–2026. These students were officially registered in the Bachelor of Science in Criminology program, actively enrolled in academic courses during the data collection period, and had exposure to Artificial Intelligence–Driven Learning tools in academic activities. The study excluded students from other academic programs, alumni, graduates, and those without experience in AI-assisted learning.

Stratified random sampling was employed in this study to ensure proportional representation of respondents from the Bachelor of Science in Criminology program. The total population of 494 students was divided into strata based on year level, and respondents were proportionally selected from each stratum using random sampling techniques. As presented in Chapter IV, Table 2, this stratification ensured that the distribution of first-year to fourth-year students was accurately represented. The Raosoft Sample Size Calculator determined a total of 217 respondents to ensure adequate sample representation and statistical validity.

Data Collection

The primary instrument used in this study was a structured questionnaire adapted from Capinding's validated tool for assessing the impact of AI in higher education. It was chosen for its strong validity and reliability in measuring students' perceptions of AI in academic contexts. To ensure relevance to criminology education, the questionnaire was systematically revised and contextualized. Out of 60 items, 2 were adopted directly, 39 were slightly revised, and 19 were extensively modified to fit criminology-specific tasks.

Data Analysis

The data gathered from the survey questionnaires were encoded, tabulated, and analyzed using appropriate statistical tools. The following statistical treatments were applied:

1. Frequency and Percentage. Used to describe the demographic profile of respondents and their exposure to Artificial Intelligence–Driven Learning tools.
2. Mean and Standard Deviation. Used to determine the level of perceived impact of Artificial Intelligence–Driven Learning on the academic experience of Criminology students.
3. 4-Point Likert Scale. A 4-point Likert scale was utilized as a forced-choice instrument to eliminate neutral responses and encourage respondents to provide clear perceptions regarding the impact of AI on their academic experience. The scale was treated as an interval scale by computing weighted means, which served as the basis for applying parametric statistical tests. However, the absence of a neutral option may have contributed to acquiescence bias, limited response variability, and possible ceiling effects in some responses.
4. Shapiro-Wilk Test of Normality. Used to determine whether the data distribution meets the assumption of normality prior to the use of parametric tests.
5. Independent Samples t-test. Used to determine significant differences when respondents were grouped according to sex.
6. One-way Analysis of Variance (ANOVA). Used to determine significant differences when respondents were grouped according to age, family income, gadget used, and frequency of AI use.
7. Post-hoc Test. Used to determine specific group differences when ANOVA results are significant.

Despite using a 4-point Likert scale, the data were treated as interval for statistical analysis. The use of parametric tests such as the independent samples t-test and one-way ANOVA was considered appropriate because the data approximated normal distribution based on the Shapiro–Wilk test results, and the sample size was sufficiently large. Methodological literature supports the robustness of parametric statistics for ordinal Likert-scale data, particularly when assumptions of normality are reasonably satisfied. According to Geoff Norman (2010), parametric tests remain reliable and robust even when applied to Likert-scale responses in educational and social science research.

Theoretical Framework

This study was anchored on three major theories that explain how criminology students adopt and use AI in higher education. The Extended Technology Acceptance Model highlights that perceived usefulness and ease of use drive technology adoption, and recent extensions include motivation and self-regulation. In criminology, this model clarifies why students use AI tools like ChatGPT to improve efficiency and access information. The Self-Determination Theory emphasizes autonomy, competence, and relatedness as key motivators, showing that AI can support self-paced study and collaboration. However, it also warns that excessive reliance on AI may weaken independent thinking and intrinsic motivation. The Constructivist Learning Theory stresses active knowledge construction through reflection and problem-solving. AI tools can provide scaffolding and personalization, but meaningful learning still requires active student engagement.

RESULTS AND DISCUSSION

Level of AI Utilization in Terms of Learning Experience

TABLE I. OVERALL SUMMARY OF LEVEL OF AI UTILIZATION IN TERMS OF LEARNING EXPERIENCE

Descriptors	M	SD	VI
AI has enhanced my learning experience by providing personalized resources.	3.00	0.61	Agree
AI has helped me understand complex criminology concepts more effectively.	2.94	0.58	Agree
AI powered tools have made my learning more engaging.	2.86	0.60	Agree
AI has provided materials that match my learning style and pace.	2.85	0.59	Agree
AI facilitates interactive learning experiences.	2.87	0.63	Agree
AI helps me connect academic concepts to real world examples.	2.88	0.61	Agree
AI encourages my creativity in learning.	2.85	0.63	Agree
AI improves retention and recall of learned information.	2.86	0.61	Agree
AI support hands-on and practical understanding	2.95	0.56	Agree
AI has encouraged me to think critically about course content.	2.85	0.63	Agree

Respondents generally agreed that AI enhances their learning experience, with an overall mean of 2.89. The highest-rated item was “AI has enhanced my learning experience by providing personalized resources” (M = 3.00), while the lowest-rated items were “AI encourages my creativity in learning” and “AI has encouraged me to think critically about course content” (M = 2.85). Overall, the findings indicate that respondents perceived AI as beneficial in supporting their learning experiences, particularly through personalized academic assistance. The findings suggest that students primarily viewed AI as a tool for improving accessibility and personalization of learning rather than as a mechanism for developing higher-order thinking skills. However, the relatively lower ratings for creativity and critical thinking indicate that students may not perceive AI as fully supporting independent analysis and reflective reasoning. This suggests that AI functions more effectively as a supplementary learning support tool than as a substitute for active cognitive engagement. The findings were consistent with prior studies indicating that AI in education primarily enhances personalized and adaptive learning experiences but has a more limited impact on higher-order thinking skills such as creativity and critical thinking.

Level of AI Utilization in Terms of Academic Performance

TABLE II. OVERALL SUMMARY OF LEVEL OF AI UTILIZATION IN TERMS OF ACADEMIC PERFORMANCE

Descriptors	M	SD	VI
AI has contributed to improving my academic performance.	2.77	0.69	Agree
AI tools help identify and address my academic weaknesses.	2.81	0.62	Agree
AI based feedback improves the quality of my criminology assignments and exams.	2.86	0.58	Agree
AI helps me achieve my learning goals.	2.81	0.61	Agree
AI provides timely assessments of my progress.	2.85	0.57	Agree
AI helps me prepare more effectively for exams.	2.72	0.67	Agree
AI enhances my analytical skills.	2.77	0.60	Agree
AI improves my ability to apply theory to practice.	2.77	0.60	Agree
AI gives resources that improve study habits.	2.77	0.56	Agree
AI has contributed to my overall academic success	2.77	0.58	Agree

Respondents generally perceived that AI contributes positively to their academic performance. The highest mean score was recorded for the statement "AI-based feedback improves the quality of my criminology assignments and exams" (M = 2.86), while the lowest mean was "AI helps me prepare more effectively for exams" (M = 2.72). The overall mean score of 2.79 falls within the "Agree" range, indicating that respondents generally viewed AI as beneficial to their academic performance, particularly in feedback and assessment-related tasks. The findings suggest that students perceived AI as most useful in improving the quality of written academic outputs and providing academic guidance through feedback mechanisms. However, the lower rating for exam preparation indicates that students may still rely more heavily on traditional study practices, classroom instruction, and personal review strategies during high-stakes academic tasks. This suggests that while AI is perceived as effective for formative learning activities such as assignments and written outputs, its role in developing long-term mastery and examination readiness may remain limited. The findings also indicate a growing reliance on AI-assisted systems in academic work. While AI improves efficiency and accessibility, unregulated use may negatively affect the development of higher-order cognitive skills and professional competencies necessary in criminology practice. The findings aligned with existing literature indicating that AI contributes positively to students' academic performance, particularly through feedback, assessment, and learning support [13], [19]. However, [20] cautioned that while AI can improve academic efficiency, overreliance may weaken independent problem-solving and exam preparedness. This supports the present findings where AI was perceived as more effective in improving assignments through feedback than in high-stakes exam preparation.

Level of AI Utilization in Terms of Motivation

TABLE III. OVERALL SUMMARY OF THE LEVEL OF AI UTILIZATION IN TERMS OF MOTIVATION

Descriptors	M	SD	VI
AI motivates me to engage actively in learning.	2.76	0.60	Agree
AI tools make learning more enjoyable.	2.75	0.61	Agree
Personalized AI content boosts my motivation.	2.77	0.60	Agree
AI provides progress tracking that keeps me driven.	2.74	0.62	Agree
AI helps me set and meet academic goals.	2.77	0.57	Agree
AI inspires me to improve continuously	2.77	0.61	Agree
AI gives feedback that encourages effort.	2.77	0.54	Agree
AI connects me with peers who have similar goal	2.74	0.63	Agree
AI presents challenges that stimulate learning.	2.77	0.58	Agree
AI supports goal setting and planning for success.	2.75	0.58	Agree

Respondents generally perceived that AI contributes to their motivation in academic contexts. The overall mean of 2.76 falls within the "Agree" range, indicating that respondents viewed AI as providing moderate motivational support in their academic activities. The highest mean scores (M = 2.77) were observed for indicators such as "Personalized AI content boosts my motivation" and "AI gives feedback that encourages effort." Meanwhile, the lowest mean scores (M = 2.74) were recorded for progress tracking and interest in criminology-related topics. The findings suggest that students were more motivated when AI tools provided personalized feedback, immediate responses, and academic assistance that supported their learning needs. However, the slightly lower ratings for progress tracking and subject-specific interest indicate that AI may not fully sustain long-term academic motivation or deeper interest in criminology as a discipline. This suggests that while AI can stimulate short-term engagement and academic effort, students may still depend on classroom interaction, instructor guidance, and collaborative learning experiences to maintain consistent motivation. The findings also imply that motivation derived from AI may be largely associated with convenience and efficiency rather than intrinsic academic interest. Furthermore, AI functions primarily as a supplementary motivational tool rather than a replacement for effective teaching strategies and human interaction. The observed results were consistent with literature emphasizing the role of Artificial Intelligence (AI) in enhancing student motivation through personalization, feedback, and adaptive learning environments [21], [22].

Level of AI Utilization in Terms of Self-Reliance

TABLE IV. OVERALL SUMMARY OF LEVEL OF UTILIZATION IN TERMS OF SELF-RELIANCE

Descriptors	M	SD	VI
AI empowers me to take ownership of my learning.	2.74	0.63	Agree
AI tools help me solve academic problems independently.	2.77	0.60	Agree
AI encourages self-directed exploration beyond the classroom.	2.78	0.60	Agree
AI support my critical thinking and decision making	2.80	0.61	Agree
AI increases my confidence in academic pursuit.	2.79	0.61	Agree
AI improves my self-discipline and accountability.	2.74	0.63	Agree
AI provides tools for self-assessment and improvement.	2.80	0.62	Agree
AI encourages reflection on my learning progress.	2.74	0.58	Agree
AI promotes independent research skills.	2.73	0.60	Agree
AI fosters initiative in academic tasks.	2.73	0.60	Agree

Respondents viewed AI positively in relation to self-reliance, as reflected in the overall mean of 2.76 interpreted as "Agree." The highest-rated indicators were associated with information evaluation and self-assessment (M = 2.80), while the lowest scores were related to independent research skills and initiative in academic tasks (M = 2.73). The findings suggest that students value AI primarily as a support tool for monitoring, evaluating, and improving academic work. AI systems may have helped learners review information, assessed understanding, and organized academic tasks more efficiently. However, the relatively lower ratings for research initiative and proactive learning behaviors suggest that AI may not fully develop deeper investigative and independent inquiry skills. This indicates that while students may become more capable of assessing and refining their work through AI-generated assistance, they may still rely on AI guidance for efficiency rather than independently initiating research or problem-solving tasks. In criminology education, this is particularly relevant because investigative reasoning, analytical judgment, and independent decision-making are essential competencies. The findings also imply that AI-supported learning may strengthen evaluative independence without fully cultivating academic autonomy. Thus, AI functions more effectively as a supplementary learning support system rather than a replacement for independent academic inquiry. The results were consistent with studies highlighting AI's role in promoting student self-reliance through autonomy and self-assessment [23], [22], [20].

Level of AI Utilization in Terms of Social Interaction

TABLE V. OVERALL SUMMARY OF LEVEL OF UTILIZATION IN TERMS OF SOCIAL INTERACTION

Descriptors	M	SD	VI
AI facilitates collaboration in group projects.	2.86	0.60	Agree
AI improves communication with classmate.	2.84	0.56	Agree
AI enhances teamwork in academic tasks.	2.81	0.60	Agree
AI provides platforms for discussion and sharing.	2.81	0.61	Agree
AI encourages interaction with instructors online.	2.77	0.59	Agree
AI tools help me access academic support.	2.80	0.60	Agree
AI supports peer networking.	2.80	0.59	Agree
AI fosters academic discourse outside class.	2.80	0.60	Agree
AI enhances group planning and coordination.	2.84	0.60	Agree
AI promotes community learning activities.	2.81	0.60	Agree

Respondents viewed Artificial Intelligence positively in relation to social interaction, with an overall mean of 2.81 interpreted as "Agree." The highest-rated indicator was AI's role in facilitating collaboration in group projects, while the lowest score was related to encouraging interaction with instructors online. The findings suggest that students primarily associate AI with peer collaboration and group coordination rather than direct interaction with instructors. AI tools may have improved communication among classmates through easier information sharing, collaborative planning, and coordination of academic tasks. However, the lower rating for instructor interaction implies that AI has limited influence on strengthening teacher–student communication. This indicates that while AI can support collaborative learning environments, it may not fully replace direct classroom discussions, consultations, and traditional communication channels. The findings also suggest that AI functions more effectively as a facilitator of shared academic tasks rather than as a substitute for meaningful educational relationships. Moreover, the results highlight the importance of balancing technology-assisted collaboration with authentic classroom interaction, as instructor presence and peer engagement remain essential in developing communication, teamwork, and professional socialization skills in criminology education. The results were consistent with Self-Determination Theory (relatedness) and related studies indicating that AI supports peer collaboration and communication but has limited influence on direct instructor–student interaction [22], [12], [19].

Level of AI Dependency among Respondents

respondents generally agreed that Artificial Intelligence contributes to their academic tasks, as reflected in the overall mean of 2.70. The highest-rated indicator was the frequent use of AI for idea generation, while the lowest-rated item indicated that respondents do not entirely believe they are incapable of completing tasks without AI assistance. The findings suggest that AI has become a common academic support tool among criminology students, particularly in improving efficiency and assisting with task completion. However, the consistent agreement

across dependency-related indicators reflects a growing reliance on AI systems in academic work, including reduced independent thinking and influence on confidence in their own abilities. The results further suggest that AI dependency may already be becoming normalized among students. Although respondents did not strongly agree that they were completely unable to function without AI, their agreement with multiple dependency indicators still reflects a pattern of cognitive reliance. In criminology education, this raises concern as the profession requires strong analytical reasoning, investigative judgment, ethical decision-making, and independent evaluation of evidence. From the perspective of Self-Determination Theory, the findings indicate a possible tension between autonomy and technological reliance. While AI may improve efficiency and academic performance, excessive dependence may reduce students' confidence in generating original ideas and solving problems independently. The findings were consistent with existing literature emphasizing that frequent reliance on AI-generated outputs may reduce independent problem-solving and deepen cognitive dependence among students [20], [24], [25].

TABLE VI. OVERALL SUMMARY OF LEVEL OF AI DEPENDENCY AMONG RESPONDENTS

Descriptors	M	SD	VI
1. I often rely on AI tools to complete my assignments.	2.72	0.64	Agree
2. I depend on AI as my first source of academic information.	2.67	0.63	Agree
3. I use AI to generate ideas for tasks.	2.77	0.61	Agree
4. I feel uncomfortable without AI help for assignments.	2.67	0.60	Agree
5. Using AI reduces my need to think independently.	2.74	0.65	Agree
6. I check AI output to before submitting everything	2.73	0.63	Agree
7. I prefer AI responses to human judgment.	2.70	0.64	Agree
8. AI affects my confidence in my own skills.	2.70	0.61	Agree
9. I use AI for most academic tasks.	2.69	0.62	Agree
10. I cannot complete some tasks without AI assistance.	2.62	0.64	Agree

Independent Samples t-Test Results Comparing Groups Across Study Variables Based on Sex

The findings revealed no statistically significant differences in Learning Experience, Motivation, Self-Reliance, and Social Interaction ($p > 0.05$), indicating that male and female students generally perceived and utilized AI in similar ways across these dimensions. Significant differences, however, were observed in Academic Performance ($p = 0.035$) and AI Dependency ($p = 0.006$), where male respondents reported higher mean scores than female respondents. This suggests that male students perceived greater academic benefits from AI utilization and demonstrated higher reliance on AI tools in completing academic tasks. Although statistically significant, the differences showed only small to moderate effect sizes, indicating that the practical magnitude of the differences remains limited. This means that while sex-related differences existed, they were not substantial enough to indicate major disparities in AI utilization between male and female students. The higher AI dependency among male respondents may reflect differences in technology-use behavior and familiarity with digital tools rather than actual differences in academic capability. While increased reliance on AI tools may improve efficiency and task completion, it may also lead to cognitive overreliance and reduced independent analytical skills, which are critical in criminology education. The findings were consistent with literature suggesting that differences in technology utilization are often influenced by behavioral patterns and digital confidence rather than demographic characteristics alone [20], [12].

Difference in the Dimensions of AI Utilization When Grouped According to Age (One-Way ANOVA)

The findings revealed no statistically significant differences across all dimensions, including Learning Experience, Academic Performance, Motivation, Self-Reliance, Social Interaction, and AI Dependency, as all p-values were greater than 0.05. These results indicate that respondents across different age categories shared relatively similar perceptions and experiences regarding AI-driven learning. The absence of significant differences suggests that age was not a major factor influencing how criminology students utilized or perceived AI in their academic activities. This may be explained by the sample's relatively homogeneous nature, with most respondents belonging to closely related age groups commonly found in higher education. Because most respondents were in the 19–24 age range, similar digital exposure and academic environments may have reduced variation in AI use across age groups. The findings further imply that students' engagement with AI may be shaped more by shared educational experiences and institutional exposure to technology rather than by generational differences. In addition, the non-significant findings should be interpreted with caution because the very small subgroup sizes in the 16–18 and 25 and above age categories may have reduced the statistical power of the One-Way ANOVA and limited its ability to detect meaningful differences. From a theoretical perspective, the findings support studies suggesting that digital competence and access to technology are more influential than age in shaping technology adoption behaviors [11], [12]. Furthermore, eta squared (η^2) values indicated small effect sizes across all dimensions, suggesting minimal practical influence of age on AI utilization variables.

Difference in AI-Driven Learning When Grouped According to Monthly Family Income (One-Way ANOVA)

The findings revealed no statistically significant differences across all dimensions, including Learning Experience, Academic Performance, Motivation, Self-Reliance, Social Interaction, and AI Dependency, as all p-values were greater than 0.05. These results indicate that students from different income categories demonstrated relatively similar perceptions and experiences regarding AI-driven learning. The absence of significant differences suggests that monthly family income was not a major factor influencing students' utilization of AI tools in their academic activities. This may indicate that access to AI technologies among respondents was relatively uniform despite socioeconomic differences. Since most AI platforms are accessible through smartphones and internet-based applications, students from varying income levels may still engage with AI tools in comparable ways. The findings also imply that digital literacy, academic demands, and institutional exposure to technology may influence AI utilization more than financial capacity alone. In addition, the widespread use of smartphones among respondents may have reduced potential disparities in technology access, allowing students from lower-income backgrounds to participate in AI-assisted learning similarly to their peers. However, the non-significant findings should be interpreted cautiously because most respondents belonged to lower-income categories, with no representation from higher-income groups. This limited variation may have reduced the statistical power of the analysis and restricted the ability to detect possible differences between socioeconomic groups. The findings were

consistent with studies suggesting that access to digital tools and institutional support play more important roles in technology adoption than socioeconomic background alone [11], [26]. Furthermore, eta squared (η^2) values indicated small effect sizes across all dimensions, suggesting minimal practical influence of monthly family income on AI utilization.

Difference in AI-Driven Learning When Grouped According to Gadget Used (One-Way ANOVA)

The findings revealed no statistically significant differences in Learning Experience, Academic Performance, Self-Reliance, Social Interaction, and AI Dependency, indicating that gadget type did not substantially influence most dimensions of AI-driven learning among the respondents. A statistically significant difference was observed only in Motivation ($p = 0.039$), suggesting that the type of device used may influence students' motivation when engaging with AI tools. This may be explained by differences in accessibility, convenience, portability, and user experience, where more flexible devices such as smartphones may enhance ease of access and engagement with AI applications. However, this finding should be interpreted with caution because of the extreme imbalance in subgroup sizes: most respondents used smartphones, while other gadget categories had very small sample sizes. This may limit statistical power and affect the stability of the results, making the finding in Motivation preliminary and subject to further validation in future studies. Overall, the results suggest that gadget type has minimal influence on students' AI utilization patterns, likely because AI applications are generally accessible across different devices. Nevertheless, the finding in Motivation implies that usability and convenience may still shape students' engagement with AI-assisted learning. The results were consistent with studies emphasizing the role of device accessibility and usability in shaping learner motivation and engagement [26], [22]. Furthermore, eta squared (η^2) values indicated small effect sizes across most dimensions, with Motivation showing a small to moderate effect size.

Difference in AI-Driven Learning When Grouped According to Frequency/Exposure to AI Tools (One-Way ANOVA)

Frequency of AI use significantly influences several dimensions of students' academic experience. Significant differences were observed in Learning Experience ($p = 0.038$), Academic Performance ($p = 0.002$), Motivation ($p = 0.033$), Self-Reliance ($p = 0.013$), and Social Interaction ($p = 0.003$), indicating that students who use AI more frequently tend to report more positive academic experiences compared to those with limited exposure. The results suggest that regular engagement with AI tools improves students' access to learning support, feedback, collaboration, and academic resources. Frequent users may become more familiar with AI functions, allowing them to maximize its benefits in completing academic tasks, understanding lessons, and participating in collaborative activities. In contrast, students with limited exposure may not experience the same level of academic support and efficiency. The findings also imply that repeated exposure to AI contributes to the development of adaptive digital learning behaviors. Frequent users may develop greater confidence in integrating AI into their study routines, enhancing motivation, independent learning, and communication in academic settings. However, AI Dependency did not show a statistically significant difference ($p = 0.096$), suggesting that reliance on AI remains relatively consistent across frequency groups despite variations in usage. These findings have important implications for criminology education, as AI can enhance academic engagement but also raise concerns regarding overreliance, which may affect the development of investigative reasoning, ethical judgment, and independent decision-making skills. The results support Self-Determination Theory, which emphasizes that repeated engagement with learning tools strengthens competence, autonomy, and relatedness [12], [13]. However, [20] cautioned that excessive reliance on AI without proper guidance may reduce independent thinking and problem-solving abilities. Finally, eta squared (η^2) results indicated moderate to large effect sizes for most dimensions, suggesting that frequency of AI use has substantial practical influence on students' academic experiences, while AI Dependency showed only a small effect size.

Significant Pairwise Differences Based on Frequency of AI Use (Post Hoc Test)

The post hoc analysis identified specific group differences based on respondents' frequency of AI use. Significant differences were primarily observed between students who rarely use AI and those who use it weekly or 3–4 times a week in Academic Performance, Motivation, Self-Reliance, and Social Interaction. The findings indicate that students with more consistent exposure to AI tend to demonstrate better academic engagement and learning outcomes than those with limited exposure. Students who use AI weekly or several times a week may benefit from continuous access to academic assistance, feedback, information retrieval, and collaborative support, which can positively influence their academic performance and motivation. In contrast, students who rarely use AI may not fully experience these advantages, resulting in lower perceived benefits across several dimensions. The results also show that significant differences are concentrated between the "rarely" group and the more frequent user groups, while differences among regular AI users are relatively minimal. This suggests that the key distinction lies in whether students actively integrate AI into their academic routines rather than in small variations among active users. Once students reach a moderate level of AI exposure, the academic benefits appear to stabilize. The findings further suggest important implications for digital learning behavior and curriculum integration. Regular AI use appears to support stronger learning engagement, confidence, collaboration, and independent learning behaviors. However, in criminology education, these benefits should be balanced with safeguards to prevent overreliance on AI systems, which may weaken independent reasoning and analytical skills without proper guidance. The results support Self-Determination Theory, which emphasizes that sustained engagement with learning tools strengthens competence, autonomy, and relatedness [13], [22], [21].

CONCLUSIONS AND RECOMMENDATIONS

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

1. Students generally perceive Artificial Intelligence as beneficial to their academic experience. This is reflected in the positive mean scores across learning experience, academic performance, motivation, self-reliance, and social interaction, indicating that students perceive AI as a supportive tool in their academic activities.
2. AI dependency is evident among respondents, particularly in tasks involving idea generation and academic assistance. However, statistical results show that this dependency did not significantly increase with higher frequency of AI use, suggesting that regular engagement with AI did not automatically lead to greater reliance.
3. There are no significant differences in AI-driven learning when respondents are grouped according to age and monthly family income. This indicates that demographic factors such as age and socioeconomic status do not significantly influence students' perceptions and use of AI.
4. Significant differences were found in academic performance and AI dependency when grouped according to sex, with male students generally obtaining higher scores in both variables. This suggests gender-based differences in academic outcomes and AI reliance.
5. Motivation significantly differs according to gadget used, while all other dimensions do not show statistically significant variation. This indicates that device type may influence motivational aspects of AI utilization but has limited effect on other learning dimensions.

6. Frequency of AI use shows significant differences in learning experience, academic performance, motivation, self-reliance, and social interaction. Students who used AI more frequently generally reported higher scores in these areas than those who rarely used AI.
7. AI dependency did not significantly differ based on frequency of AI use, indicating that increased exposure to AI did not necessarily result in higher dependency levels.
8. The findings suggest that Artificial Intelligence is perceived as a valuable and supportive academic tool among Criminology students. However, its effects vary depending on usage patterns rather than demographic characteristics.

RECOMMENDATIONS

Considering the conclusions, the following recommendations are proposed:

1. Aldersgate College Incorporated may strengthen the implementation of Artificial Intelligence integration and academic integrity policies by conducting regular seminars, workshops, and orientations on the responsible and ethical use of AI. These activities should emphasize academic honesty, proper use of AI tools, avoiding misuse, and awareness of plagiarism and AI-related misconduct. The Office of the President, the Office of the Vice President for Academic Affairs, the Office of Student Affairs and Services, and the Office of Research, Development and Entrepreneurship shall lead this initiative, which may be implemented every semester.
2. To address issues related to AI dependency and the development of critical thinking skills, faculty members, subject instructors, and program chairs may design learning activities such as written explanations, problem-solving tasks, reflective writing, case analyses, and group discussions that require students to validate or justify AI-generated outputs. These strategies will encourage independent thinking, analytical reasoning, and responsible use of AI as a support tool rather than a replacement for learning. This may be implemented every semester under the supervision of the Office of the Vice President for Academic Affairs.
3. To ensure inclusive and accessible AI-supported learning, the Knowledge Management/Web Administration Office, Curriculum and Instruction Office, program chairs, and faculty members may optimize instructional materials and AI-based activities for mobile devices and multiple platforms. This will provide equal learning opportunities and maintain student engagement regardless of gadget availability. This initiative shall be ongoing.
4. In relation to differences in student characteristics such as sex, motivation, and gadget usage, the Office of Student Affairs and Services, faculty members, and program chairs may implement inclusive strategies such as mixed-group activities, peer-assisted learning, and flexible instructional designs. These approaches aim to promote balanced participation, reduce performance gaps, and maintain consistent engagement in AI-supported learning environments. This may be implemented every semester.
5. The Office of the Vice President for Academic Affairs, together with the Academic Council composed of deans and program chairs, may standardize AI integration policies across all academic programs to ensure uniform implementation regardless of student profile. This will promote equity in access to AI-assisted learning and ensure consistency in academic practices across the institution. This may be reviewed on an academic year basis.
6. To further strengthen academic integrity monitoring systems, the Library Services, Knowledge Management/Web Administration Office, and Research Office, in coordination with instructors and faculty members, may subscribe to and implement AI detection tools and plagiarism-checking software. These systems will help identify AI-generated and unoriginal content in academic outputs such as research papers, case studies, and capstone projects, reinforcing originality, transparency, and academic honesty. This initiative shall be ongoing.

AI DECLARATION STATEMENT

AI-supported tools helped with grammar and structure in creating this article. No AI tools were used to collect, analyze, or interpret data; all authors are credited for their academic contributions.

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