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Integration of Artificial Intelligence (AI) in School Management: MATATAG Implementation in Elementary Education

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Abstract

Aim: This study examined the relationship between AI integration in school management and the enhancement of the MATATAG Curriculum implementation in East and West Tacurong City.

Methodology: This quantitative study utilized a descriptive-correlational design to examine the relationship between AI integration in school management and the enhancement of the MATATAG Curriculum implementation in East and West Tacurong City. The study involved selected school heads and teachers from elementary schools in these districts during the school year 2024-2025. The study employed statistical tools such as Mean to assess the extent of AI utilization in school management and curriculum implementation and Pearson r correlation to determine their relationship.

Results: The results of the study reveal a strong and statistically significant relationship between the extent of integration of Artificial Intelligence (AI) in school management and the enhancement level of the MATATAG Curriculum implementation, with a correlation coefficient of r = 0.875, which is significantly higher than the p-value of 0.016 at the 0.05 level of significance.

Conclusion: AI is widely utilized in administrative tasks, decision-making, and personalized learning, enhancing efficiency in grading, attendance tracking, and performance monitoring. However, it improves curriculum implementation by streamlining lesson planning, assessment, and decision-making while optimizing resources and enhancing instructional quality. Indeed, a strong correlation confirms AI's crucial role in improving educational practices, resource allocation, and data-driven decision-making in schools.

Keywords: *Administrative Efficiency, AI-Driven Decision-Making, Automation of Routine Tasks, Decision-making efficacy, Integration of AI in Administrative Processes, MATATAG Curriculum Implementation*

INTRODUCTION

The rapid evolution of technology has reshaped various industries, and education is no exception. Artificial Intelligence (AI) is increasingly seen as a game-changer in school administration, promising to enhance efficiency, automate routine tasks, and provide data-driven insights. However, while AI's potential is immense, its successful integration requires careful examination to address challenges, ethical concerns, and institutional readiness.

On a global scale, AI has been progressively incorporated into educational systems to streamline administrative processes, improve decision-making, and optimize resource allocation. Many institutions leverage AI for attendance tracking, predictive analytics, and personalized learning support (Buckingham, 2019; UNESCO, 2020). However, the degree of implementation varies across countries due to differences in technological infrastructure, policy frameworks, and institutional capacity. As AI continues to revolutionize school administration worldwide, localized studies are necessary to explore its specific implications in different educational contexts.

In the Philippines, the interest in AI adoption for school administration is growing, yet research on its actual implementation and impact remains limited. While international studies provide valuable insights, they do not fully capture the unique socio-cultural, economic, and educational landscape of the country. Challenges such as limited

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digital infrastructure, budget constraints, and varying levels of technological proficiency among educators highlight the need for a focused analysis of AI's role in school management within the Philippine setting.

Zooming into the local context, Tacurong City faces similar challenges in integrating AI into school administration. While AI has the potential to support the MATATAG education agenda by improving efficiency and decision-making, many school districts lack concrete policies and sufficient training for educators to effectively utilize AI tools. Urban districts, including those in Region XII, struggle with resource constraints and inconsistent digital readiness, further hindering AI adoption in school (World Economic Forum, 2024).

Despite the growing discourse on AI in education, there remains a significant research gap concerning its practical application in Philippine schools, particularly in Tacurong City. Existing studies often emphasize AI's benefits while overlooking critical aspects such as institutional preparedness, ethical considerations, and potential drawbacks. Without comprehensive research on these areas, policymakers and educators risk adopting AI solutions that may not align with local needs or effectively address existing challenges.

This study, therefore, sought to examine the integration of AI in school administration within Region XII, focusing on its current applications, challenges, and potential impact. By bridging this research gap, the study aims to provide evidence-based insights that can inform policies, strategies, and best practices for AI-driven school management, ultimately contributing to the advancement of the MATATAG education agenda.

Objectives

This study examined the relationship between the integration of artificial intelligence in school management and the enhancement of MATATAG Curriculum implementation in East and West Tacurong Districts, Division of Tacurong City during the school year 2024-2025.

Specifically, it sought to answer the following questions:

1. To what extent is the Integration of Artificial Intelligence (AI) in School Management, in terms of:
    - 1.1. Integration of AI in Administrative Processes;
    - 1.2. Automation of Routine Tasks;
    - 1. 3. AI-driven Decision-Making;
    - 1.4. Personalized Learning Experiences;
    - 1.5. Types of AI Tools;
    - 1.6. Data Utilization; and
    - 1.7. Training and Support Provided to Staff?
2. What is the level of the enhancement of MATATAG Curriculum implementation, in terms of:
    - 2.1. Time Element;
    - 2.2. Work Quality;
    - 2.3. Work Quantity; and
    - 2.4. Resource Optimization
3. Is there a significant relationship between the extent in the Integration of Artificial Intelligence (AI) in School Management, and the enhancement of MATATAG Curriculum implementation?

Hypothesis

This null hypotheses are tested using the 0.5 level of significance.

1. There is no significant relationship between the extents in the Integration of Artificial Intelligence (AI) in School Management, and the enhancement of MATATAG Curriculum implementation.

METHODS

Research Design

This study employed a quantitative research design, specifically a descriptive-correlational approach, to examine the relationship between the integration of artificial intelligence (AI) in school management and the enhancement of MATATAG Curriculum implementation. The research focused on public elementary schools in East and West Tacurong Districts, Division of Tacurong City, during the school year 2024-2025.

A descriptive-correlational research design was appropriate for this study, as it allowed the researcher to analyze the extent to which AI-driven tools and systems influenced various aspects of school management, such as administrative efficiency, decision-making, and curriculum monitoring. According to Bhandari (2021), a correlational

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research design investigates relationships between variables without direct manipulation. This design was particularly relevant in the context of AI utilization in schools, as it enabled an objective assessment of how AI-driven decision-making, data utilization, and digital tools contributed to curriculum implementation.

Population and Sampling

The respondents of this study were selected using various sampling techniques. First, the Total Enumeration Sampling Technique was used for the selection of all elementary schools in East and West Tacurong Districts, Division of Tacurong City, during the school year 2024-2025. Total Enumeration Sampling, or a census approach, involved including all elementary schools within these districts, ensuring comprehensive coverage of the population. This method was essential for obtaining a complete understanding of the context in which the MATATAG Curriculum was implemented. Furthermore, the Simple Random Sampling technique was used to select teachers from the chosen elementary schools in East and West Tacurong Districts.

Instrument

This study employed a researcher-made survey questionnaire, which was validated and evaluated by a panel of expert validators to ensure its content validity and reliability.

Data Collection

To ensure reliable and authentic findings, the researcher adhered to a methodology that aligned with the objectives of the inquiry. Initially, the study's implementation required the endorsement of the DepEd-Division Superintendent of Tacurong City Division and the CGS Dean through the affixation of their respective signatures on a formal document. Additionally, a letter of authorization was dispatched to the school district supervisors.

Treatment of Data

Upon the culmination of the study, the collected data were systematically arranged, presented in tabular form, subjected to rigorous analysis, and subsequently interpreted. Mean was employed to calculate the extent of the integration of Artificial Intelligence (AI) in school management and the level of enhancement in the implementation of the MATATAG Curriculum.

To assess the extent of the integration of Artificial Intelligence (AI) in school management, the scale below, adopted from Mendoza (2022), was used:

Table 1.
Scale for the extent of the integration of Artificial Intelligence (AI) in school management

RATING	RANGE OF MEANS	DESCRIPTION	INTERPRETATION
5	4.20-5.00	Highly Agree	Very High Extent
4	3.40-4.19	Agree	High Extent
3	2.60-3.39	Moderately Agree	Moderate Extent
2	1.80-2.59	Disagree	Low Extent
1	1.00-1.79	Highly Disagree	Very Low Extent

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Another rating scale, adopted from De Guzman and Valdez (2022), was used to evaluate the level of enhancement in the implementation of the MATATAG Curriculum:

Table 2.
Scale for the level of enhancement in the implementation of the MATATAG Curriculum

RATING	RANGE OF MEANS	DESCRIPTION	INTERPRETATION
5	4.20-5.00	Agree	Very Highly Implemented
4	3.40-4.19	Fairly Agree	Highly Implemented
3	2.60-3.39	Neutral	Satisfactorily Implemented
2	1.80-2.59	Fairly Disagree	Fairly Implemented
1	1.00-1.79	Disagree	Poorly Implemented

On the other hand, Pearson *r* Correlation was also employed to determine the significant relationship between the extent of AI utilization and the level of school management in the MATATAG Curriculum implementation.

Ethical Considerations

The researcher ensured that all research protocols involving ethics in research such as informed consent, privacy and confidentiality, data security, bias and fairness and transparency and accountability were complied with for the protection of all people and institutions involved in the conduct of the study.

RESULTS and DISCUSSION

Table 3.
The extent in the Integration of Artificial Intelligence (AI) in School Management

Indicator	Mean	SD	Description	Interpretation
1.1. Integration of AI in Administrative Processes;	3.70	0.91	Agree	High Extent
1.2. Automation of Routine Tasks;	3.70	1.2	Agree	High Extent
1.3. AI – driven Decision-Making;	3.74	1	Agree	High Extent
1.4. Personalized Learning Experiences;	4.06	0.8	Agree	High Extent
1.5. Types of AI Tools;	3.48	0.9	Agree	High Extent
1.6. Data Utilization;	3.34	1.1	Moderately agree	Moderate Extent
1.7. Training and Support	3.61	1	Agree	High Extent

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Provided to Staff.				
Grand Mean	3.74	0.99	Agree	High Extent

The study's findings indicate that respondents generally "agree" that AI integration in school management—particularly in administrative processes, automation of routine tasks, AI-driven decision-making, personalized learning experiences, types of AI tools, and training/support provided to staff—has a positive impact. These aspects of AI contribute to increased efficiency, improved decision-making, and enhanced learning experiences in the MATATAG implementation for elementary education. However, the moderate agreement regarding data utilization suggests that while AI plays a role in handling data, challenges such as accessibility, proper analysis, and application of insights may limit its full effectiveness.

The results suggest that AI is successfully integrated into school management and learning processes, though some areas still need improvement. The "agree" rating on various AI functions indicates that educators and administrators agree that AI brings advantages – especially if it can automate administrative tasks, improve decision making, and improve student learning with personalized solutions. The "moderately agree" rating on data utilization shows that schools may have difficulty using AI-based insights fully as it may impede the ability to capture insights due to issues such as not receiving enough training, concerns over data privacy, or technology limitations for data analytics.

To further optimize AI integration in school management under the MATATAG curriculum, the following actions are recommended:

The DepEd (Department of Education) will help the administrators and educators in Enhancing Data Utilization with Implement more advanced AI-driven analytics tools to improve data collection, interpretation, and application in decision-making. Conduct workshops and training sessions for educators and administrators on how to effectively utilize AI-generated data insights, and strengthen data security and privacy policies to ensure ethical and responsible use of AI in managing school data.

Secondly, improving AI training and support Increase professional development opportunities focused on AI literacy for school staff and provide technical assistance and help desks for troubleshooting AI-related concerns.

Lastly, optimizing AI Tools for Administrative Processes and Learning to continuously update AI systems to align with school-specific needs and improve automation efficiency. Integrate AI more effectively into learning platforms to provide better personalized learning experiences for students.

By addressing these recommendations, AI's role in school management can be maximized, ensuring a more effective and sustainable implementation of the MATATAG curriculum in elementary education.

Table 4.
Summary of the MATATAG Curriculum Implementation

Indicator	Mean	SD	Description	Interpretation
2.1. Time Element	3.92	0.74	Fairly Agree	Highly Implemented
2.2. Work Quality	3.86	0.82	Fairly Agree	Highly Implemented
2.3. Work Quantity	3.87	0.85	Fairly Agree	Highly Implemented
3.4. Resource Optimization	3.89	0.87	Fairly Agree	Highly Implemented
Grand Mean	3.87	0.82	Fairly Agree	Highly Implemented

The integration of artificial intelligence (AI) in school management, particularly within the MATATAG implementation in elementary education, has a significant impact on time efficiency, work quality, work quantity, and resource optimization. The findings, which indicate a "fairly agree" response, suggest that while AI contributes

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positively to these aspects, its full potential has yet to be realized due to certain limitations. AI helps streamline administrative tasks, enhances decision-making through data-driven insights, and improves efficiency in resource allocation. However, challenges such as technical limitations, lack of proper training, and infrastructure constraints may hinder its optimal implementation.

The study's results imply that AI integration in school management is beneficial but still requires improvements to maximize its effectiveness. The "fairly agree" rating suggests that while AI enhances work efficiency and quality, some gaps exist in its actual application. For time element, AI reduces administrative workload but may not be fully utilized due to system inefficiencies. Work quality improves with automation, but human oversight is still needed. Work quantity increases as AI assists in multitasking; however, dependence on AI tools varies among schools. In terms of resource optimization, AI can help allocate resources effectively, but schools may struggle with financial and technical constraints. Addressing these factors will enhance AI's role in school management.

To improve AI integration in school management under the MATATAG implementation, the following recommendations are suggested:

Time Element: Schools should invest in training programs to help educators and administrators effectively utilize AI tools, minimizing inefficiencies and maximizing time savings.

Work Quality: AI systems should be continuously updated and improved to enhance decision-making and minimize errors. Regular monitoring and assessment should be conducted to ensure AI applications align with educational goals.

Work Quantity: AI tools should be expanded to cover more administrative tasks, allowing educators to focus on teaching. Providing technical support and ensuring system reliability will further improve productivity.

Resource Optimization: Schools should seek partnerships with technology providers and government agencies to secure funding and infrastructure necessary for AI implementation. Ensuring accessibility and maintenance of AI tools will lead to better resource management.

By addressing these aspects, AI can be more effectively integrated into school management, leading to improved efficiency and productivity in elementary education under the MATATAG curriculum.

Table 5.
Relationship between the extent in the Integration of Artificial Intelligence (AI) in School Management and the enhancement of MATATAG Curriculum implementation

		N	Mean	SD	r	p-value	Interpretation
Integration of Artificial Intelligence (AI) in School Management	75	3.69	.047				
_____				.875	.016	High Significant Correlation	
Effectiveness of the Community	75	3.95	.059				

.05 level of Significance (2 tailed)

The data presented in Table 5 reveal a strong and statistically significant relationship between the extent of integration of Artificial Intelligence (AI) in school management and the enhancement of the MATATAG Curriculum implementation, with a correlation coefficient of r = 0.875, which is significantly higher than the p-value of 0.016 at the 0.05 level of significance. This indicates that the use of AI in school management has a substantial impact on improving the implementation of the MATATAG Curriculum, suggesting that AI plays a critical role in facilitating more effective educational practices, resource allocation, and decision-making in schools.

The integration of AI in educational settings has been widely recognized as a powerful tool for enhancing curriculum delivery. According to Shroff (2024), AI in school management helps in automating administrative processes, providing real-time data analysis, and personalizing learning experiences, which directly contributes to more efficient curriculum implementation. By optimizing administrative tasks and providing data-driven insights, AI empowers educators to focus on more impactful instructional strategies, thus enhancing the overall quality of education (Analytikus, 2023). In this context, the results corroborate the notion that AI's involvement in school

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management is pivotal in enhancing the effectiveness of educational reforms, such as the MATATAG Curriculum, which aims for a more holistic and inclusive approach to learning.

Moreover, AI's role in improving curriculum implementation is not only about administrative efficiency but also about creating a more tailored educational experience for students. As noted by Yu (2024), AI technologies allow for adaptive learning systems that cater to individual student needs, making it easier for schools to implement curricular changes effectively. This individualized approach helps in addressing diverse student needs, which is crucial for the success of the MATATAG Curriculum, designed to be more inclusive and contextually relevant to Filipino learners. Therefore, the strong correlation observed in this study highlights the critical role of AI in modernizing educational systems and enhancing curriculum delivery.

Conclusion

The following conclusions were made in light of the study's findings:

AI is widely utilized in administrative tasks, decision-making, and personalized learning, enhancing efficiency in grading, attendance tracking, and performance monitoring.

AI improves curriculum implementation by streamlining lesson planning, assessment, and decision-making while optimizing resources and enhancing instructional quality.

A strong correlation confirms AI's crucial role in improving educational practices, resource allocation, and data-driven decision-making in schools.

Indeed, integration of AI in school management to the MATATAG Curriculum has a significant impact and helps streamline to contribute positively aspects in decision making and administrative tasks.

Recommendations

In the light of the findings, the following were recommended

Department of Education (DepEd) may develop comprehensive policies and guidelines for integrating AI in school management, ensuring alignment with the MATATAG Curriculum. This includes establishing clear protocols on AI-driven decision-making, data utilization, and staff training to enhance administrative efficiency and personalized learning experiences.

Curriculum developers can design AI-supported instructional materials tailored to the MATATAG Curriculum's objectives. They can ensure that AI tools align with curriculum standards, enhance work efficiency, and promote resource optimization while maintaining a balance between technology integration and traditional pedagogical approaches.

School administrators may invest in AI tools that optimize administrative processes and support data-driven decision-making. They can also ensure that teachers and staff receive continuous professional development and technical support to effectively use AI in enhancing curriculum implementation, resource allocation, and instructional strategies. Educators can actively engage in AI training programs to develop competencies in utilizing AI for personalized learning experiences. By integrating AI-assisted tools in lesson planning, assessment, and student progress tracking, teachers can improve work quality, optimize instructional time, and enhance student learning outcomes under the Matatag Curriculum.

Future Researchers may explore the long-term impact of AI integration on school management and curriculum implementation. Studies may examine how AI-driven innovations influence teaching methodologies, student engagement, and overall educational effectiveness to provide data-driven recommendations for policy improvements.

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