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Comparative Analysis on the Efficiency of LIS Vis-a-Vis SMIS: A Case Study

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ABSTRACT

Information systems work to make managing data better so that organizational and financial operations can be structured successfully. Schools also spend money on information technologies to enhance their operations, offerings, and outcomes. Information technologies have also grown to a position of considerable relevance in education because of their role in contemporary communities. The department implemented several school-based information systems to assist school administrators and guarantee the caliber of instruction and learning. To provide efficient, open, and effective governance, the school information system must be connected in line with the direction defined by EdTech. With this, the Secondary Schools of Talisay City will integrate the School Information System into its systems to automate grading procedures and information retrieval. Thanks to this shift, teachers and advisors can now simply and quickly obtain the information they need to update.

INTRODUCTION

Information systems seek to improve management data for successfully structuring financial and organizational functions. Schools also invest in information systems to better their functions, services, and products.

Specifically, developing these systems aims to enhance productivity at work through information processing, enhancing managerial performance by supplying the knowledge needed, and winning competitions by choosing tactics (Yuen, Law & Wong, 2003). Information technologies have also risen to a position of great priority in education because of their importance in contemporary communities. Information technology's contributions to education have recently been one of the topics that receive the most attention (Webber, 2003; Flanagan & Jacobsen, 2003; Selwood, 2000, Pelgrum, 2001; Yuen, Law & Wong, 2003). Computerization of school management is the fundamental topic of today's school management, which is in the early stages of the School Management Information Systems. Principals have been utilizing information systems with progressively larger daily management staffs (May, 2003 as cited in Demir, 2006). If there is proof that the substantial investment in introducing information and communication technology (ICT) into schools—including hardware, software, networking, and staff development—has had a commensurate impact on academic achievement and effectiveness, it will be deemed worthwhile (Condie *et al.*, 2007).

The department introduced various school-based information systems to aid school heads and ensure the quality of teaching and learning. The key reform thrust of the Basic Education Sector Reform Agenda (BESRA) is to get schools to continuously improve the School Based

Management system to gain autonomy and flexibility in managing operations, resources, and planning for school development. To support School-Based Management (SBM), a school information system is required. In accordance with the direction set by EdTech, the school information system must be integrated to ensure efficient, transparent, and effective governance.

With this, the Secondary Schools of Talisay City will adopt in its systems the School Information System to automate grading systems, and the retrieval of information as well. With this move, teachers and advisers can easily and readily access the information required to update.

LITERATURE REVIEW

Information Systems

Seeman & O'Hara (2006) investigated, higher education's use of customer relationship management (CRM) using information systems to improve the student-school relationship. Findings noted that a student-centric approach, improved customer data and process management, and increased student loyalty, retention, and satisfaction with the institution's programs and services are just a few advantages of using CRM in a college setting. In order to ensure net benefits for students, educational institutions must ensure that their education management information systems are of high quality, while also maintaining students' satisfaction with the system and encouraging continued use. This research focuses on understanding student use of EMIS and the emergence of net benefits; it introduces an EMIS success model. The same model asserts that student satisfaction and continued use of the EMIS are both strongly influenced by the quality of the information that is available and the inherent services of the system (Martins *et al.* 2019).

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Learner Information System

Amilbahar and Cordero, Jr. (2018) used four different website analyzers to evaluate the overall effectiveness of the Department of Education's Learner Information System (LIS). The results demonstrated that the LIS website performs poorly in terms of Search Engine Optimization, Social Media, Performance, and Content. On the other hand, it received great marks for Design, Mobile, Usability, Server, and Security. A substantial number of teachers have voiced their dissatisfaction with the website's pace, prompting the researchers to propose a further evaluation of the overall performance.

Koch *et al.* Al (2002) investigated the advantages of using a computerized learner information database system to promote growth and accountability through information sharing. According to the study, the development of a computerized database has made it feasible to follow students' academic progress, inform faculty members about students' academic preparation and retention rates for high-risk students, and inspire institutional research and policy-making.

MATERIALS AND METHODS

This study explored the efficiency regarding information retrieval between the LIS (Learner Information System) and the SMIS (School of Management Information System) in the selected schools in the Secondary Schools of Talisay City to seek ways in accessing the information of students in the selected Secondary Schools; features of the Learner Information System (LIS) and School Management Information System (SMIS); and the comparative differences in efficiency as experienced by the teachers in selected schools.

Current Status

Currently, the Secondary Schools in Talisay City are gearing toward the implementation of the School Information System. Moreover, the schools are conducting Learning Action Cell (LAC) sessions and one-on-one tutorials for the full implementation of their school's information system.

Description of the Current Policy

The School Management Information system intends to automate data and improve promoting ease of access in acquiring data.

METHODOLOGY

This study used a content analysis method with a qualitative research methodology. Researchers use content analysis to discover trends in consented recorded interviews. Words, subjects, and concepts in the texts were categorized or coded, and the resulting information was then analyzed. In this study, convenience sampling was used. Since there was a convenient respondent pool, this strategy was used to gather the data. Additionally, it is remarkably quick, simple, and affordable, thus practical in terms of time and financial resources.

The researchers employed a form for the demographic profiles of the informants and the questions to be answered in order to collect the necessary data. In order to expound on the inquiries and provide a more thorough response, an interview was also facilitated for the productive and efficient gathering of responses. Copies of the study description, informed consent form, and interview schedule plan was sent to the informants for their permission. Through emails, messenger, phone call, and face-to-face interview, the comparative analysis between LIS and SMIS were collected. The interview used a researcher-formulated, validated, and unstructured interview guide question. The prepared interview protocol was subjected to a content validity check by several experts; two (2) curriculum and instruction experts, and case study research experts to ensure the appropriateness of the constructed interview questions. Each interview session covered 30 minutes to more than an hour, audio-recorded, and then transcribed for thematic analysis. The interview was done online through the Messenger™ application developed by Facebook™, and face-to-face while observing health protocols.

Data Analysis

The connection of data to propositions is made following the data collection phase, as themes emerge. As data is analyzed, the researchers attempted to match patterns that appear in the data to the theoretical propositions of the case study. The themes that emerged in this study thus served as answers to the research questions posed in this study. Following the theme development stage, meanings are extracted from the findings to determine recommendations for practice and future research.

Ethical Consideration

In compliance with research ethics protocols, the researcher shall observe anonymity, confidentiality, and informed consent while carrying out the study (Mohd Arifin, 2018; Richards & Schwartz, 2002; Saunders, M., Lewis, P. & Thornhill, A., 2012). Ethical approval shall be sought and granted by the Ethical Review Committee of the researcher's affiliated institution. The informed consent from the informants stipulating their awareness of the purpose of the study, their agreement to participate, and their freedom not to continue if they feel uncomfortable with the questions shall be considered prior to the conduct of the study. Further, the anonymity and confidentiality of the informants shall be preserved by not revealing their names and identity in the data collection, analysis, and reporting of the study findings. Privacy and confidentiality of the interview environment shall be managed carefully during virtual and face-to-face interview sessions, data analysis, and dissemination of the findings.

RESULT AND DISCUSSIONS

This study compared the efficiency between the Learner Information System and School Management Information System according to the viewpoints of the

informants while the researchers were immersed with them.

The Comparative differences in the function that were noticed in the use of both retrieval systems for each school year noted interrelated themes. LIS offered institutionalized services to teachers for it reduced teachers' workload. This means that LIS and SMIS played an integral part in the educational system for easy tracking and minimizing teachers' paper works and processing time. Emergent themes suggested that LIS gives more benefit to the teacher's side through data processing of personal data and tracking scholastic records. SMIS, on the other hand, is perceived as relief to teachers as leverage through automation of production of school forms, student records, and access.

Informants noted that between the Learner Information System and the School's Management Information System, it implied that LIS is beneficial because it complies with Republic 11650 also known as A Beacon of Hope for Filipino public school children, which requires all schools to identify learners with special needs so that basic services will be rendered to them. Thus, providing security and resolution to problems the education system encountered.

On the other hand, SMIS provided added features such as automation and integration of all the school forms required for each school year. It also offered institutionalized services to teachers for it reduced teachers' workload. This means that LIS and SMIS played an integral part in the educational system for easy tracking and minimizing teachers' paper works and processing time.

In terms of issues or problems encountered in each of the information retrieval systems, informants noted that the LIS had limited features, no control for data correction, slow processing/updating of data, and limited time use when there were multiple users (data traffic). For SMIS, it is internet dependent, there were bugs to be fixed, needed work is done on-site, and no mode of verification of whether the data input were correct or not. This meant that even how advanced a system was, there were still loopholes and programs that needed to be updated. Issues and problems are encountered during the inputting of the data or information of students. Thus, due to the Data Privacy Act of 2012, the information could not be disclosed.

For possible improvements, informants suggested for the improvement of each information retrieval systems. For LIS, the informants suggested that there should be full implementation of the program, full accessibility, and there should be synchronicity between the two systems introduced. Meanwhile, for the SMIS, there should be interconnectivity between the platforms, and full accessibility should also be given to the administrators of the school program. The server should also be provided by the schools for safekeeping and easy access to data for the teachers.

This meant that LIS and SMIS ought to be synchronized so that there should be no problems encountered in

tracking and transferring data especially when students transfer from one school to another.

Significant accessibility should be given to Learner Information System Coordinators to exercise local autonomy to avoid delays in the processing of information for a responsive system. Synchronization of the system ought to be done to have a common interface to harmonize data for consistency.

Development of a common interface for data consistency and creation of a database to check the consistency of the two systems.

CONCLUSION

The Learner Information System and the School Management System are both beneficial to the retrieval system of students' information provided that these two systems will be synchronized to avoid confusion for the end users the teachers. These systems must also be upgraded to avoid downtime and inaccessibility which is its most important feature.

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