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TECHNOLOGY INTEGRATION ON SCHOOL MANAGEMENT EFFICIENCY AND STUDENT OUTCOMES

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ABSTRACT:

This study examines how technology integration affects school management efficiency and student outcomes, using both quantitative and qualitative approaches.

The first part analyzes the availability of technology tools, internet access, and technical support, alongside management efficiency indicators like leadership, curriculum, and resource management. It also explores how these factors relate to student motivation, learning opportunities, and tech skills. The second part identifies challenges in using technology and offers solutions to improve efficiency. Using a descriptive-correlational design and statistical tools such as Spearman's rho and Pearson correlation, the study found that while technology supports school operations, improvements in training, access, and infrastructure are needed. The result shows that the availability of technology tools and internet access had a significant relationship on school management and curriculum delivery, showing that reliable technology resources and connectivity positively impact overall school operations. Technology availability and connectivity had a significant influence on school management and curriculum but had no meaningful impact on student outcomes in this context. The availability of technology tools has a positive and significant influence, suggesting that increased access to technology enhances leadership performance. Likewise, the curriculum/instructions also had significant influence to technology integration on school management efficiency. The findings emphasize the need for stronger leadership strategies, better infrastructure, and continuous training to fully utilize technology in education and enhance overall school performance.

INTRODUCTION

We live in a technologically dependent world. Numerous occupations that previously did not require technology now do. Technology is used daily by both adults and children for various activities like texting, social media, browsing the internet, and playing interactive games. As a highly advanced society, we have grown increasingly reliant on technology. Consequently, teaching students how to use technology has become a key priority in public education (Çetin & Tan, 2016). Raising student accomplishment while utilizing technology as a tool is a popular topic nowadays. Both educators and policymakers are reiterating their support for projects and education methods that maximize influence on learning and student outcomes. The introduction of the Common Core Standards, focusing on technology, will elevate the importance of technology use in classrooms (KC Costley, 2014). The greatest contribution educators can provide to their nation is teaching. The Department of Education's supervisors, teacher educators, and educational decision-makers are concerned about this. Because technology makes pupils more involved, they tend to remember more knowledge. It provides chances for pupils to work together with their classmates. This enables students to learn from each other. Combined, these factors can positively impact students' motivation and learning outcomes (Demir, K., and Akpinar, E. 2018). Technology integration in schools is hindered by funding issues, with few teachers using ICTs. Barriers include substandard assets, a lack of digital content, and educational software despite proficiency in technology. (Buda, A. 2020).

Research Questions

This study focused on the effects of technology integration on student results and the effectiveness of school administration. It specifically aims to address the following sub-issues:

1. What is the level of technology integration in terms of the availability of technology tools, access to connectivity, and technical support?
2. What is the level of school management efficiency in terms of leadership, curriculum/instruction, resource management, and school environment?
3. What is the students' outcome, such as student motivation, hands-on learning opportunities, and technology skills?
4. Is there a significant relationship between integration and school management effect?
5. Is there a significant influence of technology integration on school management efficiency?
6. Is there a significant relationship between technology integration and student outcomes?
7. Is there a significant influence of technology integration on student outcomes?
8. Does school management efficiency affect students' outcomes?
9. What pathway correlation can be drawn?

METHODOLOGY

This section describes the methodology used in the study, covering the research design, study environment, participants, sampling method, research tools, data collection procedures, and statistical analysis techniques.

Research Design

This research employed a quantitative method to improve the amount of information acquired as well as the credibility of the results. The structure of an item should be of adequate quality to achieve validity and legitimacy. When examining a more in-depth explanation of *quantitative* research techniques, it is vital to notice that they have unique characteristics necessary for addressing a certain research issue. This study adopted a quantitative research design with a descriptive correlational approach, aiming to investigate the impact of technology integration on school management effectiveness and student performance.

Research Participants

Respondents of the study are the selected school heads, teachers, and students from the selected schools of District III and IV Kidapawan City Division, Makilala North and Makilala Central district of Cotabato Division of Region 12. These divisions are situated in the vicinity of the Kidapawan City Division and schools of Makilala Cotabato.

DISTRICTS (KIDAPAWAN and COTABATO DIVISION)	School Head	Teachers	Students N	Sample size n
1. District III	**10**	**13**	**185**	**74**
2. District IV	**12**	**12**	**200**	**80**
3. Makilala North	**14**	**14**	**220**	**88**
4. Makilala Central	**13**	**16**	**220**	**88**
Total	**36**	**39**	**825**	**330**

Research Instrument

The researcher used a self-made questionnaire that is based on the research entitled "Technology Integration on school management efficiency and student outcomes.**"** Two pilots of the instrument were conducted with in-service teachers, and changes were made in response to their input and item analyses. Part I covers aspects of technology integration, including the availability of technological tools, access to connectivity, and technical support. Part II, pertains with the school management efficiency in terms of leadership, curriculum/instruction, resource management, and school environment. Part III deals with the students' outcomes on the students' motivation, hands-on learning opportunities, and technology skills.

Data Analysis

The researcher used the following in the analysis of the data:

Mean, Frequency and Weighted Mean were utilized to analyze various aspects related to technology integration, school management efficiency, and student outcomes.

Spearman's rank correlation coefficient (Spearman's rho) was a valuable tool in studying the relationship between technology integration in school management and both school efficiency and student outcomes (Prion & Haerling, 2014).

Pearson product-moment correlations were utilized to test the relationship between technology integration on school management efficiency and student outcome (Prion & Haerling, 2014).

Multiple Linear Regression Analysis was used to measure the influence on school management efficiency and student outcomes Richard, N., & Ayang, A. (2024).

The author also interpreted the data through the Key Informant Interview (KII) as additional concrete information based on the triangulation of results.

RESULTS AND DISCUSSIONS

This chapter presents the collected data, organized and provided to aid in analysis and interpretation. The results and discussion are structured according to the study's research questions.

PART I. Technology Integration

1. What is the level of technology integration in terms of the availability of technology tools, access to connectivity, and technical support?

Availability of Technology Tools

Table 3 displays the respondents' evaluation of the availability of technology tools for monitoring school progress, delivering lessons, tracking performance, analyzing data, and managing student records. The mean scores reflect the level of technology integration according to a descriptive scale.

The findings indicate that the availability of technology tools in schools is moderately integrated, as reflected in the overall weighted mean of 3.10. The highest-rated aspect is the use of technology for monitoring school progress and lesson delivery, both receiving a mean score of 4.61, classified as highly integrated. These findings suggest that although digital tools are available, there are areas where further improvements in accessibility, training, and infrastructure could enhance their integration in school operations.

Table 3. Level of technology integration in terms of the **availability of technology tools**

a. Availability of Technology Tools:	**Mean**	**Description**
1 Using technology during the monitoring of the school's progress	**4.61**	***Highly Integrated***
2. Using technology, they observed that the majority of the teachers deliver lessons with efficiency	**4.61**	***Highly Integrated***
3. Considering technology as a helping hand that easily tracks and monitors the school's performance in different assessments and evaluations.	**3.02**	***Moderately Integrated***
4. Utilizing technology for data analysis easier and quicker for them than doing hand calculation	**3.08**	***Moderately Integrated***
5. Accessing and managing budgets, viewing student data such as demographics, school leaver, attendance, and discipline.	**3.07**	***Moderately Integrated***
Weighted Mean	**3.10**	***Moderately Integrated***

Access Connectivity

Table 4 illustrates the level of access connectivity in schools, with an overall weighted mean of 3.64, which is categorized as integrated. Among the aspects evaluated, the highest mean score of 4.61 was assigned to using technology to stay updated and disseminate information within the school, indicating that this function is highly integrated and widely practiced. Similarly, using technology for data analysis, facility management, budgeting, and communication with stakeholders also received a high mean score of 4.40, suggesting a strong reliance on digital tools for administrative tasks. These results suggest that while technology is actively used in communication and administrative tasks, there is still room for improvement in streamlining digital tools for broader engagement, particularly in enhancing collaboration with parents, community members, and stakeholders. Strengthening training programs and infrastructure could further improve access to connectivity, ensuring seamless and effective technology utilization in school operations.

Table 4. Level of technology integration in terms of **access connectivity**

b. Access Connectivity	**Mean**	**Description**
1. Using technology to keep updated and can easily disseminate information within the school.	**4.61**	***Highly Integrated***
2. Feeling more confident in composing longer e-mails and memos, managing spreadsheets and creating presentations.	**3.13**	***Moderately Integrated***
3. Posting awards, assemblies and celebrations using technology to stay connected with both parents and community members, since it was a way to celebrate positive accomplishments.	**3.00**	***Moderately Integrated***
4. Using technology, they can easily analyze data, run reports, manage facilities and budgets and communicate with stakeholders via e-mail and social media.	**4.40**	***Highly Integrated***
5. Technology allows them to send and receive e-mail and text messages quickly.	**3.04**	***Moderately Integrated***
Weighted Mean	**3.64**	***Integrated***

Technical Support

Table 5 presented in the table assesses the level of technical support in schools, yielding a weighted mean of 3.15, which falls under the category of moderately integrated. This suggests that while technology is present and used to support administrative and instructional tasks, there is still potential for improvement in maximizing its benefits. The highest-rated indicator is the use of technology for solving problems and performing administrative tasks, with a mean score of 3.31. This suggests that while schools have adopted technology for communication and collaboration, there is still room for improvement in fully leveraging digital platforms for better organizational efficiency.

Table 5. Level of technology integration in terms of the **technical support**

c. Technology Support	**Mean**	**Description**
1. Solving problems and conducting administrative tasks empowered with the proper tools that enables me to become an efficient school administrator.	**3.31**	***Moderately Integrated***
2. Technology integration enhances the teachers to become actively engaged in the process of teaching and learning.	**3.22**	***Moderately Integrated***
3. Establishing the most effective organizational learning in schools.	**3.09**	***Moderately Integrated***
4 Technology provides adequate teacher training in the uses of technology for learning and enhances professional development.	**3.11**	***Moderately Integrated***

5	**Organizing team meetings through video conferencing tools such as Google Meet, Zoom, etc..**	**3.04**	***Moderately Integrated***
Weighted Mean		**3.15**	***Moderately Integrated***

Overall, the findings indicate that while schools have integrated technology to support administration and teaching, efforts should be made to strengthen training programs, improve accessibility to advanced tools, and encourage the seamless adoption of digital solutions to enhance productivity and professional development.

PART II. School Management Efficiency

2. What is the level of school management efficiency in terms of leadership, curriculum/instruction, resource management, and school environment?

Leadership

Table 6 presents data on the perceived efficiency of leadership in school management, particularly on technology integration and its impact on learning. The results are evaluated based on a mean score and categorized under different levels of efficiency. The highest-rated indicator, with a mean score of 4.07, is "Participation during class discussions," which is classified as Efficient. This suggests that leadership initiatives have effectively encouraged student engagement in classroom discussions. Meanwhile, the lowest-rated indicator, "Technology integration improved their academic results," has a mean score of 3.06, falling under Moderately Efficient. This implies that while technology has had a positive impact on academic performance, there is still room for improvement in its implementation. While some aspects, such as classroom participation, are notably effective, there are areas—such as academic performance improvements—that require further enhancements. These results highlight the need for continued leadership development, targeted strategies for better technology integration, and policies that maximize its impact on student learning outcomes.

Table 6. Level of school management efficiency in terms of **leadership**

Leadership	**Mean**	**Description**
1 Enhances access to better quality education	**3.11**	**Moderately Efficient**
2. Technology integration improved their academic results	**3.06**	***Moderately Efficient***
3. Helps them to become an active learner.	**3.28**	***Moderately Efficient***
4. Participate in class discussions	**4.07**	***Efficient***
5. Offers them greater flexibility and convenience towards learning	**3.16**	***Moderately Efficient***
Weighted Mean	**3.22**	***Moderately Efficient***

Curriculum and Instruction

Table 7 presents an evaluation of how technology integration impacts curriculum and instruction in a school setting. The responses are measured using a mean score and categorized under different efficiency levels**.** The weighted mean score of 3.05 indicates that technology integration in curriculum and instruction is Moderately Efficient. This means that while technology contributes positively to student engagement, responsibility, and motivation, there is still room for improvement in enhancing academic performance and collaboration. The findings suggest that further strategies should be implemented to maximize the effectiveness of technology in fostering better learning outcomes.

Table 7. Level of school management efficiency in terms of **curriculum and instruction**

Level Range Description

b. Curriculum/Instruction		**Mean**	**Description**
1.	For them, technology integration during class discussions catches their attention	2.96	*Moderately Efficient*
2.	Technology Integration allows them to become a responsible student in building their learning.	3.15	*Moderately Efficient*
3.	Helps them get better results in their subjects.	2.98	*Moderately Efficient*
4.	Motivates them to explore many topics they may not have seen before.	3.21	*Moderately Efficient*
5.	Allows them to collaborate with others easily, both on and outside of the campus	2.94	*Moderately Efficient*
Weighted Mean		**3.05**	***Moderately Efficient***

Resource Management

Table 8 assesses the efficiency of resource management in education through technology integration. With a weighted mean of 3.10, the results suggest that resource management is moderately efficient in improving students' learning experiences. The highest-rated statement (3.23) highlights that technology fosters a sense of connection among students and teachers, reinforcing its role in communication and engagement. These results imply that while technology supports resource management effectively, further strategies should be implemented to enhance student participation and engagement.

Table 8. Level of school management efficiency in terms of **resource management**

c. Resource Management		**Mean**	**Description**
1.	Makes them complete work in their subjects more convenient	2.93	*Moderately Efficient*
2.	Helps them understand the subject material more deeply	3.20	*Moderately Efficient*
3.	Get more actively involved in courses that use technology.	2.98	*Moderately Efficient*
4	Makes them more likely to skip classes when materials from course lectures are available online.	3.18	*Moderately Efficient*
5	Technology makes them feel connected to other students and teachers	3.23	*Moderately Efficient*
Weighted Mean		**3.10**	***Moderately Efficient***

School Environment

Table 9 presents the perceived efficiency of technology integration in the school environment, with a weighted mean of 3.34, indicating a Moderately Efficient classification. The highest-rated item, scoring 4.61, emphasizes the essential role of technology in administration and classroom management, illustrating its importance in streamlining and enhancing school operations. On the other hand, the use of technology for personal productivity received a lower rating of 3.11. Moreover, the findings suggest that while technology moderately supports school management, improvements in data analysis and resource accessibility could further enhance its effectiveness.

Table 9. Level of school management efficiency in terms of **school environment**

d. School Environment		**Mean**	**Description**
1.	Use of technology for personal productivity.	3.11	*Moderately Efficient*
2.	Use of technology in information presentation.	3.14	*Moderately Efficient*
3.	Use of technology for administration and classroom management.	4.61	*Highly Efficient*
4	Use of technology to access electronic resources.	2.95	*Moderately Efficient*
5	Use of technology to analyze student achievement/performance data.	2.90	*Moderately Efficient*
Weighted Mean		**3.34**	***Moderately Efficient***

PART III. Students Outcome

3. What is the students' outcome, such as student motivation, hands-on learning opportunities, and technology skills?

Student Motivation

The data in Table 10 under Student Motivation shows that technology significantly contributes to increasing student engagement and enriching their learning experiences. Among the indicators, the statement "Technology can help me to learn many new things" received the highest mean score of 4.61, categorizing it as Highly Performing, signifying that students strongly perceive technology as an effective learning tool. The remaining indicators, such as participation in class discussions, access to information resources, exploration of subjects, and connecting learning to fun activities, all fall under the Moderately Performing category. The weighted mean of 3.40 suggests, that technology moderately enhances student motivation, indicating that while technology contributes positively to learning engagement, there is still room for improvement in maximizing its full potential in education.

Table 10. Students' outcomes in term of **student motivation**

a. Student Motivation		**Mean**	**Description**
1	Technology can help me to learn many new things.	4.61	*Highly Performing*
2.	I became participative in class discussions.	3.05	*Moderately Performing*
3.	Technology provides us with instant access to vast amounts of information and resources.	3.00	*Moderately Performing*
4.	Technology allows us to explore various subjects and access educational materials.	3.05	*Moderately Performing*
5.	Technology connects learning to fun activities.	3.30	*Moderately Performing*
Weighted Mean		**3.40**	***Moderately Performing***

Hands-on Learning Opportunities

The data on hands-on learning opportunities in Table 11 reveals that technology moderately enhances students' ability to engage in practical learning activities. The top-rated indicator, "Posting and reporting assigned tasks or homework via online learning platforms," earned a mean score of 3.33, suggesting that students consider technology helpful for submitting and reporting academic tasks online. Other aspects, such as creating an engaging learning environment (3.25), browsing relevant online websites, operating a computer for PowerPoint presentations, and using educational technology for projects and assignments, also fall under the moderately performing category. The weighted mean of 3.09 suggests that while students utilize technology for hands-on learning experiences, there is potential for further enhancement to maximize its effectiveness in facilitating practical and interactive education.

Table 11. Students' outcomes in terms of **Hands-on learning opportunities**

a.	**Hands-on Learning Opportunities**	**Mean**	**Description**
1.	Technology helps me to create a more engaging learning environment.	3.25	*Moderately Performing*
2.	I can browse online websites relevant to my subjects/courses studied.	3.08	*Moderately Performing*
3.	I can operate a computer when there is a PowerPoint presentation.	2.95	*Moderately Performing*
4.	I can use educational technology such as computers, gadgets, and other materials in making my projects and assignments	2.86	*Moderately Performing*
5.	Posting and reporting assigned tasks or homework via online learning platforms such as Google Meet, zoom or Google Classroom	3.33	*Moderately Performing*
	Weighted Mean	**3.09**	***Moderately Performing***

Technology Skills

The data on technology skills in Table 12 indicates that students are generally performing well in utilizing technology for various tasks, with a weighted mean of 3.51, categorizing them under Performing. Among the different indicators, "Communicating socially using emails, messa ging, and social media" received the highest mean score of 4.61, classifying it as Highly Performing, suggesting that students are proficient in digital communication. These findings imply that while students demonstrate competency in basic technological functions, particularly in communication, there is still room for improvement in areas related to information management and account creation for academic and professional purposes.

Table 12. Students' outcomes in terms of **Technology Skills**

c.	**Technology Skills**	**Mean**	**Description**
1.	Use devices like computers, tablets or mobile phones for simple, personal and learning tasks	3.69	*Moderately Performing*
2.	Find and use reliable information on the internet or different websites	3.00	*Moderately Performing*
3.	Communicate socially using emails, messaging and social media	4.61	*Highly Performing*
4	Create online accounts such as Gmail, email or Yahoo mail to access information	2.95	*Moderately Performing*
5	Use the internet on a mobile phone, tablet, laptop or PC	3.28	*Moderately Performing*
Weighted Mean		**3.51**	***Performing***

4. Is there a significant relationship between integration and school management effect?

Relationship between Technology Integration and School Management Efficiency

Table 13 presents the correlation between technology integration and school management efficiency across different domains: Leadership, Curriculum/Instruction, Resource Management, and School Management. The availability of technology tools is significantly related to all areas, especially school management and curriculum/instruction, indicating that access to technological resources positively influences school operations. Additionally, access connectivity strongly correlates with curriculum/instruction and school management, highlighting internet access's crucial role in educational and administrative activities. Meanwhile, technology support exhibits a negative correlation with leadership but a positive but weaker correlation with school management. These results suggest that while technology integration significantly influences school management efficiency, different aspects of technology support may have varying impacts depending on the area of school operations.

Table 13. Relationship between technology integration and School Management Efficiency

		Leadership	**Curriculum/ Instruction**	**Resource Management**	**School Management**
Availability of Technology Tools	Correlation Coefficient	**.153****	**.283****	**.120***	**.381****
	Sig. (2-tailed)	.006	.000	.030	.000
Access Connectivity	Correlation Coefficient	.078	**.567****	**.175****	**.384****
	Sig. (2-tailed)	.160	.000	.001	.000
Technology Support	Correlation Coefficient	-.191**	-.057	.092	**.146****
	Sig. (2-tailed)	.001	.308	.096	.008

5. Is there a significant influence of technology integration on school management efficiency?

Influence of Technology Integration on School Management Efficiency

School Management Efficiency In terms of Leadership

Table 14 displays a regression analysis that examines the effect of technology integration on the efficiency of school management, particularly in the area of leadership. The model indicates a significant effect, explaining 6.5% of the variance in leadership efficiency. Among the predictors, the availability of technology tools has a positive and significant influence, suggesting that increased access to technology enhances leadership performance. Conversely, technology support exhibits a negative but significant effect, indicating that inadequate or ineffective technology support may hinder leadership efficiency. Insufficient or ineffective technology support can significantly hinder leadership efficiency. These findings underscore the importance of technical competence and proactive support from leadership in successfully integrating technology into organizational processes.

Table 14. Influence of technology integration on school management efficiency in terms of Leadership

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	**β**eta	T	Sig.
1	(Constant)	3.625	.285		12.711	.000
	Availability of Technology Tools	.164	.054	.178	**3.014****	.003
	Access Connectivity	.042	.053	.046	.801	.424
	Technology Support	-.212	.059	-.196	**-3.577****	.000

School Management Efficiency in terms of Curriculum/Instruction

Table 15 shows a regression analysis that investigates the effect of technology integration on the efficiency of school management, focusing on curriculum and instruction. Among the predictors, access connectivity has the most significant positive influence, indicating that better connectivity strongly enhances curriculum and instructional processes. The availability of technology tools also has a significant positive effect, suggesting that having access to technological resources contributes to improved instructional management. However, technology support does not significantly influence curriculum/instruction efficiency. The hypothesis of the study is rejected due to the reason that the probability level is less than 0.001 level of significance.

Table 15. Influence on the technology integration on **school management Efficiency in terms of Curriculum/Instruction**

Model		Unstandardized Coefficients		Standardized Coefficients		
		β	Std. Error	**B**eta	t	Sig.
1	(Constant)	.753	.283		2.664	.008
	Availability of Technology Tools	.108	.054	.096	**2.008***	.045
	Access Connectivity	.636	.052	.575	**12.192****	.000
	Technology Support	-.097	.059	-.074	-1.659	.098

These findings underscore the essential role of internet connectivity and technological tools in improving curriculum delivery, while also stressing the importance of better technology support systems. Teachers are expected to assist students if teachers are asked to acquire new methodology, procedures, and technical skills for better curriculum delivery.

School Management Efficiency in terms of Resource Management

Table 16 presents a regression analysis that investigates the effect of technology integration on the efficiency of school management in the area of resource management. The model is not statistically significant and explains only 1.8% of the variance in resource management efficiency. None of the predictors—availability of technology tools, access to connectivity, and technology support had a statistically significant impact on resource management. The hypothesis of the study is accepted due to the reason that the probability level is greater than 0.005 level of significance. These findings suggest that, unlike curriculum and leadership aspects, technology integration does not have a meaningful impact on resource management efficiency, indicating that other factors beyond technology may play a more crucial role in this domain. Simply integrating technology into educational settings does not automatically enhance resource management efficiency. Instead, effective leadership and curriculum development play more significant roles in optimizing resource utilization.

Table 16. Influence of Technology Integration on **school management efficiency** in terms of **Resource Management**

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	2.703	.288		9.372	.000
	Availability of Technology Tools	.036	.055	.040	.656	.512
	Access Connectivity	.097	.053	.109	1.832	.068
	Technology Support	.034	.060	.032	.572	.568

School Management Efficiency in terms of School Environment

Table 17 presents a regression analysis that explores the effect of technology integration on the efficiency of school management. The model is statistically significant and accounts for 26.9% of the variance in school management efficiency. Among the predictors, both the availability of technology tools and access to connectivity have a significant positive effect on school management efficiency. The hypothesis of the study is accepted at the 0.001 percent level of significance. However, technology support does not show a significant effect. These findings indicate that the presence of technology tools and better access to connectivity enhance school management efficiency, whereas technology support does not contribute significantly in this aspect.

Table 17. Influence of technology integration **on school management Efficiency** in terms of **School Management**

6. Is there a significant relationship between technology integration and student outcomes?

Model		Unstandardized Coefficients		Standardized Coefficients		
		β	Std. Error	βeta	t	Sig.
1	(Constant)	1.224	.264		4.643	.000
	Availability of Technology Tools	.247	.050	.256	**4.918****	.000
	Access Connectivity	.341	.049	.359	**7.017****	.000

Relationship between Technology Integration and Student Outcomes

	Technology Support	.047	.055	.042	.866	.387

Table 18 shows that the results indicate that none of the technology integration factors—availability of technology tools, access connectivity, and technology support—show a statistically significant correlation with any of the student outcome variables, as all p-values exceed the 0.05 significance threshold. The highest correlation observed is between technology support and hands-on learning opportunities, but this remains insignificant. Therefore, the hypothesis is accepted, due to the reason that the probability level is greater than the 0.005 percent level of significance.

Table 18. Relationship between **technology integration and student outcomes**

		Student Motivation	**Hands-on Learning Opportunities**	**Technology Skills**
Availability of Technology Tools	Correlation Coefficient	-.006	.021	.012
	Sig. (2-tailed)	.911	.707	.835
Access Connectivity	Correlation Coefficient	-.035	-.033	.061
	Sig. (2-tailed)	.528	.555	.273
Technology Support	Correlation Coefficient	.035	.055	-.046
	Sig. (2-tailed)	.531	.321	.405

These findings indicate that, in this context, technology integration does not significantly affect student motivation, hands-on learning, or the development of technology skills.

7. Is there a significant influence of technology integration on student outcomes?

Influence of the Technology Integration on the Student Outcomes

Technology Integration on Student Motivation

Table 19 presents a regression analysis assessing the impact of technology integration on student motivation. The results reveal that none of the independent variables, availability of technology tools, access connectivity, and technology support, have a statistically significant effect on student motivation, as all p-values are above the 0.05 significance level.

Table 19. Influence of technology integration on student outcomes in terms of **Student Motivation**

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	βeta	T	Sig.
1	(Constant)	3.697	.244		15.170	.000
	Availability of Technology Tools	.003	.047	.004	.060	.952
	Access Connectivity	-.035	.045	-.046	-.775	.439
	Technology Support	.032	.051	.036	.640	.523

Technology Integration in the Hands-on Learning Opportunities

Table 20 displays the regression analysis assessing the impact of technology integration on hands-on learning opportunities. The results indicate that none of the independent variables—availability of technology tools, access connectivity, and technology support—are statistically significant, as all p-values are above the 0.05 significance level. These results suggest that, in this study's context, technology integration does not significantly affect hands-on learning opportunities.

Table 20. Influence of technology integration on **student outcomes in terms of Hands-on LearningOpportunities**

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	3.205	.292		10.962	.000
	Availability of Technology Tools	.034	.056	.037	.606	.545
	Access Connectivity	-.040	.054	-.045	-.751	.453
	Technology Support	.058	.061	.054	.949	.343

Technology Integration on the Technology Skills

Table 21 presents the regression analysis investigating the effect of technology integration on technology skills. The results show that none of the independent variables—availability of technology tools, access connectivity, and technology support- are statistically significant, as all p-values exceed the 0.05 threshold. These findings suggest that technology integration does not significantly affect students' technology skills in this study.

Table 21. Influence of the technology Integration on the **Student Outcomes** In terms of **Technology Skills**

Model		Unstandardized Coefficients		Standardized Coefficients		
		β	Std. Error	βeta	T	Sig.
1	(Constant)	3.807	.220		17.278	.000
	Availability of Technology Tools	-.014	.042	-.020	-.322	.748
	Access Connectivity	.052	.041	.076	1.281	.201
	Technology Support	-.045	.046	-.056	-.986	.325

8. Does school management efficiency affect students' outcomes?

School Management Efficiency on the On the Students' Overall Outcomes

Table 22 presents the regression analysis examines the effects of school management efficiency on students' overall outcomes. The only independent variable that exhibits a statistically significant influence is curriculum/instruction, which p-value is less than the 0.05 cutoff. On the other hand, there are no discernible effects of leadership, resource management or school management on student results. Additionally, the model as a whole is not statistically significant, therefore, the hypothesis of the study is rejected at the 0.005 percent level, indicating that, aside from curriculum and instruction, school administration effectiveness generally has no discernible effect on students' outcomes.

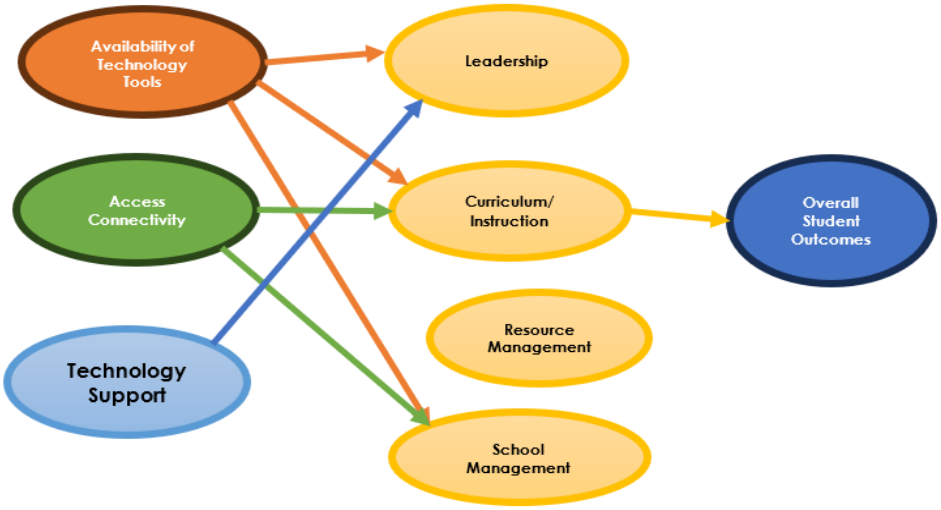
Table 22. Effects of school management efficiency **on students' overall outcomes**

Model		**Unstandardized Coefficients**		**Standardized Coefficients**		
		β	**Std. Error**	**βeta**	**t**	**Sig.**
1	**(Constant)**	**3.474**	**.140**		**24.745**	**.000**
	Leadership	**-.004**	**.031**	**-.009**	**-.142**	**.888**
	Curriculum/Instruction	**.055**	**.028**	**.136**	**1.991***	**.047**
	Resource Management	**.013**	**.028**	**.026**	**.467**	**.641**
	School Management	**-.018**	**.032**	**-.039**	**-.580**	**.563**

9. What pathway correlation can be drawn?

The Pathway Presented in the Diagram Illustrates the Relationship between Student Performance

The diagram shows that student performance is influenced by curriculum, instruction, and leadership, which are supported by technology integration. However, technology tools, connectivity, and support do not significantly affect resource management. Strong leadership and well-planned instruction matter more. Curriculum acts as a key link to student success, with leadership and management playing indirect roles, highlighting the complex role of technology in school outcomes.



SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the summary of findings, conclusions, and recommendations.

Summary of Findings

The study focuses on the technology integration of school management efficiency and student outcomes into the school heads, teachers, and pupils, from the selected Schools of Makilala North and Makilala Central District of Cotabato Division and District III & IV of Kidapawan City Division,

Region 12. The study focuses on the technology integration in school management efficiency and student outcomes. It also addressed the relationship between integrated school management efficiency and student outcomes. It aims to discover whether there is a significant influence of technology integration on school management efficiency.

1. The level of technology integration is moderately integrated.
2. The level of school management efficiency is moderately efficient.
3. The students' outcome is moderately performing.
4. There is a significant relationship between integration and school management efficiency.
5. There is a significant influence of technology integration on school management efficiency. The results confirm that certain aspects of technology integration, especially tools and connectivity, do help improve school management efficiency.
6. There is no significant relationship between technology integration and student outcomes. The study shows that the availability of technology tools, internet access, and technical support do not have a meaningful effect on student motivation, hands-on learning, or technology skills.
7. There is no significant influence of technology integration on student outcomes. The study shows that the availability of technology tools, internet access, and technical support do not have a meaningful impact on student motivation, hands-on learning, or technology skills.
8. School management efficiency does not have a significant effect on student outcomes overall. The results indicate that school management efficiency explains only 1.5% of the changes in student outcomes, which is very low. Since the overall model is not statistically significant, meaning school management efficiency, aside from curriculum and instruction, does not affect students' outcomes.
9. The pathway correlation shows how technology integration, school management, and student performance are connected. Simply using technology doesn't improve resource use; strong leadership and good lesson planning matter more. This means that for better student outcomes, schools should focus on effective teaching and leadership, along with smart use of technology.

Conclusions

The following conclusions are drawn:

1. To fully maximize its benefits, schools need to improve accessibility, enhance training programs, and upgrade infrastructure to support more effective, inclusive, and seamless use of digital tools.
2. While technology offers moderate support in school management and resource use, there is a clear need for improvements in data analysis, accessibility, and student engagement to fully realize its potential.
3. While technology positively influences student motivation and hands-on learning, there is still room for improvement in maximizing its effectiveness in education. Students show basic competency in using technology, but further enhancements are needed, particularly in areas like information management and account creation, to fully harness its potential for learning and skill development.
4. The results indicate a significant relationship between technology integration and school management efficiency, highlighting that effective use of technology plays a crucial role in improving the efficiency of school operations.
5. Technology integration significantly influences school management efficiency. Having the right technology and reliable connectivity is crucial for enhancing the efficiency of school management.
6. The study found no significant relationship between technology integration and student outcomes. The availability of technology tools, internet access, and technical support did not have a meaningful impact on student motivation, hands-on learning, or technology skills, indicating that technology use in schools did not lead to improvements in these areas.
7. The study shows that technology integration does not significantly influence student outcomes. The availability of technology tools, internet access, and technical support had a very weak impact, indicating that technology integration did not meaningfully improve student learning or skills.
8. School management efficiency does not significantly affect student outcomes, except for curriculum and instruction. Factors like leadership, resource management, and overall school management have little impact on student performance, with school management efficiency. This indicates that only curriculum and instruction play a meaningful role in affecting student performance.
9. The pathway analysis shows that while technology integration supports leadership, curriculum, and school management, it does not improve resource management. To improve student outcomes, schools should prioritize effective teaching, strong leadership, and the strategic use of technology.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are suggested:

1. Teachers should use technology to enhance teaching and learning practices, such as using digital resources, facilitating collaboration, and enabling personalized learning.
2. School administrators should invest in robust and reliable technology infrastructure to support technology integration.
3. Schools should offer continuous professional development programs to help teachers enhance their technological pedagogical content knowledge (TPCK).
4. School administrators and teachers should regularly monitor and evaluate the effectiveness of technology integration on school management efficiency and student outcomes.
5. School management should establish a technology budget to support technology infrastructure and professional development.

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