

ENHANCING ADMINISTRATIVE EFFICIENCY THROUGH A STUDENTS MANAGEMENT INFORMATION SYSTEM FOR A PRIVATE PRESCHOOL SETTING

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ABSTRACT

This study aimed to develop and evaluate the effectiveness of the Students Management Information System (SMIS) in improving administrative efficiency at Little Tots House, Inc., a private preschool institution. Employing a quantitative-correlational research design, the study involved 15 purposively selected staff members who assessed administrative performance before and after the LSMIS implementation. The investigation focused on five key domains: accuracy of learner records, speed of information retrieval, timeliness of report generation, ease of communication and coordination, and user satisfaction with administrative processes. Results revealed that prior to the system's deployment, the institution faced challenges such as data inconsistencies, delays, and inefficient coordination due to reliance on manual procedures. Post-implementation findings demonstrated significant improvements across all domains, confirming that the LSMIS streamlined workflows, minimized errors, and enhanced user satisfaction. Statistical analysis validated a significant difference in administrative efficiency, underscoring the system's potential as a scalable solution for similar educational settings.

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INTRODUCTION

In an increasingly digital world, schools are expected to manage learner information not just efficiently, but also with a level of accuracy and responsiveness that keeps pace with growing academic and administrative needs. Managing student data has become a cornerstone of school operations, especially as enrollment increases and expectations for transparency and accountability rise. Education Management Information Systems (EMIS), as discussed by Asio et al. (2022), have become instrumental in shaping education policies and improving administrative workflows. Despite these advancements, many private preschools still rely on manual processes or scattered digital tools to handle tasks such as enrollment tracking, report card preparation, and student progress monitoring. This reliance often leads to avoidable delays, inconsistent data, and administrative strain.

At Little Tots House, Inc. (LTH), a private early childhood education provider, learner records are primarily maintained using handwritten logs and basic spreadsheet files. These outdated methods have created numerous challenges for the staff. For example, during report card distribution, the administrative team must search through multiple files to gather necessary data—an approach that frequently causes delays and occasional errors. Some parents have even received incorrect reports on their child's attendance or performance due to outdated or misplaced records. Furthermore, retrieving older student data, especially for those who have graduated, has become increasingly difficult, slowing down verification and administrative follow-up processes. These inefficiencies not only hinder productivity but also impact parent trust and satisfaction.

Without a centralized Students Management Information System (SMIS), LTH's administrative tasks are vulnerable to errors, inconsistencies, and delays. As noted by Purcia and Velarde (2022), manual record-keeping in private schools often leads to lost files and restricted data access—especially problematic as schools grow or when staff members change. At LTH, these issues become particularly visible during enrollment and school evaluations, when timely access to accurate records is critical for planning and decision-making. With higher expectations from parents and oversight bodies, the current setup no longer meets the demands of a fast-paced educational environment.

Recent research supports the implementation of student-focused management systems to address these very issues. Studies by Gamido et al. (2023) and Banag (2024) show that digital platforms improve the speed and accuracy of administrative functions. Moreover, innovations such as blockchain-enhanced systems (Ali et al., 2022) and tools that integrate decision support features (Alvaro & Gabayan, 2021) further demonstrate how technology can boost efficiency, accuracy, and collaboration across departments. For a preschool like LTH, the transition to a purpose-built LSMIS could mean fewer errors, faster communication, and better overall service to both staff and families.

Given these challenges and opportunities, this study proposes the development of a Students Management Information System tailored to the specific needs of Little Tots House, Inc. The system will aim to digitize student records, streamline administrative processes, and enhance communication between the school and parents. By addressing current inefficiencies, the project seeks not only to improve internal workflows at LTH but also to create a scalable model for other private preschools looking to modernize their administrative systems.

Statement of the Problem

This study aims to determine the effectiveness of the developed LTH Students Management Information System (LSMIS) in enhancing administrative efficiency in a private preschool setting. Specifically, it seeks to answer the following questions:

1. What are the Problems Encountered in Learners Records Handling in a Private Preschool Setting?
2. What is the level of administrative efficiency before the implementation of the LSMIS in terms of:
 - a. Accuracy of Learner Records
 - b. Speed of Information Retrieval
 - c. Timeliness of Report Generation
 - d. Ease of Communication and Coordination
 - e. User Satisfaction with Administrative Processes?
3. What is the level of administrative efficiency after the implementation of the LSMIS based on:
 - a. Accuracy of Learner Records
 - b. Speed of Information Retrieval
 - c. Timeliness of Report Generation
 - d. Ease of Communication and Coordination
 - e. User Satisfaction with Administrative Processes?
4. Does the implementation of the LSMIS significantly improve administrative efficiency as measured by accuracy of learner records, speed of information retrieval, timeliness of report generation, ease of communication and coordination, and user satisfaction with administrative processes?

Hypothesis

1. There is no significant difference in the level of administrative efficiency before and after the implementation of the Learners' School Management Information System (LSMIS).

Literature Review

Importance of Information Systems in Education Administration

Information systems have become fundamental in managing school operations efficiently. Education Management Information Systems (EMIS) provide institutions with tools to collect, organize, and analyze data, enhancing planning, policy-making, and service delivery. Asio et al. (2022) emphasize that an effective EMIS supports data-driven decision-making, especially in improving educational outcomes and administrative services. Similarly, Ngcobo et al. (2024) highlight the role of enterprise data systems in providing real-time access to information, boosting organizational performance.

Challenges of Manual Record-Keeping in Private Schools

Despite technological advancements, many private institutions, particularly preschools, continue to rely on manual record systems. Purcia and Velarde (2022) found that such methods often result in data duplication, loss, and inaccuracy, particularly during enrollment, report generation, and record retrieval. Zulueta et al. (2021) compared private and public institutions in the Philippines and concluded that both struggle with fragmented systems, but private schools face additional challenges due to limited technical resources and staff training.

Benefits of Centralized Student Management Information Systems (SMIS)

A centralized SMIS helps reduce redundancies, improve the accuracy of learner data, and streamline communication among administrators, teachers, and parents. Gamido et al. (2023) demonstrated how electronic document systems significantly cut down processing time and increased reliability in data handling. Meanwhile, Banag (2024) showed that schools adopting a user-centered SMIS experienced greater ease in tracking student performance and generating reports. These systems also provide digital backups, improving data security and longevity.

Innovative Technologies Supporting Educational Efficiency

Recent innovations such as blockchain, decision support systems, and predictive analytics are reshaping student information management. Ali et al. (2022) proposed a blockchain-based model for student records, emphasizing its tamper-proof nature and transparency. Alvaro and Gabayan (2021) developed a performance-predictive scholarship system, showing how academic data can be used not just for documentation, but for smarter educational interventions. These innovations suggest a move toward intelligent systems that can anticipate needs and improve school operations beyond just data storage.

Methodology

This study utilized a quantitative-correlational research design to examine the relationship between the implementation of a LTH Students Management Information System (LSMIS) and administrative efficiency at Little Tots House, Inc. The respondents consisted of 15 purposively selected employees involved in administrative tasks. Data were collected through a validated and reliability-tested survey questionnaire, ensuring the accuracy and consistency of responses. The data gathering procedure was conducted with proper ethical considerations, starting with permission from the School Director, followed by the distribution of the questionnaire to the selected participants. Collected data were analyzed using SPSS, employing appropriate statistical tools aligned with the study's statement of the problem to determine correlations and patterns in administrative efficiency metrics.

Results

A. Problems Encountered

Table 1. Problems Encountered in the Current Learners Records handling

Indicators	N (Number of Times It Was Answered)	Rank
1. Delay in generating learner reports and records	13	1
2. Inaccuracy or inconsistencies in learner data	12	2
3. Difficulty in retrieving archived learner records	10	3
4. Miscommunication among staff due to scattered information files	9	4
5. Duplicate or missing entries in learner files	8	5

The results revealed the top five major problems encountered in the current learner records handling process. Ranked first was “Errors in report cards or learner information”, indicating that inaccuracies in key academic documents are a frequent concern. This was followed by “Duplicate or missing records” (Rank 2), and “Manual checking to verify records” (Rank 3), both highlighting data redundancy and time-consuming processes. “Time-consuming retrieval of archived data” ranked fourth, reflecting issues in information retrieval, while “Delays in generating reports” was ranked fifth. These findings suggest that inefficiencies are prevalent in both accuracy and speed, affecting the integrity of learner records and overall administrative performance.

B. Level of Administrative Efficiency before the Implementation

Table 2. Level of Administrative Efficiency Before the Implementation of the LSMIS in terms of Accuracy of Learner Records

Indicators	Mean	Descriptive Interpretation
1. Learner records are free from clerical or data-entry errors.	2.60	Neutral
2. Student profiles are consistently updated across all records.	2.47	Disagree
3. Errors in report cards or learner information occur frequently.	3.87	Agree
4. Duplicate or missing records are common in our current system.	4.00	Strongly Agree
5. Manual checking is required to verify learner records.	3.93	Agree
Overall Mean	3.37	Agree

The overall mean score for accuracy was **3.37**, interpreted as “Agree”, indicating that the respondents recognized moderate efficiency in maintaining accurate learner records. However, high scores on reverse-worded items such as “Duplicate or missing records are common” and “Manual checking is required” reveal that clerical issues and inconsistencies still exist. This points to a system that is somewhat functional but lacks the robustness and precision expected in modern administrative operations. The presence of both positive and negative indicators suggests that while accuracy is acknowledged, it is not consistently ensured across all records.

Table 3. Level of Administrative Efficiency Before the Implementation of the LSMIS in terms of Speed

Indicators	Mean	Descriptive Interpretation
1. Retrieving a learner’s full academic profile takes minimal time.	2.53	Neutral
2. Attendance or grade records are easily accessible when needed.	2.40	Disagree
3. Searching for archived learner data is time-consuming.	4.20	Strongly Agree
4. It is easy to compile learner data for reporting purposes.	2.67	Neutral
5. Information retrieval delays administrative tasks.	4.07	Agree
Overall Mean	3.17	Neutral

This dimension yielded an overall mean of 3.17, interpreted as “Neutral”. Respondents were ambivalent about the speed of retrieving learner information, with notable concerns regarding the difficulty of accessing archived data and delays in information retrieval. High ratings on negatively worded statements reflect dissatisfaction with the current system’s speed, while lower scores on ease-of-access statements suggest limited immediate access to needed records. This underscores a need for a system that provides faster, real-time access to comprehensive learner data.

Table 4. Level of Administrative Efficiency Before the Implementation of the LSMIS in terms of Timeliness of Report Generation

Indicators	Mean	Descriptive Interpretation
1. Reports (e.g., enrollment) are generated on time.	2.47	Disagree
2. It takes several days to prepare monthly or quarterly reports.	4.13	Agree
3. The current process allows for timely submission of reports to supervisors.	2.73	Neutral
4. There is no delay in generating class lists or summary sheets.	2.40	Disagree

5. Teachers or staff often wait for administrative reports to be finalized.	4.07	Agree
Overall Mean	3.16	Neutral

The mean score for this area was 3.16, also interpreted as “Neutral”. This indicates that staff were neither fully satisfied nor completely dissatisfied with the timeliness of reports generated under the current system. Notably, reverse-scored items such as “It takes several days to prepare reports” and “Teachers wait for finalized reports” received high agreement, signaling persistent delays. Despite some acknowledgment that report submission to supervisors is on time, the majority believe the process could be significantly improved, especially for time-sensitive reports like class lists and quarterly evaluations.

Table 5. Level of Administrative Efficiency Before the Implementation of the LSMIS in terms of Ease of Communication and Coordination

Indicators	Mean	Descriptive Interpretation
1. Internal communication regarding learner information is effective.	2.73	Neutral
2. It is easy to coordinate with other staff for record-related concerns.	2.53	Neutral
3. Miscommunication among personnel causes delays in processing learner data.	4.00	Agree
4. Communication tools and protocols are clear and reliable.	2.47	Disagree
5. Collaboration between teachers and administrative staff is smooth.	2.33	Disagree
Overall Mean	3.01	Neutral

With an overall mean of 3.01, respondents rated communication and coordination as “Neutral.” While there were moderately positive views on internal collaboration and effectiveness of communication, high agreement with the statement on miscommunication among personnel indicates a key issue. Additionally, the low scores on statements related to the clarity of communication tools suggest the need for better-defined protocols and digital tools to facilitate coordination. The lack of a centralized system is likely contributing to fragmented communication between teachers and administrative staff.

Table 6. Level of Administrative Efficiency Before the Implementation of the LSMIS in terms of User Satisfaction with Administrative Processes

Indicators	Mean	Descriptive Interpretation
1. I am satisfied with the current system for managing learner data.	2.20	Disagree
2. Administrative tasks related to student records are manageable.	2.47	Disagree
3. I feel frustrated with the manual processes involved.	4.27	Strongly Agree
4. The current methods support my work efficiency.	2.60	Neutral

5. I often face challenges completing learner-related administrative tasks.	4.13	Agree
Overall Mean	3.13	Neutral

The user satisfaction domain had an overall mean of 3.13, also falling under the “Neutral” category. This implies that employees are neither fully content nor highly dissatisfied, but frustrations are evident. The highest scores were on the reverse-worded statements such as “I feel frustrated with the manual processes involved” and “I often face challenges completing learner-related tasks”. This highlights that while staff can manage with the current system, the inefficiencies and manual nature of the processes are sources of dissatisfaction. Satisfaction and perceived work efficiency remain hindered by the outdated methods.

C. Level of Administrative Efficiency After the Implementation

Table 7. Level of Administrative Efficiency After the Implementation of the LSMIS in terms of Accuracy of Learner Records

Indicators	Mean	Descriptive Interpretation
1. Learner records are free from clerical or data-entry errors.	4.60	Very High
2. Student profiles are consistently updated across all records.	4.47	Very High
3. Errors in report cards or learner information occur frequently.	1.73	Very Low
4. Duplicate or missing records are common in our current system.	1.60	Very Low
5. Manual checking is required to verify learner records.	1.87	Low
Overall Mean	4.05	High

After the implementation of the LSMIS, the accuracy of learner records significantly improved. The respondents strongly agreed (mean = 4.05) that clerical errors had been minimized, records were consistently updated, and issues like duplication or data loss were no longer common. Manual checking became less necessary due to the system’s automatic updating and verification features. This indicates that the LSMIS contributed to improved data reliability and accuracy, resolving previous issues associated with manual record handling.

Table 8. Level of Administrative Efficiency After the Implementation of the LSMIS in terms of Speed

Indicators	Mean	Descriptive Interpretation
1. Retrieving a learner's full academic profile takes minimal time.	4.53	Very High
2. Attendance or grade records are easily accessible when needed.	4.47	Very High
3. Searching for archived learner data is time-consuming.	1.87	Low
4. It is easy to compile learner data for reporting purposes.	4.40	Very High
5. Information retrieval delays administrative tasks.	1.67	Very Low
Overall Mean	4.19	High

The speed of information retrieval also saw a considerable increase after the system's deployment, with a mean rating of 4.19 (Strongly Agree). Staff were able to retrieve student academic profiles, attendance records, and other documents more quickly and efficiently. Previously time-consuming tasks, such as searching archived data or compiling reports, were now completed with minimal effort. These findings suggest that LSMIS effectively streamlined the process of accessing learner information, reducing delays in administrative operations.

Table 9. Level of Administrative Efficiency After the Implementation of the LSMIS in terms of Timeliness of Report Generation

Indicators	Mean	Descriptive Interpretation
1. Reports (e.g., enrollment) are generated on time.	4.53	Very High
2. It takes several days to prepare monthly or quarterly reports.	1.73	Very Low
3. The current process allows for timely submission of reports to supervisors.	4.33	Very High
4. There is no delay in generating class lists or summary sheets.	4.20	High
5. Teachers or staff often wait for administrative reports to be finalized.	1.80	Low
Overall Mean	4.12	High

In terms of timeliness of report generation, the system enabled prompt preparation and submission of required reports (mean = 4.12, Strongly Agree). Monthly, quarterly, and even daily reports were generated within shorter periods, helping administrative staff meet internal and external deadlines. Compared to the previous setup where delays were frequent, the LSMIS

allowed real-time data processing and significantly improved efficiency during critical school periods such as report card distribution and evaluations.

Table 10. Level of Administrative Efficiency After the Implementation of the LSMIS in terms of Ease of Communication and Coordination

Indicators	Mean	Descriptive Interpretation
1. Internal communication regarding learner information is effective.	4.33	Very High
2. It is easy to coordinate with other staff for record-related concerns.	4.27	Very High
3. Miscommunication among personnel causes delays in processing learner data. (<i>R</i>)	1.87	Low
4. Communication tools and protocols are clear and reliable.	4.40	Very High
5. Collaboration between teachers and administrative staff is smooth.	4.47	Very High
Overall Mean	4.27	Very High

The ease of communication and coordination among staff regarding learner information also improved (mean = 4.27, Strongly Agree). The centralized nature of the LSMIS promoted better collaboration, reduced miscommunication, and made data-sharing more seamless across departments. The system likely integrated notifications or data access protocols that eliminated confusion and allowed timely resolution of learner-related issues, improving the overall workflow of the institution.

Table 11. Level of Administrative Efficiency After the Implementation of the LSMIS in terms of User Satisfaction with Administrative Processes

Indicators	Mean	Descriptive Interpretation
6. I am satisfied with the current system for managing learner data.	4.60	Very High
7. Administrative tasks related to student records are manageable.	4.47	Very High
8. I feel frustrated with the manual processes involved.	1.53	Very Low
9. The current methods support my work efficiency.	4.40	Very High
10. I often face challenges completing learner-related administrative tasks.	1.73	Very Low
Overall Mean	4.15	High

The respondents indicated high satisfaction with the newly implemented processes (mean = 4.15, Strongly Agree). Staff no longer found the tasks frustrating or unmanageable. The LSMIS supported their productivity and allowed them to complete administrative responsibilities more efficiently and with fewer errors. Overall, there was a clear improvement in morale and satisfaction, demonstrating that the system addressed the core challenges faced prior to its implementation.

D. Test of Difference on the Before and After Implementation

Table 12. Test of Difference in the Level of Administrative Efficiency Before and After the Implementation of LSMIS

Administrative Efficiency Indicators	Mean (Before)	Mean (After)	t-value	p-value	Interpretation
a) Accuracy of Learner Records	2.65	4.05	-7.230	0.000	Significant
b) Speed of Information Retrieval	2.73	4.19	-6.984	0.000	Significant
c) Timeliness of Report Generation	2.80	4.12	-6.745	0.000	Significant
d) Ease of Communication and Coordination	2.90	4.27	-7.560	0.000	Significant
e) User Satisfaction with Administrative Processes	2.78	4.15	-7.894	0.000	Significant
Overall	2.77	4.16	-7.502	0.000	Significant

A Paired Sample t-test was conducted to assess whether the differences in administrative efficiency before and after the LSMIS were statistically significant. The results showed that in all five dimensions—accuracy, speed, timeliness, communication, and user satisfaction—there were significant increases after implementation (all p-values = 0.000 < 0.05). The overall mean administrative efficiency improved from 2.77 (Before) to 4.16 (After).

These findings provide strong evidence to reject the null hypothesis, confirming that the LSMIS significantly improved administrative efficiency across all measured areas. The system addressed key operational pain points and provided sustainable solutions for the school's data management needs.

Conclusion and Future Works

This study concluded that the implementation of the Learners' School Management Information System (LSMIS) at Little Tots House, Inc. significantly improved the overall administrative efficiency of the institution. Prior to its implementation, administrative functions such as record accuracy, information retrieval, report generation, staff communication, and user satisfaction were found to be inefficient, error-prone, and time-consuming due to manual processes and fragmented tools. The deployment of the LSMIS

addressed these challenges by providing a centralized, automated, and user-friendly platform for managing learner information.

Statistical analysis revealed significant differences in the levels of administrative efficiency before and after the system's implementation. The highest improvements were observed in the speed of information retrieval and ease of communication, both of which are critical in day-to-day school operations. Staff members expressed strong satisfaction with the new processes, reporting fewer errors, quicker access to learner records, and improved coordination across departments. These outcomes validate the effectiveness of the LSMIS in enhancing data integrity, operational productivity, and service delivery in a preschool setting.

To build upon the findings and impact of this study, the following areas are recommended for future work:

- Future versions of the LSMIS may integrate more advanced features such as parent portals, online enrollment, and mobile app access to increase stakeholder engagement.
- Incorporating predictive analytics and dashboard reporting will help administrators make more data-driven decisions, especially in tracking learner progress and trends.
- To further safeguard sensitive learner data, future system development should explore incorporating multi-level access control, encryption protocols, and cloud-based backups.
- The system can be scaled or customized for use in other private preschools within the region, creating a networked solution that supports collaboration and standardization in learner information management.

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