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RESEARCH ARTICLE

DESIGN AND DEVELOP A THESIS AND CAPSTONE PROJECT MANUSCRIPT ARCHIVING MANAGEMENT SYSTEM FOR EASTERN VISAYAS STATE UNIVERSITY ORMOC CAMPUS

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ABSTRACT

Digital archiving is a replacement for the traditional paper archive as it serves the same purpose of preserving and protecting documents created in a digital format. In this study, we design and developed a manuscript online digital archiving management system for the Eastern Visayas State University Ormoc Campus. The system addresses the challenges related with traditional hardbound kept in a designated place by the department and library. The researcher develop a digital platform with the aim of providing an effective archival management system for student theses and capstone manuscripts projects. The researcher concede the need of efficient solutions of traditional archival thesis and capstone project manuscripts. We conducted a qualitative research study and was utilized through a case study approach with both interviews and observations as gathering information. We used a Agile concepts with the combination of Rapid Application Development (RAD) to maintain a adaptable and iterative approach throughout the development process of the system. The findings of this study indicate that existing archival systems lack of essential features to effectively manage thesis and capstone project manuscripts. The development of this web-based online digital archiving system is significant for Eastern Visayas State University - Ormoc Campus and the researcher, as it provides unlimited capacity for uploading documents, but it also imposing specific limits to the needs of thesis and capstone project manuscript within Eastern Visayas State University-Ormoc Campus.

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INTRODUCTION

A capstone project is a comprehensive, final academic task most students do during their final year of an academic course. This project may require extensive work since it is a multi-disciplinary task that sometimes forces learners to use the knowledge and skills acquired in their fields to tackle real-life matters of concern. Research papers, case studies, creative works, internships, and field placement projects are all part of capstone projects. The main objective of these projects is to promote and encouraged students in analytical reasoning, address complex challenges, and demonstrate their readiness for their specific careers. Capstone projects are sometimes seen as the pinnacle of a student's academic journey and may provide significant experience and abilities that will be beneficial for their future pursuits. A research paper or major project course is a large scale final project that aim to give students with the significant skills and knowledge necessary to carry out research and produce and excellent research paper or major project. These often include a range of subjects, including research technique, literature evaluation, data gathering, analysis, and writing and presenting abilities.

An undergraduate thesis, also known as a bachelor's dissertation, is an extensive scholarly document that necessitates extensive study on the selected subject. Typically, you allocate it in the final year of your undergraduate program, where you pursue a bachelor's degree. The selection of a subject is contingent upon the student's own interests and the specific field they want to pursue. In the current era of digital technology, the immense quantity of information accessible to us via electronic devices is both astounding and daunting. The internet has changed the way we access and interact with information from any social media platforms to internet-based databases. Nevertheless, the unprecedented accessibility of information brings significant difficulties, especially in the realm of digital preservation. Education institutions face an increasingly challenging task of efficiently managing and safeguarding their intellectual resources in the era of digitization and information technology. According to Aloklu (September 2019) states that educational institutions have challenges in effectively handling vast quantities of information, whether in the form of physical documents or electronic data.

Traditional archives often maintained printed papers in the past. However, universities and colleges have now adopted digital archiving and data management systems to efficiently organize and store all the information they gather and use. A recent study, showed that several universities that have not yet taken action to transfer their record management systems from a paper-based, cabinet-based system for storing and securing information. In a case study by Caluza, L. (January 2017), Leyte Normal University still relied on the traditional method of data storage; thus, when the strongest typhoon (Yolanda) hit the university, the papers and documents from the registrars archiving area were scattered and deteriorated. By comparison to our study instead of relying on the traditional method of storing documents we develop a digital archiving theses manuscript system that aids the challenges faced by the university in terms of archival process and stored them in cloud storage to prevent being dispersed. The study carried out by Momoti, Nikiwe & King, Lizette. (June 2020), revealed that universities lack formal record management systems, resulting in the storage of records in unsecured cabinets within their respective offices. Despite of this it gives to us an idea about the importance of having a archival system to a universities or any other organizations. Digital preservation helps protect document, manuscript, journal from physical damage or loss ensuring the security of every valuable documents and exclude the need of physical storage such as cabinet. Azim et al (2018) explained that records are essential documents that are made, received, kept and utilized by an organization or individual in carrying out commercial operations, and fulfill legal obligations. Any higher education institution must handle its records effectively and efficiently in order to function smoothly.

In the same way, Eastern Visayas State University Ormoc Campus also leans largely upon its documents to achieve reliable record keeping. The handling of physical document storage consumes a lot of materials, space, time and effort. Such kinds of environments often result in challenges like indexing, access, retrieval and dissemination of the scholarly materials by the students, instructors, researchers and faculty. Moreover, there may be no digital centralized archiving system resulting in loss of such data, limited access to these other works and time wasting by administrative efforts as well. The university currently uses the hardcopy storage model to perform archiving with cabinets as the medium of storage. The library record system works with both paper and electronic documents classified by their official transactions. The lack of adequacy in the system makes it hard to retrieve needed files in time because of the large number of records. Amendment of this limitation, Eastern Visayas State University – Ormoc Campus archiving process should be further modernized and digitized. It is believed that creating a thesis and capstone project manuscript management system will save a lot of time and effort while looking for documents. The system is designed to address all the issues connected to centralization, keeping and preserving the information. On the other hand, with this system the archiving process of theses and manuscripts becomes more streamlined, while at the same time the use of paper-based documents is reduced. Generally, this system aims at accelerating all the operations of saving, searching, retrieval and accessing theses and capstone project papers, guaranteeing all users consistent experience and zero information leakages.

Numerous studies have demonstrated how crucial archival records are related to societal changes. The preservation of significant documents and data has been a longstanding aspect of society for several centuries. It involves the storage and safekeeping of information, either on a temporary or permanent basis, making it accessible when required ^[4]. Zuheng and Heyuzi (March 20, 2017) , observed that managing archives is a regular responsibility within colleges and universities. Efficient utilization of college archives is important for enhancing the institution's brand, preserving cultural heritage, facilitating teaching reforms, advancing scientific research, and fostering innovation. This practice enhances the productivity of archive personnel, alleviates their workload, and boosts the utilization rate of college archives . The study uses the literature review method such as research method, experimental and object-oriented method to analyze the current situations of archiving management work in the university.^[5]

Although electronic management systems offer numerous advantages for handling digital data in educational institutions, there is a notable concern regarding security. It is imperative to guarantee that all data entered into the organizational system are protected and are not easily vulnerable to disclosure to third parties. Apart from the security concerns associated with managing digital data, other issues require attention and resolution. Van Loon et al. (2017) and Joshi & Singh (2017) state that among the issues of primary concern in the present paper are the lack of a single accountability for information management, inconstant use of archiving methods, a poor data management function, a disjointed system, and a lack of user expertise with data archives. From this perspective, this study primarily focuses on the challenges associated with archiving and managing documents in Eastern Visayas State University – Ormoc Campus. This research problem serves as the foundation for an ongoing project that seeks to investigate how the university can strategically address the issues of archiving and document management in a manner that is most efficient, thereby fulfilling the requirements and expectations of stakeholders. There is a lack of knowledge on the experience of each institution in terms of information management and data storage at educational institutions in the current literature on Digital Archives and Information Management. Furthermore, the research focus of this study is related to an investigation of how archives and document management are organized at a university, such as Eastern Visayas State University – Ormoc Campus. Based on a case study conducted in Eastern Visayas State University – Ormoc Campus, the collection and analysis of data will enhance the understanding of how the said academic institution managed and archived scholarly papers. A review of the literature on this study, analysis and collection of data through a case study, and discussions and conclusions that focus on the interpretation of the extent to which the formulated arguments are reflected in the research findings are presented in the remainder of this paper.

METHODOLOGY

The study employed a qualitative research method, utilizing a case study, to collect detailed insights from participants about the archival process in higher educational institutions.

The researchers aim to design and develop a web-based online digital archiving system for the Eastern Visayas State University—Ormoc Campus, with the goal of facilitating paperless or digital data archiving and simplifying transactions, including retrieving manuscripts for future reference. The National University (NU) states that qualitative research typically collects data in the field from smaller sample sizes, enabling researchers to personally visit participants in their homes or other settings [6]. Our case study and observations were done at the Eastern Visayas State University-Ormoc Campus, which is located in Ormoc City. We chose this specific institution due to its long standing practice of having large quantities of academic papers or manuscripts kept every year about graduating students and also because of the fact that it is well known for annually producing graduates. We selected the study participants through purposive sampling, ensuring that they included staff or faculty, students from various year levels, and administrators from Eastern Visayas State University-Ormoc Campus.

The primary focus of this study is applying a digital archiving system through a descriptive case study to the people involved in order to address the specific management problems within Eastern Visayas State University – Ormoc Campus. A qualitative research, more often, takes the form of descriptive type of a study that looks into the background of individuals or groups and uses descriptive narrative in relaying their strategies for solving problems. This form of case study is valuable when a researcher aims to offer a detailed and thorough examination of the phenomenon in question [7]. Semi-structured interviews were used to guarantee a mix of pre-set questions and flexibility for respondents to express themselves further in certain areas. A high-specification camera and microphone equipped smartphone was used to record each 15-minute interview so as to obtain clear video and audio quality. The researchers conducted participant observation primarily at Eastern Visayas State University's Ormoc Campus's archival facilities during regular business hours over a three-week period. This implies observing the archiving process, interactions among people, and existing system use. Also, the researchers occurred to informally engage in discussions with faculty members to get their different perspectives and experiences.

The second part of this study focuses on the system's design and development. When it comes to archive management, all of the system capabilities are limited to the university's requirements. In this stage of this project, we used Rapid Application Development (RAD), which is an agile software development approach that focuses more on ongoing software projects and user feedback. Since we conducted interviews and observations with different participants at Eastern Visayas State University's Ormoc Campus, their feedback and insights about our system have been significant in the design and development of this digital archiving system. In other words, rapid application development (RAD) focuses on development and building a prototype rather than planning. Following the four basic steps of RAD, the final phase involves deploying the system. During this phase, we thoroughly test the system before going live, which includes intensive scale testing, issue tracking, final technical documentation and customizations, and system simulation. The existing literature on faculty papers within university archives and manuscript collections is

noticeably lacking when it comes to discussing acquisition, appraisal, administration, processing, and utilization as critical issues. Therefore, we conducted a survey using ARL libraries and universities previously classified as research institutions to address this gap. The survey research delves into different dimensions of the management of faculty papers at various angles, including criteria for selecting potential donors, strategies employed by archivists when seeking faculty papers, types of materials requested and retained, levels of arrangement applied, and how often both users and staff use them (Laver, 2003). However, the importance of archival records in Nigerian polytechnic libraries remains undeniable, particularly in reference, historical research, and administrative functions. Although archival records and manuscripts abound within these libraries, their scattered nature poses challenges for retrieval when needed. This study focuses on advocating the establishment of archival subsystems within polytechnic libraries to ensure the preservation and dissemination of valuable administrative, research, reference, and historical records. Most archival records in archival libraries are scattered, so the efficient retrieval may be difficult. The research problem revolves around the challenge of organizing and accessing dispersed archival materials. This quantitative investigation emphasizes the need for a structured archival approach in Nigerian polytechnic libraries. The study recommends that library systems establish distinct archive departments, each under the leadership of a licensed archivist. A design like this would simplify the selection, obtaining, organization, storage as well as dissemination of records from archives such as documents and manuscripts besides enhancing their respective use. Our system can also implement the recommended approach to organize and access archival manuscripts, thereby preserving data (Aliyu, n.d). According to Hodge, Gail. M. (January 2000), He pointed out the importance of having best practices for digital archiving in all stages of Information Lifecycle Management (IML). While we are using a Rapid application Development (RAD) in prototyping and testing the functionalities of the digital archiving system.

Additionally, Jayoma, J., Moyon, E., and Morales, EM. (2020) become aware that there is an rapid increase of records managed by organizations, regardless of their size, emphasize the present challenge of keeping record. These records serve important purposes, ranging from historical and demographic research to sociological, scientific investigations, medical, and serves as valuable benchmarks for an organization's future activities. This research is centered on the Department of Social Worker and Development (DSWD) Caraga, where the ongoing creation of records encounters obstacles due, to the constraints of a record keeping system, which hinders the retrieval and monitoring procedures. In response to these difficulties DSWD Caraga has taken a step towards digitalizing its record keeping system. The main goal is to update and improve management methods to ensure the preservation of lasting documents. This shift is in line with the organizations requirements and adheres, to the regulations governing record keeping. This article suggests an approach to record categorization by utilizing the Python Tesseract library, an open source tool that interfaces with Googles Tesseract OCR Engine. Converting paper-based documents into a digital format through scanning with the used of PyTesseract library to recognize and extract text from these digitized documents

and through the integration with Django, a high-level Python web framework, and MySQL, a relational database management system, facilitates efficient management of records concerning classification, indexing, and archiving. The outcomes of this system include enhanced ease for the records officer and providing a comprehensive solution for the secure storage and retrieval of records. This technological intervention aims to overcome the challenges inherent in conventional record management systems, promising improved efficiency, accessibility, and security in handling DSWD Caraga's extensive record repository. This study signifies a practical approach to address contemporary challenges in record management through the fusion of technological advancements and strategic digitization initiatives. A recent study obtained from Villarosa, E. in November 2021 shows that archiving management systems have a big impact on the way records are managed in any learning institution. They developed a record-archiving system for Eastern Visayas State University – Burauen Campus. He designed it with the aim of moving from the traditional paper-based to the digital paperless way of record management. The researchers employed a mix of quantitative and qualitative methods to conduct the study, which was administered in an iterative manner. They ran several cycles of defining, designing, developing, and implementing the system. On the other hand, our qualitative research merely involved designing and implementing a thesis and capstone project manuscript archiving management system for the Ormoc campus of Eastern Visayas State University. Our aim was to preserve theses and capstone project manuscripts while also creating a secure and centralized database for all users. By combining various system features and user prompts, we aimed to enhance the assistant's ability to refine the text and make it sound more natural, while ensuring the original content's intent and accuracy.

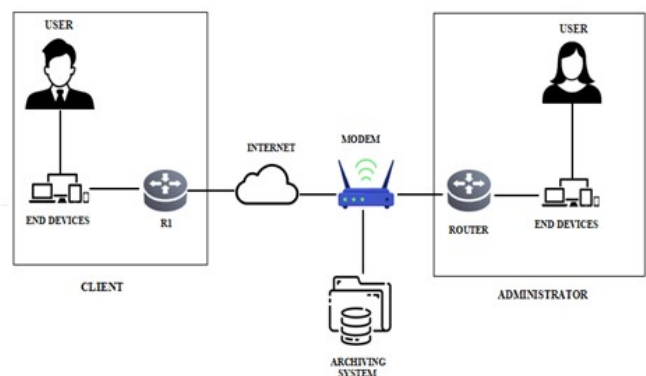
In study of Buragohain, D., Deka, M., Kumar, A. (January 2022), preserving a manuscripts in traditional way is an old practices. However, over the last twenty years digitizing old manuscripts become the primary concerns of government to ensure the preservation of old manuscripts for future generations as considered a valuable assets. The study highlights the preservation and conservation practices adopted by the British Library to digitize the ancient manuscripts in North Eastern India. The purpose of the study is to address the concern regarding the preservation of these traditional culture. In addition, the British Library's preservation policy for ancient manuscripts in North-Eastern states of India analyse both qualitative and quantitative. In relation to our study Eastern Visayas State University - Ormoc Campus is still relying on physical copies of manuscripts the need of archiving system is imperative as they continue to rely on traditional method of preserving these academic papers. With this, we have developed an innovative solution to significantly enhance document management and preservation at our institution. These methodologies reflect a continuous evolution in the field of archiving driven by the need for efficient preservation, accessibility, and management of records. While some studies have focused on qualitative assessments of archival systems, emphasizing the challenges faced and proposing innovative solutions, others have adopted quantitative methodologies to measure the effectiveness and

pave the way for more effective and resilient archiving systems.

RESULTS

The researchers observed and interviewed administrators, employees, and students at the Eastern Visayas State University Ormoc Campus in this section. The purpose of the interviews and observations was to identify the shortcomings of the archival procedures, particularly in terms of archiving and preservation. Proponents also gathered feedback from students, staff, faculty members, and administrators about the developed digital archiving system. The tables below show the interview results. The table above shows the number of respondents who have answered and participated during the survey with a total of 63 respondents. The system was tested by different level users. It was tested and evaluated by faculty members of the computer studies department and was asked by the proponents with a series of questions regarding the manuscript archiving systems. One of the questions asked was, "is the archival management of theses and capstone project manuscripts in Eastern Visayas State University-Ormoc Campus efficient?". Majority of the students that were interviewed found out that, even though the university practices archiving, it still relies on traditional method which is disadvantageous. Students also were interviewed regarding their experience while testing our system. Based on the information that was collected and gathered, the respondents observed and evaluated that the digital archiving system is convenient to the students when seeking information related to their studies. Some respondents strongly agreed that the need of manuscripts archiving system should be realized to preserve and organize important files. Overall, respondents find the system secure and reliable as it addresses the institutions needs with regards of secure storage and archiving of manuscripts.

Respondents	No. Of Respondents
Students from EVSU-OC (different year levels and programs)	50
Students outside EVSU-OC	10
Faculty or Staff	2
Administrator	1
Total	63



According to the data gathered and analyzed, it appears that Eastern Visayas State University-Ormoc Campus is engaged in archiving management. Nevertheless, the university continues to utilize traditional methods, wherein the submitted final theses and capstone project manuscripts are stored in physical form within cabinet-like storage systems.

Although the university has always used traditional techniques for archiving, the implementation of digital archiving system represents a significant breakthrough. Majority of the respondents agreed that the digital archiving method was useful for keeping digital copies of theses and manuscripts. The findings show the need of implementing digital technologies in university's archival procedures. Moreover, the positive reception of the digital archiving system highlights its potential to simplify archival practices and adapt to the evolving landscape of information management.

DISCUSSION

The Thesis/Capstone Project Manuscript Archiving System was introduced as a web-based solution to efficiently preserve student manuscripts in digital form. The system is seen as an solution, for safeguarding documents in contrast, to traditional physical techniques. Thorough testing of the system was conducted to validate the efficiency of archiving, retrieval and compliance with data retention regulations ensuring that users find the system easy to use and understand in terms of its dependability and performance. The researcher did a lot of testing and surveys involving the staff of Computer Studies Department and students of the Eastern Visayas State University – Ormoc Campus. There were several students from different year levels to gauge the system's functionality, performance and the general user experience. As regards to effectiveness, respondents affirmed that the manuscript archiving system is beneficial to future researchers whom may require access of the manuscript for reference. 90% of the participants across the age expressed their experience with the system with more satisfaction whereas staff and administrators cited the importance of the system. The system is centralized to the storage, organization and management of theses and capstone project manus, hence a continuous streamlined process that makes it easier for retrieval and access. The scope of the project was limited to the consolidation of capstone project manuscripts and academic theses in a united system. This system provides benefits to faculty, students, and researchers by addressing both current and future needs. Currently, manuscripts are stored in offices. However, with the implementation of this archiving system, manuscripts will be stored digitally, offering students a more convenient and time-efficient means of searching for and accessing the content.

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