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Evaluation of Cloud-Based Students' Academic Record Management Systems for Success Factors: Current Practices and Prospects in Tanzania Secondary Schools

Vicent Jonas

Assistant Lecturer, Tanzania Institute of Accountancy – Tanzania Dar es salaam

Email: *kwambianas@gmail.com*

***Abstract*—** The adoption of cloud-based student academic record management systems in Tanzanian secondary schools faces challenges due to limited digital infrastructure, low internet penetration, and gaps in technical support, despite national policies promoting digitalisation. This study aimed to evaluate key success factors influencing the adoption and use of such systems, focusing on system quality, information quality, service quality, user satisfaction, use or intention to use, and net benefits. Employing an explanatory sequential design, the study collected quantitative data from 162 teachers across three purposively selected secondary schools in Dar es Salaam, analyzed using descriptive statistics and multiple regression, alongside qualitative insights from open-ended responses. Findings indicate that system quality, information quality, and perceived net benefits significantly encourage teachers' use of the system, while weak service quality and support, alongside satisfaction alone, may reduce engagement. Challenges identified include limited devices, insufficient training, technical errors, and data security concerns. The study concludes that cloud-based systems hold strong potential for enhancing efficiency, transparency, and decision-making in record management, provided infrastructural and capacity constraints are addressed. Recommendations include investing in digital infrastructure, providing continuous training and technical support, and establishing clear data security guidelines to ensure sustainable and effective adoption across Tanzanian secondary schools.

***Keywords*—** Cloud-based systems, system quality, information quality, service quality, user satisfaction, use or intention to use, net benefits.

I. INTRODUCTION

Background of the study

Cloud-based student academic record management systems sit at the intersection of two pressing trends in education; the drive to make student data more accessible, interoperable and useful for decision-making, and the rapid migration of institutional IT services from on-premises servers to scalable cloud platforms (Hosseini-Ashlaghi et al., 2023). These systems are touted as cheaper to capitalize, scalable and can be accessed remotely by administrators and students, and the capacity to make timely insights of the records, which most institutions are telling they have exceeded expectations in instances where cloud services have been effectively handled (Naveed et al., 2023; Santos et al., 2024).

In the meantime, research and business surveys show that successful adoption is not related to the used technology but several success criteria such as clear governance and management determination, good service level contracts and vendor selection, security and complies opportunities, and digital literacy and connectivity of the users (Santos et al., 2024).

Globally, schools have moved rapidly to cloud-based student information tools, but high adoption has exposed systemic risks (Matthew et al., 2021). Recent surveys estimate that roughly seven in ten K-12 students now use cloud-based educational tools, signaling widespread reliance on third-party platforms; yet that centralisation concentrates risk whereby, a single vendor handles the records of a very large share of pupils (for example, one major vendor was reported to serve about 75% of US K-12 districts), and high-profile incidents have shown the consequences of misconfiguration or exploitation (large-scale exposures of learner and teacher data and frequent unauthorized access). These data points indicate a high level of paradoxical high online adoption and proven, substantial threats to privacy and data integrity in students (Ibrahim, 2024).

In Africa, the situation is no better as there are both spots of encouraging digitalization and poor governance integration, biased adoption, and increasing cyber-attacks (Metto et al., 2022). University and school registry studies indicate a 50-50 implementation of electronic records in a small fraction of Kenyan institutions, with regional studies reporting spikes in

data-breach activity, with one report of a~64% increase in leaked accounts in Nigeria over one quarter, and reasonable national internet penetration in South Africa concealing a rural - urban division as rural download speeds were reported to be 14 times lower, all of which contribute to poor implementation of academic records on the cloud (Metto et al., 2022; Okuonghae & Bakare-Fatungase, 2023; Azwidowi et al., 2024). Thus, Africa has the demand and some capacity for cloud records, but infrastructural, technical and governance shortfalls create major failure points.

In Tanzania, official strategy and pilot systems exist, yet practice lags and many schools remain ill-equipped to migrate records safely to the cloud (Omary, 2020). National documents set out School Information Systems and dedicated record managers for primary and secondary levels, but national data show low connectivity such that internet penetration around 31.6% and surveys indicate that roughly 40% of teachers report their school lacks any technological devices (Mulokonzi & Kitula, 2023). These conditions perpetuate paper reliance, inconsistent record-keeping and risk of data loss or poor data quality as systems are rolled out. Thus Tanzania faces a clear contradiction between policy ambition and ground realities: planned digital record systems versus limited access, devices and capacity for secure, continuous cloud use (Omary, 2020; Mulokonzi & Kitula, 2023).

Despite the acknowledged benefits of cloud-based student academic record management systems in improving accessibility, efficiency, and decision-making, secondary schools in Tanzania continue to struggle with effective adoption due to persistent infrastructural and governance challenges (Mulokonzi & Kitula, 2023). While national strategies have outlined the integration of school information systems, the reality on the ground shows low internet penetration of about 31.6% and nearly 40% of teachers reporting the absence of technological devices in their schools, leaving many institutions reliant on paper-based and inconsistent record-keeping practices (Omary, 2020; Mulokonzi & Kitula, 2023). This mismatch between policy ambition and actual implementation highlights a critical gap in practice.

Furthermore, little is known about the specific success factors that determine whether cloud-based record systems can be effectively adopted and sustained in Tanzanian secondary schools. This study therefore seeks to evaluate the role of key dimensions including system quality in terms of reliability and usability, information quality focusing on accuracy and timeliness of student records, and service quality such as training, support, and responsiveness. It will also assess the extent of system use and intention to use, levels of user satisfaction relating to ease, trust, and convenience, and the net benefits derived in areas such as efficiency, transparency, and decision-making. By addressing these dimensions, the study aims to bridge the divide between planned digital transformation and the limited resources, capacities, and infrastructures available in Tanzanian schools.

Literature Review

Chen et al. (2021) surveyed 302 Taiwanese employees to assess cloud storage system success. In their PLS-SEM study on a cloud storage service for organizational use, they found that system quality had a strong positive effect on user satisfaction. They reported that high system quality significantly boosted satisfaction, although surprisingly satisfaction did not significantly drive continuance intention. In practical terms, this suggests that even a reliable cloud platform may not guarantee continued use. The authors conclude that organisations should focus on improving system quality to satisfy users, but the noted a gap is that they did not examine user behaviour in academic record systems.

Yilmaz (2022) compared student satisfaction with two cloud-based LMS platforms. Using a mixed explanatory design, surveying 7,318 students (3,294 using Moodle and 3,332 using Google Classroom, with 692 experiencing both) at Uşak University, Turkey. The key finding was that students on the cloud-hosted Google Classroom were significantly more satisfied with system infrastructure and process than those on Moodle. For example, Google Classroom users reported higher satisfaction with system reliability and assessment functions. The study concludes that cloud LMS can enhance perceived quality of service. The implication is that information quality in a cloud system can directly affect student satisfaction. However, Yilmaz's work does not address academic record systems but focused on learning content delivery, not formal student record management, the current study fills this by evaluating record data quality.

Amakiri and Ayawei (2020) examined cloud adoption and student record efficiency at Niger Delta University, Nigeria. In a survey of 301 university staff using

questionnaires, they measured cloud computing practices (SaaS/PaaS) against records accessibility and safety, analysing data via Spearman correlation (SPSS). They found very high correlations between cloud use and record management efficiency. In other words, greater cloud usage was strongly associated with more accessible and safer student records. The authors conclude that cloud computing would enhance record's management efficiency, recommending that universities use cloud services to avoid data loss. This highlights a net-benefit and efficiency of cloud systems.

Alamirew (2024) studied service quality and satisfaction in an Ethiopian university indirectly relevant to system use. He surveyed 263 students using PLS-SEM. He found only tangibles (physical infrastructure) and assurance (staff expertise) had significant effects on satisfaction, whereas responsiveness and reliability were not significant. Although his focus was on satisfaction, this has implications for use whereby, if certain service aspects are weak, students may be less inclined to engage with the system. The gap identified is that Alamirew did not measure actual system usage or intention to use cloud-based records.

Magasi et al. (2022) examined how service quality affects student satisfaction in Tanzanian higher education. In a stratified survey of 326 students at Dodoma City institutions, they applied logistic regression. They report that all five dimensions namely; tangibles, reliability, responsiveness, empathy, assurance and a new dimension significantly predict student satisfaction. In other words, better campus facilities, reliable services, prompt responsiveness, caring attitude and trustworthy information all increased satisfaction. They conclude service quality was generally below expectations, recommending improvements across all dimensions. The study did not measure actual system usage or intention to use cloud-based records thus the currrent study will explicitly assess teacher's engagement/intention with the new cloud SIS.

II. RESEARCH METHODOLOGY

Research Setting

The study was conducted in Dar es Salaam, Tanzania, focusing on three purposively selected secondary schools namely; Kibasila Secondary School, Mbagala Secondary School, and Benjamin William Mkapa High School. These schools were chosen because they actively use online result management systems, making them relevant cases for examining the adoption and effectiveness of cloud-based academic record management. Their selection is scientifically justified as they provide practical contexts where the system is already in operation, thus allowing the study to generate meaningful insights into success factors, challenges, and prospects of cloud-based record management in Tanzanian secondary schools.

Research Design

Explanatory sequential design will be employed, whereby the study will first collect and analyse quantitative data to assess key success factors such as system quality, information quality, service quality, use or intention to use, user satisfaction, and net benefits, followed by qualitative input based on challenges, recommended improvements and other relevant views. This design is suitable as it allows the researcher to quantify the main trends while also capturing deeper insights into user experiences, ensuring a more comprehensive understanding of the factors influencing the adoption and sustainability of cloud-based academic record management systems in Tanzanian secondary schools.

Targeted Population

The targeted population for this study comprised 273 teachers drawn from the three selected secondary schools, with the numbers obtained directly from the respective headmasters. Teachers were chosen as the study population because they are the primary users of the academic record management systems, engaging directly with the processes of recording, updating, and accessing student information. This makes them the most appropriate respondents for providing reliable information into the quality, usability, and overall effectiveness of cloud-based record management in Tanzanian secondary schools.

Sample Size and Sampling Techniques

Sample size was determined using the formula below which is adopted from Slovin (1960).

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{273}{1 + 273\ (0.05)^2}$$

$$n = 162$$

n - The sample size, N – Population of study, Error estimate (e) = 5%

Therefore, the study employed a total of 162 teachers from the three selected secondary schools in Tanzania.

This study employed stratified sampling, whereby teachers were grouped according to their respective schools to ensure fair representation across the three institutions. This method was selected because the schools differ in size and teacher numbers, and stratification minimizes sampling bias by giving each school a proportionate chance of inclusion. Within each stratum, respondents were then selected proportionally to the total number of teachers in that school, making the sample both representative and reliable for drawing conclusions.

Data Collection Instruments

The research employed a questionnaire method of data collection that was in the form of a closed questionnaire. Questions were structured such that they had a pre-determined response structure, that is, with a 5-point Likert scale that is strongly disagree to strongly agree. The format was used to simplify the process of the collection of data by providing the respondents with specific choices clearly and it was easy to respond to the questions and increased the efficiency of data analysis. The closed-ended questions that used standardized response scale provide consistency among the participants and aided easy quantitative analysis.

Validity and Reliability

Moreover, the research was not using many open ended questions to investigate the issues, suggested solutions and other pertinent perceptions of the interviewees.

Data Analysis

To analyse the quantitative data, the study employed descriptive statistics and multiple regression as analysed using Statistical Package for the Social Sciences(SPSS) version 26. Each of the key variables was analyzed using descriptive statistics in which case, this was used to determine the patterns and trends in data. The multiple regression analysis was then used to evaluate the validity and the nature of the relationships between the independent variables and the dependent variable. Also, thematic analysis was used to analyze qualitative data. The following regression model was used in determination of coefficients of the independent variables in relation to the dependent variable:

$$IU = \beta_0 + \beta_1 SQ + \beta_2 IQ + \beta_3 SE + \beta_4 US + \beta_5 NB + \varepsilon$$

Whereby:

IU = Use/Intention to use
SQ = System quality
IQ = Information quality
SE = Service quality
US = User satisfaction
NB = Net benefits
β0 = Constant factor
β1, β2, β3, β4, β5 = Respective coefficients
ε = Random variable

Table 1: *KMO and Bartlett's Test Results (n = 162)*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.895**
Bartlett's Test of Sphericity	Approx. Chi-Square	1945.517
	df	91
	Sig.	.000

Source: Field Data, 2025

Table 1 presents the results of the validity test conducted using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity on the questionnaires administered to teachers. The KMO value of 0.895 indicates excellent sampling adequacy, suggesting that the data were highly suitable for analysis. Similarly, Bartlett's Test of Sphericity was significant (χ^2 = 1945.517, df = 91, $p < 0.001$), confirming that the correlation matrix was not an identity matrix and that the variables were sufficiently interrelated to justify further analysis. These findings imply that the questionnaire items were valid and appropriately structured.

Table 2: *Reliability test results (n = 162)*

Variable	No. of Items	Cronbach's Alpha	Remarks
1. System quality	6	.865	Very reliable
2. Information quality	5	.834	Very reliable

3. Service quality	5	.772	Reliable
4. Use/Intention to use	5	.750	Reliable
5. User satisfaction	5	.875	Very reliable
6. Net benefits	5	.901	Excellent

Source: Field Data, 2025

The reliability analysis was done to examine the internal consistency of the measurement scales of the study. The findings indicate that the quality of systems (alpha =.865), the quality of information (alpha =.834), and user satisfaction (alpha =.875) have shown to be very reliable and the quality of service (alpha =.772) and the intention to use or use (alpha =.750) were also reliable, and the net benefit (alpha =.901) has presented the best reliability. This shows that all constructs met the acceptable level of Cronbach of 0.7 Alpha, and thus the items of the measurement were reliable and consistent. It means that the data obtained offers a consistent and reliable foundation of further statistical analysis and interpretation of the variables that determine the use of cloud-based academic record management systems.

III. PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Descriptive statistics

Descriptive statistics were computed to summarise and provide an overview of the responses from the 162 teachers regarding the key variables of the study.

These statistics include measures of central tendency, variability, and distribution, which help to understand the general patterns in system quality, information quality, service quality, use or intention to use, user satisfaction, and net benefits of the cloud-based academic record management systems. The results are presented in Table 3.

Table 3: *Descriptive Statistics Results (n = 162)*

Variable	Mean	Std. Dev	Variance	Skewness	Kurtosis
1. System quality	4.2222	.61805	.382	-1.040	-.085
2. Information quality	4.1889	.62901	.396	-.734	-.260
3. Service quality	4.0111	.53278	.284	-.258	-1.107
4. Use/Intention to use	4.1444	.57451	.330	-.692	-.644
5. User satisfaction	4.2667	.58299	.340	-.980	.271
6. Net benefits	4.2333	.61382	.377	-.982	.205

Source: Field Data, 2025

The average score of system quality was 4.22, and the standard deviation was 0.618, which means that teachers were not very divided on whether the cloud-based system of managing academic records is reliable and usable. The negative skewness (-1.040) indicates that the greater part of the responses was concentrated at the higher part of the scale, whereas the close to zero kurtosis (-0.085) indicates a rather normal distribution. Such findings suggest that the image of system reliability and usability are positive, which is important in the long-term adoption and successful usage of the system.

Information quality had a mean of 4.19 and a standard deviation of 0.629, showing that teachers generally perceive the student records as accurate and timely. The moderate negative skewness (-0.734) indicates a tendency for responses to cluster at higher ratings, and the slight negative kurtosis (-0.260) suggests a fairly flat distribution. This implies that high-quality information contributes to user trust and confidence in the system, supporting better decision-making and record management.

The mean score for service quality was 4.01 with a standard deviation of 0.533, reflecting moderate agreement among teachers regarding the adequacy of support, training, and responsiveness provided. The slight negative skewness (-0.258) and negative kurtosis (-1.107) indicate a slightly left-skewed and flatter distribution. These findings suggest that while service quality is generally satisfactory, there may still be room to enhance support mechanisms to improve user engagement and satisfaction.

Use or intention to use recorded a mean of 4.14 and a standard deviation of 0.575, showing that teachers are generally willing to engage with the system. The

negative skewness (-0.692) indicates that most teachers report high levels of use or intention to use, and the moderate negative kurtosis (-0.644) reflects a slightly flattened distribution. This suggests that strong intention to use the system is likely to translate into consistent practical engagement, which is vital for achieving the intended benefits of cloud-based record management.

User satisfaction had a mean of 4.27 and a standard deviation of 0.583, indicating a high level of satisfaction regarding ease of use, trust, and convenience. The negative skewness (-0.980) shows that most respondents rated satisfaction highly, and the positive kurtosis (0.271) indicates a slightly peaked distribution. This implies that overall user satisfaction is a strong driver for continuous adoption and acceptance of the system.

The net benefits mean obtained was 4.23 and the standard deviation was 0.614, indicating that teachers feel that the system has significant benefits to them in efficiency, transparency and decision making. The skewness value (-0.982) indicates that the responses are more concentrated on the higher end whereas the kurtosis value is positive (0.205), indicating that distribution is moderately peaked. It means that the system is providing valuable results, which confirms its importance and justifies its adoption in schools on a broader basis.

Regression Analysis

To identify how the system quality, information quality, and service quality, user satisfaction, and net benefits affect the use or intentions to use a cloud-based academic record management system among teachers, a multiple regression analysis was used. This was adopted in order to ascertain how much each of the independent variables can be used to predict the dependent variable and this gives a better insight on the factors that significantly influence adoption and engagement with system. Table 4 summarises the results.

Table 4: *Multiple Regression Analysis Results (n = 162)*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.841	.213		3.942	.000
	System quality	.455	.071	.490	6.379	.000
	Information quality	.276	.048	.303	5.795	.000
	Service quality	-.564	.089	-.523	-6.369	.000
	User satisfaction	-.438	.125	-.444	-3.512	.001
	Net benefits	1.029	.118	1.099	8.728	.000
a. Dependent Variable: Use/Intention to use						

Source: Field Data, 2025

Use or intention to use was positively and significantly affected by system quality (0.490, t = 6.379, p < 0.001). This means that the more the perceptions are about the reliability and usability of the system, the higher the willingness of teachers to use it. The implication here is that it can be predicted that enhancing the technical reliability of the system as well as its usability can be a strong factor in motivating adoption and frequent usage

Information quality was also positively and significantly associated with use or intention to use (β = 0.303, t = 5.795, p < 0.001). This shows that when student records are accurate and timely, teachers are more inclined to rely on and interact with the system. The implication is that ensuring high-quality, up-to-date information within the system enhances trust and promotes wider usage among users.

Service quality, however, had a negative and significant effect on use or intention to use (β = -0.523, t = -6.369, p < 0.001). This suggests that where support, training, and responsiveness are perceived as inadequate, teachers' willingness to use the system decreases. The implication is that schools and system providers must improve training, technical assistance, and responsiveness to strengthen adoption and overcome barriers linked to poor support.

Similarly, user satisfaction was found to have a negative and significant effect on use or intention to use (β = -0.444, t = -3.512, p = 0.001). This indicates that despite high reported satisfaction levels, in regression analysis other factors such as system and information quality outweighed satisfaction in influencing usage intentions. The implication is that satisfaction alone is not sufficient

to sustain adoption unless combined with strong technical performance and adequate support structures.

Net benefits showed a strong positive and significant effect on use or intention to use ($\beta = 1.099$, $t = 8.728$, $p < 0.001$). This demonstrates that when teachers perceive the system as improving efficiency, transparency, and decision-making, they are more likely to use it consistently. The implication is that highlighting and reinforcing the tangible benefits of the system can drive higher levels of adoption and ensure sustainability of cloud-based academic record management in schools.

In addition to the quantitative findings, responses from the open-ended question provided further insights into the challenges teachers face when using the cloud-based student record system. Several common themes emerged, highlighting practical issues that affect adoption and effective use of the system.

Limited access to devices; A number of respondents indicated that schools lacked sufficient computers or digital devices, forcing teachers to share limited resources. This constraint often led to delays and frustrations in entering or retrieving student records.

Inadequate training and support; Several teachers highlighted insufficient training and a lack of ongoing technical support. Without proper guidance, some users struggled to understand system functions, reducing efficiency and discouraging regular use.

System downtime and technical errors; Respondents also mentioned occasional system failures, downtime, or errors during data entry, which undermined confidence in the system's reliability and increased workload through repeated attempts to upload information.

Data security concerns; Some teachers expressed worries about the safety of student information, fearing possible data loss or unauthorized access. These concerns influenced trust in the system, even when other features performed well.

Building on the challenges identified, teachers also suggested several improvements that could enhance the effectiveness of the cloud-based student record system. Their recommendations focused on practical solutions to strengthen usability, reliability, and overall impact.

Provision of adequate devices; Teachers suggested that schools should be equipped with more computers and related digital tools. Increasing the number of devices would reduce delays caused by resource sharing and allow more staff to use the system effectively.

Regular training and capacity building; A common recommendation was to provide continuous training and refresher courses. Teachers felt that hands-on support and guidance would improve confidence, digital skills, and overall system engagement.

Enhanced technical support and maintenance; Respondents called for readily available technical assistance and routine system maintenance. This would help resolve system errors and downtime quickly, reducing disruptions to their work.

These recommendations reflect the practical needs of users and highlight areas where targeted improvements could strengthen the adoption and sustainability of cloud-based student record systems in Tanzanian secondary schools.

Following the recommendations for improvement, teachers also shared their views on the future prospects of cloud-based systems in Tanzanian secondary schools. Their responses reflected optimism about the potential benefits, while also recognising the conditions needed for success.

Wider adoption across schools; Many teachers anticipated that cloud-based systems would be increasingly adopted in more schools as digital transformation in education advances. They believed that broader implementation could standardise record management nationwide.

Improved efficiency and transparency; Respondents highlighted the potential for these systems to reduce paperwork, speed up record processing, and promote transparency in managing student performance data, making school administration more effective.

These perspectives suggest that teachers recognise strong potential for cloud-based systems to transform record management in Tanzanian secondary schools, provided that infrastructural and capacity challenges are addressed.

Discussion of the Findings

The findings show that teachers generally viewed the cloud-based academic record management system positively, with high scores for system quality, information quality, user satisfaction, and net benefits, though service quality emerged as a concern. Regression results confirmed that system quality, information quality, and net benefits significantly encouraged usage, while weak service support and satisfaction reduced intention to use. Open-ended responses revealed challenges such as limited access to devices, inadequate training, technical errors, and data security concerns, but teachers also suggested solutions including more devices, continuous training, and stronger technical support.

The study's findings that system quality strongly influences intention to use align with Chen et al. (2021), who also reported that higher system quality significantly improved user satisfaction. However, unlike Chen et al., this study found that satisfaction alone was not enough to sustain usage, as regression analysis showed a negative relationship between satisfaction and intention to use. This partly contrasts with Chen's conclusions, since their study suggested satisfaction was central but did not significantly drive continuance intention. Similarly, Yilmaz (2022) highlighted that information quality in cloud-based platforms enhances user satisfaction, which aligns closely with the present findings where accurate and timely records significantly increased intention to use. The difference, however, is that Yilmaz focused on learning platforms, while the current study extends this evidence to record management systems.

The results also resonate with Amakiri and Ayawei (2020), who found that cloud adoption improved record accessibility and safety, reflecting the strong net benefits reported in this study. Both sets of findings confirm that perceived efficiency and transparency drive stronger adoption of cloud systems. By contrast, Alamirew (2024) observed that service quality dimensions such as responsiveness and reliability were not significant predictors of satisfaction, which differs from this study's finding that weak service quality reduced intention to use. In the Tanzanian context, Magasi et al. (2022) found that service quality dimensions were all important to student satisfaction, which partly aligns with the current findings, as teachers also expressed concerns about service quality, training, and responsiveness. However, while Magasi's study emphasised satisfaction as a product of service quality, the present study shows that service shortcomings can directly hinder actual usage, thus extending the earlier evidence.

CONCLUSIONS

The study concludes that cloud-based academic record management systems are viewed positively by teachers in Tanzanian secondary schools, particularly in terms of system quality, information quality, and net benefits, which strongly encourage usage. However, weak service quality and gaps in training and support reduce teachers' willingness to fully adopt the system. While most users are satisfied and recognize the efficiency and transparency it brings, practical challenges such as limited devices, technical errors, and data security concerns still hinder its effective use.

RECOMMENDATIONS

In the case of school administrations, it is advisable to invest in sufficient digital infrastructure by supplying more computers and other associated devices so that all teachers will be able to access the system without delays. To the system providers and developers, it should aim at the overall improvement of the reliability of systems, timely technical support, and system maintenance to reduce downtime and errors to the minimum. Educational leaders should also provide continuous training and refresher programs to teachers so that they gain confidence, enhance their digital skills, and be willing to use the system consistently. To the policymakers like the Ministry of Education, it is recommended to use cloud-based record systems in broader education policies and to provide budgetary assistance to scale implementation in schools. There should also be clear guidelines regarding what data is secure and user responsibility as this will help build on trust with the system and also to be able to securely handle information about the students.

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