

Lincoln School of Arts and Languages Management System

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Abstract- The Lincoln School of Arts and Languages Management System (LSALMS) was developed to address inefficiencies caused by the school's manual and paper-based administrative processes. The web-based system centralized academic and administrative information and supported enrollment, admissions, student and faculty records, fee management, schedules, attendance, assessments, core values, semester configuration, reports, and role-based user portals. A descriptive-developmental approach was used, while Rapid Application Development (RAD) guided requirements planning, user design, construction, and cutover. Online interviews with the school principal and personnel documented the existing workflow and operational problems, prototypes were used to refine required features, and a five-point acceptability questionnaire evaluated usefulness, ease of use, responsiveness, and user satisfaction. The system was evaluated by 68 respondents composed of 66 students and 2 staff members. Results showed weighted means of 4.72 for usefulness, 4.67 for ease of use, 4.63 for responsiveness, and 4.65 for user satisfaction. The detailed overall acceptability table reported a mean of 4.67, interpreted as acceptable. The findings indicate that the developed system was positively received and addressed major concerns associated with decentralized spreadsheets, paper-based records, manual enrollment, and inefficient information retrieval.

Keywords- school management system, web-based system, enrollment management, student records, Rapid Application Development, acceptability testing

INTRODUCTION

Technology has become increasingly important in educational administration because schools manage large volumes of student, faculty, scheduling, assessment, and financial information. Digital platforms can reduce repetitive work, improve access to records, and support more coordinated decision-making across school offices (Bond et al., 2021; Selwyn, 2021; Sunarjo et al., 2024).

Despite the growing use of educational technology, many institutions continue to rely on paper-based documents, spreadsheets, and face-to-face transactions. Manual enrollment, registration, record keeping, fee collection, and scheduling can require repeated data entry and may contribute to delays, data inconsistency, retrieval difficulties, and risks of loss or unauthorized access (Purcia & Velarde, 2022; Amanchukwu & Ololube, 2020; Touray, 2021).

The Lincoln School of Arts and Languages (LSAL), located in Quezon City, Philippines, experienced similar operational concerns. The source manuscript describes the use of Microsoft Excel, Google Drive, paper records, and manual enrollment procedures for curriculum, assessments, transcripts, admissions, applications, scheduling, and student information. These fragmented processes increased administrative workload and made information retrieval more time-consuming.

To address these concerns, the project developed the Lincoln School of Arts and Languages Management System, a centralized web-based platform intended to digitize administrative and academic workflows. The system provides role-based access for administrators, registrars, faculty members, students, and applicants and integrates functions for academic setup, records, fees, enrollment, admissions, schedules, attendance, assessments, and reporting. The study

further assessed the system's acceptability in terms of usefulness, ease of use, responsiveness, and user satisfaction.

OBJECTIVE OF THE STUDY

The primary objective of the project was to design and implement a management system for the Lincoln School of Arts and Languages that would support the school administration in effectively organizing, planning, and managing resources and activities to achieve institutional goals.

1. Describe the existing process in the current system.
2. Identify the problems encountered in the manual processes.
3. Identify the features of the proposed management system.
4. Evaluate the developed management system's acceptability in terms of usefulness, ease of use, responsiveness, and user satisfaction.

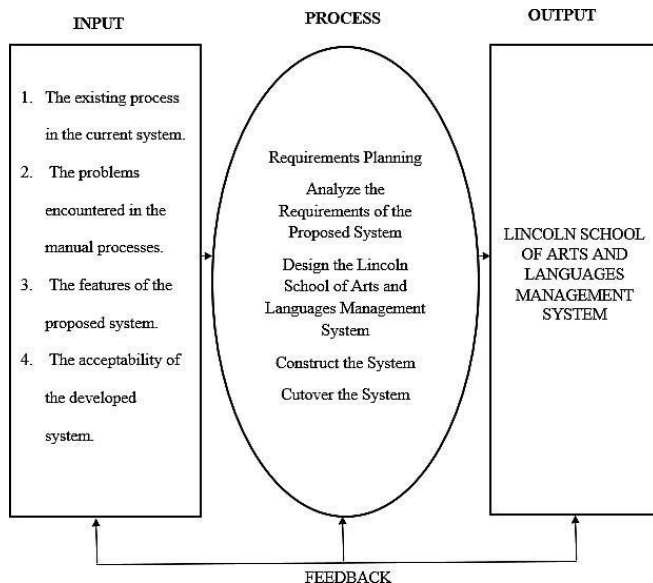


Figure 1. Conceptual framework of the Lincoln School of Arts and Languages Management System.

Figure 1 presents the input-process-output framework used to organize the project. The inputs correspond to the four study objectives, the process applies the RAD stages of requirements planning, analysis, design, construction, and cutover, and the output is the completed Lincoln School of Arts and Languages Management System. Feedback connects the

output to the development process and supports iterative refinement.

MATERIALS AND METHODS

Research and Development Design

The project used a descriptive-developmental approach. The descriptive component documented the existing workflow and the problems encountered in the school's manual processes, while the developmental component covered system requirements, prototyping, construction, testing, and implementation.

System Development Method

Rapid Application Development (RAD) was used as the development methodology. The source manuscript describes four phases: Requirements Planning, User Design, Construction, and Cutover. Requirements Planning identified operational needs through stakeholder interviews; User Design translated these needs into prototypes; Construction involved iterative coding and refinement; and Cutover covered final testing and implementation.

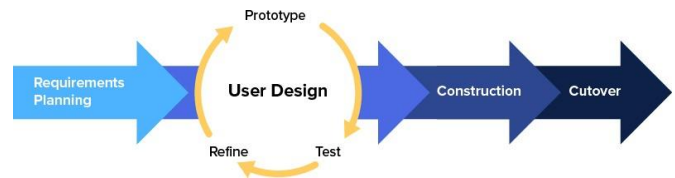


Figure 2. Graphical representation of the Rapid Application Development model.

Figure 2 shows the RAD model applied during system development. Its iterative structure allowed the proponents to collect requirements, present prototypes, revise functionality, construct the web application, and prepare the completed system for use while incorporating feedback from intended users.

Study Locale and Respondents

The study focused on the Lincoln School of Arts and Languages in Quezon City. Online interviews were conducted with Mrs. Regina Lea D. Maguddayao, the school's President and Principal, together with school personnel, to document existing processes and desired improvements. For acceptability testing, 68 respondents participated: 66 students and 2 staff members composed of the admin and a faculty representative.

Data-Gathering Instruments

For Objectives 1 and 2, online interview questions were used to gather information about the school's current processes and manual-system problems. For Objective 3, visual prototypes were presented during feedback sessions so potential users could comment on interface design and functionality. For Objective 4, a structured five-point questionnaire measured usefulness, ease of use, responsiveness, and user satisfaction.

Data Analysis

Data Flow Diagrams were used to represent the existing and proposed processes. An Ishikawa diagram was used to organize the root causes of the problems identified in the manual system. Stakeholder responses were reviewed through thematic analysis to identify recurring concerns and required features. Acceptability responses were analyzed using descriptive statistics and average weighted means.

Table 1. Likert Scale for Acceptability Testing

Numerical Equivalent	Weighted Value	Descriptive Equivalent	Descriptive Interpretation
5	4.21-5.00	Strongly Agree	Acceptable
4	3.41-4.20	Agree	Acceptable
3	2.61-3.40	Moderately Agree	Acceptable
2	1.81-2.60	Slightly Agree	Not Acceptable
1	1.00-1.80	Disagree	Not Acceptable

Table 1 presents the five-point scale used to interpret the acceptability questionnaire. The source manuscript states that responses from 2.61 to 5.00 were treated as acceptable, while responses from 1.00 to 2.60 were treated as not acceptable.

Development Environment and Implementation Requirements

Table 2. Hardware Components and Specifications

Component	Specification
Processor	Intel Core i3 or higher
Memory	4 GB RAM minimum; 8 GB or higher recommended
Storage	128 GB SSD or higher
Display	14-inch screen, 1920 × 1080 resolution
Graphics	Dedicated GPU with 2 GB VRAM

Table 2 lists the recommended hardware used to support system development and operation. The source manuscript specifies an Intel Core i3 or higher processor, at least 4 GB of RAM, SSD storage, a full-HD display, and dedicated graphics to provide stable performance for web development and routine system use.

Table 3. Software Components and Specifications

Component	Specification
Operating System	Windows 10 or later
Web Browsers	Microsoft Edge and Google Chrome
Scripting Language	PHP 1.9.0 or later
Front-end Technologies	HTML, CSS, JavaScript, Bootstrap, jQuery
Database / Local Server	XAMPP for Windows 8.2.12
Code Editor	Visual Studio Code or similar

Table 3 summarizes the software environment identified in the source manuscript. The system was developed as a web application using PHP and conventional front-end technologies, with XAMPP supporting the database environment and modern web browsers used for access and testing.

RESULTS AND DISCUSSION

Existing Process of the Lincoln School of Arts and Languages

The existing workflow was largely manual. Administrative data, attendance, assessments, transcripts, personal student information, class schedules, and reports were processed using spreadsheets, paper records, and manual coordination among the administrator, faculty, registrar, and students.

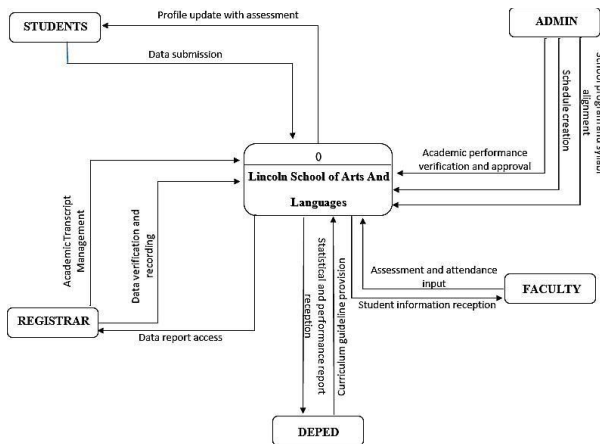


Figure 3. Context Data Flow Diagram of the existing process.

Figure 3 shows the principal entities involved in the existing manual process and the flow of information among them. The diagram demonstrates that administrative and academic information passed through several users and manual storage points before reports or updated records were produced.

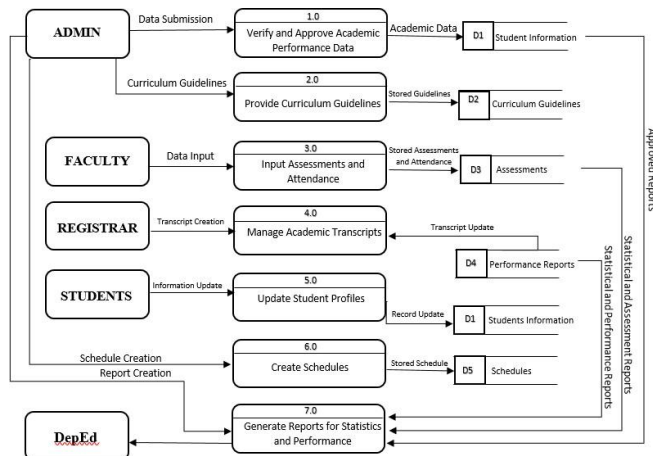


Figure 4. Top-level Data Flow Diagram of the existing process.

Figure 4 expands the existing workflow into the major school processes. It shows manual verification of academic data, attendance and assessment recording, transcript updating, personal-information updates, schedule preparation, and report generation. The dependence on separate manual activities illustrates why processing was time-consuming and susceptible to errors.

Problems Encountered in the Manual Process

Interviews with the school principal and staff identified substantial time and effort requirements in curriculum creation, assessment, transcript management, enrollment, admissions, and applications. The manuscript also reports concerns related to spreadsheet security, multiple disconnected files, paper-based records, redundancy, record loss, data corruption, and slow retrieval.

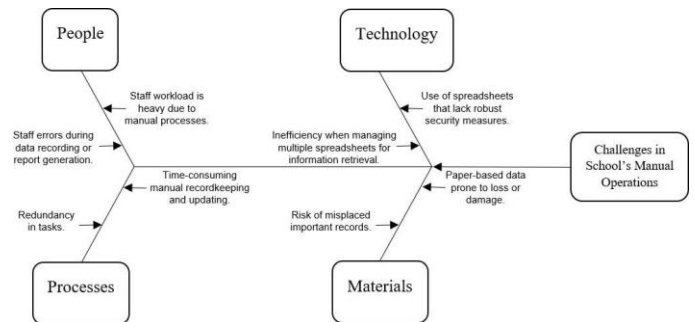


Figure 5. Ishikawa diagram of the problems encountered in the manual process.

Figure 5 groups identify the identified causes of inefficient school operations into related problem areas. The diagram emphasizes that the observed difficulties resulted from a combination of manual procedures, document handling, data-storage practices, security limitations, and administrative workload rather than from a single isolated issue.

Proposed Management System and Workflow

The proposed LSALMS replaced the fragmented manual process with a centralized platform. Administrators, registrars, faculty members, students, and applicants interact with the system through role-specific functions, while records are stored in a common database. The proposed system supports user management, academic structures, fee configuration, admissions, registration, schedules, attendance, assessments, reports, and student access to academic information.

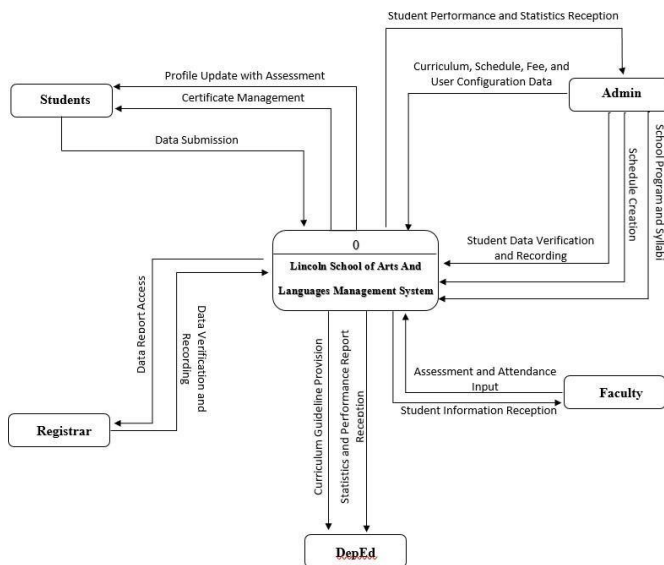


Figure 6. Context Data Flow Diagram of the proposed management system.

Figure 6 presents the overall interaction between LSALMS and its external users. It shows how the centralized application receives and returns information for administrative, academic, enrollment, and student-service activities through a single computerized environment.

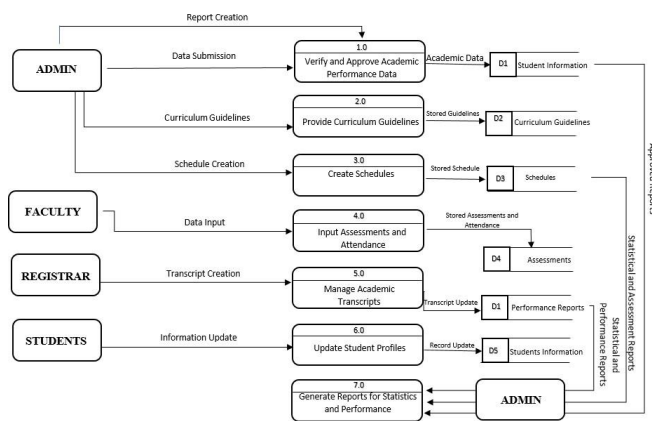


Figure 7. Top-level Data Flow Diagram of the Lincoln School of Arts and Languages Management System.

Figure 7 expands the proposed system into its principal computerized processes. Centralized data handling supports more coordinated management of users, academic structures, fees, admissions, registration, schedules, assessments, and reports, reducing the repeated encoding required by the former manual workflow.

Major System Interfaces and Role-Based Features



Figure 8. Login page for administrator and registrar.

Figure 8 presents the secure login interface used by administrators and registrars. User credentials are validated before access is granted, and the system determines the user's role so that the appropriate functions and dashboard can be displayed.



Figure 9. Administrator homepage.

Figure 9 shows the administrator dashboard. The interface provides access to Management, Setup, Registration, and Upload functions, including users, strands, subjects, faculty, rooms, sections, core values, fees, semester configuration, curricula, schedules, section advisers, admissions, registration, attendance, and assessment data.



Figure 10. Registrar homepage.

Figure 10 presents the registrar dashboard, which is focused on student-record and enrollment functions. The interface supports application review,

admissions processing, student registration, and maintenance of accurate student records.

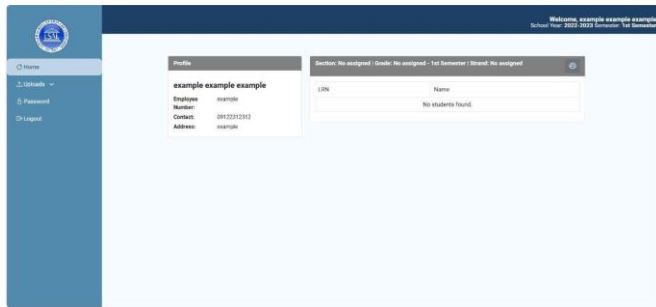


Figure 11. Faculty staff homepage.

Figure 11 shows the faculty dashboard. It presents the faculty member's profile and assigned students, sections, and grade levels and provides functions for uploading attendance, assessments, and other instructional records.

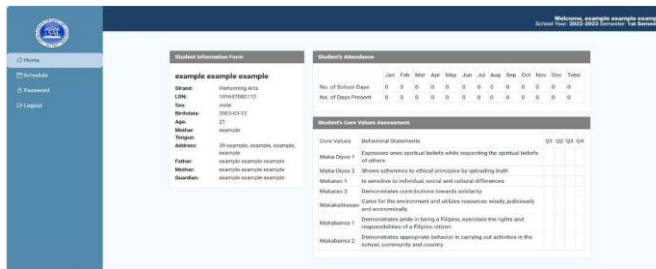


Figure 12. Student homepage.

Figure 12 presents the student portal. Students can view personal and academic information, attendance, assessments, and class schedules, providing direct access to records that previously required manual inquiry.



Figure 13. Admission homepage.

Figure 13 shows the admission portal used by prospective students. The page provides access to admission requirements, selection procedures, application submission and status information, and

contact details, supporting a more accessible application process.

Profile of the Testers

Table 4. Profile of the Testers

Variable	Profile	Frequency	Percentage
Gender	Male	29	42.65%
Gender	Female	39	57.35%
Age	16-18	59	86.76%
Age	19-20	7	10.29%
Age	30-35	2	2.94%
Age	36-40	0	0%
Age	>40 years old	0	0%

Table 4 summarizes the 68 respondents who evaluated LSALMS. Females comprised 57.35% of the respondents and males 42.65%. Most respondents were 16-18 years old, reflecting the predominance of student users in the evaluation, while two respondents were staff members.

Acceptability of the Developed System

Table 5. Acceptability Assessment in Terms of Usefulness

Indicator	Mean	Interpretation
This system is a great help to my work.	4.72	Acceptable
The system offers tools or features that help me complete tasks.	4.75	Acceptable
I would recommend this system to my colleagues.	4.74	Acceptable
The system reduces the time spent on manual processes.	4.71	Acceptable
The system contributes to overall productivity.	4.68	Acceptable
Average Weighted Mean	4.72	Acceptable

Table 5 shows that usefulness obtained an average weighted mean of 4.72, interpreted as

acceptable. The highest item mean was 4.75 for the availability of tools and features that help users complete tasks, while all indicators remained within the acceptable range.

Table 6. Acceptability Assessment in Terms of Ease of Use

Indicator	Mean	Interpretation
It is easy to make the system do exactly what you want.	4.62	Acceptable
It is relatively easy to move from one part of a task to another.	4.68	Acceptable
The organization of menus or information lists is clear and easy.	4.63	Acceptable
Learning how to use new functions is very easy.	4.75	Acceptable
It does not take too long to learn the system functions.	4.65	Acceptable
Average Weighted Mean	4.67	Acceptable

Table 6 presents an average weighted mean of 4.67 for ease of use. Learning new system functions received the highest item mean of 4.75, indicating that respondents generally found the interface understandable and the transition between tasks manageable.

Table 7. Acceptability Assessment in Terms of Responsiveness

Indicator	Mean	Interpretation
The system responds fast to inputs.	4.69	Acceptable
The speed of the system is fast enough.	4.54	Acceptable
Tasks can be performed straightforwardly.	4.56	Acceptable

Indicator	Mean	Interpretation
Fewer steps are required to get something to work.	4.69	Acceptable
When encountering issues, the system provides helpful error guidance.	4.65	Acceptable
Average Weighted Mean	4.63	Acceptable

Table 7 shows an average weighted mean of 4.63 for responsiveness. The highest scores of 4.69 were assigned to fast response to inputs and the reduction of steps needed to complete tasks, while all response-speed and error-guidance indicators were interpreted as acceptable.

Table 8. Acceptability Assessment in Terms of User Satisfaction

Indicator	Mean	Interpretation
Working with this system is satisfying.	4.71	Acceptable
I would like to use this system every day.	4.62	Acceptable
Using this system is not frustrating.	4.63	Acceptable
The system does not stop unexpectedly.	4.66	Acceptable
User needs have been fully considered.	4.63	Acceptable
Average Weighted Mean	4.65	Acceptable

Table 8 reports an average weighted mean of 4.65 for user satisfaction. Satisfaction with working with the system obtained the highest means of 4.71. The detailed source table reports 4.65 as the category average, although one narrative sentence in the original manuscript separately mentions 4.63; this value should be verified by the authors if the manuscript is finalized for publication.

Table 9. Overall Acceptability Assessment of LSALMS

Category	Average Weighted Mean	Interpretation
Usefulness	4.72	Acceptable
Ease of Use	4.67	Acceptable
Responsiveness	4.63	Acceptable
User Satisfaction	4.65	Acceptable
Overall Mean	4.67	Acceptable

Table 9 summarizes the four acceptability dimensions. Usefulness received the highest mean at 4.72, followed by ease of use at 4.67, user satisfaction at 4.65, and responsiveness at 4.63. The detailed overall table reports an overall mean of 4.67 and an acceptable interpretation. The original abstract separately states an overall mean of 4.72, so the discrepancy should be checked against the original computation before journal submission.

CONCLUSION AND RECOMMENDATIONS

CONCLUSION

The study documented a manual school-management environment that depended heavily on spreadsheets, paper records, repeated encoding, face-to-face enrollment, and decentralized information storage. These conditions contributed to delays, security concerns, retrieval difficulties, record inconsistencies, and administrative workload.

The developed LSALMS centralized key administrative and academic functions in a web-based platform. Its role-based modules supported administrators, registrars, faculty members, students, and applicants through functions for users, academic structures, fees, admissions, enrollment, schedules, attendance, assessments, reports, and academic-record access.

The acceptability evaluation produced positive results across all four dimensions. The detailed source tables reported mean scores of 4.72 for usefulness, 4.67 for ease of use, 4.63 for responsiveness, and 4.65 for user satisfaction, with an overall mean of 4.67, interpreted as acceptable.

RECOMMENDATIONS

1. Integrate tools for educational content delivery, such as online classroom functions, and consider a mobile application version to improve access for users on mobile devices.
2. Prioritize completion and refinement of registrar functions to support full student registration, academic tracking, and reporting.
3. Provide comprehensive user training, documentation, and continuing technical support for students, faculty members, and administrative personnel.
4. Perform regular system maintenance and updates to improve security, functionality, performance, and user experience.
5. Design future versions for scalability and integration with other institutional platforms, including financial software and student information systems.

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