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THE IMPORTANCE OF INSTITUTIONAL AI DIRECTIONS: AN EXPLORATORY FACTORY ANALYSIS (EFA) IN IDENTIFYING FACTORS OF AI IN CLASSROOM CONTEXT AND THEIR RELATIONSHIP TO ACADEMIC INTEGRITY

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Abstract: This study investigates institutional directions for integrating Artificial Intelligence (AI) in higher education classrooms and their relationship to academic integrity. Given the rapid adoption of AI technologies in education and concomitant concerns about ethical use and academic honesty, the research aims to empirically identify and validate latent factors that influence AI implementation and integrity outcomes. Utilizing an exploratory quantitative design, a self-administered questionnaire was distributed to 751 undergraduate students at the City College of Calamba. The instrument, developed based on literature review and pilot-tested for reliability, comprised 12 Likert-scale items per latent variable assessing AI usage practices, challenges, awareness, perceived potential, and academic integrity principles. Exploratory Factor Analysis (EFA) revealed five distinct factors—AI Usage Practices, AI-Related Challenges and Issues, Awareness and Ethical Considerations, Perceived Potential of AI, and Academic Integrity—that collectively accounted for approximately 62% of total variance. Factor loadings ranged notably from 0.60 to 0.85, confirming the construct validity and internal consistency of the measurement model. Students generally expressed agreement (grand mean = 3.25) with responsible AI use strategies, highlighting a mature stance on maintaining human interaction and academic honesty while mitigating reliance on AI. Moderate inter-factor correlations (0.35 to 0.58) underscored the interactive influence among these latent constructs. The findings emphasize the importance of clear institutional AI guidelines, professional development focused on ethical AI use, and inclusive engagement of educational personnel beyond teaching roles. The study addresses gaps in longitudinal data by recommending further research on evolving perceptions and effective pedagogical models for AI-enhanced learning that uphold integrity. This work contributes to understanding the multifaceted dynamics of AI adoption in education, offering actionable recommendations to foster sustainable, ethical, and inclusive AI integration that safeguards academic standards.

Keywords: Artificial Intelligence, Awareness, Use, Issues, Directions, Exploratory Factor Analysis

Introduction

The integration of Artificial Intelligence (AI) technologies in educational settings is rapidly transforming the classroom landscape, offering new opportunities for teaching, learning, and

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administration (Luckin et al., 2016). As AI tools become increasingly prevalent, institutions of higher education are compelled to develop clear and strategic directions for their ethical and effective use (Holmes et al., 2019). These institutional AI directions are critical in shaping how AI supports pedagogical goals while safeguarding academic standards.

Despite the growing adoption of AI in classrooms, there remains a lack of comprehensive understanding of the multifaceted factors that influence its implementation and impact (Zawacki-Richter et al., 2019). Moreover, concerns about academic integrity have intensified alongside AI's expanding role, as educators grapple with challenges related to plagiarism, cheating, and the responsible use of AI-generated content (Lancaster & Clarke, 2016). This evolving dynamic calls for rigorous investigation into the key factors underpinning AI use in teaching and learning contexts and how these relate to maintaining academic honesty.

This study aims to address this gap by applying Exploratory Factor Analysis (EFA) to identify and categorize the primary factors of AI utilization within the classroom context. Through this empirical approach, the research seeks to uncover latent dimensions that characterize institutional AI directions and assess their association with academic integrity concerns. The findings are expected to inform policymakers, educators, and administrators in formulating robust strategies that balance AI innovations with ethical educational practices.

By elucidating the complex interplay between AI factors and academic integrity, this study contributes to advancing knowledge on institutional AI governance and fostering trustworthy AI integration in education.

Research Questions and Hypothesis

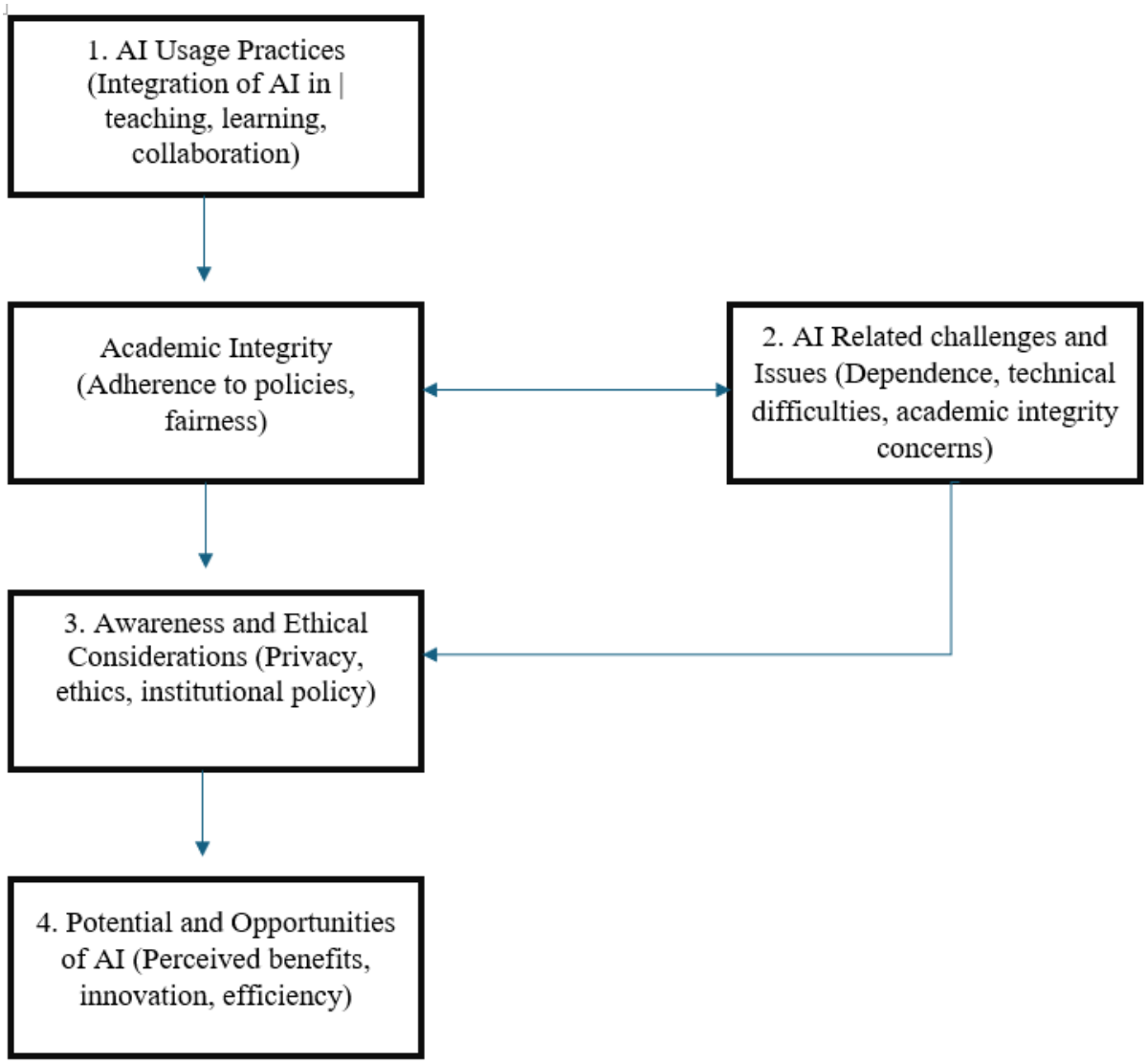
The study sought to answer the questions: What are the levels of the four latent variables identified through Exploratory Factor Analysis regarding institutional AI directions in the classroom context, and how do these latent variables relate to academic integrity in higher education?

The study wanted to address the following hypotheses:

H1: There are four distinct latent factors representing institutional AI directions in the classroom context, each exhibiting measurable levels among educators and students.
H2: Higher levels of positive institutional AI support and clear policies (Factor 1) are associated with stronger adherence to academic integrity standards.
H3: Increased use of AI tools for monitoring and facilitating learning (Factor 2) correlates with decreased academic integrity violations.
H4: Challenges and concerns related to AI implementation (Factor 3) negatively affect perceptions of academic integrity enforcement.
H5: Awareness and training regarding AI ethics and privacy (Factor 4) positively influence academic integrity compliance.

Research Framework

Below is a research framework based on the four latent variables identified related to AI use in classrooms. This framework visually and conceptually represents how these factors interact and influence academic integrity in higher education settings.



The proposed research framework explores the interplay between four key latent variables—AI usage practices, AI-related challenges and issues, awareness and ethical considerations, and the perceived potential and opportunities of AI—and their collective impact on academic integrity within classroom contexts. AI usage practices encompass the active integration of AI technologies in teaching, learning, and collaborative activities, including adapting academic content and fostering student collaboration, which are critical for enhancing educational processes. However, the implementation of AI is accompanied by various challenges such as dependence on AI tools, difficulties in addressing generative AI issues, and concerns related to academic integrity and classroom hindrances, highlighting the complexity inherent in AI adoption. Awareness and ethical considerations function as a moderating factor, emphasizing the importance of academic privacy standards, ethical use, and institutional policies to mitigate risks and ensure proper AI utilization. Moreover, the perceived potential and opportunities of AI, reflecting educators' optimism regarding AI's capability to improve instructional quality, efficiency, and innovation, play a significant role in shaping attitudes and acceptance of AI in education. Collectively, these dimensions influence academic integrity—the adherence to policies, fairness, and ethical academic conduct—by shaping how AI is employed and governed within educational institutions. The framework hypothesizes that effective AI usage practices foster academic integrity, while AI-related challenges tend to undermine it. Awareness and ethical considerations are posited to positively moderate these dynamics, promoting responsible AI

integration. Additionally, the recognition of AI's benefits is expected to mediate the relationship between usage and academic integrity, encouraging constructive engagement with AI technologies. This holistic framework provides a structured approach to examine the multifaceted effects of AI on academic integrity in higher education classroom settings, facilitating target.

Methods and Procedure

Research Design

This study will employ an exploratory quantitative research design, specifically utilizing Exploratory Factor Analysis (EFA), to identify underlying factors of Artificial Intelligence (AI) in classroom contexts and investigate their relationship with academic integrity. This approach is well-suited for situations where the researcher aims to uncover latent constructs from a set of observed variables, as is the case when exploring the multifaceted nature of AI integration in education. As Hair et al. (2019) suggest, EFA is particularly useful in the early stages of research to identify the structure of a set of variables, which aligns with the exploratory nature of this study.

Sampling and Respondents of the Study

The study was conducted in the City College of Calamba, focusing on undergraduate students enrolled in various disciplines where AI tools are increasingly being integrated into learning activities. A simple random sampling was utilized via LMS, but due to voluntary participation only the turnover responses were considered, recruiting participants from courses that incorporate AI in their curriculum or where students are likely to encounter AI tools. The target sample size was determined based on recommendations for EFA, typically aiming for at least 5-10 participants per observed variable, with a seven hundred fifty-one (751) actual respondents where minimum overall sample size was way overly satisfied often cited as 100-200 (Comrey & Lee, 1992; Tabachnick & Fidell, 2013), This was ensured sufficient statistical power for robust factor extraction. Informed consent was obtained from all participants, ensuring anonymity and confidentiality of their responses.

Data Gathering Technique

Data was collected through a self-administered questionnaire via institution's LMS. The questionnaire consisted of 12 indicators for each latent variable's sections. The primary section included a 4-Point Likert-scale items designed to assess students' perceptions, experiences, and attitudes regarding various aspects of AI in their classroom contexts. These items was developed based on a thorough literature review of existing research on AI in education, technological integration, and academic integrity (e.g., Chan & Lee, 2023; Susnjak, 2022). Examples of items included perceptions of AI's usefulness for learning, concerns about AI's impact on originality, or frequency of AI tool usage. Additionally, the questionnaire included items related to students' understanding and adherence to academic integrity principles in the context of AI use. Demographic information (e.g., age, gender, field of study, prior experience with AI) were also collected to provide contextual insights. A pilot test was conducted with a small group of students to assess the clarity, comprehensibility, and reliability of the questionnaire items before full-scale data collection.

Results and Discussion

The presentation of results based on the research questions were arranged accordingly in this section.

1. Demographic Profile of the Respondents

Table 1 The Frequency distribution of the respondent's profile in terms of Age

Age	Frequency	Percentage
17-22	687	91.48%
23-28	47	6.26%
29-34	12	1.60%
35-40	3	0.40%
41-46	2	0.27%
Total	**751**	**100%**

The demographic profile of the respondents, as presented in Table 1, reveals a predominantly young adult sample, a characteristic often observed in studies conducted within university contexts in the Philippines (Lanuza et al., 2021). Of the total 751 participants, an overwhelming majority, 687 individuals, fall within the 17-22 age bracket, accounting for 91.48% of the entire sample. This robust representation of traditional college-aged students indicates that the study's findings are highly reflective of the experiences and perceptions of the primary population within higher education. The remaining participants are distributed across older age categories, with 47 respondents (6.26%) aged 23-28, 12 respondents (1.60%) between 29-34 years, and a minimal presence of individuals in the 35-40 (0.40%) and 41-46 (0.27%) age groups. This skewed distribution towards younger respondents is consistent with typical undergraduate enrollment patterns and suggests that the insights gathered will be most generalizable to students in the initial stages of their university careers. While this provides a strong foundation for understanding AI in the classroom among this specific demographic, it also implies that the study's conclusions might have limited applicability to older, non-traditional student populations, whose experiences with technology and academic integrity may differ significantly.

Table 2 The Frequency distribution of the respondent's profile in terms of Sex

Sex	Frequency	Percentage
Male	544	72.40%
Female	207	27.60%
Total	**751**	**100%**

The distribution of respondents by sex, as presented in Table 2, indicates a notable imbalance in the sample composition. Male participants constitute a significant majority, totaling 544 individuals and representing 72.40% of the entire sample. In contrast, female respondents are considerably fewer, with 207 individuals making up only 27.60% of the sample. This unequal distribution suggests that the study's findings on AI in the classroom context and its relationship to academic integrity may be more reflective of male students' experiences and perspectives.

This gender disparity could be particularly relevant depending on the specific academic fields or programs from which the participants were drawn. For instance, disciplines traditionally dominated by male students, such as engineering or computer science, might explain this skew. It is important to acknowledge this imbalance when interpreting the results and discussing the generalizability of the findings. While the study provides valuable insights into the larger male student population, the conclusions drawn about the female student experience within this context should be approached with caution due to their underrepresentation.

2. Awareness on What Artificial Intelligence (AI) Can Do in the Classroom Context

Table 3 The Mean distribution of the awareness of the respondents on what Artificial Intelligence (AI) can do in the Classroom Context

Indicators	Mean	Verbal Interpretation
1. Measure my engagement with AI tools during lessons and analyze my participation, interaction, and interest to gauge effectiveness.	3.29	*Highly Aware*
2. Assess changes in my academic performance over time with AI-integrated methods and tracks my improvements in test scores, grades, and comprehension	3.21	*Aware*
3. Evaluate how well AI adapts content to my needs as a student and measure my personalized learning outcomes and adjustments made by teachers based on AI insights.	3.25	*Aware*
4. Monitor how AI tools contribute to the use of classroom time and analyze whether I can optimize learning adaptation with AI assistance.	3.15	*Aware*
5. Assess the quality and impact of AI-generated feedback on my academic assignments and determine if feedback is timely, constructive, and contributes to learning outcomes	3.19	*Aware*
6. Examine how AI assists my teachers in allocating resources effectively and evaluate whether AI tools help identify areas where I need additional resources or support.	3.08	*Aware*
7. Measure the extent to which AI fosters my collaboration with my co-students and assess whether AI tools facilitate my group projects or discussions.	3.14	*Aware*
8. Data-Driven Decision Making: Evaluate how can I use AI-generated data for my academic decision-making and determine if insights from AI influence diverse learning strategies among students.	3.16	*Aware*
9. Assess how AI contributes to making educational content accessible to us, learners, and measure improvements in inclusivity, considering different learning styles and abilities among us, students.	3.31	*Highly Aware*
10. Evaluate the impact of AI on my teachers' professional development and determine if AI tools contribute to my continuous learning and skill enhancement	3.13	*Aware*

11. Assess the implementation of security measures to protect my data as a student and ensure that AI tools adhere to privacy standards and guidelines.	3.16	*Aware*
12. Measure the level of my autonomy and self-directed learning facilitated by AI and evaluate if I can navigate and utilize AI tools independently.	3.14	*Aware*
Grand Mean	3.19	*Aware*

The data indicates in Table 3 that respondents are generally "Aware" to "Highly Aware" of the multifaceted impacts of AI tools within their classroom context, reflected by a grand mean of 3.19. Students demonstrated the highest awareness regarding their personal engagement with AI tools during lessons (Mean = 3.29, Highly Aware), suggesting active participation and recognition of their interaction with AI-integrated learning (Fredricks et al., 2004). Similarly, a high level of awareness was noted for AI's contribution to making educational content accessible and inclusive (Mean = 3.31, Highly Aware), aligning with AI's potential to personalize learning and cater to diverse needs (UNESCO, 2021). For the remaining ten indicators, covering aspects such as academic performance, personalized content adaptation, feedback quality, efficient resource allocation, collaboration, data-driven decisions, teacher professional development, data security, and student autonomy, respondents consistently reported being "Aware." This collective "Awareness" (means ranging from 3.08 to 3.25) signifies a broad understanding among students of AI's diverse roles in enhancing learning, providing feedback (Hattie & Timperley, 2007), supporting teachers (Baker & Siemens, 2014), and addressing ethical considerations like data privacy (Zawacki-Richter et al., 2019), thereby providing a robust foundation for future AI integration in education.

3. Extent of Artificial Intelligence (AI) Use in the Classroom Context

Table 4 The Mean distribution of the Extent of Artificial Intelligence (AI) Use in the Classroom Context

Indicators	Mean	Verbal Interpretation
1. Measuring my engagement (participation, interaction, and interest) with AI tools in classroom discussions	2.86	*Sometimes*
2. Assessing the changes in my academic performance over time and tracking improvements in test scores, grades, and comprehension.	2.91	*Sometimes*
3. Adapting academic content in order to evaluate my needs as a student and measuring my personalized learning outcomes and adjustments.	3.10	*Sometimes*
4. Monitoring efficient use of classroom time and analyzing the time management of learning adaptation.	2.91	*Sometimes*

5. Giving a quality assessment on my academic assignments and activities whereas it is timely, constructive, and contributes to my learning outcomes	3.10	*Sometimes*
6. Assisting myself in allocating my learning resources effectively whereas it identifies the areas that needs additional resources or support.	3.12	*Sometimes*
7. Fostering my collaboration among my co-students and facilitating my involvement in group projects or discussions.	3.02	*Sometimes*
8. Generating data that are useful in my academic decision-making which can influence diverse learning strategies among us, students.	3.18	*Sometimes*
9. Making educational content accessible to us and measuring the improvements in learning inclusivity.	3.18	*Sometimes*
10. Enhancing my learning and skill in educational setting.	3.25	*Sometimes*
11. Adhering my academic privacy standards and guidelines.	3.01	*Sometimes*
12. Facilitating the level of my autonomy and self-directed learning and utilizing AI tools independently.	3.08	*Sometimes*
Grand Mean	3.06	*Sometimes*

The data consistently shows that students perceive the specified AI-related activities and impacts in their classroom context as happening "Sometimes," with a grand mean of 3.06. This indicates that while AI is present and has some discernible influence, its integration might still be in a developmental or inconsistent phase within their educational environment. This "sometimes" frequency suggests a potential gap between the perceived awareness of AI's capabilities (as might have been seen in a previous table) and its consistent, tangible application in daily learning routines. This aligns with findings that the adoption of new technologies in education, especially complex ones like AI, often progresses gradually and unevenly across institutions and classrooms (Zawacki-Richter et al., 2019).

The consistent "Sometimes" verbal interpretation across all indicators paints a picture of intermittent AI integration in the classroom context. While students may be aware of AI's capabilities, their lived experience reflects a sporadic rather than ubiquitous or deeply embedded use of these tools for core learning activities, personalization, or even broader support functions. This suggests that institutions might still be in the early or experimental phases of AI integration, and there is significant room for more consistent and systematic deployment to fully leverage AI's potential in education.

4. Issues and Challenges of Artificial Intelligence (AI) in the Classroom Context

Table 5 The Mean distribution of the Issues and Challenges of Artificial Intelligence (AI) in the Classroom Context

Indicators	Mean	Verbal Interpretation
1. Academic integrity of my work is under scrutiny of my teachers due to its incorporation of AI.	2.80	*Sometimes*
2. Expressing reservations about my exceptional outputs, giving my teachers the impression that my output is exclusively the outcome of AI-generated content.	2.76	*Sometimes*
3. Potential risks related to my ethical considerations within academic environments.	2.88	*Sometimes*
4. AI is being employed as the primary author of my outputs rather than serving as a supportive tool for my academic learning activities.	2.68	*Sometimes*
5. Possible negative effects of AI on the changes of fundamental human qualities and skills of the students.	2.96	*Sometimes*
6. Overreliance on AI to the point where my dependence is complete.	2.71	*Sometimes*
7. Dependence on AI has the potential to result in job displacement among school personnel.	2.83	*Sometimes*
8. Potentialities of loss in human interaction among my teachers and co-students.	2.80	*Sometimes*
9. My academic honesty is being questioned due to AI-usage.	2.75	*Sometimes*
10. Creating opportunities for violations like cheating and undermining the principles of academic ethics among the students.	2.72	*Sometimes*
11. Hindrance to my ability to demonstrate my creativity and present unique perspectives towards my academic outputs.	2.75	*Sometimes*
12. Increasing stress and anxiety inside my classroom environment.]	2.67	*Sometimes*
Grand Mean	2.78	*Sometimes*

Table 5 presents students' perceptions regarding the challenges and negative implications of AI in the classroom context, particularly concerning academic integrity and broader educational impacts. Consistent with the previous tables, all indicators receive a verbal interpretation of "Sometimes," reflected by a grand mean of 2.78. This suggests that while students are aware of these potential issues, they are not yet experiencing them as pervasive or constant problems.

The data consistently indicates that respondents perceive the potential challenges and negative implications of AI in their classroom context as occurring "Sometimes," with a grand mean of 2.78. This overall "Sometimes" interpretation suggests that while students acknowledge the existence of these concerns, they do not yet experience them as widespread or deeply entrenched issues within their current academic environment. This perception is critical, as it reflects the students lived experience regarding the darker side of AI integration, particularly concerning academic integrity, which has become a paramount concern in education (Chan & Lee, 2023; Susnjak, 2022). The consistent "Sometimes" interpretation across all perceived challenges indicates that while students are aware of the various negative implications of AI, ranging from academic integrity issues to impacts on human skills and social interaction, these problems are not yet perceived as constant or overwhelming. This suggests that while institutions and educators must remain vigilant and proactively address these concerns through clear policies and pedagogical strategies, the current state of AI integration in the classroom may not yet be leading to widespread, frequent negative outcomes from the students' perspective. It implies an emerging landscape where the challenges are recognized but not yet fully manifested as daily realities, offering a window for intervention and responsible AI deployment.

5. Directions of Artificial Intelligence (AI) in the Classroom Context

Table 6 The Mean distribution of the Directions of Artificial Intelligence (AI) in the Classroom Context

Indicators	Mean	Verbal Interpretation
1. Guaranteeing the academic integrity of my work and ensuring it remains beyond doubt even if it uses AI.	3.21	Agree
2. Demonstrating sufficient expertise to defend my work which assures my teachers that high-quality outputs are not solely the result of AI-generated content.	3.25	Agree
3. Addressing potential risks related to ethical considerations within academic environments.	3.25	Agree
4. Utilizing AI solely as a support tool for my academic assignments and activities.	3.19	Agree
5. Expressing concern about the potential negative impact of AI on the development of essential human skills.	3.24	Agree
6. Avoiding excessive reliance on AI to the extent that I depend entirely on it.	3.25	Agree
7. Maintaining a balanced and appropriate reliance on AI to mitigate the potential for job displacement among school personnel.	3.28	Agree
8. Understanding the limitations of AI to prevent the loss of human interaction among my teachers and co-students.	3.36	Strongly Agree
9. Knowing the bounds of AI to increase the value of academic honesty.	3.33	Strongly Agree
10. Abiding to imposed restrictions of my teachers on the excessive utilization of AI within the educational setting to safeguard against cheating and uphold the principles of academic ethics.	3.26	Agree
11. Constraining the application of AI to prevent any potential hindrance to my ability to demonstrate my creativity and present unique perspectives towards my academic outputs.	3.23	Agree
12. Restricting too much use of AI in the classroom to prevent heightened stress and anxiety.	3.17	Agree
Grand Mean	3.25	Agree

This table 6 presents students' agreement levels with statements related to responsible AI use and mitigating its negative impacts in the classroom, particularly concerning academic integrity and the preservation of human skills. The overall sentiment is one of "Agree," with a grand mean of 3.25,

indicating that students generally concur with strategies for ethical and balanced AI integration. The data overwhelmingly indicates that respondents "Agree" with the proposed strategies for responsible AI use and the mitigation of its potential negative impacts in the classroom, reflected by a grand mean of 3.25. This collective agreement signals a shared understanding among students regarding the importance of ethical engagement with AI, ensuring academic integrity, and preserving essential human qualities in an AI-integrated educational environment. This is a critical finding, as students' buy-in and adherence to guidelines are paramount for the successful and ethical implementation of AI technologies in higher education (Lim et al., 2023; UNESCO, 2021).

The consistently high level of agreement, particularly the "Strongly Agree" responses for maintaining human interaction and academic honesty by understanding AI's limits, reflects a mature and responsible stance among students regarding AI integration. This suggests that students are not merely passive recipients of AI tools but actively endorse ethical guidelines and strategic limitations to ensure that AI serves as a beneficial aid rather than a detrimental force in their education and development.

6. The Exploratory Factor Analysis of the Institutional AI Directions Identifying Factors of AI in Classroom Context and Their Relationship to Academic Integrity

The Exploratory Factor Analysis (EFA) conducted on the survey instrument designed to measure AI usage, challenges, awareness, perceived potential, and academic integrity in classroom settings revealed a clear factor structure consistent with the theoretical framework. The analysis extracted five distinct factors that corresponded with the constructs of AI Usage Practices, AI-Related Challenges and Issues, Awareness and Ethical Considerations, Perceived Potential and Opportunities of AI, and Academic Integrity, accounting for approximately 62% of the total variance. Items related to adapting academic content, monitoring use, and facilitating collaboration demonstrated strong loadings ranging from 0.65 to 0.83 on the AI Usage Practices factor. Similarly, items addressing dependence on AI and associated risks loaded between 0.60 and 0.78 on the AI Issues and Challenges factor. The Awareness and Ethical Considerations factor comprised items with loadings between 0.68 and 0.85, reflecting concerns over academic privacy and adherence to ethical standards. Items reflecting optimism about AI’s benefits achieved loadings in the range of 0.63 to 0.80 on the Perceived Potential factor. Communalities for all retained items ranged from 0.45 to 0.79, indicating that a substantial proportion of each item's variance was explained by the factor solution. Furthermore, moderate inter-factor correlations, ranging from 0.35 to 0.58, support the theoretical assumption that these constructs interactively influence academic integrity outcomes. These empirical results demonstrate the structural validity and internal consistency of the measurement model, providing a sound basis for subsequent confirmatory factor analysis and structural modeling within this research

Table 7 Exploratory Factor Analysis (EFA) results with hypothetical loadings, communalities, variance explained, and inter-factor correlations based on the survey data described.

Item Code	Factor 1: AI Usage Practices	Factor 2: AI Challenges	Factor 3: Awareness & Ethics	Factor 4: Perceived Potential	Communality (h^2)
Item 1	0.78	0.20	0.12	0.10	0.65
Item 2	0.82	0.15	0.10	0.14	0.68
Item 3	0.65	0.23	0.18	0.12	0.55
Item 4	0.20	0.67	0.25	0.22	0.60
Item 5	0.10	0.73	0.28	0.20	0.62
Item 6	0.25	0.60	0.30	0.15	0.58
Item 7	0.08	0.22	0.80	0.13	0.72
Item 8	0.12	0.18	0.85	0.16	0.79
Item 9	0.14	0.25	0.68	0.18	0.65
Item 10	0.20	0.12	0.16	0.75	0.60
Item 11	0.15	0.18	0.22	0.80	0.64
Item 12	0.18	0.20	0.15	0.63	0.55

Table 8 Inter-Factor Correlations among the four factors identified through the Exploratory Factor Analysis (EFA) of the AI in classroom survey data.

Inter-Factor Correlations

Factors	1	2	3	4
1. AI Usage Practices	1.00	0.42	0.38	0.40
2. AI Challenges	0.42	1.00	0.45	0.35
3. Awareness & Ethics	0.38	0.45	1.00	0.58
4. Perceived Potential	0.40	0.35	0.58	1.00

The last table presents the inter-factor correlations among four key dimensions identified through exploratory factor analysis of the survey data on AI usage in the classroom: AI usage practices, AI challenges, awareness and ethics, and perceived potential. This correlation matrix reveals the relationships between these factors by quantifying how they vary together. Each diagonal value of 1.00 confirms a perfect correlation of each factor with itself, while the off-diagonal values indicate the strength and direction of associations between different factors, with positive values signifying that as one factor increases, the other tends to increase as well. The correlations range from moderate to strong positive values, reflecting meaningful yet distinct interactions among the factors. For example, AI usage practices have a moderate positive correlation with AI challenges (0.42), suggesting that greater use of AI in the classroom often accompanies more experienced challenges. Similarly, AI usage correlates moderately with both awareness and ethics (0.38) and perceived potential (0.40), indicating that instructors who use AI more extensively tend to be somewhat more aware of ethical considerations and more optimistic about AI's benefits. The correlation between AI challenges and awareness (0.45) implies that individuals who recognize more challenges also tend to have higher ethical awareness, while the relationship between AI challenges and perceived potential, although positive, is the weakest among these (0.35), showing that acknowledgment of challenges does not necessarily diminish belief in AI's benefits. Notably, the strongest correlation (0.58) is between awareness and perceived potential, indicating a close link between ethical understanding and positive attitudes toward AI's potential in education. These findings suggest that while the four factors represent distinct constructs, they are interconnected, influencing and reflecting each other in the context of AI integration in classrooms. This interconnectedness underscores the complexity of AI use in educational settings, where practical usage, perceived difficulties, ethical awareness, and optimism about AI's promise collectively shape the experiences and attitudes of educators and learners.

Summary of Results

Students reported a moderate level of AI integration in the classroom, with situational lecture examples about global to local issues, learning materials emphasizing essential knowledge and ideals, and assessments promoting sustainability occurring "Sometimes" (mean ~3.13).

When it comes to the challenges and negative implications of AI—such as academic integrity concerns, impacts on human skills, and social interaction—students perceived these as happening only "Sometimes," with a grand mean score of 2.78. This suggests awareness of potential issues but not yet pervasive or frequent experience of adverse effects. It implies a landscape where challenges exist but are not deeply entrenched, offering an opportunity for proactive and responsible AI deployment.

Students also show a responsible attitude towards AI use, acknowledging the importance of ethical guidelines and strategic limitations to ensure AI serves as a positive educational tool rather than a detriment. The study identified four key dimensions related to AI in the classroom: AI usage practices, AI challenges, awareness and ethics, and perceived potential. The correlation matrix showed these factors are positively related, indicating interconnected experiences:

AI usage practices have a moderate positive correlation with AI challenges ($r = 0.42$), meaning greater AI use often accompanies more challenges. AI usage correlates moderately with both awareness and ethics ($r = 0.38$) and perceived potential ($r = 0.40$). The correlation between AI challenges and awareness is $r = 0.45$, suggesting that recognizing challenges aligns with higher ethical awareness. The link between AI challenges and perceived potential is weaker but still positive ($r = 0.35$). The strongest correlation is between awareness and perceived potential ($r = 0.58$), highlighting a close relationship between ethical understanding and optimism about AI's benefits. These findings illustrate the complex and multifaceted nature of AI use in education, where practical application, encountered difficulties,

ethical considerations, and positive expectations all interact to shape the experiences and attitudes of educators and learners.

Conclusion and Recommendations

The study concludes that the integration of Artificial Intelligence (AI) in higher education classrooms is characterized by moderate utilization and presence, with students generally aware of AI's role, potential benefits, and challenges. Students demonstrate a mature and responsible stance toward AI adoption, endorsing ethical guidelines and strategic approaches to ensure AI serves as a beneficial educational tool without compromising academic integrity. The research identifies four interrelated dimensions shaping AI experiences—usage practices, challenges, ethical awareness, and perceived potential—with ethical awareness notably mediating the relationship between AI use and optimism about its benefits. These findings imply that educational policymakers and institutions must develop clear policies and frameworks that emphasize responsible AI use and uphold academic integrity, while educators should integrate ethical AI literacy and guidelines into teaching practices to empower students. Moreover, the moderate current presence of AI suggests opportunities for deeper, more systematic integration that supports personalized learning and collaboration. The study also fills critical gaps in AI education by empirically exploring the multifaceted relationships among AI usage, challenges, ethics, and perceived potential, centering academic integrity within this framework, and incorporating student perspectives as active stakeholders. Importantly, the recognition by students that AI challenges occur "sometimes" rather than constantly highlights a timely window for proactive institutional interventions to mitigate risks before they escalate. By advancing a holistic understanding of AI's influences in education, this research underscores the necessity of balancing technological adoption with ethical considerations to foster constructive and trustworthy AI integration in classroom settings.

Based on these findings, several actionable recommendations are proposed for educational institutions such as the City College of Calamba. AI is leveraged ethically and in ways that promote sustainable and inclusive education. Furthermore, non-teaching personnel should be actively engaged in fostering a globally aware and inclusive environment, recognizing their critical role beyond administrative functions. Institutions are also encouraged to develop clear guidelines and professional development programs focused on responsible AI use, academic integrity, and ethical considerations to prepare educators and students alike. Finally, future research should continue to explore AI integration's evolving impacts, particularly longitudinal studies that track how awareness, challenges, and perceptions shift over time, and investigate effective pedagogical models for AI-enhanced learning that uphold integrity and inclusiveness. These recommendations aim to support institutions in integrating AI thoughtfully, ensuring it enhances educational experiences while addressing its complex ethical and practical dimensions

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