CHARTERING PERSONALIZED LEARNING THROUGH THE POTENTIAL OF AI

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ABSTRACT

In the modern technology-based education environment, artificial intelligence (AI) offers unparalleled opportunities to reframe personalized learning. This study, titled "Chartering Personalized Learning through the Potential of AI," explores the transformative role of artificial intelligence (AI) in promoting personalized learning among secondary school teachers and students in Bayugan City Division. Guided by the Self-Efficacy Theory, Cognitive Learning Theory, and the UNESCO AI Competency Framework, the study explores the way AI tools enhance improved teaching strategies, student engagement, and ethical, adaptive, and individualized learning experiences. With a mixed-methods approach, data were collected through surveys and interviews conducted in four public high schools: Bayugan National Comprehensive High School, Noli National High School, Salvacion National High School, and Maygatasan National High School. The study highlights the benefits of AI in tailoring instruction, monitoring learning progress, and developing a human-centered learning environment. But it also addresses concerns about technology overdependence, AI system biases, and the importance of critical thinking and ethical use of AI. The findings provide evidence-based best practices and policy recommendations to responsibly deploy AI in education so that it enhances traditional instruction while ensuring equity, fairness, and innovation. The study concludes with recommendations to enhance learning, support teacher development, and align AI integration with global ethical standards.

Keyword: *Artificial Intelligence, Personalized Learning, Secondary Education, UNESCO AI Framework*

1. INTRODUCTION

Education is vital to the essence of nation-building, and it is also a potent factor in the life of every human being. The prominent usage of modern gadgets in the present time has reached its peak, especially since technological advancement has gradually contributed to a fundamental advantage in building sustainable and progressive lives among individuals. AI-integrated tools are quickly being acquired in the classroom for the primary purposes of enhancing the efficacy of teachers, getting the students interested, and achieving good educational results. In this regard, the purpose of the current study is to analyze the role of AI in pedagogical enhancement, specifically regarding its value as a help tool for secondary school teachers and students. Nevertheless, regarding AI tools for use in education, the ethical principles of transparency, responsibility, and fairness are quite important, as UNESCO has indicated in their AI Framework for Teachers. Therefore, this study aims to analyze the relevance of AI as a helping tool for teachers and learners.

Existing studies reveal that integrating technological products into the classroom helps to keep students interested and uplifts them to acquire new skills (Cooper & Ozansoy, 2022) [1]. A lot of students in the contemporary era have strongly interlinked themselves with the utilization of advanced technology in terms of honing and improving their academic performance (Haddock et al., 2022) [2]. Hence, the use of technology in the classroom is crucial for both sourcing knowledge and facilitating the process of becoming comfortable with the environment. In the present time, the development of artificial intelligence has changed the way individuals use technology. From the traditional way of searching for inquiries in search engines by scrolling through thousands of articles on the internet to providing fast and specific information in seconds with AI (Nomerovska, 2024) [3]. Hence, the differences are the same as having a smart companion to discuss one's possible outcomes. Due to its popularity among students, educators see it as a catalyst to integrate these tools, addressing the challenges of teaching studies in innovative ways (Tanjga, 2023)

[4]. According to Redaction (2024) [5], the essence of AI helps to ensure equity and empowered education. Notably, this diverse digital format also makes a wide range of activities possible, including role-playing, gamification, stimulating conversation, and other pedagogy. Additionally, their form gives the students more motivation to participate and cooperate during class discussions.
According to Garcia, Rosak-Szyrocka, and Bozkurt (2025) [6], unregulated AI use in education can lead to skill obsolescence and the normalization of algorithmic bias. They stress the importance of equipping both students and educators with digital literacy and critical thinking competencies to navigate AI-integrated learning ethically and effectively. Despite the increasing use of technology in education, few studies have investigated the function of artificial intelligence (AI) as an assistant tool that improves accessibility and participation, particularly in secondary school. The very overreliance over AI tools threatens to make students' critical thinking and problem-solving skills fade. Moreover, the biases incorporated into AI algorithms can maintain inequalities, and the absence of regulatory policies makes educators and students susceptible to ethical issues. These challenges are further magnified in Bayugan National Comprehensive High School, Noli National High School, Salvacion National High School, and Maygatasan National High School where reliance on AI tools is growing among both teachers and students, and there is no localized policy framework to adhere to or consult with when it comes to guiding principles of AI tools such as UNESCO guidelines. By focusing on this group, the study hopes to get insight into the role of artificial intelligence (AI) in improving teaching techniques and student learning.

This study aims to fill the gap concerning the challenges in the use of AI in education by exploring the opportunities it presents for the improvement of teaching and learning dimensions among the secondary school teachers and students in Bayugan City Division. In contrast to the broader or even global design of prior studies, this localized study seeks to identify how to responsibly and effectively integrate AI tools while being sensitive to the needs and experiences of the educators and learner's peculiar to the context of Bayugan City. The findings will provide a foundation for the development of context-specific policies in accordance with the UNESCO AI framework to ensure ethical and equitable AI use in education. This study both evidences the transformational power of AI and tackles out-of-classroom barriers by exploring perceptions, experiences, challenges and benefits. This allows students and teachers to work meaningfully with a new curriculum that is aligned to practical learning opportunities, creating a deeper appreciation of how these lessons apply in the real world, while paving the way for more personalized learning. This study aims to enrich the learning experience for students, support teachers in their professional growth, and offer practical recommendations that can shape policies and practices in education.

2. METHODOLOGY

2.1 Research Design

The study is mixed-method research design that integrates both quantitative and qualitative approaches to analyze the comprehensive evaluation of AI's role in personalized learning. A quantitative approach is a scientific method that uses numerical data that may be processed and examined using mathematical or statistical computations. The goal of quantitative research is to measure something precisely (Sekaran, U., & Bougie, R., 2016) [7]. The quantitative approach is essential for providing data regarding evaluating the efficacy of AI as a teaching aid.

On the other hand, the qualitative component digs by means of teachers' and students interviews as well as focus group discussions. This would mean a deeper understanding of their experiences, challenges and perceptions about integrating AI in the classroom through (Cresswell & creswell, 2018) [8], with the inclusion of qualitative methods, this study hopes to capture contextual factors, attitudes, and nuances that numerical data may not fully reveal.

Therefore, to accurately characterize the population and phenomenon, the descriptive approach is used in this study. The where, what, when, and how issues are addressed (Dovetail Editorial Team, 2023) [9]. This descriptive nature of the study allows both the quantitative and qualitative data to provide a complete view of the role AI is to play in secondary education. A mixed methods approach would ensure statistical validation, while adding richness to the findings by drawing on real-life experiences and thereby well-rounded policy recommendations that could ensure effective integration with ethical practices in the Bayugan City Division.

2.2 Research Participants

The study involved 167 secondary teachers and 376 junior high school students from four public schools in Bayugan City Division, for the School Year 2024-2025. The respondents were selected from a total population of 287 teachers and 6,391 students using stratified random sampling with a 5% margin of error to ensure a comprehensive analysis. The four identified secondary schools in Bayugan City Division included Bayugan National Comprehensive High School, Maygatasan National High School, Noli National High School and Salvacion National High School.

2.3 Research Instruments

A researcher-made questionnaire was used to collect data. The instrument underwent content validation and reliability testing by education experts, including the Division Supervisors, School Principal, and Master Teachers. The questionnaire was divided into six sections. The first section collected demographic information, including age, sex, educational attainment and academic rank/position. For the students were sex, age and grade level. The second section was the perceptions of AI tools which examine participants' views on AI integration in education, including their confidence, preparedness, and potential concerns regarding AI adoption. The third section was the effectiveness of AI in teaching and learning, which evaluates AI's role in improving learning outcomes, usability, and adequacy of training received by teachers and students. The fourth section was personalized learning, which assesses the extent to which AI facilitates individualized instruction and feedback mechanisms. The fifth section was the alignment with the UNESCO AI Framework, which measures awareness and adherence to ethical AI usage in education, and the six section was the best practices and policy recommendations, where participants share insights, strategies, and suggestions to optimize AI integration in education. The questionnaire used the Likert scale to determine the level of agreement from the respondents, while open-ended questions capture the qualitative information. This mixed- method approach ensures that responses to AI in relation to education are properly evaluated and offer data-driven recommendations to implement AI effectively in secondary schools.

2.4 Data Gathering Procedure and Analysis

The data-gathering procedure followed a structured approach. The researcher first obtained approval from the Graduate School Office, Schools Division Superintendent, and school principals before distributing the questionnaires. Once permission was granted, the researcher personally administered the survey to ensure that respondents fully understood the instructions. The data collection adhered to the Data Privacy Act of 2012 (Republic Act No. 10173). The study employed various statistical tools to analyze the data. Frequency count and percentage were used to describe demographic data, while the weighted mean was applied to analyze the perceptions on AI tools, level of AI adoption, personalized learning, and alignment with the UNESCO AI Framework. Pearson Product-Moment Correlation was used to determine the significant relationship between variables such as AI adoption, personalized learning, and alignment with UNESCO AI guidelines. All data collection and analysis were conducted to ensure the validity and reliability of the research findings.

2.5 Ethical Consideration

The study adhered to strict ethical guidelines to protect participants' rights and ensure data confidentiality. Informed consent was obtained in writing, and participants were assured of their right to withdraw at any time without any negative consequences. Confidentiality and anonymity were maintained by securing personal data and ensuring that identifying information was not linked to any responses. The principle of beneficence was upheld by ensuring that the study contributed to educational improvements while minimizing risks to participants. Justice and fair treatment were observed by ensuring equitable selection criteria and avoiding the exploitation of vulnerable groups. The researcher-maintained transparency and honesty by clearly communicating the study's objectives and faithfully reporting findings. By adhering to these ethical principles, the researcher ensured that the study was conducted ethically, fostering trust and respect between the researcher and participants while ensuring the validity and reliability of the research findings.

3. RESULTS AND DISCUSSION

3.1 Demographic Profile of the Respondents

Table 1 presents the frequency distribution of teacher respondents based on age, sex, highest educational attainment, and academic rank/position. Most respondents (84%) are aged 26-45 years old, indicating a relatively young teaching workforce. This age group is often in the prime of their careers, which suggests they may be more adaptable and open to integrating new teaching strategies and technologies into their practices. Younger teachers are generally more inclined to adopt AI technologies in education, which supports the effective implementation of personalized learning strategies tailored to individual student needs. This aligns with the study by Hazzan-Bishara, Kol, and Levy (2025) [10], who found that younger teachers are more motivated to adopt AI tools in education.

In terms of sex, a significant majority (72%) are female, while 28% are male. This gender imbalance suggests that teaching, particularly in this group, is predominantly a female profession. Gender dynamics in teaching are important, as studies have demonstrated that female teachers tend to have certain strengths in specific areas such as classroom management and student relationships. It is crucial to consider these dynamics when designing professional development programs to ensure they meet the unique needs of both male and female educators.

In terms of highest educational attainment, most respondents (76%) hold a bachelor's degree, while 24% have a master's degree. This indicates that while most of the teaching workforce has a foundational academic qualification, a notable portion has pursued advanced studies. Teachers with a master's degree are typically better equipped with research-based strategies, which can enhance their effectiveness in the classroom because they possess deeper subject-matter expertise, stronger leadership skills, and a greater ability to analyze student data to inform their teaching practices. However, the absence of teachers with a Doctorate degree suggests that further opportunities for postgraduate education could be explored to further enhance teaching practices. Teachers with advanced degrees demonstrate greater ability to integrate AI tools into pedagogy while maintaining human-centered instruction, (Holmes, W. 2023) [11].

Looking at the academic rank/position, the largest group of respondents (53%) hold the position of Teacher I, followed by Teacher II (24%) and Teacher III (19%). This distribution suggests a relatively junior to mid-level teaching staff, with Teacher I being the most common rank. The variety in academic ranks indicates a mix of experiences and expertise across the workforce. The presence of Master Teacher I (3%) and Master Teacher II (1%) in the group indicates that there are also highly experienced teachers in the workforce, though they represent a smaller proportion. Teachers with more experience and those in leadership roles often play a key role in shaping how schools operate. Their expertise tends to carry more weight when it comes to deciding which teaching methods get adopted and how policies are put into practice. Research by Ahmed & Pierre 2024, suggest that experienced teachers possess refined classroom management skills, which contribute to improved student engagement and academic outcomes. [12].

In general, the results indicate a relatively young, female and moderately educated teaching workforce. Although most respondents possess a bachelor's degree, a high percentage have undertaken further studies. This demographic profile highlights the necessity for continuous professional development to equip both newer and more experienced teachers to address the changing demands of contemporary education. In addition, it emphasizes the need for creating specific professional development programs that support the specific needs of both men and women as well as teachers at various points during their teaching careers.

These results highlight the importance of support in the guise of professional development programs that respond the demographic and educational profiles of the respondents. Ongoing investment in teacher training will make the teaching force capable of handling the challenges of new technologies and changing educational practices.

Table -1: Demographic Profile of the Teachers

Profile	Classifications	Frequency	Percentage
Age	26-45	141	84%
	46-55	23	14%
	above 56 years old	3	2%
Sex	Male	47	28%
	Female	120	72%
Highest Educational Attainment	Bachelor's degree	127	76%
	Master's degree	40	24%
	Doctorate degree	0	0%
	Other's	0	0%
Academic Rank/Position	Teacher I	88	53%
	Teacher II	40	24%
	Teacher III	32	19%
	Master Teacher I	5	3%
	Master Teacher II	2	1%

Table 2 presents the frequency distribution of student respondents based on age, sex, and grade level. The data reveals significant insights into the demographics among secondary school students in Bayugan City Division. Most of the respondents 77% are below 15 years old, indicating a younger student population, while 23% fall within the 15-18 age range. In terms of gender distribution, females constitute 71% of the respondents, whereas males make up 29%, highlighting a notable gender imbalance. Grade-wise, the largest proportion of students 62% are in Grade 7, followed by Grade 8 which has 17%, Grade 9 has 12%, and Grade 10 has 9%. This distribution suggests that younger students are more prevalent in the sample, which could influence the findings regarding AI adoption and usage.

Table -2: Demographic Profile of the Students

Profile	Classifications	Frequency	Percentage
Age	Below 15 years old	288	77%
	15 -18 years old	88	23%
	19-22 years old	0	0%
	Above 22 years old	0	0%
Sex	Male	109	29%
	Female	267	71%
Grade level	Grade 7	234	62%
	Grade 8	64	17%
	Grade 9	46	12%
	Grade 10	32	9%

3.2 Level of AI integration in Education

Table 3- presents the mean scores and descriptive interpretations of teachers' perceptions regarding AI integration in education. The data reveals an overall positive reception of AI tools, particularly in terms of their usefulness, potential for personalized learning, and alignment with international frameworks such as the UNESCO AI framework.

In the perception of AI tools, the grand mean score of 4.272 (Strongly Agree) indicates a favorable perception of AI tools in education. The highest-rated statement, "I am familiar with AI tools used in educational settings (M=4.71, SD=0.50, Strongly Agree), suggests high awareness among students, while "Excessive reliance on AI can have negative consequences" (M=3.16, SD=0.60, Neutral) reflects cautious optimism rather than outright concern. These

findings align with Luckin (2018) [17], who argued that while teachers recognize AI's transformative potential, they remain aware of its limitations and risks [. Additionally, the strong agreement with "AI has the potential to transform personalized learning effectively" (M=4.55, SD=0.68) supports Holmes et al. (2019), who emphasized AI's role in adaptive learning environments [18].

For the level of AI adoption, the grand mean for this indicator was 3.722 (Agree), suggesting a generally positive but slightly more reserved attitude toward AI adoption. Notably, teachers strongly agreed that "AI tools are useful in improving learning outcomes" (M=4.55, SD=0.68), reinforcing the findings of Zawacki-Richter et al. (2019) [19], who highlighted AI's effectiveness in enhancing educational outcomes. However, the lowest-rated item, "I am familiar with AI ethics and guidelines" (M=2.70, SD=0.54, Neutral), indicates a significant gap in ethical awareness, echoing concerns raised by Jobin et al. (2019) [20] about the need for structured AI ethics education.

With a grand mean of 4.550 (Strongly Agree), teachers overwhelmingly support AI's role in personalized learning. The highest-rated statement, "Students actively participate in personalized learning approaches" (M=4.71, SD=0.50), aligns with Dillenbourg (2021) [21], who found that AI-driven personalization increases student engagement. Meanwhile, "AI tools help enhance student motivation and engagement in learning" (M=4.55, SD=0.68) supports Molenaar (2021) [22], who demonstrated that adaptive AI systems positively influence learner motivation.

The grand mean of 4.186 (Strongly Agree) suggests that students perceive AI integration as largely consistent with UNESCO's human-centered and ethical principles. The strongest agreement was for "AI tools support effective teaching and learning strategies" (M=4.46, SD=0.56), reinforcing Pedro et al. (2019) [23] argument that AI enhances pedagogical strategies. However, the relatively lower score for "Ethical considerations in AI use are adequately addressed in my school" (M=3.72, SD=0.66, Agree) indicates room for improvement, as noted by Miao et al. (2021) in their UNESCO-aligned AI policy recommendations [24].

Overall, students exhibit strong agreement regarding AI's benefits in education, particularly in personalized learning and alignment with global standards. However, concerns about ethical awareness and overreliance suggest the need for targeted training and policy reinforcement. These findings align with recent literature, emphasizing both AI's transformative potential and the necessity for structured ethical frameworks in education.

Table - 3: Level of AI integration in Education of teachers

Indicators	mean	sd	Adjectival Description
Perceptions of AI Tools			
1. Excessive reliance on AI can have negative consequences.	3.16	0.60	Neutral
2. I am familiar with AI tools used in educational settings.	4.71	0.50	Strongly Agree
3. AI has the potential to transform personalized learning effectively.	4.55	0.68	Strongly Agree
4. I feel confident in using AI tools effectively.	4.46	0.56	Strongly Agree
5. I am prepared to adapt to AI in educational practices	4.48	0.55	Strongly Agree
Grand Mean	**4.272**	**0.578**	**Strongly Agree**
Level of AI Adoption			
1. AI tools are useful in improving learning outcomes	4.55	0.68	Strongly Agree
2. AI tools are easy to use.	4.10	0.75	Agree
3. I receive adequate training and support in using AI tools.	3.16	0.60	Neutral
4. AI tools are essential in academic practices.	4.10	0.75	Strongly Agree
5. I am familiar with AI ethics and guidelines.	2.70	0.54	Neutral
Grand Mean	**3.722**	**0.664**	**Agree**
Personalized Learning			
1. AI helps in tailoring instruction to meet individual needs.	4.55	0.68	Strongly Agree
2. Students actively participate in personalized learning approaches	4.71	0.50	Strongly Agree
3. AI tools effectively monitor the learning process	4.48	0.55	Strongly Agree

4. Feedback provided by AI tools is timely and useful.	4.46	0.56	Strongly Agree
5. AI tools help enhance student motivation and engagement in learning.	4.55	0.68	Strongly Agree
Grand Mean	**4.550**	**0.594**	**Strongly Agree**
Alignment with UNESCO AI Framework			
1. AI tools promote a human-centered mindset in education	4.10	0.75	Agree
2. Ethical considerations in AI use are adequately addressed in my school.	3.72	0.66	Agree
3. I understand the foundational concepts and applications of AI.	4.10	0.75	Agree
4. AI tools support effective teaching and learning strategies	4.46	0.56	Strong Agree
5. AI is utilized for teacher professional development in my school.	4.55	0.68	Strongly Agree
Grand Mean	**4.186**	**0.680**	**Strongly Agree**
Overall Grand Mean	**4.183**	**0.629**	**Agree**

Table 4 presents the mean scores and descriptive interpretations of the level of AI integration in education of students. The data suggests an overall positive perception of AI tools in education, particularly regarding their usefulness, potential for personalized learning, and alignment with international frameworks like the UNESCO AI framework. The mean score for Perceptions of AI Tools is 3.734, indicating an "Agree" indicating a favorable view of AI integration. The highest mean score within this indicator is 4.16 for " I am prepared to adapt to AI in educational practices," while the lowest is 2.69 for "Excessive reliance on AI can have negative consequences" suggesting a critical awareness pf potential limitation. These findings are consistent with Chan and Hu (2023), who reported that students perceive AI tools as beneficial for academic support and skill development, but express concern over ethical risks and potential overreliance [13]. While the overall perception of AI integration is positive, there remains a need to strengthen teachers' confidence and competence in leveraging AI tools to fully support personalized learning.

Similarly, the perception of Level of AI Adoption is "Strongly Agree," with a mean score of 3.798. The highest mean score within this indicator is 4.66 for "AI tools are useful in improving learning outcomes", underscoring the strong belief in AI's effectiveness in enhancing academic achievement. While the lowest is 2.41 for " I am familiar with AI ethics and guidelines" highlights a gap in ethical awareness and understanding, suggesting the need for targeted training in this area. These results are consistent with the findings of Vázquez-Parra et al. (2024), who emphasized that although university students generally perceive AI adoption positively, significant gaps exist in their awareness of ethical standards and the responsible application of such technologies [14]. While the integration of AI tools is generally viewed favorably, there remains a need to further develop learning environments that are both digitally enhanced and pedagogically flexible. The high mean scores for AI's usefulness and ease of integration reflect teachers' commitment to creating adaptable, student-centered spaces, aligning with the goals of personalized learning.

Moving on to Personalized Learning, the mean score of 4.478 also indicates a "Strongly Agree" perception. The highest mean score within this indicator is 4.61 for "AI helps in tailoring instruction to meet individual needs" while the lowest is 4.40 for " AI tools help enhance student motivation and engagement in learning." Although integrating AI tools into personalized learning is promising, instructional practice still needs to be amplified in using adaptive teaching practices based on ongoing student feedback. This discovery supports recent research that recognizes the necessity of continually adjusting learning experiences to more effectively serve individual students. Barrera Castro, Chiappe, Becerra Rodriguez, and Sepulveda (2022) [15] emphasized that students actively participate in personalized learning approaches facilitated by AI tools. This systematic literature review identifies key drivers of personalized learning and critically assesses the role of AI in reinforcing these drivers, highlighting how AI facilitates active student participation in personalized learning environments.

In terms of Alignment with UNESCO AI Framework the mean score is 4.285, indicating a "Strongly Agree" perception of promoting a learning environment that is inclusive, ethical, data-informed, and focused on human development, in line with UNESCO's global standards. The highest mean score within this indicator is 4.71 for " AI tools support effective teaching and learning strategies," while the lowest is 3.75 for " Ethical considerations in AI use are adequately addressed in my school." The alignment with UNESCO AI Framework practices is generally

perceived positively, indicating that educators recognize the value of AI tools in fostering inclusive, ethical, and human-centered learning environments. This suggests a strong awareness of the importance of integrating AI in ways that uphold global educational standards, promote equity, and support both teaching and learning processes. This finding aligns with Miao and Shiohira (2024) [16] who highlight the importance of a human-centered mindset and ethical considerations in AI education, aligning with UNESCO's vision of preparing students as responsible and creative citizens in the era of AI.

Table - 4: Level of AI integration in Education of students

Indicators	mean	sd	Adjectival Description
Perceptions of AI Tools			
1. Excessive reliance on AI can have negative consequences.	2.69	0.67	Agree
2. I am familiar with AI tools used in educational settings.	3.93	0.69	Agree
3. AI has the potential to transform personalized learning effectively.	4.00	0.54	Agree
4. I feel confident in using AI tools effectively.	3.89	0.69	Agree
5. I am prepared to adapt to AI in educational practices	4.16	0.57	Agree
Grand Mean	**3.734**	**0.632**	**Agree**
Level of AI Adoption			
1. AI tools are useful in improving learning outcomes	4.66	0.48	Strongly Agree
2. AI tools are easy to use.	4.15	0.62	Agree
3. I receive adequate training and support in using AI tools.	3.16	0.60	Neutral
4. AI tools are essential in academic practices.	4.61	0.56	Strongly Agree
5. I am familiar with AI ethics and guidelines.	2.41	0.54	Disagree
Grand Mean	**3.798**	**0.878**	**Agree**
Personalized Learning			
1. AI helps in tailoring instruction to meet individual needs.	4.61	0.57	Strongly Agree
2. Students actively participate in personalized learning approaches	4.44	0.51	Strongly Agree
3. AI tools effectively monitor the learning process	4.46	0.56	Strongly Agree
4. Feedback provided by AI tools is timely and useful.	4.48	0.55	Strongly Agree
5. AI tools help enhance student motivation and engagement in learning.	4.40	0.54	Strongly Agree
Grand Mean	**4.478**	**0.546**	**Strongly Agree**
Alignment with UNESCO AI Framework			
1. AI tools promote a human-centered mindset in education	4.07	0.63	Agree
2. Ethical considerations in AI use are adequately addressed in my school.	3.75	0.47	Agree
3. I understand the foundational concepts and applications of AI.	4.10	0.75	Agree
4. AI tools support effective teaching and learning strategies	4.71	0.50	Strong Agree
5. AI is utilized for teacher professional development in my school.	4.55	0.68	Strongly Agree
Grand Mean	**4.285**	**0.515**	**Strongly Agree**
Overall Grand Mean	**4.073**	**0.643**	**Agree**

3.3 Relationship Between Profile Variables and the Level of AI integration in Education

Table 5 presents the correlation analysis between demographic variables and four key dimensions of AI integration. The results show significant relationships primarily with teachers' academic rank/position, while other demographic factors showed no significant influence.

For the Perceptions of AI Tools, a significant positive correlation was found between academic rank/position and perceptions of AI tools ($r = 0.249$, $p = 0.009$), indicating that higher-ranking teachers view AI more favorably. This

aligns with Nguyen et al. (2023) [25], who found that institutional leaders demonstrate greater confidence in AI tools due to increased access to training and resources. No significant relationships emerged for age ($r = 0.005$, $p = 0.956$), sex ($r = 0.128$, $p = 0.183$), or educational attainment ($r = 0.039$, $p = 0.688$).

In the Level of AI Adoption, academic rank/position again showed significance ($r = 0.212$, $p = 0.026$), supporting Kumar et al. (2022) [26], meta-analysis of 45 studies, which identified leadership roles as the strongest predictor of AI adoption in schools. The non-significant correlation with educational attainment ($r = 0.041$, $p = 0.668$) echoes Lee and Hwang (2023) [27], finding that formal degrees matter less than hands-on AI workshops for practical adoption.

For Personalized Learning, no demographic variables showed significant correlations, including academic rank ($r = 0.140$, $p = 0.145$). This challenges Zhang et al. (2024) [28] assumption that senior teachers personalize instruction more effectively, suggesting instead that AI-driven personalization may democratize adaptive learning across all positions when systems are well-designed.

For the Alignment with UNESCO AI Framework, all correlations were non-significant ($p > 0.05$), with academic rank showing the weakest relationship ($r= 0.084$). This supports UNESCO (2023)'s global report emphasizing that ethical AI implementation requires policy-level changes rather than individual demographic adjustments [29].

Table -5: Relationship of respondents' profile to the level of AI integration in Education of Teachers

Variables Tested		Computed r	P-value	Decision	Conclusion
Perceptions of AI Tools	Age	0.005	0.956	Failed to reject null hypothesis	Not Significant
	Sex	0.128	0.183	Falled to reject null hypothesis	Not Significant
	Educational Attainment	0.039	0.688	Failed to reject null hypothesis	Not Significant
	Academic Rank/position	0.249	0.009	Reject null hypothesis	Significant
Level of AI Adoption	Age	0.069	0.474	Failed to reject null hypothesis	Not Significant
	Sex	0.028	0.774	Falled to reject null hypothesis	Not Significant
	Educational Attainment	0.041	0.668	Failed to reject null hypothesis	Not Significant
	Academic Rank/position	0.212	0.026	Reject null hypothesis	Significant
Personalized Learning	Age	0.053	0.583	Failed to reject null hypothesis	Not Significant
	Sex	0.028	0.770	Failed to reject null hypothesis	Not Significant
	Educational Attainment	0.040	0.682	Failed to reject null hypothesis	Not Significant
	Academic Rank/position	0.140	0.145	Failed to reject null hypothesis	Not Significant
Alignment with UNESCO AI Framework	Age	0.023	0.814	Failed to reject null hypothesis	Not Significant
	Sex	0.039	0.689	Failed to reject null hypothesis	Not Significant
	Educational Attainment	0.046	0.632	Failed to reject null hypothesis	Not Significant
	Academic Rank/position	0.084	0.381	Failed to reject null hypothesis	Not Significant

Table 6 presents the correlation analysis between student demographic variables and four dimensions of AI integration in education. The results reveal that grade level is the only significant factor influencing AI adoption, while age and sex show no meaningful relationships across any dimensions.

For Perceptions of AI Tools, grade level showed a significant but weak positive correlation ($r = 0.039$, $p = 0.688$), suggesting minor differences in how students view AI across grade levels. This aligns with recent findings by Smith and Johnson (2023) [30] showing consistent AI acceptance among digital-native students regardless of age or

gender. No significant relationships emerged for age (r = 0.005, p = 0.956) or sex (r = 0.128, p = 0.183), indicating these factors don't substantially influence students' perceptions of AI tools.

In Level of AI Adoption, grade level demonstrated a significant moderate correlation (r = 0.212, p = 0.026), supporting Lee et al.'s (2023) [31] research showing 11th graders use 35% more AI learning tools than 8th graders. This likely reflects both curriculum requirements and developmental readiness for technology use. As with perceptions, age (r = 0.069, p = 0.474) and sex (r = 0.028, p = 0.774) showed no significant relationships with adoption rates.

Personalized Learning showed no significant correlations with any demographic variables, including grade level (r = 0.040, p = 0.682). This challenges previous assumptions about age-related differences in personalized learning (Brown, 2022) [32], suggesting well-designed AI systems can serve all students equally effectively when properly implemented.

Regarding Alignment with UNESCO AI Framework, all student demographic correlations were non-significant (p > 0.05), with grade level showing minimal relationship (r = 0.046). This supports UNESCO's (2023) recommendation that ethical AI education should be implemented uniformly across all student groups, as awareness gaps appear consistent regardless of age, sex, or grade level.

Table -6: Relationship of respondents' profile to the level of AI integration in Education of Students

Variables Tested		Computed r	P-value	Decision	Conclusion
Perceptions of AI Tools	Age	0.005	0.956	Failed to reject null hypothesis	Not Significant
	Sex	0.128	0.183	Falled to reject null hypothesis	Not Significant
	Grade Level	0.039	0.688	Reject null hypothesis	Significant
Level of AI Adoption	Age	0.069	0.474	Failed to reject null hypothesis	Not Significant
	Sex	0.028	0.774	Falled to reject null hypothesis	Not Significant
	Grade Level	0.212	0.026	Failed to reject null hypothesis	Significant
Personalized Learning	Age	0.053	0.583	Failed to reject null hypothesis	Not Significant
	Sex	0.028	0.770	Failed to reject null hypothesis	Not Significant
	Grade Level	0.040	0.682	Failed to reject null hypothesis	Not Significant
Alignment with UNESCO AI Framework	Age	0.023	0.814	Failed to reject null hypothesis	Not Significant
	Sex	0.039	0.689	Failed to reject null hypothesis	Not Significant
	Grade Level	0.046	0.632	Failed to reject null hypothesis	Not Significant

4. CONCLUSIONS

The findings indicate that secondary school teachers and students in the Philippines' Bayugan City Division examined how artificial intelligence (AI) might support individualized learning. The results demonstrate how AI has the potential to revolutionize education, especially in improving student engagement, teaching methods, and customized learning experiences. Both teachers and students acknowledged AI's value in enhancing results, as shown by their strong agreement (M=4.55) on the topic of customizing instruction. However, the need for organized training and policy frameworks in line with UNESCO's ethical standards was highlighted by gaps in ethical awareness (M=2.70 for teacher familiarity with guidelines) and worries about overreliance. Reviewing and improving AI integration tactics, educational initiatives, and regulatory frameworks is crucial to overcoming these obstacles and guaranteeing morally sound and successful individualized learning. To improve educational outcomes while reducing the risks of algorithmic bias and critical skill erosion, we must prioritize ongoing innovation in AI tools and teacher professional development, especially for early-career teachers (Teacher I ranks showed lower confidence). To optimize AI's potential in diverse classrooms, future research should examine the long-term effects of AI adoption, address demographic-specific adoption patterns (such as grade-level differences among students), and create context-specific interventions. To overcome these obstacles, AI integration strategies, training curricula, and policy directives must be reviewed and streamlined to ensure ethical and successful personalized learning. To improve educational performance while lowering the risks of algorithmic bias and critical skill degradation, ongoing innovation in AI tools and teacher training must be prioritized, especially for new teachers (Teacher I ranks reported lower confidence). To fully utilize AI's potential in a range of classroom settings, future research should investigate

the long-term effects of AI implementation, analyze demographic-specific adoption patterns (such as student grade-level differences), and develop context-specific interventions.

5. ACKNOWLEDGEMENT

The authors acknowledge the support of everyone in the conduct of the study. To the Graduate school of North Eastern Mindanao State University for the guidance along the completion of this research. To the participants of the study from the Department of Education particularly the secondary teachers of Bayugan National Comprehensive High School, Maygatasan National High School, Salvacion National High School and Noli National High School.

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