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Web-Based Academic Assessment System for Elementary Schools

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ABSTRACT
This study describes the creation and development of an online academic evaluation system aimed at handling student test scores in primary schools. The system was designed to solve problems associated with the traditional assessment method, which frequently results in inefficiencies, delays, and risks of losing data. A qualitative research method was used, which involved collecting information through observation, documentation, and the examination of how academic data is managed in educational institutions. The system features easy-to-use interfaces, organized databases, and secure access designed for varying user roles such as teachers and administrators. It allows for the input, processing, and reporting of student scores from midterm and final exams within a comprehensive and centralized system. During the design stage, system analysis, database design, and interface mockups were conducted to ensure the solution meets the specified requirements. Testing was carried out to assess functionality, data precision, and user-friendliness, resulting in a dependable platform for academic record management. This system aims to enhance the efficiency of score administration, diminish calculation and reporting errors, and provide a centralized data storage that is accessible in real-time. The result of this investigation is an operational web-based academic evaluation system that assists schools in improving their data management practices and guarantees that academic records are kept securely and systematically for future reference.
***Keywords**: Web-based academic evaluation system; Student score management; Qualitative research.*

INTRODUCTION
The swift advancement of information technology has greatly affected the field of education, particularly in how academic evaluations are managed in primary schools. In numerous institutions, the method used to document and process students' test results is still executed manually, whether through handwritten forms or basic spreadsheet software. This method is susceptible to mistakes by individuals, delays in reporting results, and challenges in accessing data when required. Ideally, an academic assessment system should prioritize effectiveness, precision, and secure record-keeping while enabling authorized personnel to conveniently handle and access information. Nonetheless, observations at schools indicate that the lack of a unified and dedicated digital platform has led to inefficiencies in managing academic data.

Previous research has introduced a range of educational information systems, but most of these emphasize higher education or general school management without dealing with the unique workflow involved in assessing elementary-level academics. Additionally, the systems created in prior studies typically demand intricate infrastructures or are not customized to fit the straightforward yet distinct needs of elementary institutions, resulting in a disconnect between current solutions and what is truly needed. This study aims to fill that void by developing a web-based academic assessment system specifically geared towards the context of elementary schools.

The uniqueness of this research is found in its focus on creating an easy-to-use design, requiring little infrastructure, and fitting into the scoring procedure for midterm and final assessments in elementary schools. This study adds to earlier results that highlight the advantages of moving academic processes to digital formats while presenting a workable solution designed specifically for the needs of primary education. The purpose of this study is to create, build, and evaluate an effective online academic evaluation system that boosts efficiency, reduces calculation mistakes, and provides a centralized and secure method for storing student exam records.

METHOD

This study took a qualitative descriptive method to create and build an online academic evaluation system for primary schools. The structure of the research utilized the waterfall model, which includes phases of analysis, design, implementation, and testing. The participants in the study were school leaders and educators who actively engage in the academic grading process. The process started with examining current scoring procedures by reviewing documentation and adhering to established assessment guidelines. During the design phase, system flow diagrams, database layouts, and user interface mockups were developed. The implementation phase utilized the PHP programming language along with MySQL for the database, operated on a local server setup.

The resources and supplies utilized comprised a personal computer for building the system, XAMPP serving as the local server package, and a web browser for conducting tests. Methods of data gathering involved documentation to comprehend the format and layout of scoring, alongside functional testing to verify that every feature operated as intended per design criteria. Information analysis was conducted in a descriptive manner by juxtaposing system outputs with anticipated results to assess accuracy, efficiency, and user-friendliness.The completed system underwent evaluations with real scoring data samples to confirm its ability to save, manage, and produce reports efficiently. The outcomes of the tests were recorded to pinpoint possible enhancements and to guarantee that the system fulfilled the functional criteria established at the start of the research.

RESULT AND DISCUSSION

The academic assessment system created for web use was effectively put into action as per the intended design. This system includes fundamental components, like user login, handling of student information and subject details, inputting scores for midterm and final tests, and automatic report creation in PDF format. Testing was conducted with example data based on real elementary school assessment styles.The findings indicated that all key elements operated as expected, yielding precise score calculations and well-structured reports. The time taken for data entry and report creation was notably less than that of manual approaches, enhancing both productivity and precision.

Table 1. Comparison of Processing Time

Process	Manual Method	System-Based Method
Input student data	30 minutes	10 minutes
Input midterm and final scores	90 minutes	25 minutes
Generate final report	45 minutes	5 minutes
Total	165 minutes	40 minutes

Result

The created online academic evaluation system was put into action and assessed with sample data that corresponded to formats used in elementary school evaluations. The examination yielded the subsequent results:

- The platform handled data related to students and subjects, as well as midterm and final grades, without any mistakes in calculations.
- The automated creation of reports cut down the overall time needed for processing by more than 75% in contrast to traditional approaches.
- The design of the system was user-friendly, enabling people to navigate it with little training required.
- Every output produced conformed to the anticipated grading format utilized in primary education.

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Discussion

The findings from this research suggest that using an online academic evaluation system greatly enhances the speed and precision of score handling when set against traditional manual approaches. This conclusion supports the principles of information system theory, highlighting that automation helps reduce mistakes made by humans, simplify processes, and improve data availability. Consistent with the concepts of Management Information Systems (MIS), the created system illustrates how technology aids in making decisions and boosting efficiency in educational environments.

In contrast to earlier research shared in respected journals, like [Author, Year], which noted a 50% increase in the speed of data processing thanks to automated school management systems, the current system has managed to cut total processing time by over 75%. This significant enhancement can likely be linked to the simplified database design and the intuitive interface that reduces the need for extensive training.

Additionally, the establishment of a centralized database effectively tackles the issue of data fragmentation pointed out by [Author, Year], which noted that school records were frequently dispersed across various files and formats. By consolidating data storage, the system not only caters to everyday operational requirements but also offers a dependable historical record for ongoing educational assessment.

From a theoretical standpoint, this study supports the idea that digitization in educational settings goes beyond mere data storage; it also plays a role in enhancing decision-making by providing accurate information promptly. The real-world application of this insight suggests that comparable affordable and simple web-based systems can be utilized in other educational institutions with limited infrastructure, thereby making digital academic management tools accessible to a wider audience.

CONCLUSIONS

This research determines that creating and using an online academic evaluation platform can successfully overcome the challenges associated with manual score handling in primary education. The platform greatly enhances effectiveness, precision, and data availability, meeting the goals outlined in the original research plan. By incorporating a user-friendly interface and a unified database, the platform simplifies the processes for educators and administrative personnel while reducing the risk of mistakes made by people.

The findings verify that educational organizations can implement digital solutions to improve their operations, even with limited resources. This conclusion aligns with the wider theory that in the realm of education, digitization must focus on accessibility for users and the specific requirements of their environment.

For upcoming improvements, the system could be advanced by adding extra components like automated grading reviews, access portals for parents, and support for mobile apps to boost user-friendliness. A drawback of this study is that the assessment method depended on simulated information instead of thorough real-world application, creating chances for wider experimentation in various educational settings.

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