ASSESSMENT OF THE EFFICIENCY OF THE ONLINE ENROLLMENT SYSTEM OF BATO INSTITUTE OF SCIENCE AND TECHNOLOGY

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Abstract – The Bato Institute of Science and Technology Online Enrollment System deals with student details, grade reports, enrollment, and billing. It keeps track of all the information on a student from the first day of their course until completion. Which complete every semester each year, and all of these will be available for future reference. Almost all the work used is computerized, so accuracy was maintained. Maintaining the backup is easy. The system has two access modes: administrator and user (staff and student). A standardized questionnaire was developed and administered to system users, covering areas such as ease of use, speed, and overall satisfaction level to assess the system's efficiency. Based on the results of the gathered and treated data, the researcher was able to conclude. It shows that the "Efficiency of the Online Enrollment System" is effective because of "very good" result during the survey. It is recommendable that the current system continuously improves from time to time to avoid problems in the future.

Keywords – Computerization, Management System, Online Enrollment, Web-based System

1. INTRODUCTION

"Assessment of the Efficiency of the Online Enrollment System of Bato Institute of Science and Technology" is a research study that aims to evaluate the performance of the online enrollment system of the BIST. The study investigates the system's usability. The authors aim to identify areas for improvement and provide recommendations for enhancing the system's efficiency and user experience.

In recent years, many authors have explored the importance of online enrollment systems in educational institutions. For example, Nkuo-Akenji and Kinoti (2017) argue that online enrollment systems can significantly improve the student registration process while increasing efficiency and reducing operational costs. Similarly, Kewalramani and Singh (2017) contend that online enrollment systems can offer excellent benefits, including flexibility, speed, and availability.

Furthermore, Chen, C. and Chen, W. (2018) suggested that an online enrollment system can provide an effective and efficient way of managing student data, improving the quality of education institution services. Yaghoubi and Asghari (2016) also highlighted the importance of a suitable online enrollment system in managing student data effectively.

Other authors have emphasized the role of online enrollment systems in managing the high volume of student applications. For instance, Arora and Soin (2019) state that online enrollment systems can save time and resources in reviewing and processing student admission applications. García et al. (2020) highlighted the need for a reliable, fast, and efficient online enrollment system to manage many student applications.

Ranaev and White (2019) focused on the user experience and satisfaction of the online enrollment system. They suggest that an exemplary user interface and functionality are crucial in ensuring the satisfaction of users seeking to enroll in an educational institution. Reay et al. (2020) argued that a user-friendly and easy-to-use online enrollment system could encourage student enrollment and retention.

Green (2017) and Akalonu and Baridonya (2018) emphasized the importance of electronic data management in online enrollment systems, including storing, accessing, and processing data efficiently.

Universities should begin to consider planning the development or use of student information systems generally recognized by SIS and consistent with best practices while expanding their database services (Bigirimana et al., 2016).

In summary, online enrollment systems have become an essential component of educational institutions, and their successful implementation can significantly enhance student registrations and admissions. Along with the authors mentioned above, many other researchers have explored and advocated for efficient and effective online enrollment systems that meet the expectations of students and educational institutions, thus improving the overall quality of education services.

2. THEORETICAL FRAMEWORK

The theoretical framework used in "Assessment on the Efficiency of the Online Enrollment System of Bato Institute of Science and Technology" is the Technology Acceptance Model (TAM) developed by Davis, F. D. (1989). The model aims to explain user acceptance and adoption of new technology by considering perceived usefulness (PU) and perceived ease of use (PEOU). According to TAM, a user's intention to use technology directly relates to how useful they perceive the technology

to be and how easy they perceive it to operate. Users are more likely to adopt a technology perceived as valuable and easy to use.

In the context of the assessment of the efficiency of the online enrollment system of the Bato Institute of Science and Technology, the application of TAM can determine users' perceptions of the system's usefulness and ease of use. It can help identify if the system needs any improvement and optimization to facilitate users' acceptance and adoption of the technology.
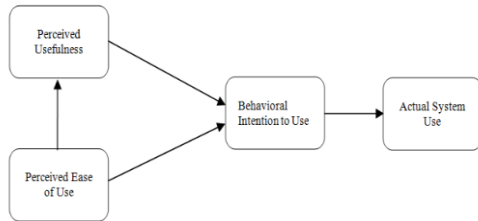

Figure 1. Technology Acceptance Model (TAM)

3. MATERIALS AND METHODS

The researcher chose to use the Descriptive Developmental Research Method, wherein the study focuses on present situations. It involves the description, analysis, and presentation of the current system, its composition, and processes of phenomena. Descriptive statistical methods are employed to describe the fundamental characteristics of data in a study. They provide simple summaries of the sample and the measures. The Descriptive Developmental Research Method is more on analyzing the existing system; through this method, the researcher will be able to know how the current system operates. It describes and examines the systematic procedure of human activities. It is essential to determine the actions to identify the problems and weaknesses of the existing system and, at the same time, to devise a solution to the problems encountered. The answer will be associated with the proposed method.

The researcher conducts a user satisfaction survey to evaluate the effectiveness of the Bato Institute of Science and Technology's online enrollment system A standardized questionnaire covered areas such as ease of use, speed, and overall satisfaction level. The questionnaire was completed by a representative sample of participants who had used the system online using google forms. Responses to the survey were analyzed using various statistical tools, such as descriptive statistics, mean, standard deviation, and correlation. This analysis identified areas where participants felt satisfied and areas with room for improvement. Based on the results, decisions were made to optimize and improve the system, providing a better user experience for future enrollments.

The researcher personally visited the BIST institution to ask permission for the system to evaluate its performance. The researcher created a list of questions that expose the system by category. The respondents are composed of faculty and students (see Table 1). All the respondents were asked to complete the questionnaire survey after using the online enrollment system and answer it to the best of their knowledge. See Figure 2 for the official website of BIST, wherein the students and staff can navigate and start the online enrollment process. The respondents were given the link (https://tinyurl.com/4jewax22) for the survey questionnaires through group chat messenger to gather the data and allow time to complete the forms. The survey forms were then collected for encoding and tabulating responses to facilitate the analysis during the interpretation of the data. After the researcher got the questionnaires, the researcher calculated the percentage. The statistical tool obtains an overall perspective of the studied situation. This also includes the scaling system, which the researcher used to monitor the respondent's interpretation of facts. The Likert scale was used to evaluate or assess the items in the questionnaire. The range and the variation of the five-point scale are shown in Table 2.

Table 1. Respondents of the Study

Designation	Frequency	Percentage
Faculty	145	11%
Students	1164	89%
Total Number of Respondents	1309	100%

Table 2. The Five-point Likert Scale

Scale	Range	Interpretation
5	4.6 - 5.0	Excellent
4	3.7 - 4.5	Very Good
3	2.8 - 3.6	Good
2	1.9 - 2.7	Fair
1	1.0 - 1.8	Poor

Weighted mean was used to measure the general response of the survey samples, whether they agreed with a given statement or not.

The formula for calculating the weighted average is as follows:

Where:
$\bar{X}$ - Mean
f - Weight is given to each respondent
x – Number of respondents
n - Total number of respondents

Mean

$$\bar{X} = \frac{\sum fx}{n}$$

Percentage

$$P = \frac{x}{n} x100$$

The users (respondents) were asked to navigate to the login page of the online enrollment system and provide their identification credentials. After a successful login, the user is redirected to their account dashboard. From there, the user can access the functions relevant to their role, such as enrolling in classes or viewing academic records. Once the user completes their tasks, logging out of the system is recommended to avoid unauthorized access to their account.
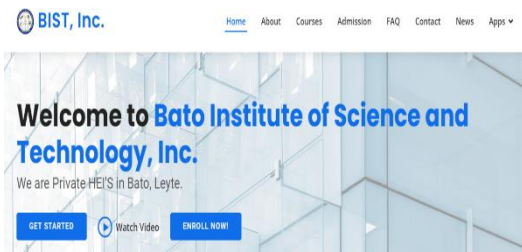
Figure 2. Official website of the school

Figure 2 is the official website of the Bato Institute of Science and Technology, wherein the users and viewers can see the details regarding the school, such as the courses offered, requirements for admission, advertisements, and the enrollment procedure. The registered users, like the students and the teachers, will access this site to log in to their portal.

Figure 3. Login screen (Registrar/Admin)

Figure 3 is where the registration for the students can be accessed. The user must log in using the username and password created by the system administrator. The assigned person for registration can input the student's information and print their registration certificate. All the transactions of the registrar can also be done here. The registrar has full access to this module.

Figure 4. Login screen (Student)

Figure 4 is where a registered student can log in to their portal. The student must log in using the username and password created by the registration officer.

Figure 5. Login screen (Instructor)

Figure 5 is the login for the instructor using the username and password created by the system admin. Once successfully logged in, they can now view the class schedules.

4. RESULTS AND DISCUSSIONS

The researcher surveyed the BIST to evaluate its performance and consider improvements. Along with the survey, one thousand three hundred nine (1,309) respondents completed the questionnaire and participated in the survey.

The participants were instructed to use any web browser, such as Chrome or Mozilla, to access the webpage for usability testing and to assess the system's efficiency. Each participant had to log into their portal for the test.

Below are the portion analyses and interprets the data from the users' evaluation of the Bato Institute of Science and Technology Online Enrollment System, which they used during the online survey.

Table 3. Efficiency – Question 1. The system can respond in 0.1 seconds.

Interpretation	Frequency	Range	Percentage
Excellent	380	1.45	29%
Very Good	383	1.17	29.3%
Good	387	0.89	29.6%
Fair	121	0.18	9.2%
Poor	38	0.03	2.9%
Total	1309	3.72	100%
Interpretation			Very Good

Table 4. Efficiency – Question 2. The device does not "hang" or "lag" when accessing different system features.

Interpretation	Frequency	Range	Percentage
Excellent	399	1.52	30.5%
Very Good	361	1.10	27.6%
Good	369	0.85	28.2%
Fair	131	0.20	10%
Poor	49	0.04	3.7%
Total	1309	3.71	100%
Interpretation			Very Good

From the data above, the results of the student's evaluation in terms of its efficiency can be observed. It can be noted that the system was rated "Very Good," considering whether the system can respond in 0.1 seconds and whether the device does not "hang" or "lag" when accessing different features of the system.

Table 5. Usability– Question 1. The system is easy to understand.

Interpretation	Frequency	Range	Percentage
Excellent	527	2.01	40%
Very Good	361	1.10	28%
Good	343	0.79	26%
Fair	52	0.20	4%
Poor	26	0.07	2%
Total	1309	4.17	100%
Interpretation			Very Good

Table 6. Usability– Question 2. The system is easy to learn by different users
(e.g., beginner, experts).

Interpretation	Frequency	Range	Percentage
Excellent	482	1.84	30.5%
Very Good	360	1.10	27.6%
Good	368	0.84	28.2%
Fair	78	0.11	10%
Poor	21	0.02	3.7%
Total	1309	3.91	100%
Interpretation			Very Good

Table 7. Usability– Question 3. The system can be opened in different browsers
(e.g., Internet Explorer, Google Chrome, Mozilla Firefox)

Interpretation	Frequency	Range	Percentage
Excellent	633	2.42	30.5%
Very Good	334	1.02	27.6%
Good	222	0.51	28.2%
Fair	86	0.13	10%
Poor	34	0.03	3.7%
Total	1309	4.11	100%
Interpretation			Very Good

It shows that the overall remarks and Interpretation is "Very Good." Based on the survey results, the system became more effective as it was implemented and thus received positive feedback.

5. CONCLUSION AND RECOMMENDATIONS

The researcher considered that fast-paced technological changes are opportunities to make everyday life easier at home, school, and work. Computer resources have been helpful in industries by providing information that demands good performance is terms of its usability. Some schools have already used these resources to develop an accessible, accurate record and enrollment management system. This study aimed to evaluate the efficiency of the online enrollment system to determine if the BIST current system performs well. The assessment seeks to optimize the design, address shortcomings, and enhance its efficiency and user experience without developing a new system. It is also anticipated that there will be an improvement in the current system in terms of its efficiency.

Based on the results gathered, the system's efficiency can be concluded that some aspects still need updating and improvement for the system to be perceived as more efficient by the users, specifically the capability of the system to be opened on different devices. The design should be optimized to function seamlessly on other devices, including smartphones, tablets, and laptops, to cater to users' varying needs and preferences. These will improve the accessibility and convenience of the system for users who prefer to use different types of devices to access it.

A recommendation was formed based on the derived conclusions. Even if the users approve and the system produces the desired result, it should be prioritized because efficiency contributes to its overall performance. The survey on the system's performance should be done to improve the system's efficiency in using possible input data to get the highest quality and as much output as possible. By improving these aspects of the online enrollment system, the user experience can be significantly enhanced, making the system more efficient, functional, and user-friendly. The fewer resources the system uses to get results, the better the system will be.

6. ACKNOWLEDGMENT

REFERENCES

[1] Akalonu, C. C., & Baridonya, J. L. (2018). Design and implementation of a web-based student admission system for tertiary institutions in Nigeria. International Journal of Computer Science and Information Security, 16(6), 69-75.

[2] Arora, S., & Soin, M. (2019). A study on the perception of students towards online admission systems of institutes in India. International Journal of Computer Applications, 182(45), 35-39.

[3] Bigirimana, J., Nkurunziza, T., & Mugwaneza, V. (2016). An assessment framework for evaluating the usability of

e-Learning platforms. Journal of e-Learning and Knowledge Society, 12(1), 175-190.

[4] Chen, C. Y., & Chen, W. Y. (2018). An online enrollment system using cloud computing technologies. Proceedings of the International Conference on Applied System Innovation: Applied System Innovation for Modern Technology, 313-316.

[5] Garcia, E., Garcia-Ruiz, M. A., & Cuadrado-García, M. (2020). Implementation of online enrollment systems in Latin American universities: A comparative analysis. Sustainability, 12(11), 4492.

[6] Green, K. T. (2017). The benefits of online registration systems: A literature review. Journal of Information Technology Management, 28(2), 3–13.

[7] Kewalramani, M., & Singh, R. (2017). An empirical study on the factors affecting the acceptance of the online course registration system in India. International Journal of Advanced Research in Computer and Communication Engineering, 6(4), 142-147.

[8] Nkuo-Akenji, T., & Kinoti, H. (2017). Factors influencing adoption of online registration systems among students in selected Kenyan universities: A case study. International Journal of Advanced Research in Computer Science and Software Engineering, 7(7), 238-248.

[9] Ranaevskaia, E., & White, M. C. (2019). The impact of electronic medical records on healthcare delivery in developing countries: A systematic review. Bulletin of the World Health Organization, 97(9), 630-638.

[10] Reay, N. W., Johnson, N., Kamal, N., & Perez-Quiñones, M. A. (2020). Improving the user experience of an online teaching and learning platform. Journal of Computing in Higher Education, 32(1), 1-18.

[11] Yaghoubi, N. M., & Asghari, M. (2016). Designing an efficient online enrollment system for higher education institutes. International Journal of Emerging Technologies in Learning (iJET), 11(3), 72-77.

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