PAARL
Research Journal

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Research Journal

2014 PAARL Executive Board

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PAARL is an association of librarians working in academic and research libraries that supports scholarly research and formal education in the tertiary level, and upholds the profession of librarianship in the country. Its principal mission is to articulate the concerns of academic and research librarians and their institutions, and to influence information policy development affecting the future of academic and research libraries.

Author's Guide
PAARL Best Research Award 2014

The Philippine Association of Academic/Research Librarians, Inc. (PAARL) is pleased to announce the Call for Papers to be published in the forthcoming issue of the PAARL Research Journal, which will qualify for the **Best Research Award 2014**. The purpose of this call is to provide an excellent opportunity for library practitioners/information professionals to disseminate their research outputs through publication and oral presentation in a forum/seminar.

1. **ELIGIBILITY**

The call is open to all library practitioners/information professionals who works in an academic/research library.

2. **SELECTION, ACCEPTANCE AND AWARD**

In addition to standard criteria (such as extensiveness of literature review and references, appropriateness of research data/methods, adequacy of data analysis and presentation of findings, and consistency of research findings/conclusions), submissions will be judged on the following criteria:

1. Potential contribution of the research study (significance and relevance)
2. Innovation and originality (i.e. it shows high levels of creativity, fresh thinking and innovation in approach)
3. Overall impact (it shows actual or potential impact)
4. Special considerations: a) it takes into account the extent to which the research is useful in the promotion of the profession; b) it deals with problems facing the profession, locally/worldwide

The top three (3) authors of accepted papers shall each be given a 20-minute timeslot to present their research outputs during the 4th Marina G. Dayrit Lecture Series on 21 November 2014, with the overall theme, "Librarians as Researchers."

While there may be a number of papers to be accepted for Internet/journal publication and presentation, there will only be one (1) paper that will be named as the Best Research Award for the year 2014. Author(s) of the winning paper shall receive a cash incentive of Php 10,000.00 and a trophy/plaque of recognition, which will be awarded to him/her/them during the Association's General Assembly on 30 January 2015.

Authors of accepted papers, while included in PAARL's publication, are still allowed to present/publish their papers internationally and are not subject exclusively for PAARL.

3. **SUBMISSION GUIDELINES**

Authors should note the following when submitting manuscripts:

1. Full paper should be in Microsoft Word (*.doc or *.docx) format and submitted through e-mail to ssesposo@engglib2.upd.edu.ph.
2. Authors must follow the Instruction for Authors (see item 4 below) to be qualified/considered for acceptance.
3. All authors will be notified after their submissions have undergone the peer review process to be conducted by the Committee.
4. Revisions must be submitted within five (5) days upon receipt of the decision letter/notification inviting a revision.
5. Accepted papers shall be published in the Association's website and shall be included in the upcoming issue of the PAARL Research Journal.
6. Accepted papers shall be presented during the 4th Marina G. Dayrit Lecture Series.

4. **INSTRUCTION FOR AUTHORS: SUBMISSION TEMPLATE**

Papers should be prepared following these guidelines:

4.1 **Formatting**
    4.1.1   Font face should be Times New Roman size 12. Title should be in bold face, size 14. Major headings in bold face.
    4.1.2   Should be formatted using Letter-sized paper (8.5 x11 in.).
    4.1.3   Paragraph format should be single-spaced, with justified margins.
    4.1.4   Full paper should not exceed 5,000 words.

4.2 **Organization of the Research Paper**
    4.2.1   Title
    4.2.2   Full name of Author(s), affiliation(s) and e-mail address
    4.2.3   Introduction/Background of the Study
    4.2.4   Purpose of the study
    4.2.5   Methodology
    4.2.6   Results and discussion
    4.2.7   Conclusion and recommendations
    4.2.8   References
    4.2.9   Appendices (if any)

5. IMPORTANT DATES

14 October 2014	Deadline of full paper submission
21 October 2014	Notification (authors) of acceptance of papers for presentation to 4th Marina G.Dayrit Lecture Series (MGDLS4)
07 November 2014	Announcement of accepted papers for oral presentation
21 November 2014	Oral presentation of accepted papers at the MGDLS4
30 January 2015	Awarding of recipient of Best Research Award 2014 at the PAARL General Assembly

The 2014 PAARL Best Research Award Committee

Chair: Corazon M. Nera

Members: Ruben P. Marasigan
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Editorial

Fe Angela M. Verzosa
Editor

It is an honor and a distinct pleasure for me to introduce the inaugural issue of **PAARL Research Journal**, a library publication intended as an online forum for library research in the field of Philippine academic and research librarianship, and at the same time, a venue where Filipino academic and research librarians can share library innovations and breakthroughs which will be useful as a springboard for further studies and more research. In addition, this journal not only aims to serve as an online repository for the creative works and research outputs of our colleagues and members, but also as a documentation on the activities, growth and milestones of our organization, the Philippine Association of Academic/Research Librarians (PAARL).

One of the key projects of the 2014 leadership, President Sharon Maria S. Esposo-Betan initiated this unprecedented undertaking to fill the gap in the literature of Philippine academic librarianship, with the specific aim to publish high-quality and empirically-oriented researches of current interest not only to Filipino academic and research librarians, but to library practitioners in general both here and abroad.

To encourage greater participation from librarians working in academic or research libraries all over the country, a call for papers was disseminated through the association's Yahoogroup website and Facebook fan and group pages sometime in the middle of the year. As a result, a total of nine (9) articles were submitted within the deadline set in October. Thereafter, the top three were selected by a team of peer evaluators, to vie for the Best Research Award, which shall receive a cash incentive of Php 10,000.00 and a trophy or plaque of recognition, to be awarded during the Association's General Assembly on 30 January 2015.

Mindful of the need for an international audience, authors of the articles to be published in this journal were instructed to assign to the Editorial Team the non-exclusive right to publish and distribute the text electronically and to archive and make it permanently retrievable. All content posted in the journal will be licensed under a Creative Commons Attribution-Noncommercial license. Copyright, however, shall remain with the author/s, and any material that will appear in the journal may be reused by the author/s in any form.

The top three selected papers were presented during the *4th Marina G. Dayrit Lecture Series on the topic,* "**Recognizing Best Researches: A Colloquium on Philippine Libraries and Librarianship**", which was held on 25 November 2014 to coincide with the celebration of the National Book Week. In no particular order, these papers hereunder are featured in our inaugural issue:

• **Transaction Log Analysis of Author Searching in a University Library: Basis for Improving OPAC Retrieval Results**, submitted by Ana Maria B. Fresnido
• **Role of Catholicism in the Development of Libraries in the Philippines**, submitted by Martin Julius V. Perez and Mark Elizier T. Pineda
• **Determining the Factors Affecting the Passing Rate in the Board Examination for Librarians Using a Web-Based Instrument,** submitted by Briccio M. Merced, Jr. and Rhea M. Canang

Ana Maria B. Fresnido has been the Library Director of De La Salle University-Manila since 2006. As Head of the Library's Technical Services for more than ten years, Ana is considered an expert in cataloging. She served as Secretary of PAARL for three years, and since 2006, she has been representing the University Library in the ASEAN University Network Inter-Library Online (AUNILO) Working Committee.

Martin Julius V. Perez works as an Archivist at the Department of Foreign Affairs, and a lecturer at the School of Library and Information Studies, University of the Philippines-Diliman. He is one of the Fellows selected to participate in the Jay Jordan IFLA/OCLC Early Career Development Fellowship Program for 2015. The program supports library and information science professionals from countries with developing economies.

Martin's co-author, Mark Elizier T. Pineda, is presently the Librarian of the Archbishop Gabriel Reyes Memorial Library, the official research and information resource center of the San Carlos Seminary. He studied BLIS at the University of the Philippines-Diliman and is currently pursuing MLIS at the same university.

Dr. Briccio M. Merced, Jr., is the University Librarian of the University of the Philippines Mindanao.   He coordinates the MLIS program of the University

of Mindanao, formerly visiting professor in the graduate program at Ateneo de Davao University, and faculty affiliate at the University of Southeastern Philippines. He used to teach in the undergraduate programs of the University of Mindanao, Notre Dame University, and Holy Cross of Davao College. He is a board reviewer for the Librarians Licensure Exam at Holy Cross and at the University of Mindanao.

When their paper was submitted to PAARL, Rhea M. Canang, Dr. Merced's co-author, was librarian at Evangelical Mission College, Davao City. She is now head librarian of the Holy Cross College of Calinan, also in Davao City. She finished her BLIS program at Holy Cross of Davao, and her MSLIS degree at the University of Southeastern Philippines.

For PAARL Research Journal, the Editorial Team for CY 2014, headed by the undersigned to oversee the production, design, publication and distribution of the journal, is composed of :

Prof. Corazon M. Nera, presently the Library Director of Lyceum of the Philippines, served as Chairman of the Professional Regulation Commission (PRC) Board for Librarians for nine years, Past President of PAARL, and a teacher of Library Science for more than three decades. Cora is also one of PRC's Outstanding Librarians.

Dr. Marilou P. Tadlip is the current head of the National Committee on Libraries and Information Services of the National Commission for Culture and the Arts. She was the Director of the University Library System of the University of San Carlos in Cebu City from 1976 to 2011, and the Chair of its Department of Library and Information System from 2007 to 2011. Dr. Tadlip is likewise PRC's Outstanding Librarian for the year 2014.

Prof. Rodolfo Y. Tarlit, an acknowledged expert in cataloging, indexing and abstracting, was the University Librarian of the University of the Philippines – Diliman from 2012 until this year, Past President of PAARL, and a senior lecturer at the UP School of Library and Information Studies since 1996.

Ms. Mila M. Ramos was Chief Librarian of the International Rice Research Institute, based in Los Baños, Laguna until her retirement a few years ago. She is currently the Head Librarian of the Center for Agriculture & Rural Development, MRI Development Institute, and an Online Research Librarian of Consumer Centre based in Toronto. She served as member of the PRC Board for Librarians for more than two terms.

Dr. Rina H. Diaron is the Director of Libraries of Saint Louis University in Baguio City, Secretary of the NCCA-National Committee for Libraries and Information

Services, and member of the CHED Regional Quality Assessment Team (RQUAT) for Library and Information Science Program

Ms. Elvira B. Lapuz is Head Librarian, General Reference and Electronic Resources Section of the University of the Philippines Diliman Library, Past President of PAARL, and President-elect of the Philippine Librarians Association, Inc (PLAI) for 2015-2016

Mr. Michael A. Pinto currently works at the Provincial Learning and Resource Center (formerly Cagayan Provincial Library), and served previously as Library Director of the University of Saint Louis in Tuguegarao. He was actively involved as Executive Vice-President of PLAI and PLAI-CaVRLC President.

> *In the words of James G. Neal, University Librarian of Columbia University: "**Librarianship** is an "information poor" information profession. Decisions are routinely not supported by the evidence of well-designed investigations. Research in the field is poorly communicated, understood, and applied. It is imperative that academic librarians and higher education libraries develop and carry out systematic research and development programs."* — **Neal, 2006**

With these wise and inspiring words in mind, it is our fervent hope that PAARL will have contributed in no small measure in the growth of our library literature and in helping shape the future of research in Philippine academic librarianship. On behalf of my Editorial Team, I wish to thank the 2014 Board of Directors of PAARL, led by Sharon Ma. S. Esposo-Betan, for giving us the opportunity to pursue the realization of a dream, Through PAARL Research Journal, our Filipino librarians will have found an excellent medium to disseminate their research pursuits to a wider audience.

Table of Contents

PAARL Research Journal

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Inaugural Issue

DETERMINING THE FACTORS AFFECTING THE PASSING RATE IN THE BOARD EXAMINATION FOR LIBRARIANS USING A WEB-BASED INSTRUMENT

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ABSTRACT

Licensure is a mark of a professional recognized by the government and the public to introduce standards of excellence, rules of behavior, guidelines of recruitment, and measures of protection that assure high sense of dedication, responsibility, skills and quality towards one's professions that uplifts a professional to a position of dignity and prestige in society. The Philippine national passing rate does not even draw closer to 50% since 2005 as stated by the Professional Regulatory Commission due to factors such as lack of preparation, school, student's level of comprehension and retention, psychological, emotional, social, economic, review, and examination factors. To expedite the gathering, processing and computing for the survey results, a web-based instrument is developed to determine which among the factors greatly affect the passing rate of examinees.

Keywords - Librarians, Board Examination, Passing Rate, Web-Based Instrument

INTRODUCTION / BACKGROUND OF THE STUDY

Licensure is a standard mark of a professional recognized by the government and the public to introduce excellence, rules of behavior, guidelines of recruitment and measures of member protection, assuring a high sense of dedication, responsibility, skills and quality towards one's profession. Licensure examinations vary from one country to another in regard to the acceptance of librarianship as a profession. In the United States and Europe, a high percentage of passers are very visible. There is a commendable result in the licensure examination due mainly due to a good number of schools offering Library and Information Science (LIS). Asian countries like Thailand, Singapore, Taiwan, China, and India have also been producing quality and competitive librarians.

In the Philippines, an inconceivably poor performance rating among examinees in the Librarians' Licensure Examination (LLE) is observed. The national passing rate does not even draw closer to 50 percent for more than five years since 2005, as stated again by the Philippine Regulatory Commission. Speculated to have detrimental effects are preparation, school factors, student's level of comprehension and retention, psychological, emotional, social, economic, review and examination. Other factors are curriculum, facility, review, faculty, spiritual, review, mental, and the examinee.

1.a. Factors Affecting Performance in the Board Examination

Association between school factors and achievement is being strictly correlational, not causal (Coleman, 1966; Raudenbush & Wilms, 1995). Competencies individuals must possess are those that are supposed to have been acquired in the classroom based on the national curriculum and content coverage of subjects. If the national curriculum and content coverage of subjects provided by the government are observed properly, the performance of graduates in the licensure may be raised (Howell & Nolet, 2000; Estrada, 1973).

LIS education must inculcate in future librarians openness to a shift in paradigm, not only in the ways of doing things but, more specifically, in mentality (Stueart & Moran, 2007). Librarians' education must focus on competencies that meet new expectations and take advantage of new opportunities (Gutsche, 2010); quality, collaboration, and demand (Yap, 2007); and matching university curriculum with industry requirement (Aripin, 2008).

Related to curriculum is quality of our teaching personnel. Teachers have far-reaching influence as agents of constructive change in society (Educational Commission, 1993). A good teacher is acquired, not born (Calmorin, 2000; Detomal, 2008). Good teachers produce good quality students and improve on their competencies (Nagasu, 2004; Roma, 2009). Teachers become competent when they learn and apply new technologies (Adediwura & Tayo, 2007), in the teaching-learning processes (Baxter, 2000).

A good curriculum prepares students to succeed in society (Howell & Nolet, 2000). The goal of licensure is to identify those individuals who can be processed to possess minimum competencies related to a specific vocation (Castle, 2004). Teachers bear a special responsibility for curriculum determination because it is only through their efforts that a curriculum is implemented, and is able to have real effect (Estrada, 1973). Teacher performance is one indicator that predicts student achievement (Hanushek, Kain, & Rivkin, 1999; Stronge, 2007, LeTendre, 2007). Agaylan (2001) concludes that faculty factor is significantly correlated to the passing percentage.

The physical condition of schools can also influence student achievement (Lyons, 2002). Student achievement is highest in modern learning environments, and lowest in obsolete learning environments (Chan, 1996). School training must include facilities, equipment and hand-tools that students can use to include materials and instruction of operations the same as those found in the industry and farms or firms, where the students will likely work in the future (Mende, 1996). Hopland (2011) has successfully associated poor school facilities with poor student achievement for most countries. When planning, designing, or managing the school facility, these facets of place experience should, when possible, be taken into consideration (Lackney, 2013). Fulton (1979) recommended that each classroom should be designed for and equipped with essential facilities available to facilitate learning outcome of students (Farrant, 1991; Farombi, 1998; Owoeye (2011). Learning can potentially occur through interaction with one's environment.

Out of the formal classroom setting, an examinee now prepares oneself for the board examination. Good preparations for exam on the part of the examinees are highly needed as it gives examinees a sense of control and mastery, and prevent test anxiety. Lack of intensive preparations before taking the test itself that may cause failure (Ford, 2000), and the best way to study for an exam is to keep the memory fresh on an ongoing basis (Keeley, 1997).

Emotional, coupled with the psychological state of examinees, can affect board exam results (Ho, 2004). Relation between anxiety and test performance is nonlinear; a slight amount of anxiety being beneficial, while a large amount is detrimental (Powell, 1997; Lawrence, Paul, Eriksen, Anastasi, 1988). An emotional state on the test day would affect test results due to depression, angry, or nervousness (Kubiszyu & Borich, 2000).

While the emotional state of an examinee is important, of equal importance is the mental adequacy. Academic competence is associated with ability to manage study load affecting a student's academic performance (Kleijn et al., 1994). It includes the ability to understand and coping with the amount of course material, and in preparing for the examination (Topman, 1992).

Education is a spiritual act (Carotta, 1999) that is conducted in partnership with others that must be practiced with a sense of reverence for the very being of the person (Miller, 2000). To deny the spirit is to deny an essential element of one's being. Understanding the relationship of spirituality and academic achievement may provide educators with yet another tool for providing opportunities for student academic success as well as encouraging responsible citizenship (Noddings, 2005).

Socio-economic factors (Chall, 1996) include attendance in the class, family income, parent's educational background, teacher-student ratio, presence of trained teachers in school, student's gender, and distance of the school from home (Mushtaq, 2012). Students with less money will be faced with a number of concerns and problems that might affect their performance as they will contend with these problems first, before dealing with requirements for the board examination.

Examinees not feeling well during the board examination would not perform well in the results (Taylor, 2000). Preparing well for the board examination can give the examinees a sense of control and mastery, as this will prevent test anxiety from overwhelming them (Feldman, 2000). Other factors that can influence board exam results are self-motivation, personal goal-setting, time-discount behavior or impatience (Winston, et al., 2002), and time-management skills (Walker, 1980; Kirscenbaum, 1982; Powell, 2004).

Examiner-examinee interaction could also affect an individual's performance if such presence is intimidating instead of comforting (Taylor, 2000). The test should also be administered in a quiet, physically comfortable environment (Oosterhof, 1994) with sufficient light for reading so that the takers will not be distracted.

1.b. Web-based Survey Instrument

Internet growth has impacted virtually every aspect of society including survey research. Kay and Johnson (1999) identified over 2,000 web-based surveys in 59 areas. The web offers a number of distinct advantages over more traditional mail and phone techniques such as reducing the time and cost of conducting a survey, and avoiding the often error-prone and tedious task of data entry (Wright, 2005); being fruitful in terms of administration and fast interpretation (Solomon, 2001; Gunn & Couper, 2000; Martin, 2010); low financial resources implications, short response time, researcher's control of the sample, data are directly loaded in the data analysis software, thus saving time and resources associated with the data entry process; immediate control of answers and instant electronic storage (Balter, (2005); and, quick and convenient way of collecting data (Hunter, 2012),

1.c. Theoretical Framework and Anchor Theories

This study is anchored on the following theories: McElfresh Theory on Professionalism, Stenberg's Triarchic Theory of Intelligence, Feldman's Theory of Good Preparations, Motivational Systems Theory of Martin Ford, Emotional Quotient Theories and Status Attainment Theory.

With reference to McElfresh, librarians must meet certain standards of education and competence to ensure the quality of their work. Accordingly, librarians must undergo rigorous and extensive education in theoretical and practical aspects of the work, which then leads to an examination or certification when the final professional credential is earned (McElfresh, 2012). This theory implies that quality education is necessary to be competent in the field of expertise to meet specific standards.

Intelligent behavior, according to Stenberg, consists of three major components with each being a basic unit of information processing. These are componential (analysis of information to solve problems), experiential (using prior knowledge as information in problem-solving and creating new ideas), and contextual (using intelligence to adapt to environmental demands). This theory covers the academic, or the intellectual factors as to how students craft their capability and ability to analyze concepts or any problem strata using theories of their chosen field of expertise and application of these theories that may appear present covering the scope of licensure examination questions.

A good examination preparation gives examinees a sense of control and mastery, and prevents test anxiety from overwhelming them, says Feldman. The fatal effect in taking the licensure examination is lack of intensive preparation before taking the test itself that may cause failure.

Actual achievement and competence are the results of a motivated, skillful, and biologically capable person interacting with a responsive environment (Ford, 2007). This environment is the students' collaboration with their peers, willingness to seek help and the ability to manage and regulate time and study environment. A motivated person can initiate and maintain activity until the goal is attained, has skills to construct and execute a pattern that produces desired result (Campbell, 2007). Rogers' (2004) experiential learning theory distinguished two types: cognitive and experiential. The former corresponds to academic knowledge, while the latter refers to applied knowledge. Experiential learning addresses the needs and wants of the learner.

Emotion is a feeling, or state that conveys information about relationships (Mayer, 2000) that includes a wide range of observable behaviors, expressed feelings, and changes in the body state, according to the emotional quotient theory. Three emotional quotient theories are of Bar-On (2000), Mayer & Salovey (1997), and Goleman (1998). All three theories seek to develop an understanding of how individuals recognize, understand, apply, and manage emotions in order to predict and improve individual effectiveness (Aufong, 2010 cf. Goleman, 2003) impacts of which may affect examination outcomes.

Developed by Blau and Duncan (2011), status attainment theory is a sociological concept that deals largely with one's position in society, or class. Affected by both achieved factors (such as educational attainment), and ascribed factors (such as family income) it is achieved by a combination of parent's status, one's own efforts and abilities, and luck. The idea behind status attainment is that one can be mobile, either upwardly or downwardly, in the form of a class system.

The goal of licensure testing is to identify those individuals who possess minimum competencies related to a specific vocation (Schmitt, 1995). Licensure tests are typically mandatory evaluations of specific competency standards for all beginning practitioners in a given profession. A critical issue related to licensure test (LT) development is creating a test that minimizes classification errors in relation to those who possess minimal competency and those who do not, a passing score to determine who is considered minimally-competent and who is not (Castle, 2004). The Philippine Professional Regulatory Board determines a passing score for Librarians.

1.d. Conceptual Framework

On the basis of the foregoing theories, the paradigm that served as guide to this research is the Input-Process-Output model. Possible factors that may affect the passing rate in the Librarians' Licensure Examination (LLE) are illustrated in figure 1. These are categorized into: curriculum, faculty, facility, review preparations, emotional, mental, spiritual, social, economic, examinee and exam. To achieve the objective of the study, the researchers sought support from an IT specialist in creating a web-based survey to speed up data collection and generating the results.

Input

Possible factors that may affect the passing rate of a Librarian in the Licensure Examination

A. Curriculum
B. Faculty
C. Facility
D. Review preparations
E. Emotional
F. Mental
G. Spiritual
H. Social
I. Economic
J. Examinee
K. Exam

Process

Web-Based Survey Instrument

Output

Factors that have significant effect on the passing rate of Librarians in the Licensure Examination
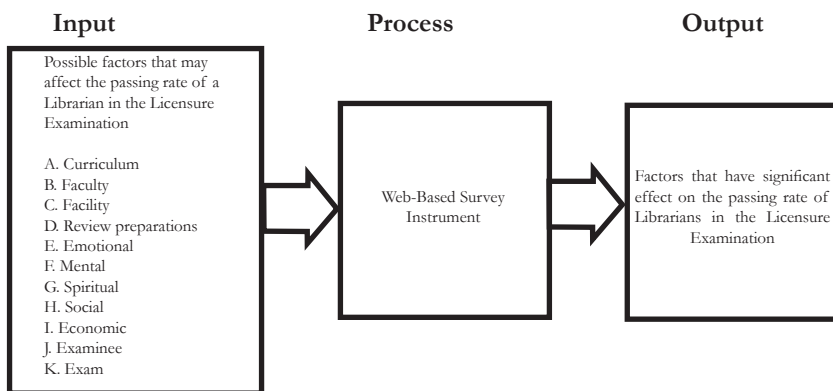
Figure 1. Conceptual Framework

PURPOSE OF THE STUDY

This study determines factors that have significant effect on the passing rate of librarians taking the Philippine licensure examination. These factors are curriculum, faculty, facility, review preparations, emotional well-being, mental state, spiritual belief, social condition, economic status, the examinee himself/herself, and the examination proper. All these factors can be gathered through a developed web-based survey instrument that will facilitate data gathering and processing. To expedite the gathering, processing and computing of results, a web-based research survey was used for this purpose.

Results of this study will help entities involved in the administration of the Library and Information Science (LIS) program in making decisions towards improving their services. It shall also benefit LIS students in preparing for the licensure examination, especially those in their final year of study. This shall also help re-takers in identifying the needed improvements in their next attempt. Lastly, this will help other researchers to study the same topic by using the results as their reference.

METHODOLOGY

Descriptive correlation survey method was used for this study with data gathered through a researcher-constructed questionnaire, which underwent validation and reliability testing with experts. Respondents were from the PLAI-DRLC (Philippine Librarians Association Inc.—Davao Region Librarians Council) members comprising of 114 active members as of the year 2014. Using the sample size formula, 89 were actually involved in the study.

The System Development Life Cycle (SDLC) model was the basis for the web-based survey program. SDLC is the standard model applied for systems development. It has five phases: (1) Analyze, (2) Design, (3) Develop, (4) Testing, and, (5) Finalize. Figure 2 illustrates the SDLC model.
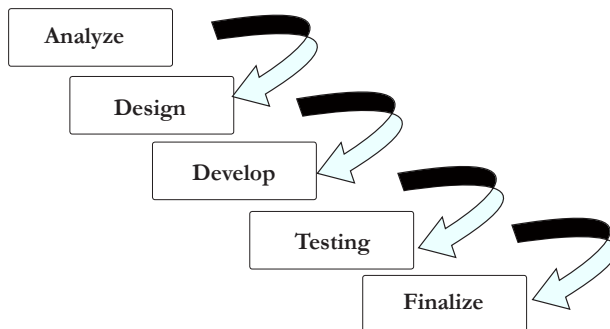

Figure 2. System Development Life Cycle (SDLC) Model

Analyze covers data-gathering, including identification of the current problem, determining the information required, and the technical requirement needed in developing the system.

Design involves working with an Information Technology (IT) specialist whose task was to determine the architectural design using the following software for the web-based survey program:

- Web Development platform: WampServer - is a Windows web development environment. It creates web applications with Apache2, Php and MySQL database. Alongside PhpMyAdmin, the database can now be easily managed, and the WampServer can be used to simulate a web server using personal computers. The Php script can run from a personal computer without the assistance of a genuine server to test the system.
- Text Editor: Notepad++ - a free source code editor and notepad replacement that supports several languages in the coding phase for the functionalities. Notepad++ was used because of its simplicity, and incredibly lightweight compared to IDE's.
- Scripting Language: PHP - a general-purpose server-sided scripting language originally designed for Web development to produce dynamic Web pages. PHP is extensively used by almost 81% of all the websites.
- Database Management System: MySQL - is the world's most used open-source relational database management system that runs as a server providing multi-user access to a number of databases. MySQL works with Linux, Mac OS X, and Microsoft Windows.
- Interactive layout: HTML and CSS - HyperText Markup Language (HTML) is the main markup language for displaying web pages and other information that can be displayed on a web browser. Cascading Style Sheet is a style sheet language used for describing the presentation semantics, or the look and formatting of a document written in a markup language. HTML was used to format the display of the Web pages, while CSS was used to enhance system interface.

The application architecture of the system, shown in Figure 3, is a three-tier design that can create flexible and reusable applications. By segregating an application into tiers, one can develop the option of modifying or adding a specific layer, instead of reworking the entire application.
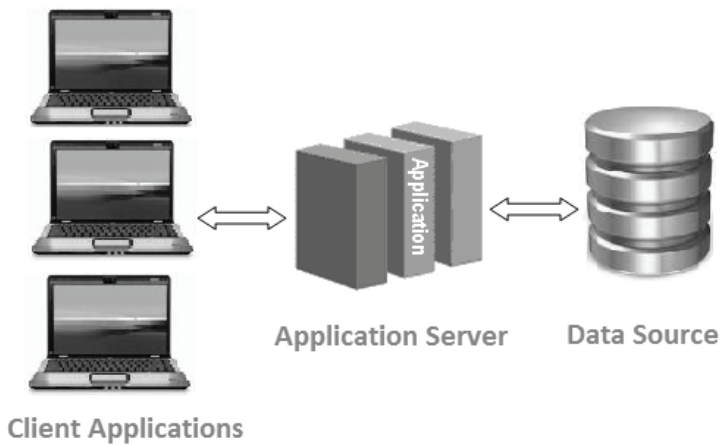
Figure 3. Architectural Design

Develop is the phase that discusses and describes the functions of the web-based survey system for end-users and administrator. Introduction and explanation about the study will be for end-users. After the first interface, respondents can now take the survey, and send the survey key via email. The survey key is to exclusively target the intended respondents.

Figures 4 and 5 show snapshots of the upper and lower view of the respondent's first interface. Figure 6 shows a snapshot of the survey page found in the second interface. The administration statistical results can be automatically viewed and printed.

Figure 4. Upper view of the first interface
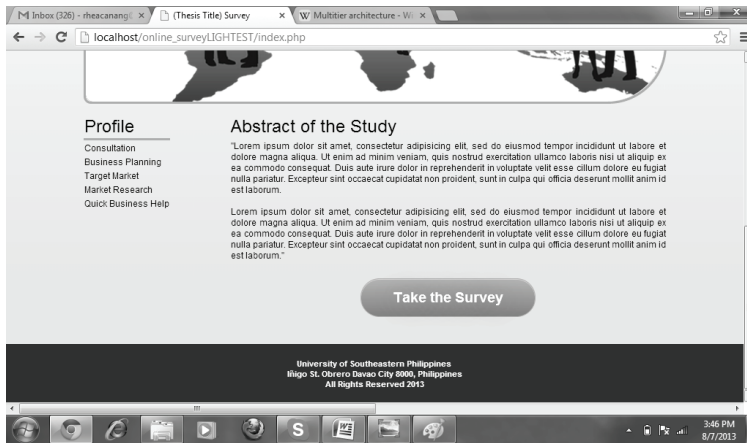
Figure 5. Lower view of the first interface
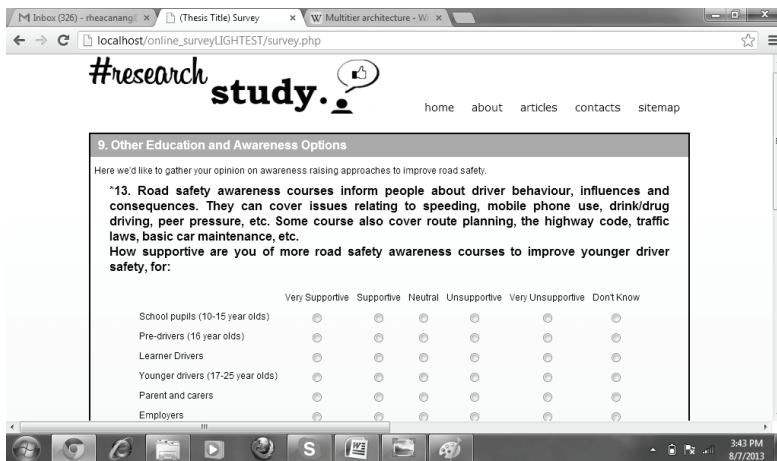
Figure 6. Second interface

Testing examines the functionality and workability of the system by allowing sample users to try the program for quality assurance. When errors were observed, the program was debugged for correction. This test also ensured that the developed system conforms to the requirements.

Finalize covers the maintenance of the system to check and fix the bugs, and other errors which were not anticipated during system development. Any enhancement, such as addition of new features and text, was done during this phase.

Data Gathering Procedure and Analysis

Data was gathered from books, online journals, and internet articles, grey and other related literatures, and research studies. The list of respondents was secured from the PLAI-DRLA officers. Respondents and researchers communicated via email for instructions with a link to the web-based survey instrument which was conducted during the school year 2013-2014. The web-based survey automatically gathered the data and tallied the results.

The SPSS (Statistical Package for the Social Sciences) was also utilized to tabulate and compute data gathered with weighted means and regression analysis. Following were the formula used.

Weighted mean formula:　　　　　　Regression analysis formula:

$$\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n} \qquad\qquad Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon$$

RESULTS AND DISCUSSION

Results of the survey and discussion start with Table 1 which contains the significant factors influencing the passing rate in the board examination for librarians. Regression analysis indicates the following results.

Coefficients[a]

Model		Unstandardized Coefficients			
		B	t	Sig.	Interpretation
1	(Constant)	81.849	19.498	.000	
	Curriculum	-.751	-1.018	.312	Not Significant
	Faculty	-.076	-.113	.911	Not Significant
	Facility	1.242	1.997	.049	Significant
	Review Preparations	-.292	-.284	.777	Not Significant
	Emotional	-.469	-.790	.432	Not Significant
	Mental	2.097	2.182	.032	Significant
	Spiritual	-.832	-1.034	.304	Not Significant
	Social	-.924	-.826	.411	Not Significant
	Economic	-2.366	-2.973	.004	Significant
	Examinee	.080	.097	.923	Not Significant
	Exam	.904	1.119	.267	Not Significant

a. Dependent Variable: Average Grade

Table 1: Regression analysis result

Significant values lower than 0.05 are those that are highlighted in yellow. These are facility with .049, mental at .032, and economic at .004. These factors have a significant effect on the passing rate in the librarians' licensure examination (LLE).

Facility includes the school environment, specifically the classroom and library, the availability and functionality of these resources for research and study requirements of librarians. Conducive environments complemented with well-provided resources have positive contributions to the LLE result.

Mental factor refers to academic performance. Students who performed well during their school days and review, have greater chances in passing. Feldman's theory that states that a good examination preparation is highly needed is a truism. Preparations must be well-established from the very start, or from the first year of the students up to their final years to immediately before the examination dates.

Economic factor means the financial stability of the examinee. Finances contribute to the performance in the board examination since this is a motivating factor. Those in the lower-class were most likely to be motivated compared to those in the upper-class. Financial disability motivated students to study harder in order to pass the exam.

The rest of the factors got an above .005 significant value, which means they have no significant effect on the passing rate. These are curriculum which had a value of .312, faculty at .911, review preparations .777 , emotional .432, spiritual .304, social .411, examinee.923, and exam at .267.

Web-Based Survey Instrument for Automatic Data Gathering and Processing

The web-based survey is accessible from any device such as iPhone, tablet, laptop or personal computer, as long as there is an internet connection. Respondents will be contacted through email provided with a link. The Uniform Resource Locator (URL) is http://web-basedsurveyinstrument.herobo.com. Figures 7 and 8 show both the upper and lower views of the first interface.

Home and results tabs are illustrated in figure 7. When clicked, these tabs are open to the public. The Home tab is where the viewer can see the first interface that includes information about the survey and the researcher. The Result tab is where the viewer sees the general survey result.
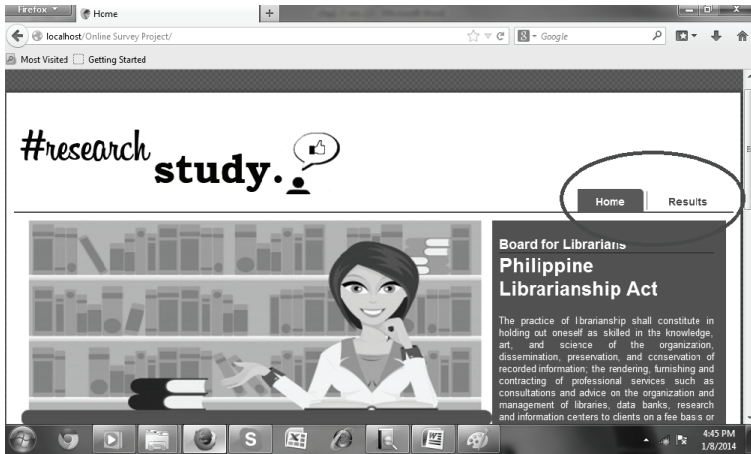
Figure 7. Upper view of the first interface

Figure 8 is Take the Survey button. The respondent clicks it, proceeds to the next steps, and then starts answering the survey questions.
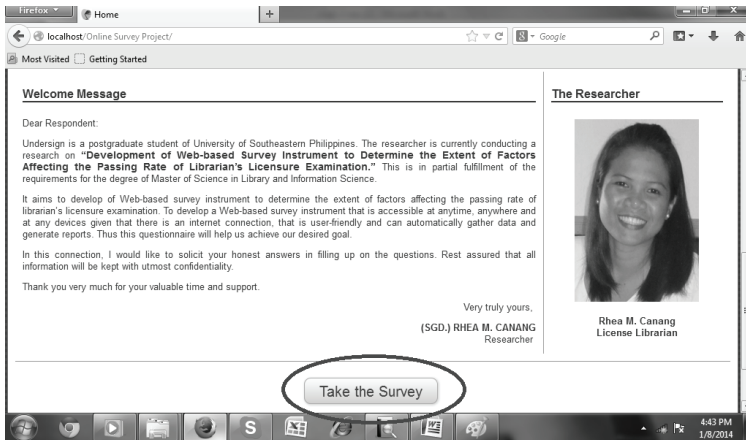
Figure 8. Lower view of the first interface

Figures 9 and 10 show the upper and lower view of the survey questionnaire.

Figure 9. Upper view of survey questionnaire

Figure 10. Lower view of survey questionnaire

As the website administrator, the researcher can add and delete respondent information and questions to the survey. Figure 11 shows the login form which requires the administrator to fill in his/her username and password. Figure 12 shows the dashboard tab where the administrator can manage categories, questions and users. Figures 13, 14 and 15 are the actual views on how to manage user, categories and questions.
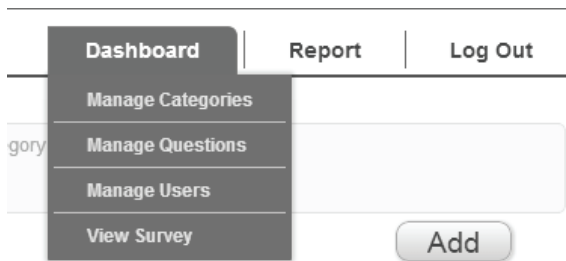
Figure 11. Administrator login
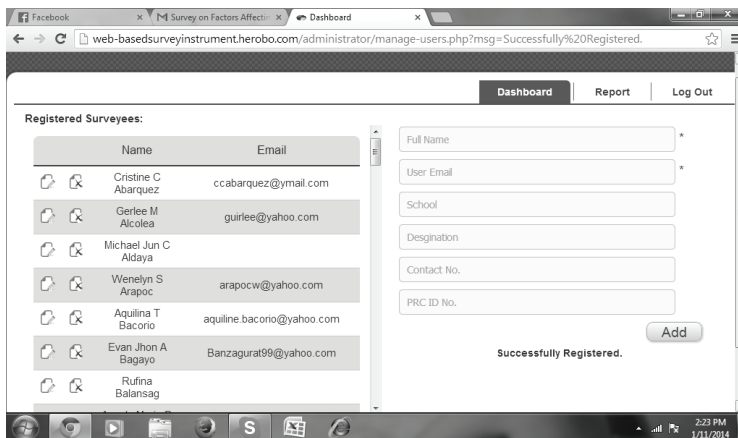
Figure 12. Dashboard

Figure 13. Manage Users

Figure 14. Manage Categories
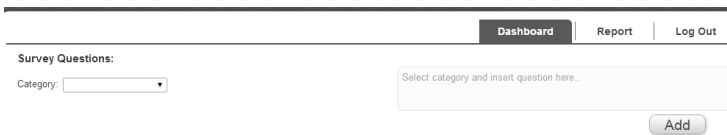
Figure 15. Manage Questions

To have control access to the survey questionnaire, a list of respondents was encoded in the database. Required fields to be filled-in by the respondent are names and email address. Fields for school, designation and contact number are considered optional (see Figure 14). This is to monitor and ensure that the names encoded were the only ones who can take the survey only once. Encoded names were the entire 114 members of PLAI. Every respondent received an email from the researcher that included information about the study, survey instructions and a link to the survey website. Survey instructions included an Authentication key (see Figure 15), which is a password that the respondents were asked to key-in before they could take the survey.
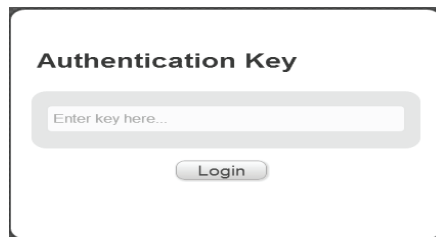
Figure 15. Authentication key

Individual and general results are automatically generated when a respondent has finished answering the survey questions. Only the administrator can view the individual results by clicking on the survey sheet icon (see Figure 16), while the general results can be viewed by both the administrator and the public. Both individual and general results can be printed. The individual results show the details based from the individual respondent's answer, while general results show the average rating of the total respondents who answered the survey with corresponding remarks.
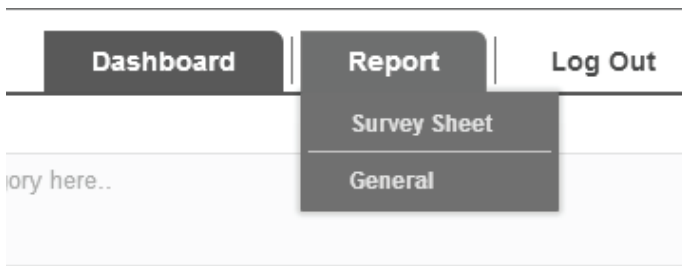
Figure 16. Survey Report

CONCLUSIONS AND RECOMMENDATIONS

Among factors affecting passing rate in the board examination for librarians, only three have significant effects based on their significant values lower than 0.05. These are facility, mental state of the examinee, and economics. Curriculum, faculty, review preparations, emotional, social, spiritual, the examinee himself/herself, and the examination proper have no significant effects as their significant values are higher than 0.05. The web-survey instrument provided convenience in the administration, gathering, tabulation, and interpretation of the data gathered.

Based on the findings, the following are hereby recommended:

1. Colleges and universities offering LIS must provide excellent facilities since this will condition the mental state of their students towards taking the board examination. Foremost among these facilities are state-of-the-art library, internet resources, and other amenities appropriate for excellent learning, study, and research.
2. Students must be mentally prepared. The time to prepare is not at the moment of taking, but should start when a student commences his or her formal education. This means starting to condition oneself from elementary grades, all the way up to the moment of taking the board examination.

3. In terms of economics, a student taking the board examination must have adequate finances ready to be disbursed. Money is already a consideration when one finishes a degree in library science. Money is needed in processing academic requirements such as paying graduation fees, diploma, and transcript of records. Money is also needed when one files for an application in taking the board examination, not to mention requirements for food, fare, and other incidental expenses. When one takes the board examination, his or her mind should focus only on the test items, and not burden with other distractors.

4. Other personal factors, while not that significant, must also be properly placed. The examinee must be emotionally stable, adequate social support like family or friends to serve as inspiration, and must be spiritually uplifting.

5. Curriculum must be reviewed to evaluate if the contents tally with those that were given during the board examination. Periodic evaluation must be conducted to gauge its relevance as well.

6. Students must enroll in colleges and universities whose faculty profile ensures one's passing in the board examination. Factors such as advanced degrees, competence, experience, research track record, training, and experience must be among the qualities to look for in a faculty member teaching library and information science.

7. Web-based survey approaches should be encouraged in social research since they ensure automatic data-gathering, and faster interpretation of results.

8. This research can be replicated to enhance the survey questions, expand the list of other possible factors affecting the passing rate in the board examination for librarians, and improve the web-based survey instrument leading to a new wave of progress and innovation.

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TRANSACTION LOG ANALYSIS OF AUTHOR SEARCHING IN A UNIVERSITY LIBRARY: BASIS FOR IMPROVING OPAC RETRIEVAL RESULTS

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ABSTRACT

The online public access catalog (OPAC), through its transaction logs, demonstrates a clear picture of the OPAC users' actual encounter with the system. Examining transaction logs, therefore, offers libraries the opportunity to analyze users' searching behaviors providing meaningful insights that are very useful when considering improvement of the catalog interface. Since 2003, when the De La Salle University Library shifted to the use of the Millennium Integrated Library System, it has only modified its OPAC once (in 2010) because of the need to adopt the new template design provided by Innovative. Now that Innovative (developer of the Millennium ILS) is presenting a new look for the DLSU OPAC through the use of Sierra, the Library deemed it necessary to assess first the performance of the OPAC, specifically in terms of user interface, to make sure that the Library is able to address its patrons problems and difficulties with the OPAC before adopting major changes in the OPAC design. This study was conducted to find out the reasons behind author searches with no retrievals; to identify common problems encountered by library patrons in the conduct of their search for authors; and, to determine the weakness of the existing OPAC design.

INTRODUCTION

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The DLSU Library's WebOPAC

The DLSU Library's OPAC is the key to the Library's collection and services the DLSU community. As the OPAC is also made available off-campus, it also services patrons who may not be part of the DLSU community but for some reasons (bibliographic checking, copy cataloging, bibliography making, etc.) find the need to make use of the OPAC.

The Library currently has two types of OPAC-- the classic catalog and the catalog powered by Encore Discovery.

<u>The Classic Catalog</u>

The classic catalog is composed of two databases which are the main catalog and the local index.

The main catalog contains bibliographic records where corresponding items or barcodes are attached. One barcode represents one item which can be physically available, as in the case of printed materials or audiovisual materials in CDs and DVDS, microfilms, etc., or virtually available, as in the case of online materials such as e-books and e-journals. Said catalog is scoped by type of material (e.g. books, serials, etc.) to allow them to be searched separately by choosing the desired type, or as one, by choosing the View Entire Collection option. It is also scoped by location/specific collection so search can be limited to such. (see Fig 1):

The local index, on the other hand, is comprised of indexes of specific articles, works, or documents contained in a publication. A publication, therefore, may have several entries as it may contain several articles or works. No item or barcode is attached to the records. Just like the main catalog, the local database is scoped to allow them to be searched individually but there is way for the entire database to be searched as one, unlike the main catalog.

Search delimiters for both the main catalog and the local index are keyword, title, author, subject, LC Call Number, Government Document Number, and ISBN/ISSN (see Fig. 2).
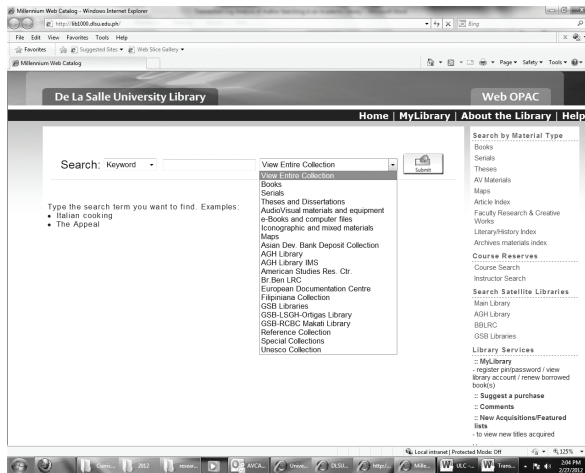
Fig. 1. Screenshot of the Classic OPAC showing the different collections

The default field limit is *keyword* while the default database is the main catalog or the *View entire collection*. If a patron therefore wishes to search using the author field or any other fields, he has to select from the dropdown menu found on the left side of the screen. Similarly, if the patron wishes to search for the main catalog or specific collections/libraries, he has to again select from the dropdown menu found on the right side of the screen. On the contrary, if a patron wishes to search for the local index, he will need to go to the extreme right side of the screen and select the index he would want to search either under the *Material Type or Course Reserves*.
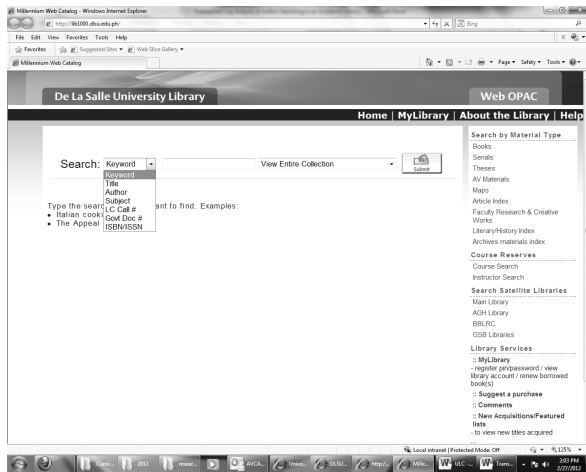
Fig. 2. Screenshot of the Classic OPAC showing the different field limits

Encore Discovery

      Encore Discovery (see Fig. 3) is a sophisticated OPAC which "marshals all manner of search technologies, including faceted search results, Tag Cloud, Did You Mean...?, Popular Choices, Recently Added suggestions, and RightResult™ relevance ranking" ("Encore").

      It allows searching of the main catalog, presents the list of results, and sorts the results in terms of *Availability, Search found in …, Format, Collection, Location, Language, Publish Date,* and *Place [of Publication].* It also links the patron directly to related *Images* on the Web through Yahoo. Likewise, it offers choices to *Refine* by Tags through a show of all tags containing or relating to the search term submitted. The tags are of varying font sizes which is indicative of the number of materials available for a particular tag. The bigger the font size of the tag, therefore, the more number of items are available. Encore also lists down *Recently Added* items and provide more tags for *Related Searches* (see Fig 4 on page 5).
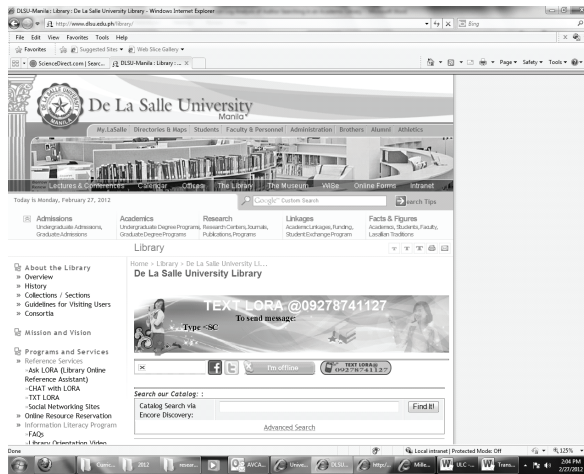
Fig. 3. Screenshot of the WebOPAC Powered by Encore Discovery

While the *Encore Discovery* is far more advanced in terms of functionality than the classic catalog, it is not capable of incorporating the local index into its system, thus, only the main catalog is searchable through this OPAC.
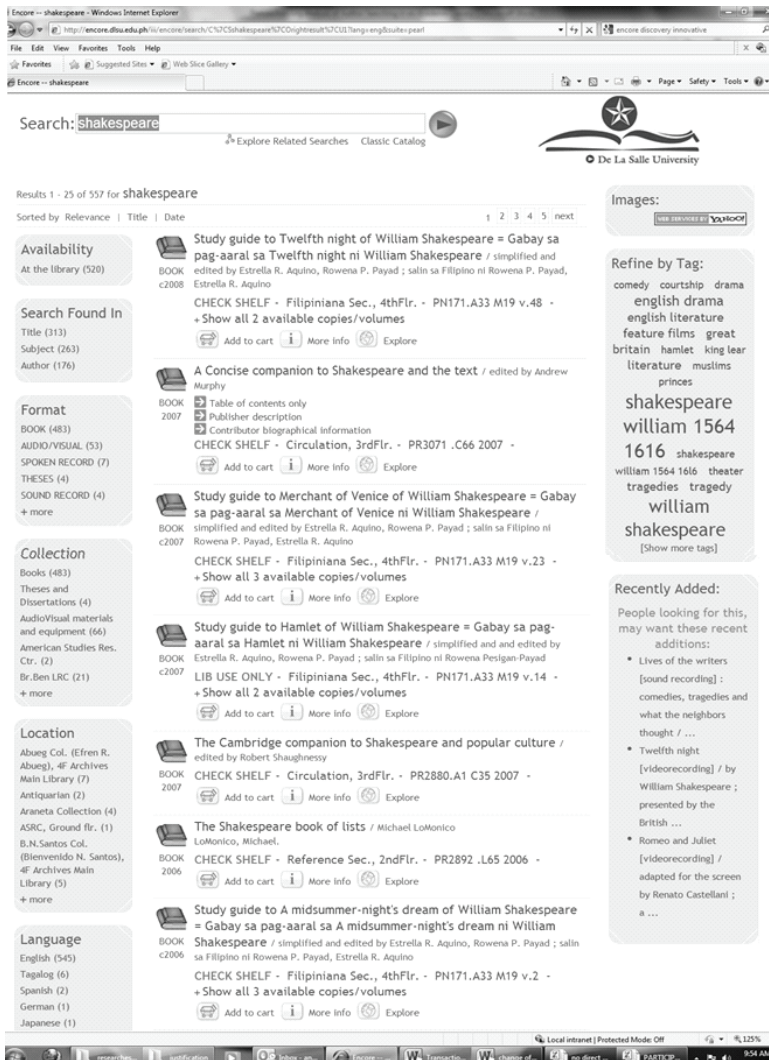
Fig. 4. Sample search result page using Encore Discovery

METHODOLOGY

Data Collection

The data used for this particular study were gathered from the Millennium

Web Management module. This module records search queries submitted to the main catalog. The log files collected correspond to author searches with no retrievals performed from December 8, 2011 from 3:00 a.m. onwards up to January 11, 2012 of 3:00 a.m. or a total of 35 days (the maximum number of days that the system can record and save).

Since the data cannot be extracted directly from the said module, the researcher had to copy paste 264 pages of 10-row tables onto an Excel file which totaled to 2617 author searches in all.

The researcher opted to focus only on author searches with no retrievals for the reason that these are supposed to be specific searches, meaning, a patron does not need to have the skills to formulate search questions as compared to keyword or subject search thus is easier to conduct. Since authors names are shorter compared to titles, patrons are expected to obtain only a negligible amount of errors when conducting author searches compared to other specific field limits such *Call Numbers, Govt Doc Numbers, Standards Numbers, Prof/TA, Courses, Titles* and *Other*. Likewise, searches with no retrievals are most likely to uncover problems encountered by patrons in the conduct of their search specifically in terms of user interface.

Cleaning of Data

All 2617 records were found to be valid records as they contain all the pertinent data such as *Search Query, Terminal Number* and the *Time* the query was executed/submitted. Below is a sample page of data copied from the Millennium Web Management Module:

Limited to Searches with No Direct Hits - AUTHORS
From December 08 03:00AM to January 11 03:00AM

Page 1 of 264 pages

	Terminal	TIME
84 caring cross road	5	Thursday January 05 11:30AM
100 words to make you sound great	5	Thursday December 08 09:35AM
1998 corbit Tidwell	5	Thursday December 08 07:44AM
a comprehensive documentary reports	5	Thursday January 05 10:14AM
a directory of	5	Monday December 12 04:55PM
a graham scrambler	5	Saturday December 10 10:45AM
a guide to the helping professions	5	Friday December 16 05:46PM
a Jenkins	5	Monday December 12 01:53PM
a silberschatz	5	Friday January 06 02:16PM
a tanonbaum	5	Monday January 09 11:11AM

Data Analysis

Transaction log analysis (TLA) was used to examine the data which according to Peters (Villen-Rueda, Senso, Moya-Anegon, 2007) *"is the study of interactions registered electronically between online systems of information retrieval and the persons who search for information contained in these systems."*

The queries were analyzed one by one to identify the reasons/errors behind author searches with no retrievals. Out of 2617 records, 1140 (43.56%) reasons/errors appeared very obvious. For the remaining 1,477 (56.44%), the researcher had to perform simulated searching to investigate why these queries resulted to zero retrievals.

As simulated searching was performed several days after the data extraction, the results of the simulated searches may not accurately represent the results gathered during the time they were originally executed because the database is a live one, thus, addition, deletion, and correction of records may have occurred from the time the original search was executed until the simulated search was performed.

To make sure that the exact queries performed by the patrons were the same queries that will be tried again, the researcher copied each of the query extracted from the Millennium and pasted it onto the OPAC search box using the *Author* as the field limit and the *View Entire Collection* to cover all records in the main catalog.

The reasons/types of errors identified were grouped together to come up with a major grouping common reasons/errors.

RESULTS AND DISCUSSIONS

Summary of Searches Conducted from December 8, 2011 to January 11, 2012

From 3:00 a.m. of December 8, 2011 up to 3:00 a.m. of January 11, 2012, the total number of searches performed via the OPAC was 56,932 with the *Advanced Boolean* (keyword), recording the most number of usage; followed by *Title* index search and *Author* index came next. Refer to Table 1.

Table 1
Indexes Used and Search Results, December 08 03:00AM to
January 11 03:00AM

	Number Done	Percent Done
RECORD NOS	1,627	2.89%
ADVANCED BOOLEAN	28,047	49.74%
SIMPLE BOOLEAN	4,955	8.79%
AUTHORS	7,557	13.40%
CALL NOS	1,004	1.78%
SUBJECTS	3,414	6.05%
GOVT DOC NOS	1	0.00%
STANDARD NOS	13	0.02%
PROF/TA	37	0.07%
COURSES	103	0.18%
TITLES	9,181	16.28%
Other	453	0.80%
TOTAL	**56,392**	**100.00%**

Patrons who usually prefer the use of *Advanced Boolean* and *Simple Boolean* (keywords) as well as *Subject* field limits are those who cannot precisely identify their desired information so what they commonly do is to key in a term that more or less represent what they need and browse through all the results to locate the information they are looking for. Those who prefer to use *Record numbers, Authors, Call Numbers, Govt Doc Numbers, Standards Numbers, Prof/TA, Courses,* and *Titles* as their field limits, on the other hand, are patrons who know precisely the information they are looking for, thus key in exact terms that they are trying to find.

Patrons who conduct author searches are perceived to be those who are familiar with the names of the authors they are looking for.

Summary of Author Searches Conducted from December 8, 2011 to January 11, 2012

Of the 56,392 searches submitted to the system from December 8, 2011 to January 11, 2012, 13.40% or 7,557 were searches that used *Author* as the field delimiter. Out of 7,557 author searches, 2,617 or 34.63% were author searches with no retrievals.

Considering that author searches are supposed to be specific searches, it

is quite alarming to know that a big percentage of the searches retrieved no results. Assuming that the patrons who executed the searches know exactly what they were looking for, this could mean a serious collection development problem as what they were looking for are not available in the collection.

Table 2
Search Results for User Keyed Searches - AUTHORS
From December 08 03:00AM to January 11 3:00AM

	Number Done	Percent Done
Searches Retrieving 1 Record	2,034	26.92%
Searches Retrieving 2 to 8 Records	1,118	14.79%
Searches Retrieving 9 to 30 Records	965	12.77%
Searches Retrieving 31 to 99 Records	480	6.35%
Searches Retrieving 100 to 499 Records	287	3.80%
Searches Retrieving 500 to 4999 Records	53	0.70%
Searches Retrieving 5000 or More Records	3	0.04%
Total Searches Retrieving Records	4,940	65.37%
Total Records Retrieved/Average per Search	192,618	38
Searches With No Retrievals	2,617	34.63%
Total Searches	7,557	100.00%

Reasons/Errors for Author Searches with No Retrievals

After a thorough examination of all the author searches with no retrievals, the different reasons identified were grouped together to come up with eight major categories:

Table 3
Major Error Categories of Author Searches with No Retrievals

Types of Errors	Number of Queries	Percentage	Rank
Combination search	**145**	**5.54**	6
more than 1 name search	144	4.36	
name and date search	11	0.42	
name and edition search	1	0.04	
name and keyword search	2	0.08	
name and title search	12	0.46	
title and name search	5	0.19	
Inappropriate database	**226**	**8.64**	5
Erroneous names	**585**	**22.36**	2
Incorrect names	114	4.36	
Questionable entries	471	18.00	
Items not held in the Library	**377**	**14.41**	3
Non-author searches	**368**	**14.06**	4
bib record number	1	0.04	
statement of responsibility	1	0.04	
subject/keyword search	123	4.70	
title/phrase search	243	9.29	
Typographical error	**5**	**0.19**	8
Wrong name entry format	**843**	**31.87**	1
abbreviated first name	2	0.08	
acronym	6	0.23	
forename	15	0.57	
full middle name	4	0.15	
name entries with prefixes and suffixes	26	0.99	
not inverted	751	28.70	
succeeding first and middle name initials after the surname	30	1.15	
Wrong spelling	**77**	**2.94**	7
TOTAL	**2617**	**100.00**	

Wrong Name Entry Format

    Table 3 shows that majority of the errors committed specifically under the *Wrong Name Entry Format* category were because the names were entered in direct format (not inverted). As a general rule, a name should be entered with the surname first (except for Chinese and Vietnamese names) followed by the first name (e.g. De La Cruz, Juan).

    The number of times this particular error was committed summed up to a total of 834 (or 31.87%) searches which showed that some patrons were not aware of the said rule.

    As the default field limit is keyword search (see Fig. 5), the instruction on how to conduct a search is specifically meant for keyword search, hence patrons are not guided as to how to correctly conduct an author search.
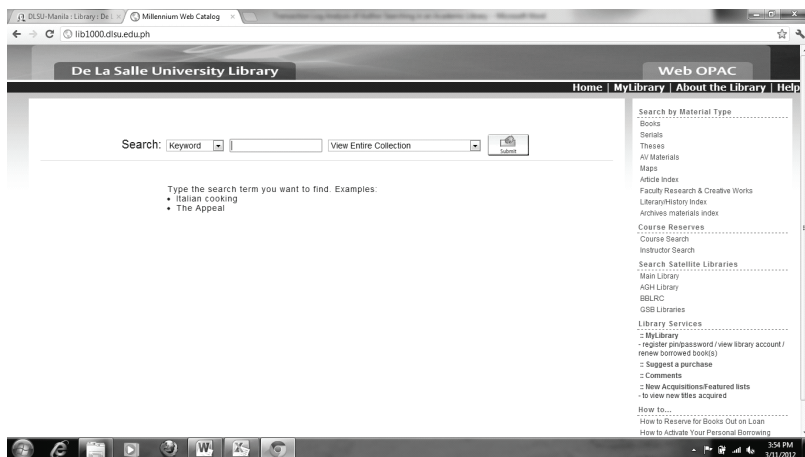
Fig. 5. Screenshot of the Introductory Page

    Despite the above limitation of the OPAC, however, it offered option of changing a search retrieving no hits into the correct format (inverted format), done by simply clicking on the suggested entry format (see Fig. 6). A patron who is keen enough should, therefore, be able to still find the information he is looking for.
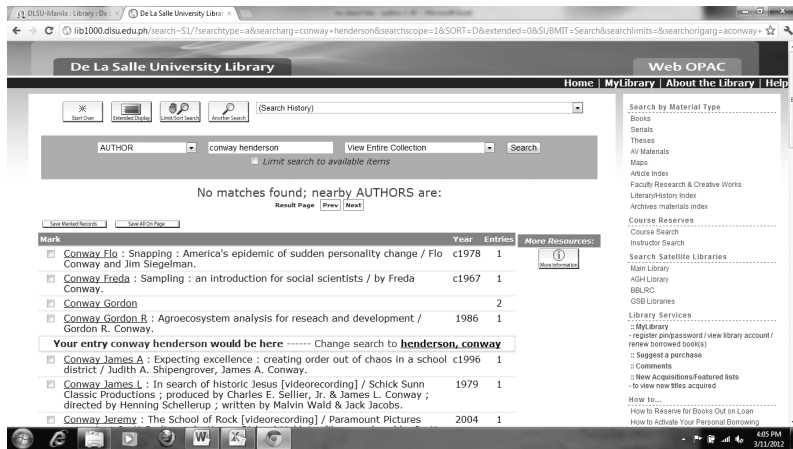
Fig. 6. Sample search result of an author search entered in direct format

To view the instructions on how to conduct a correct author search, the patron has to click on the icon and click on the *Author* tab (see Fig. 7 and 8); but this is unlikely for a patron to do if he is not familiar with the system.
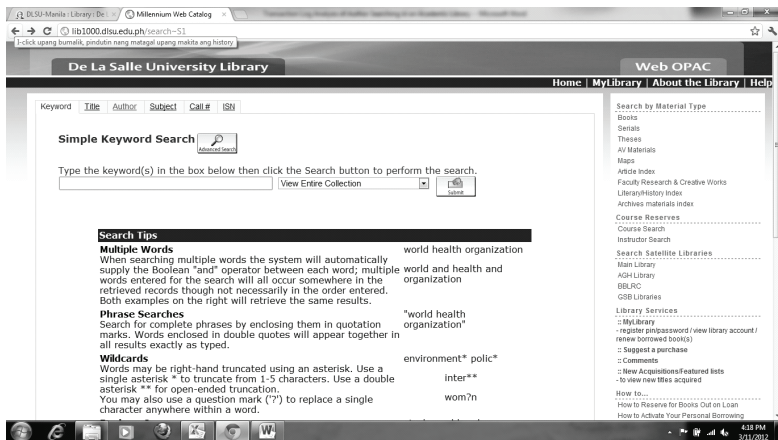
Fig. 7. Default Start Over Screen
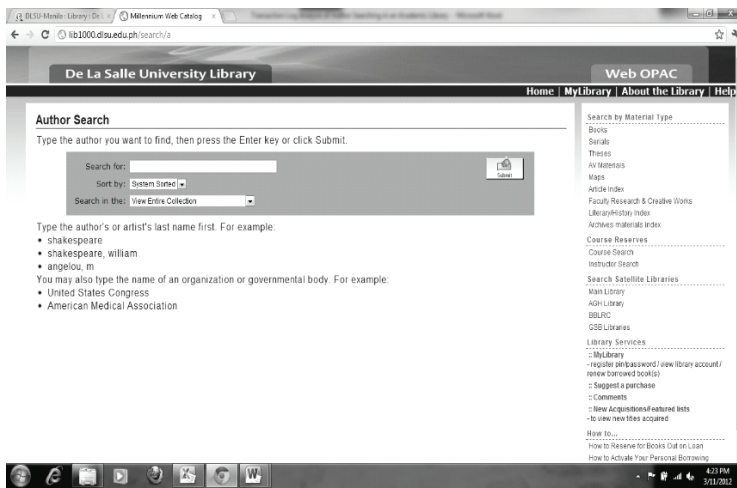
Fig. 8. Author Search tab providing instructions on how to conduct author search

Thus, it is ideal that the instructions on how to conduct the searches using the different field delimiters be made available right at the introductory page to make sure that patrons are made aware even before a search is executed rather than leaving the patron to chance upon the instructions.

Should a patron be likewise unfamiliar with the author's first name, it is better to simply enter the author's surname to retrieve all authors having the same surname, but such may yield numerous hits and may require the patron to browse through all the results. To further limit searches, it would be good to at least know the initial letter of the first name so that the patron is presented with a shorter list of names to choose from.

Note, however, that author entries may not necessarily appear in the catalog exactly the same as they are written on the resource. As a rule, a name entry should be entered consistently in a catalog, which is why catalogers usually adopt the format of a name that has already been established in the catalog. Take the name of *William Shakespeare* as an example, whose name appears in varied forms, but would all be entered, in the DLSU catalog and in most catalogs as: **Shakespeare, William, 1564-1616.**

Guliemus filius Johannes Shakspere
Shake-speare

Shak-spear
W. Shakespeare
William Shakespeare
William Shakspeare
William Shaksper
William Shakspere
William the son of John Shakspere
Wisllm Shakp
Willm Shakspere
Wm Shakspe

This is so because consistency in format is important to collocate all works written by a particular author. Using varied name entries for one particular author will cause the name to spread out and be interfiled with other names making it more difficult for patrons to locate. Furthermore, determining the variety of names that a particular author may have will likewise be very troublesome for patrons and for catalogers as well as they would need to provide cross references for every variation in the name.

On the contrary, if the first name initial is followed right away by the middle name initial (e.g. Santrock, J.W. instead of Santrock, J.), it is more likely to retrieve no results as this is a very precise search preventing the system from presenting other options or variant name that the cataloger may have used. Table 3 shows that 30 (1.15%) queries of this type (succeeding first and middle initials after the surname) contributed to the number of author searches with no retrievals.

Similarly, if a patron enters the author's names with name prefixes or suffixes (e.g. Br. Andrew Gonzalez FSC) or abbreviates the first name (e.g. Ma. instead of Maria) or in contrast, includes the full middle name (Garcia, Carlos Aquino instead of Garcia, Carlos A.) or enters an acronym instead of the full name (BSP instead of Bangko Sentral ng Pilipinas) then the search is sure to retrieve no results as very exact searches tend to limit the system from presenting variant name formats.

Entering a forename instead of a surname (e.g. Hector instead of De Leon, Hector) is also guaranteed to bring zero hits.

All of these mistakes could have been avoided beforehand if instructions on how to properly conduct an author search is provided at the introductory page.

<u>Erroneous Names</u>

Another reason why an author name search will retrieve no results is

because it is incorrect in the first place (e.g. Defensor, Mirriam instead of Santiago, Mirriam Defensor). A total of 585 (22.36%) author searches with no retrievals executed during the specified time (see Table 3) were names that were erroneous.

The errors may be because of variations in the name of the author. Considering that there really are names which may take varied forms, (like in the case of married women), it is the responsibility of the cataloger to be aware of the difficulty that a patron may encounter in the execution of these types of names hence should provide cross references to re-direct patrons to the correct name.

Likewise, browsing through the author searches with no retrievals also revealed that there were names which appeared to be very unusual (471 or 18%) (refer to Table 3) not because they were foreign sounding but because they seemed to be incorrect (e.g. Wais, Mcver, Siy Bebang, etc.) although it would be very difficult to ascertain the inaccuracies because of the fact that there is no one list to where they may be verified or compared.

This somehow shows that patrons who conducted these author searches were actually not very sure of the specific names of the authors and were probably just guessing the spelling based on how they heard the names or how they were relayed to them.

In cases like this, it would be best to use the Encore Discovery catalog rather than the classic catalog as it has a Did You Mean…? feature which recommends to patrons to try *"Confirming the spelling of your search words;" "Using other words for the subject of your searches;"* or *"Providing more letters of the search words if you are using wildcards."*

With the limitation of the Encore, however, to incorporate the local index into its system, the patron will only be able to search the main catalog and will need to do a separate round of searching to check the local index. As to how the patron will be able to guess whether he needs to do a separate search or not using the local index brings another major concern as the classic catalog and the *Encore Discovery* catalog both provide no advice or search tips.

Items Not Held by the Library

Another major reason why an author search retrieved no results is because these were searches for items not held by the Library. Table 3 shows that 377 (14.41%) of these types of queries were submitted to the OPAC. This may be an indication of a collection development issue granting that all author searches conducted were valid author names. This may mean that there are materials that the patrons needed that

the Library did not have.

Considering though that an author may have several works in several formats, it would not be possible to determine what exact work they really needed. Furthermore, as the reason why they were looking for such works cannot be ascertained, relying on these data to acquire books and other library materials is not recommended.

To help identify specific needs of the patrons, it would be good to conduct the same study for the title searches.

Non-Author Entry

It is assumed that those who used author as field delimiter were indeed looking for authors. Looking at the searches conducted revealed that there were search terms that were not names but were bibliographic record number (1 or 0.04%), statement of responsibility (1 or 0.04%), subject or keywords (123 or 4.7%), and titles or phrases (243 or 9.29%) summing up to a total of 368 (14.07%) non-author searches (see Table 3).

If the patrons who performed these searches entered a non-author search despite the fact that they were using the author field delimiter, it only shows that the patrons were not aware that they needed to identify the search limit before conducting the search. They probably just entered the term right away on the search box without taking a look at what delimiter they were in.

This again may be attributed to the absence of instructions on the OPAC to advise patrons on how to properly conduct a search.

Use of Inappropriate Database

In the conduct of the simulated searching, the researcher used the *Author* field limit and *View Entire Collection* as search parameters. Based on the results of the simulated searching conducted, 226 (8.64%) (refer to Table 3) were authors' names with existing bibliographic entries hence should not have generated a zero retrieval rate.

The fact that these searches resulted to no retrievals may, however, mean two things--one, that at the time the search was conducted, the records did not exist yet considering that the simulated searching was conducted several days after the log files where extracted; and two, that the patron who conducted the search selected/used the database which is not appropriate for the material he is looking for (e.g.

book database was selected/used instead of the theses database). Majority of the results retrieved during the simulated searching under this category were from the *Theses* database and a few from the *AV Materials* database suggesting that the patrons indeed made use of the incorrect database

To find out if the records really did not exist yet when the actual searching was conducted, the researcher did random searching of terms which were identified to be searches submitted using inappropriate databases through the use of the Millennium cataloging module. This module is a staff module that contains information on the date when the record was created. All records checked proved to have been created prior to December 8, 2011; majority of which were created in 2004. Based on these findings, the reason for retrieving zero hits despite the fact that there were records containing names of the author searches is down to the last reason, i.e., that the patron selected/made use of inappropriate databases.

Once more, this proved that patrons were having problems using the OPAC. It is most likely that the patrons were again not aware that there exist different databases (although the different materials types or databases available are enumerated on the right side of the screen) or that they were supposed to *View the Entire Collection* if they are not sure of the type and format of the item they were looking for.

<u>Combination Search</u>

145 or 5.55% (see Table 3) of author searches submitted were queries composed of combination of an author field with either another author, or a date, an edition, or a title.

This type of search is ideal when using the *Keyword or Advanced Boolean* search. Considering that the introductory page is set for keyword searching, this should not have been a problem if the patron made use of the default search parameters which is keyword + *View Entire Collection*. It is when the patron opted to change to the field limit to *Author* upon the conduct of the combination search that the problem existed. Why would a patron then choose the author as field limit when he is in fact submitting a combination search or keyword query? The main reason would be that it is but rational for an author's name or authors' names to be searched using the author field limit. Furthermore, none of the two examples on the introductory page clearly illustrate that a search using a combination of two or more search indexes may be performed (see Fig. 1 on page 4).

<u>Wrong Spelling</u>

A search that is misspelled whether it is an author, keyword, subject, or any other field is definite to retrieve no hits. 77 or 2.94% of searches executed during the time of the study retrieved no results because the names were misspelled.

In instances like this, it would again be best to use the *Encore Discovery* catalog rather that the classic catalog because of its *Did You Mean…?* feature as through this, the spelling of the word being searched may be confirmed. Likewise, it offers the patron the possible correct spelling of the term or name being searched for. The problem, however, is the limitation of the Encore to incorporate the local index into its system thus the patron is again presented with the need to do a separate round of searching should he prefer to check the local index as well.

The fact that both the *classic catalog* and the *Encore Discovery* catalog provide no advisory to the patron in terms of what databases are searchable from both catalogs again produces a major concern to the Library and the patron, too.

<u>Typographical Error</u>

A small portion (5 or 0.19%) of author searches conducted during the period of the study retrieving no results is attributed to typographical error. Just like those that were misspelled names, searches with typographical errors are certain to retrieve no results (if not inaccurate results).

Once more, this could be resolved with the use of Encore Discovery through its *Did you mean …?* feature.

CONCLUSIONS AND RECOMMENDATIONS

The OPAC's lack of instruction on how to properly conduct author searches is the main reason why there were author searches that retrieved no results. While it is evident that the patrons' unfamiliarity with the system also contributed to failed author searches, it seemed that not much thought was given on the design of the OPAC. The Library simply adopted the design offered by Innovative Interfaces without conducting a series of test searches to at least find out how the system can recover from possible search mistakes. Likewise, default samples provided by Innovative were accepted and used without even testing or analyzing its applicability to the DLSU community.

The catalogers' failure to provide cross references for varied name formats has, in a way, also contributed to failed author searches.

With this, it is recommended that an analysis of transaction logs for all delimiters (subject, title, call number) be conducted as well to provide for a more comprehensive view of the problems currently being encountered by patrons with the system.

The Library should also seriously consider examining all the pages/screens of the OPAC by conducting different trial searches to actually see and experience how the system works. All observations should be properly recorded to enable the Library to implement changes to the screens in view of responding to errors and improving retrievals.

It is also suggested that the two OPACs be integrated as one to eliminate the need to search from both and to make sure that the local index is also made accessible all the time. While the Library is looking for a system that will make this possible, it would be good to educate the patrons on the difference of the two by providing instructions, if possible on the introductory pages of each OPAC, or through the Library's website.

After changes have been made on the OPAC, continuous monitoring of the transaction logs is proposed. Related to this, a follow up research on the impact of the changes made to the OPAC should likewise be carried out.

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ROLE OF CATHOLICISM IN THE DEVELOPMENT OF LIBRARIES IN THE PHILIPPINES

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ABSTRACT:

This paper presents an exploratory study on the role of Catholicism in the development of libraries in the Philippines. The paper's aim is to provide perspective and background information in Philippine library history accounts reflecting Catholicism's involvement and contributions to the development, and influence to the present stature of libraries in the Philippines. These is presented into three parts: 1) the first collections and convent libraries, 2) Catholicism, education and libraries, and 3) religious collections and religious libraries.

Keywords: Catholicism; Philippines; library history; religion; libraries

INTRODUCTION

Philippine Library History

The study and writing of Philippine library history is described to be juvenile. The earliest essay written on this literature was published in 1928, "Libraries in the Philippines" in the *Library Journal*, by Eulogio Rodriguez, while the first book was published in 1974 entitled *The Libraries of the Philippines* written by Concordia Sanchez. An extensive study of the sources and chronology of events pertaining to the Philippine library history from the sixteenth to the end of the nineteenth century was made available in 1996 by Vicente Hernandez through the book entitled *History of Books and Libraries in the Philippines, 1521-1900*. In the introduction of book, Hernandez (1996) provided a review of the extent of existing literature written on Philippine library history. Based on this review, it can be concluded that not much, or relatively a few, books and articles have been written and published about the history and development of libraries in the Philippines (Hernandez, 1996; and Totanes, 2006),

particularly during the pre-colonial and Spanish colonial periods. This period prior to the 1900s was once called by Hernandez as the "dark age of library history in the Philippines."

Furthermore, Olle (1971) mentioned that in an ideal sense, library history should not be studied on its own, but always in relation to the relevant social, educational, and publishing history – forming its background information. It is on this proposition that Hernandez (1996), have noted that the articles written on it lack enough background information and linkage. This information and linkage would further establish the contexts, and facilitates the understanding of particular events and accounts in the history and development of libraries in the Philippines. The scarcity of professional and scholarly literature on this led to the conceptualization of this paper.

PURPOSE OF THE STUDY

This paper aims to provide perspective and background information based on the links of libraries and religion in the Philippines, particularly exploring the role of the religion brought by the colonizers, Catholicism, to the development of libraries in the country. It shall trace the Philippine library history accounts that reflect Catholicism's involvement in the establishment and development of libraries in the country. At the same time, it shall identify and highlight the contributions and influences of Catholicism to the present stature of libraries in the Philippines.

METHODOLOGY

Qualitative-descriptive research design was employed in this study. Historical documents and existing literature on the subject were examined. A thorough review of literature was provided, after which an analysis was made to put context in the targeted Philippine library history with reference to Catholicism.

RESULTS AND DISCUSSIONS

In order to establish the framework for this paper, the relationship or connection of libraries and religion was reviewed and presented.

Libraries and Religion

The link between 'libraries and librarianship' and 'religion' is one of the oldest and most important relationships in the history of library development.

In the early days, libraries, in the form of repositories for records, were often found in temples and were cared by priests or monks, and by educated slaves. The context and content of these earliest texts and records – that are religious in nature, and the motivations of efforts to keep, distribute, and promote these by religious authorities, were identified by Schneider (2009) as further evidences to this historical relationship. This relationship between libraries and religion has been discussed in literature in several different ways spanning from the history of the Western to the Oriental civilization of the world.

Peterson (2010) in an article has concluded that the great medieval monastic libraries and their scriptoria had their birth in the book-collecting activity necessary to support the monastic form of individual prayer life. The monk's daily work of copying texts, which evolved from the farm to the scriptorium, aided the monk in memorizing them for prayer. In this way, work and prayer were melded together in the monk's life. Later on, it became customary for monasteries to lend texts to other monasteries, giving birth to the inter-library loan. With these developments, the ancient wisdom was saved for its rebirth at the Renaissance – a truly significant contribution to the history of Western culture. There's no doubt that in a way or another, monastic libraries represented "the heart of Western learning for more than 1,000 years" (Harris, 1999).

On the other side of the world, based on the historical research done by Ranaweera & Ranasinghe (2013), it is evident that early libraries of Sri Lanka were started in the monasteries with the influence of Buddhism. Gathered literature showed that the literary activities and libraries were maintained in an excellent manner during the Anurādhapura period – the ancient citadel, and more or less, the heart and soul of the religious and cultural heritage of Sri Lanka. They have also noted that Buddhist monks and high-ranking officials were the main users of monastic libraries functioned in the period of Anurādhapura kingdom. This is a clear manifestation that religion is a catalyst to the development of libraries.

In the Catholic Church, libraries are traditionally viewed as key resources. In fact, in monasteries of the medieval times, the library was simply called an "armarium" – a closet where treasures of are stored like a spiritual and intellectual arsenal (Clausen, 2004). This position on libraries was further expounded in the March 19, 1994 religious letter of the Pontifical Commission for the Cultural Patrimony of the Church stating that:

> *"…the mere existence of ecclesiastical libraries, of which many are of ancient foundation and of extraordinary cultural value, constitutes a decisive testimony to this irrevocable effort of the Church towards a spiritual heritage documented by a library tradition which she considers, at the same time, as both a good of her own and as a universal good placed at the service of human society."*

To give light to this position, a study by Chancellor (2012) examined the relationship of the early history of the profession with religion, and even more specifically, the Catholic Church. Through citing monastery libraries, the production of manuscripts and books, the design of classification system to organize resources by monks, and as well as the union catalog, she concluded that the Catholic Church played a pivotal role in the historical development of libraries and the library and information science profession. The findings of the study support the Catholic Church position that it has participated in a determinate way towards the molding of cultural institutions (such as the library), often with an innovative impulse and with long enduring results, - through direct or indirect influence with regards to the specific evolution of library institutions.

Catholicism in the Philippines

Catholicism, being the most popular religion in the Philippines, became the springboard for the development of early libraries in the context of religion. Catholicism in the Philippines, based on historical facts, was interpreted in two extreme ways: 1) Catholicism was completely imposed on the natives through the use of superior military, political and cultural force, and 2) Catholicism rescued native society from pagan and uncivilized darkness (Francisco, 2000).

The history of the Catholic Church in the Philippines started with the arrival of the Spanish conquistadors in 1521. During the period of conquest, several religious orders arrived in the Philippines. First were the Augustinians, who came with Miguel Lopez de Legazpi's expedition to the Philippines and built the church of Saint Paul (would later be known as the San Agustin Church). The Franciscans were the next to enter the Philippines in 1578 and created the typical town design common today in the Philippines. The Jesuits came next, whose primary focus was the evangelization of the southern part of the Philippines, but was later expelled under the decree of Charles II in 1768. This led to a great loss, both in ministry work and education, until their return in 1859. The Dominicans were next to arrive with Domingo de Salazar, the first Archbishop of Manila, and built the University of Santo Tomas – the oldest standing Catholic university in Asia. The last religious order to arrive to the Philippines were the Augustinian Recollects.

The synod of Manila is one of the greatest achievements of the first bishop of Manila. It started in 1581 and ended in 1586. The problems discussed in the synod were mainly related to the legality of the Spanish conquest and the best means to bring the Filipinos to the knowledge of the Christian faith. By the end of the eighteenth century, the Philippines experienced progress. Filipinos were happy and full of energy, and optimism pervaded the land. But during the 19th century, the friars, who have defended the welfare of the people for centuries, started putting the interest of Spain above the interest of the Philippines (Gutierrez, 1999). They paid allegiance to Spain even if at times, they had differences in functionaries.

The situation of Catholicism in the Philippines changed during the period of American colonization. The Americans introduced the doctrine of separation of church and the state. They reorganized education and created the public school system. In spite of this, Catholicism adapted quickly to the new system. Francisco (2000) noted that the defeat of the Spaniards may have worked to the advantage of Catholicism in the Philippines. New religious orders established Catholic schools within the Commonwealth framework of government in the Philippines. The separation from politics enabled groups within Catholicism to engage in different social problems, especially the problem of land tenancy in the 1930s up to the 1950s. In 1945, the Catholic Bishops Conference of the Philippines was formed. Its purpose was to unify, coordinate and organize the Filipino Catholics in the works of education, social welfare, religious and spiritual aid under the direction of the Filipino bishops (Quitorio, 1996).

The history of Catholicism in the Philippines showed that the Catholic Church played a big role in the formation of the Philippines, as we know it today. And as Francisco (2000) pointed out, though the Catholic Church does not emerge from history unscathed, it is not surprising why it retains an overwhelming majority of the population.

Catholicism and the Development of Libraries in the Philippines

Guided by the historical and socio-cultural pattern in the development of libraries, as well as the literature review that shows the evident link between religion and libraries, the role of Catholicism in the development of libraries in the Philippines is sought by this study. It presents and expounds on the direct and indirect contributions of Catholicism and group them into the three topics: 1) first collections and convent libraries, 2) Catholicism, education and libraries, and 3) religious collections and religious libraries.

a. First Collections and Convent Libraries

The study and writing of history of libraries in the Philippines is often linked with the country's political / colonial history. The accounts of most writers start with the "discovery" of the Philippines by the Spanish conquistadors in the 1520s. This is because there is uncertainty if there were libraries and/or library collections existing in the archipelago prior to the coming of the Spaniards. Although it is speculated that there could have been books in whatever form that might have existed in the Philippines during that period (Vallejo, 1993), the absence of records that would prove this hypothesis is a major setback among scholars. Vallejo attributed this lack to the destruction by the Spaniards of the materials of culture in the archipelago, including reading materials, associated with pagan worship of the natives.

It is believed that the first libraries in the Philippines were established by religious orders. It was described that these religious orders have brought with them their books and their library tradition, through their first private collections and convent libraries that are mostly concentrated to books relating to Christian religion and morality. One explanation for this is the royal law that forbids the shipping of non-Christian books to the Spanish colonies which was enforced in the Philippines. This further explains the slow proliferation of libraries in the Philippines during the early years of Spanish colonization.

Although the Spanish religious' efforts were concentrated on the spread of religious literature, Hernandez (1996) has noted that they contributed beyond this through the first library regulations, first printing press, and book trade. They have learned to use these knowledge for the benefit of their field of mission – evangelization.

Early libraries in the Philippines may have existed during these early years of Spanish colonization, but the first documented reference to the existence of a "library" in the island of the Philippine was in the letter to Philip II of Fr. Domingo de Salazar, the first Bishop of Manila, on June 18, 1583 complaining about the destruction of a "very good library" in the fire, which consumed his living quarters (Hernandez, 1996).

Here are the early libraries that were established in the Philippines by the different religious orders, and were documented. This is a summary of the research done by Hernandez in 1993:

Augustinian Libraries

Library of the Augustinian Convent of San Pablo in Intramuros (1607)
- 1,000 rare titles
- *Geographicae enarrationis: libro octo* by Prolemaei Alexandrini – oldest book in the library
- Fr. Agustin Maria de Catro - considered as the first known librarian in the Philippines and the greatest Augustinian bibliographer
- Fr. Policarpio Hernandez
- the library used to be located in the upper cloister facing Santa Pontencia St., above the sacristy

Library of the Parish of Bauan, Batangas (1596 – 1928)
- destroyed by fire

Library of the Augustinian Convent in Cebu City (1768)
- 2,000 good and rare books

Library of the Augustinian Orphanage of Malabon (until 1896)

- confiscated by the new Philippine Republic

Library of the Escuela Normal Superior de Maestras
- the school was run by the Augustinian nuns of the Assumption from 1892 to 1898

Franciscan Libraries

Library of the Convent of Our Lady of Angels in Intramuros (1578 – 1946)
- 8000 books
- Librarians: Fr. Cristobal Velda (1864); Fr. Cipriano Gonzalez (1890); Fr. Antonio de Vidales (1891 – 1892)

Library of the Santa Ana Church

Dominican Libraries

Library of the Dominican College of Manila (1605 – 1611)
- received Archbishop Benavides' collection
- absorbed in the University of Santo Tomas

Library of the University of Santo Tomas (1611)
- 12,000 volumes of rare books
- *La Guerra Judaica* by Pablus Josephus ca. 79 AD – oldest book in the library
- part of the book collection that the Jesuits had before their expulsion from the Philippines in 1768 were transferred here

Library of San Juan de Letran (1669)

Library of the Convent of Santo Domingo in Intramuros (until 1941)

Jesuit Libraries

Library of the College of San Ignacio and College of San Jose (1583, 1601)
- the two colleges shared the same library

Library of the College of San Felipe de Austria (1640 – 1644)

Library of the Mission House in Palapag, Samar (1693)

Library of the Ateneo Municipal and the Casa Misiones (1859 – 1932)
- destroyed by a fire

Recollect Libraries

Library of the Convent of San Nicolas in Intramuros (1608 – 1945)
- contained 7114 books

Library of San Sebastian Church and Convent (1621)

Recollect Library and Archives (1994)

- 12,000 volumes in holdings
- *Historia General de Philipinas* by Juan de la Concepcion 1788 – oldest book in the collection
- Librarians: Fr. Regino Bangcaya; Owen Maturan

Daughters of Charity Libraries

Library of Santa Isabel College in Intramuros (1632 – Second World War)
Library of the La Concordia College (1868 – 1945)

It can be summed up that the Catholic religious orders have established these libraries for two purposes: 1) to support the needs of their order for intellectual development and repository of their records, and 2) to support the schools or learning institutions they have established. It also reflects that there was an established management of libraries and even designated librarians during the time specified, a first in the Philippine islands as mentioned in the records. These may not be the totality of all the libraries established by the religious orders, but these were the only few recorded. It is possible that there were other libraries established that were not available in the records. As further observed, most of these libraries along with its institutions were either destroyed by natural calamities (i.e. fire) or the war. Most of the surviving remnants of these libraries' early collections comprise the present-day rare books collections of a number of institutions in the Philippines. Since printing was introduced by the Catholic religious, some of these collections can classified as Filipiniana rare books as they fall under the criteria "all books printed in the Philippines prior 1945" which also includes Philippine incunabula or books printed in the Philippines from 1593 to 1640 (Ubay, Perez, Moran & Siapno, 2013).

b. Catholicism, Education and Libraries

Establishment of schools was not the priority of the missionaries who came to the Philippines but rather, found it as a means for evangelization. As early missionaries were also learned scholars, they found the need to educate (Fernandez, 1979). They have established learning institutions supported by libraries, which stirred up the creation of a national association of Catholic educational institutions in 1941 and much later contributed to the educational accreditation we presently know.

i. Catholicism and Education in the Philippines

Early elementary education can be traced to the Augustinians. When they arrive in Cebu in 1565, they started schools that taught the Christian religion to the children of the *datus*. The Franciscans started what we know now as elementary

schools. They also taught Filipinos practical arts. The start of Jesuit education in the Philippines was pushed by Pedro Chirino in Iloilo in 1592. They taught students, who also used the school as residence, with the idea of turning them into catechists who will become evangelizers to the people in their own areas.

In 1581, Bishop Domingo de Salazar wrote to the King of Spain to express the need for a college to educate priests. The college was opened in 1596 and was named Colegio de Manila or Colegio de la Compania. This college was administered by Jesuit priests. By 1733, the institution was renamed University of San Ildefonso. The University of San Ignacio, from its very beginning, had a printing press. From it came out *Gramaticas* or Lexicos and the *Vocabularios* or Dictionaries, written by professors from the university, people of long experience in the Philippines. The Dominicans established Colegio de San Juan de Letran, one of the earliest well-known school in the Philippines, in 1620. This was important since not only did the school accepted orphans as students, their college also educated men who were employed in the civil service and ecclesiastical life in the Philippines.

An instruction was given to Gov. Gomez Perez Dasmarinas by Philip II in 1589 to establish a school for Spanish girls in the Philippines. This led to the creation of Colegio de Santa Potenciana in 1594. The college offered basic education to orphaned Spanish women. The Confraternity of Santa Mesa de la Miscordia erected a new college for women in 1632, named Santa Isabel. In 1862, these two colleges were fused together to form the College of Santa Isabel, which offered similar education as in Europe.

The Jesuits, insinuated by Capt. Gen. Don Fernando Norzagaray in 1895, took charge of a primary school of thirty boys. The institution was called "Escuela Pia" of Manila. The institution was elevated to a college of secondary teaching by Queen Isabel II of Spain in 1865 and was renamed Ateneo Municipal de Manila.

Catholic schools built during the Spanish colonization continued to function during the American period but were faced with a lot of difficulties. Public schools had better quality of education as compared to the catholic schools. The early 1900s also saw the arrival of new religious congregations in the Philippines. Their arrival paved way to the founding of more Catholic schools in the country. These religious congregations were the following: the ICM sisters (1910) who joined the CICM, the Holy Spirit Sisters (1912) who joined the SVDs, the Sisters of St. Paul de Chartres (1904), the Benedictine Sisters (1906), the Franciscan Missionaries of Mary (1912), and the Good Shepherd Sisters (1912). Schools established during this period were Assumption College, St. Scholatica College, and La Salle College by the Christian Brothers of New York and San Beda College by the Benedictines.

It can be summed up that Catholic education laid the foundations of education in the Philippines, which contributions span from the developments in sciences and other disciplines to the preservation of our dialects manifested in the grammar and catechetical books like the *Doctrina Cristiana* (Catholic Bishops' Conference of the Philippines, 2012).

These accounts mentioned may not explicitly describe the contribution of this educational system established by the Catholic religious to the development of libraries in the Philippines. Rather, it is assumed that along with the establishment of Catholic schools, universities, seminaries and other learning institutions, libraries also flourished as support to the academic needs of these educational institutions.

ii. Catholic Educational Association of the Philippines (CEAP)

Despite the reforms in the Philippine educational system introduced by the Americans, Catholic education has withstood and adapted to the waves of changes until the present-day. It has become responsive to the needs of the Philippine educational system. In 1940, an auxiliary board of the Archdiocese of Manila was created to address the educational concerns and cooperation among Catholic schools, and to collectively respond not only to urgent educational issues but also societal issues. On February 2, 1941, the constitution of the Catholic Educational Association of the Philippines was drafted and officers were elected. CEAP is the national association of Catholic educational institutions in the Philippines. At first, CEAP was composed only of schools within the Archdiocese of Manila, but soon extended its membership throughout the Philippines. During the Second World War, CEAP ceased operations. Library-related programs of CEAP are handled by the CEAP Library Committee. Through CEAP Library Committee, library-related concerns were addressed among its members. Cooperation is evident through their programs and projects for the advancement of their libraries, librarians, and the library profession.

iii. Philippine Accrediting Association of Schools, Colleges and University (PAASCU) and Accreditation

Another indirect contribution of Catholicism in education and libraries in the Philippines is on the aspect of accreditation. Accreditation is a concept based on self-regulation which focuses on evaluation and the continuing improvement of educational quality (PAASCU, 2014). It is through the Catholic Education Association of the Philippines (CEAP) that Philippine Accrediting Association of Schools, Colleges and University (PAASCU), one of the established accrediting agencies in the Philippines, was born. PAASCU is a service organization that aims to accredit academic programs that meet commonly accepted standards of quality education.

PAASCU's history can be traced back to CEAP's Accreditation Committee, which was founded in October 1954, to facilitate the voluntary accreditation for CEAP colleges and universities. On its initial meeting, it drew up a Manual of Accrediting with self-survey forms for eight different areas, in which the "Library" is one of them. (PAASCU, 2002). By November 1, 1957, eleven (11) CEAP colleges and universities had undergone an institutional self-survey and been visited by an outside accreditation team. These 11 private Catholic educational institutions were: Ateneo de Manila University, De La Salle University, College of Holy Spirit, Maryknoll College, San Beda College, St. Joseph's College (Quezon City), St. Paul College of Manila, St. Scholastica's College, St. Theresa's College (Cebu), St. Theresa's College (Manila), and University of San Carlos. Their acceptance to be charter members of the first permanent accreditation association in the Philippines marks the end of the task of the CEAP Accreditation Committee and marked the birth of an incorporated organization. In December 2, 1957, PAASCU was registered as a corporation with the Securities and Exchange Commission in the Philippines. It also extended its membership to all private colleges, universities and high schools, both sectarian and non-sectarian.

The "Library" as one of the eight areas being evaluated for each institution, PAASCU looks into the library as a support to the school's academic programs. The particular sections of the "Library" area include: administration; collections/holdings; personnel; financial support; services and use; and physical facilities. PAASCU's library standards are stipulated in their accreditation instrument where the first part is the extensive explanation of the requirements and the second part is the evaluation tool (Obille, 2007). The evaluation results of each library would depend on the following outcomes measures: development of the library, sufficient budget, updated and adequate library collections, qualified and competent personnel, innovative library services, and improved library facilities, among others.

As early as 1969, Alcarez has already observed that the findings of the accrediting teams give a true picture of the libraries being surveyed, and in effect, had led to significant improvements in libraries being accredited. Renovations and face-liftings were spearheaded. Professionally trained librarians have been employed and given faculty status. Library collections has been enriched by regular acquisitions. And in general, the library's role in the achievement of the institution's objectives was realized among the institutions being accredited.

Based on these, it can, therefore, be argued that in one way or another, Catholicism through CEAP, its members' libraries and PAASCU has indirectly contributed to the development of libraries in the Philippines, as they have pioneered the present-day accreditation practice in the country. These institutions and associations have also paved way in raising the quality of libraries in the country.

c. Religious Collections and Religious Libraries

Acknowledging the role of libraries and their collections in its mission, the Catholic Church has valued and regarded them as important instruments for evangelization. Under this topic, an attempt to present existing religious libraries in the Philippines and their collections was sought. Three (3) of these are hereby presented: the Miguel De Benavides Library of the University of Santo Tomas, the Ralph B. Gehring Library of the Loyola School of Theology and the Archbishop Gabriel M. Reyes Memorial Library of the San Carlos Seminary.

i. Miguel De Benavides Library (University of Santo Tomas)

The University of Santo Tomas is the Philippines' oldest standing university. It was built under the direction of Archbishop Miguel de Benavides. "Benavides wanted to create a university that was to bring the Good News to the people, the expansion of Christian faith, the intellectual apostolate and the preparation of clerics and laymen for the task of the church and the state." Before Benavides' death in 1605, he wrote in his testament a donation of 1,500 pesos and his personal library towards the establishment of a college of higher studies. This, along with other donations collected led to the creation of the university on April 18, 1611. It was built as a Dominican educational institution until the educational and ecclesiastical decree given to the university by King Philip IV. Pope Innocent X conferred the title university in the bull In *Supereminenti*, November 20, 1645. King Charles III of Spain gave the university the royal title in 1785. The university was exclusive only to Spaniards at first, but mestizos and pure Filipinos were eventually admitted by the eighteenth century.

Hernandez (1996) noted that there are no available information pertaining to the library. It is also probable that some of the books kept in the rare books section of the library were part of Archbishop Benavides' collections, as pointed out by Fr. Fidel Villaroel (1982). During the expulsion of the Jesuits from the Philippines in 1768, books from their colleges and residences were donated to the UST Library. UST also inherited the College of San Jose, which later became the College of Medicine and the College of Pharmacy. The UST being the only official university in the Philippines during the nineteenth century paved way to the improvement of the library. During this period, holding of books have significantly increased and a total of three libraries were created, one for each campus (Hernandez, 1996).

Candida Cabatu (1952) wrote that from the beginning of the UST library to 1926, books were classified using the Fixed System. This system is an antiquated scheme wherein call numbers of each book was identified by a letter and two numbers - the first number identifies the shelf, the letter identifies the compartment,

and the second number represents the position where the book is located in the compartment. The Library of Congress System replaced this system in 1936. As pointed out by Cabatu (1952), the UST Library has a bountiful collection of old and new documents in its archives, which is of paramount importance for the study and better understanding of Philippine history.

When the UST campus in Intramuros, after its destruction during the Second World War, was transferred to its present location in Sampaloc, Manila, the library was transferred to the main building. On October 29, 1989, an exclusive building for the library was built, named UST Central Library Building. The library was later renamed Miguel de Benavides Library in commemoration to Archbishop Benavides. This was done in line with the celebration of the 400 years of existence of the library (University of Santo Tomas, 2014).

The present-day Miguel de Benavides Library has evolved to a university library that supports various degree programs in UST. The extent of the Library's religious collection can be found it one of its section and a branch library: Religion Section and Ecclesiastical Faculties Library, respectively. The Religion Section caters to the academic needs of college students in their theology courses. It contains almost 9,000 volumes and more than 5,000 titles. While Ecclesiastical Faculties Library, a branch library located at the ground floor of the Father´s Residence, provides books and periodicals on Philosophy, Theology and Canon Law for students and professors of the Ecclesiastical Faculties of UST. In addition, UST has established the Antonio V. Del Rosario UST Heritage Library which houses the vast printed collection of the UST's historical materials such as rare books from 1492 through 1900, Filipiniana rare books and materials, rare periodicals, and rare legal collections, medical books and book on pharmacy (UST, 2014). On this Library, the surviving books in the initial collection Archbishop Benavides are preserved.

ii. Ralph B. Gehring Library (Loyola School of Theology)

The Loyola School of Theology (LST) Library, or the Ralph B. Gehring Library, has been described as the "best theological library in Southeast Asia". This might not refer to the physical appearance of the library but rather to the books and periodicals the library holds. The library was created from the merging of materials from two Jesuit institutions, the San Jose Major Seminary and Berchmans College, in 1955. These 25,000 books collected from the sorting and weeding created the base for the collection of the library. The library receives periodicals through subscription and in exchange for *Landas*, the journal of the Loyola School of Theology. Presently, it houses an approximate of 100,000 volumes of library materials. This number does not include publications of little worth or interest to the Library. It does, however, include philosophical, cultural, historical, sociological periodicals which complements the School of Theology's program of instruction and the Jesuit character of the institution (Gehring, 1992).

Formerly owned by the Philippine Province of the Society of Jesus, the Library was donated to Loyola School of Theology in 1996, and is intended primarily for use by the faculty and students of Loyola School of Theology.

iii. The Archbishop Gabriel M. Reyes Memorial Library (San Carlos Seminary)

The Archbishop Gabriel Reyes Memorial (AGRM) Library is the official research and information resource center of the San Carlos Seminary, the Holy Apostles Senior Seminary and the Lorenzo Mission Institute- at the service of the professors and seminarians. The Library was dedicated and named after the first Filipino Archbishop of Manila. On June 29, 1987, together with the San Carlos Graduate School of Theology, the AGRM Library was completed and blessed by His Eminence Jaime Cardinal Sin, Archbishop of Manila and His Eminence Ricardo Cardinal Vidal, Archbishop of Cebu. AGRM's principal aim is to promote the intellectual and spiritual formation of seminarians residing at the San Carlos Pastoral Formation Complex.

A major part of its collection of books and periodicals was put together through the dedication, initiative and efforts of Fr. John P. Zwaenepoel, CICM, the first Library Director. This collection covers religious and Catholic literature and references. Approximately 70% of it are on theology / religion, 15% on philosophy and 15% on other subjects. The Library also contains thesis and research output of the seminarians of San Carlos Seminary. Acquisition of new books, publications and periodicals, and various donations to the Library, are made possible through the Archdiocese of Manila (San Carlos Seminary, 2014).

CONCLUSION

As exemplified in the literature, the link between libraries and religion is one of the oldest and most important relationships in the history of library development. This is true to the case of the Philippines, in which Catholicism, the religion brought by the Spanish colonizers, has played a role in the development of libraries in the Philippines.

The history of Catholicism in the Philippines showed that the Catholic Church played a significant role in formation of the Philippines. This is why majority of the Filipino population are Catholics and the country is recognized for having the largest number of Catholics in Asia.

As the paper aimed to provide perspective and background information on the links of libraries and Catholicism in the Philippines, it has pointed out, through Philippine library history accounts, Catholicism's involvement in the establishment and development of libraries in the country until the present time.

These were presented into three parts: 1) the first collections and convent libraries, 2) Catholicism, education and libraries, and 3) religious collections and religious libraries.

The history of libraries in the Philippines began with the arrival of Spanish colonizers. Along with the colonizers came the evangelization by the Catholic missionaries. Religious books were the main contents of the earliest library collections in the country in accordance with King Philip II of Spain's decree. They brought with them their books and their library tradition, through their first private collections and convent libraries. These have provided a direct impact in the history of libraries in the Philippines. These also became the foundation of libraries and librarianship in the country. The surviving library collections and convent libraries formed the nucleus of modern day rare books collections and heritage libraries in the country.

As early missionaries were also learned scholars, they found the need to educate. They used education as an instrument for evangelization. The creation of seminaries, schools, universities and other learning institution by various Catholic religious led to the establishment of libraries that would support these educational institutions, which in turn leads to the enrichment of the collections of libraries. In 1941, the Catholic Educational Association of the Philippines (CEAP), a national association of Catholic educational institutions in the Philippines, was established. CEAP is concerned with the promotion of the interests of Catholic educators. Through its Library Committee, CEAP has fostered cooperation among its members' libraries and librarians and has contributed to their development. It was also through CEAP that the Philippine Accrediting Association of Schools, Colleges and University (PAASCU), one of the established accrediting agencies in the Philippines, was born. PAASCU pioneered the accreditation of academic programs to meet commonly accepted standards of quality education, in which the library is one of its areas. This indirect link of Catholicism to libraries in the Philippines through education and accreditation has caused a significant improvement in the standards for libraries in the country. It may not be fully credited to Catholicism, but in one way or another, it has contributed to the development of libraries in the country.

As Catholicism develops in the Philippines, and so do the religious collections and religious libraries. The virtually nonexistent literature on them is indicative that little is known about them yet, however the cases of the Miguel de Benavides Library, the Ralph B. Gehring Library and the Archbishop Gabriel M. Reyes Memorial Library, which primarily act as special and academic libraries, illustrate these developments. This is the direct contribution of Catholicism to the growth of religious collections and religious libraries.

With these points cited, this study has highlighted, in one way or another, the role of Catholicism in the development of libraries in the Philippines. These contexts shouldn't be disregarded in the study and writing of history and development of libraries in the Philippines. This would further imply that the present stature of libraries and librarianship in the country is once rooted in Catholicism's influence. As we acknowledge that these contexts shapes our history and society, this could be a basis in analyzing the growth of these libraries and the profession, as well as in understanding how the identity of libraries and librarianship in the Philippines was shaped by this religion. This also provides a basis for future research into an interesting and often overlooked context within library history, not just in the case of the Philippines but as well in other countries.

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EMOTIONAL STABILITY AND BEHAVIORAL PERFORMANCE OF ACADEMIC LIBRARIANS

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ABSTRACT

The study assessed and correlated the emotional stability and behavioral performance of the academic librarians in Cagayan de Oro City. The participants were 32 academic librarians and 1001 students from ten higher educational institutions. Descriptive research design and standardized survey instruments were used in the study. Data were analyzed using percentage, mean, t-test, and ANOVA. Findings reveal a positive relationship between the librarians' level of emotional stability and behavioral performance. Overall, the librarians had moderately high emotional stability and behavioral performance. One major recommendation is for the library administrators to put in place staff training programs for the enhancement of the librarian behavioral performance for full user satisfaction.

Keywords: Emotional stability, behavioral performance, academic librarian, Cagayan de Oro City libraries, RUSA guidelines

INTRODUCTION/BACKGROUND OF THE STUDY

The relationship between emotional stability and work performance has been a frequent research topic in most of the occupations. However, in the field of librarianship, very little research has been made on the topic, especially in the local context. The researcher found it interesting to determine whether emotional stability is a predictor of behavioral performance of the academic librarians. This research is especially relevant in the light of today's ever-changing library environment - information explosion, new technologies, new digital resources, and virtual services. Gone was the time when libraries operated simply and provided mostly print resources for students and faculty. Now, libraries have to deal with so many players - administrators, system vendors, various suppliers of books and journals and online databases, and consortia. There is also the Internet that has raised the expectations of the library users. Then add to these the tasks of planning, budgeting, supervising, reporting, developing library collections, and other tasks as may be assigned to the librarian by the administrator. How do librarians respond

to these multifarious tasks and what effects do these have on their behavioral performance?

Agreeing with the observation of researchers like Gers and Seward (1985) who found that "behaviors have a strong influence on performance" and Whitlatch (1990) who opined that "librarian's courtesy, interest, and helpfulness are crucial in providing successful reference service", the researcher decided to undertake this study on the emotional stability and behavioral performance of academic librarians. Having at hand basic information on emotional stability and behavioral performance of librarians, library administrators can be properly guided in setting personnel programs and staff training geared towards more effective library service. The information gathered in this study is relevant to the present efforts of the Professional Regulatory Board for Librarians in formulating standards and competencies for the library profession, with the end in view of developing a National Competency-based Standard for Librarians.

PURPOSE OF THE STUDY

This study determined the emotional stability and behavioral performance of academic librarians. Specifically, it sought to find answers to the following questions:

1. What is the librarian participants' level of emotional stability considering:

   1.1 Balance
   1.2 Courage
   1.3 Emotional control
   1.4 Emotional sensitivity
   1.5 Anxiety
   1.6 Ego strength

2. As assessed by the students, what is the librarian participants' level of behavioral performance along the following dimensions:

   2.1 Approachability
   2.2 Interest
   2.3 Listening/Inquiring
   2.4 Searching
   2.5 Follow-up

3. Is there a significant difference in the librarian participants' level of emotional stability considering:

    3.1 Age
    3.2 Length of service
    3.3 Civil Status

4. Is there an association between the librarian participants' level of behavioral performance and emotional stability?

5. Is there a significant difference in the students' assessments of the librarians' behavioral performance considering their year level?

METHODOLOGY

This study utilized the descriptive research design. According to Calderon and Gonzales (2005), this research design is used to obtain information concerning the current status of the phenomena to describe —what exists with respect to variables or conditions in a situation. This study is descriptive because it described emotional stability and the behavioral performance of the librarians as assessed by the students.

There were two groups of participants in this study: 32 academic librarians and 1001 students from 10 academic schools in Cagayan de Oro City. The study used two questionnaires. The first questionnaire dealt with the librarians' emotional stability. It consisted of 54 statements rated on a 4-point scale (1-not true of me to 4-very true of me) and was adapted from "The Construction of an Indigenous Emotional Stability Scale" by Chrystal (2012). The questionnaire also elicited personal data of the librarians such as age, civil status, and length of service.

The second questionnaire dealt with the academic librarians' behavioral performance when giving service as perceived by the students. The questionnaire was based on Reference User Services Association Guidelines (2004), consisting of 41 statements rated on a 7-point scale (NA-not applicable to SA-strongly agree) with five areas - approachability, interest, listening, searching, and follow-up. To identify the librarian, the three initial letters of the librarian's full name were used as code.

The instruments used in the study were standardized wherein reliability and validity have already been established. The survey instruments were distributed to and retrieved from the librarians and the students of the selected schools in Cagayan de Oro. Prior to the distribution of the questionnaires, a letter asking

permission to conduct the survey was sent to the academic administrators of the different libraries. Attached to each questionnaire was a transmittal letter that introduced the study and sought the participant's cooperation and honest responses. The questionnaires for emotional stability were collected a day after the distribution, while the questionnaires for behavioral performance were collected 10 minutes after their distribution. The floating of questionnaires took almost two weeks.

The student participants were sampled through convenience sampling technique. Only those students who were readily available during the survey were included in the study (Gravetter, 2011). All the reference academic librarians' of the selected schools were involved in the survey.

Items of the emotional stability instrument were rated using a 4-point scale: 4 (Very true of me), 3 (True of me), 2 (Slightly true of me), and 1 (Not true of me). Items of the behavioral performance instrument were rated using a 7-point scale: SA (Strongly Agree), A (Agree), AS (Agree Slightly), DS (Disagree Slightly), D (Disagree), SD (Strongly Disagree), and NA (Not Applicable).

The following were the statistical tools used in analyzing the data: percentage for the distribution of participants according to their socio-demographic characteristics, mean for their level of emotional stability and behavioral performance, and t-test and ANOVA for the test of difference in means.

RESULTS AND DISCUSSION

Problem 1: What is the librarian participants' level of emotional stability considering:

1.1   Balance
1.2   Courage
1.3   Emotional Control
1.4   Emotional Sensitivity
1.5   Anxiety
1.6   Ego Strength

Table 1. Frequency, Percentage and Mean Distribution of the Librarian's Emotional Stability (Balance)

Range	Description	Interpretation	F	%
3.51 – 4.00	Very true of me	High	7	21.88
2.51 – 3.50	True of me	Moderately High	21	65.63

1.51 – 2.50	Slightly true of me	Moderately Low	4	12.50
1.00 – 1.50	Not true of me	Low	0	0
		Total	32	100

Overall Mean: 3.13   SD: 0.49   Description: Moderately High

No		M	SD	Description
1	I balance my family life with the other things that I do.	3.66	0.48	High
2	I make time for my friends regularly.	2.69	0.86	Mod.High
3	I give enough attention to both my work or studies and other areas in my life.	3.31	0.64	Mod.High
4	I balance my work and family responsibilities.	3.56	0.56	High
5	I have time for hobbies.	2.91	0.96	Mod.High
6	I have enough time to socialize with my friends.	2.53	0.92	Mod.High
7	I find that there are enough hours in the day to get my work done.	3.16	0.81	Mod.High
8	I find that my work or study load can be combined with my family needs.	2.97	0.93	Mod.High
9	I have healthy workload.	3.25	0.80	Mod.High
10	I live a balanced life.	3.31	0.64	Mod.High

The data show that the librarians demonstrated a moderately high emotional stability as indicated by the overall mean of 3.13. On the specific indications of emotional stability, the librarians rated themselves highly on balancing family life with the other things that they do and balancing work and family responsibilities. The finding suggests that the librarians are really good at balancing things and setting priorities. Persons who have high emotional stability scores perceive themselves to possess quality life and are satisfied with work organization (Bobic, 2012).

Table 2. Frequency, Percentage and Mean Distribution of the Librarian's Emotional Stability (Courage)

Range	Description	Interpretation	F	%
3.51 – 4.00	Very true of me	High	6	18.75
2.51 – 3.50	True of me	Moderately High	20	62.5
1.51 – 2.50	Slightly true of me	Moderately Low	6	18.75
1.00 – 1.50	Not true of me	Low	0	0
		Total	32	100

Overall Mean: 2.99   SD: 0.55   Description: Moderately High

Table 2 shows that the librarians' emotional stability along courage was moderately high (M=2.99), overall. Majority of them (62.50%)had courage of moderately high level, suggesting that the librarians welcome challenges and risks, are not afraid of making changes, and do speak up for others even in the face of negative consequences. The preceding statement is aligned with what Bedenk (2012) posited that individuals who are intrinsically motivated try things out and persist in pursuing an idea.

Table 3. Frequency, Percentage and Mean Distribution of the Librarian's Emotional Stability (Emotional Control)

Range	Description	Interpretation	F	%
3.51 – 4.00	Very true of me	High	13	40.62
2.51 – 3.50	True of me	Moderately High	7	21.87
1.51 – 2.50	Slightly true of me	Moderately Low	12	37.50
1.00 – 1.50	Not true of me	Low	0	0
		Total	32	100

Overall Mean: 3.09   SD: 0.78 Description: Moderately High

Table 3 shows that in terms of emotional control, the librarians had moderately high (M=3.05) control over their emotions. This finding implies that the librarians have good listening skills, take time to explain something until an information is understood, and prefer to talk things through rather than being angry or cutting off the discussions. This finding confirms what Hogan and Holland (2003) concluded that persons who are calm, self-confident, and resilient will be evaluated positively.

Table 4. Frequency, Percentage and Mean Distribution of the Librarian's Emotional Stability (Emotional Sensitivity)

Range	Description	Interpretation	F	%
1.00 – 1.50	Very true of me	High	0	0.00
1.51 – 2.50	True of me	Moderately High	4	12.50
2.51 – 3.50	Slightly true of me	Moderately Low	18	56.25
3.51 – 4.00	Not true of me	Low	10	31.25
		Total	32	100

Overall Mean: 3.19   SD: 0.61   Description: Moderately Low

* reversely scored

Table 4 shows that the overall level of the librarians' emotional sensitivity was moderately low (M=3.19). This finding indicates that librarians are not overly sensitive, not easily offended and hurt, and tend not to display inappropriate behavior in negative situations. As described by Scherdin (2002), the personality types of librarians are introversion, sensing, thinking, and judging (ISTJ).

Table 5. Frequency, Percentage and Mean Distribution of the Librarian's Emotional Stability (Anxiety)

Range	Description	Interpretation	F	%
1.00 – 1.50	Very true of me	High	0	0.00
1.51 – 2.50	True of me	Moderately High	4	12.50
2.51 – 3.50	Slightly true of me	Moderately Low	14	43.75
3.51 – 4.00	Not true of me	Low	14	43.75
		Total	32	100

Overall Mean: 3.31   SD: 0.63   Description: Moderately High

* reversely score

As shown in Table 5, overall, the librarians had moderately low self-rating on anxiety, suggesting that they are not likely to display overly fearful and malad-justed behavior in various situations and in their interaction with people. In addition, the librarians do not display neurotic tendencies, are not prone to depression, and not too apprehensive about issues. According to Pederson (2011), people who are high on depression traits are also more sensitive to negative feedback, but those who are low on depression are less sensitive to negative feedback.

Table 6. Frequency, Percentage and Mean Distribution of the Librarian's Emotional Stability (Ego Strength)

Range	Description	Interpretation	F	%
3.51 – 4.00	Very true of me	High	10	31.25
2.51 – 3.50	True of me	Moderately High	18	56.25
1.51 – 2.50	Slightly true of me	Moderately Low	4	12.50
1.00 – 1.50	Not true of me	Low	0	0.00
		Total	32	100

Overall Mean: 3.22   SD: 0.55   Description: Moderately High

Table 6 shows that the librarians had moderately high self-rating on ego strength (M=3.22). However, they had high self-rating on self-acceptance, suggesting that the librarians are sure of themselves, have self-confidence, self-respect, and know what they want.   This is in contrast to the images held by other people that librarians are reticent, meek, inept, and lack self-respect (Attebury, 2010).

Problem 2: As assessed by the students, what is the librarian participants' level of behavioral performance along the following dimensions:

2.1   Approachability
2.2   Interest
2.3   Listening/Inquiring
2.4   Searching
2.5   Follow-up

Table 7. Frequency, Percentage and Mean Distribution of the Librarian's Behavioral Performance (Approachability)

Range	Description	Interpretation	F	%
6.51 – 7.0	Strongly Agree	Very High	106	10.59
5.51-6.50	Agree	High	433	43.26
4.51-5.50	Agree Slightly	Moderately High	314	31.37
3.51 – 4.50	Disagree Slightly	Moderately Low	110	10.99
2.51 – 3.50	Disagree	Low	24	2.40
1.51 – 2.50	Strongly Disagree	Very Low	12	1.20
1.0 – 1.50	Not applicable	Not applicable	2	0.20
		Total	1001	100

Overall Mean: 5.50 SD: 1.00 Description: Moderately High

No.	The librarian	M	SD	Description
1	is poised and ready to engage with approaching patrons	5.70	1.11	High
2	acknowledges patrons through the use of a friendly greeting to initiate conversation	5.46	1.30	Moderately High
3	remains visible to patrons as much as possible	5.64	1.11	High
4	identifies patrons needing or wanting help	5.65	1.14	High
5	roves through the reference or public areas offering assistance	5.41	1.26	Moderately High
6	gets the patron started on the initial steps of his search	5.37	1.24	Moderately High
7	checks back on the patron's progress	5.28	1.34	Moderately High
8	responds in a timely fashion to queries	5.50	1.18	Moderately High

Table 7 reveals that the librarians were assessed to be moderately high on approachability (M=5.50). The behaviors with very high means (5.70 – poised and ready to engage with approaching patrons, 5.65 – identifies patrons needing or wanting help, 5.64 – remains visible to patrons as much as possible) are indicative that the librarians are always accessible and have time for the students. According to Jacoby and O'Brein (2005), giving friendly service may help boost students' confidence in finding answers to their queries on their own ability.

Table 8. Frequency, Percentage and Mean Distribution of the Librarian's Behavioral Performance (Interest)

Range	Description	Interpretation	F	%
6.51 – 7.0	Strongly Agree	Very High	137	13.69
5.51-6.50	Agree	High	462	46.15
4.51-5.50	Agree Slightly	Moderately High	288	28.77
3.51 – 4.50	Disagree Slightly	Moderately Low	74	7.39
2.51 – 3.50	Disagree	Low	23	2.30
1.51 – 2.50	Strongly Disagree	Very Low	13	1.30
1.0 – 1.50	Not applicable	Not applicable	4	0.40
		Total	1001	100

Overall Mean: 5.65   SD: 1.13 Description: High

Table 8 shows the behavioral performance of librarians along interest. Overall, the librarian were assessed to be high on interest (M=5.65). This finding confirms the observation that librarians give their library users' special attention especially those who need assistance and that they demonstrate commitment to providing effective information assistance. As stated by Ramos (2012) and Whitlach (1990), eagerness to help the client, friendliness, approachability, patience, and diligence in clarifying questions and willingness to collaborate with librarians from other institutions are factors affecting the success of reference service.

Table 9 Frequency, Percentage and Mean Distribution of the Librarian's Behavioral Performance (Listening)

Range	Description	Interpretation	F	%
6.51 – 7.0	Strongly Agree	Very High	128	12.79
5.51-6.50	Agree	High	513	51.25
4.51-5.50	Agree Slightly	Moderately High	255	25.47
3.51 – 4.50	Disagree Slightly	Moderately Low	65	6.49
2.51 – 3.50	Disagree	Low	27	2.70
1.51 – 2.50	Strongly Disagree	Very Low	11	1.10
1.0 – 1.50	Not applicable	Not applicable	2	0.20
		Total	1001	100

Overall Mean: 5.59   SD: 1.17 Description: High

Table 9 shows that the assessed behavioral performance of librarians along listening was also high (5.59). Three behaviors with the highest ratings were respecting privacy (5.83), using appropriate tone (5.72), and communicating cordially (5.70). The finding means that students appreciate the listening and questioning skills of librarians and that they are provided with the information they need. This finding is consistent with the previous finding of Kwon (2007) that user satisfaction is higher when librarians demonstrate listening behaviors.

Table 10. Frequency, Percentage and Mean Distribution of the Librarian's Behavioral Performance (Searching)

Range	Description	Interpretation	F	%
6.51 - 7.0	Strongly Agree	Very High	86	8.59

5.51 - 6.50	Agree	High	32	3.20
4.51 - 5.50	Agree Slightly	Moderately High	738	73.73
3.51 - 4.50	Disagree Slightly	Moderately Low	89	8.89
2.51 - 3.50	Disagree	Low	39	3.90
1.51 - 2.50	Strongly Disagree	Very Low	9	0.90
1.0 - 1.50	Not applicable	Not applicable	8	0.80
		Total	1001	100

Overall Mean: 5.46 SD: 1.22   Description: Moderately High

Table 10 shows the librarians' behavioral performance along searching. The librarians were assessed to be moderately high on searching (M=5.46). This finding shows that the librarians exhibit proper search techniques and behavior consistent with effective search strategies. Thus, the students are satisfied with the result of their search for information. In the study of Magi and Mardeusz (2012), majority of the students indicated that the librarians helped them in selecting and recommending sources like databases and reference books and in determining whether the sources were reliable.

Table 11. Frequency, Percentage and Mean Distribution of the Librarian's Behavioral Performance (Follow-up)

Range	Description	Interpretation	F	%
6.51 - 7.0	Strongly Agree	Very High	98	9.79
5.51 - 6.50	Agree	High	426	42.56
4.51 - 5.50	Agree Slightly	Moderately High	286	28.57
3.51 - 4.50	Disagree Slightly	Moderately Low	120	11.99
2.51 - 3.50	Disagree	Low	39	3.90
1.51 - 2.50	Strongly Disagree	Very Low	24	2.40
1.0 - 1.50	Not applicable	Not applicable	8	0.80
		Total	1001	100

Overall Mean: 5.40   SD: 1.11   Description: Moderately High

As shown in Table 11, the behavioral performance of librarians along follow-up was moderately high (M=5.40), overall. Compared with the other behavioral performances earlier discussed, the behavior on follow-up had the lowest overall mean, although moderately high. With the lowest mean was setting up, if needed, individual research appointment to continue researching the question. On

approachability, checking back on the patrons' progress also had the lowest mean (5.28). The findings indicate the need for the librarians to enhance their follow-up behavior.

Problem 3: Is there a significant difference in the librarian participants' level of emotional stability considering:

31   Age
32   Length of service
33   Civil Status

Ha_1: The librarian participants' levels of emotional stability significantly vary considering age, length of service, and civil status.

Table 12. Results of the Test of Difference in the Librarians' level of Emotional Stability Considering Age

Emotional Stability	19-40 years old		41 years old & above		t	p
	M	SD	M	SD		
Balance	3.06	0.43	3.22	0.56	-0.94	0.29
Courage	3.05	0.49	2.90	0.61	0.76	0.39
Emotional Control	3.16	0.87	2.98	0.66	0.65	0.31
Emotional Sensitivity*	3.37	0.50	2.94	0.67	2.06	0.25
Anxiety*	3.51	0.55	3.03	0.62	2.29	0.62
Ego Strength	3.21	0.59	3.20	0.59	0.01	0.99

*reversely scored

Table 12 shows the results of the test of difference in the librarians' levels of emotional stability when grouped according to age. Statistical result shows that the alternative hypothesis was not supported because no significant difference in the means existed. Likewise, the study of Nazarpour-e Samsami (2006) found no meaningful relationship between demographic cases and personality characteristics according to age groups. Soto et al. (2011) also suggested that there is no age trend across early adulthood and middle age on personality.

Table 13. Results of the Test of Difference in the Librarians' level of Emotional Stability Considering Length of Service

Emotional Stability	Less than 10 years		More than 10 years		t	p
	M	SD	M	SD		
Balance	3.05	0.44	3.23	0.55	-1.02	0.38
Courage	3.01	0.53	2.96	0.57	0.24	0.75
Emotional Control	2.95	0.81	3.25	0.73	-1.05	0.72
Emotional Sensitivity*	3.37	0.58	2.94	0.58	2.06	1.00
Anxiety*	3.47	0.54	3.09	0.67	1.76	0.37
Ego Strength	3.22	0.66	3.19	0.51	0.13	0.45

*reversely scored

Table 13, shows the test of difference in the librarians' levels of emotional stability considering length of service. As shown, there was no significant difference in the levels of emotional stability when length of service was considered. As discussed by Harter (2002), employees stay longer in a company not just because of pension and benefits but also of the greater meaning they place on personal development and of finding their work as a calling, enjoyable, fulfilling, and socially useful. As usually observed, librarians really stay long in their profession and retire as librarians.

Table 14. Results of the Test of Difference in the Librarians' level of Emotional Stability Considering Civil Status

Emotional Stability	SINGLE		MARRIED		t	p
	M	SD	M	SD		
Balance	2.87	0.47	3.31	0.43	-2.66	0.69
Courage	2.91	0.55	3.04	0.54	-0.68	0.94
Emotional Control	3.23	0.70	2.98	0.83	0.86	0.56
Emotional Sensitivity*	3.38	0.45	3.05	0.67	1.53	0.15
Anxiety*	3.35	0.58	3.28	0.66	0.30	0.68
Ego Strength	3.16	0.65	3.25	0.51	-0.35	0.46

*reversely scored

The results of the test of difference in the librarians' levels of emotional stability considering civil status are presented in Table 14. As shown, there existed no significant difference in the librarians' emotional stability levels considering their civil status. Regardless of the civil status of the librarians', their emotional stability levels were almost the same. This finding is in contrast to the study of the EU Research on Social Sciences and Humanities (2004) revealing that married persons were more emotionally disturbed compared with unmarried persons because of the many responsibilities they faced.

Problem 4: Is there an association between the librarian participants' level of behavioral performance and level of emotional stability?

Ha$_2$: The librarian participants' level of behavioral performance is significantly associated with the level of their emotional stability.

Table 15. Pearson's r values showing the Associations between the Librarians' Behavioral Performance and Emotional Stability

Emotional Stability	Behavioral Performance				
	Approachability (M = 5.67)	Interest (M=5.88)	Listening (M=5.78)	Searching (M=5.64)	Follow-up (M=5.63)
Balance (M=3.13)	0.18	0.28	0.36	0.20	0.35
Courage (M=2.99)	-0.08	-0.11	-0.10	-0.15	-0.11
Emotional Control(M=3.08)	0.05	-0.02	-0.05	-0.02	-0.06
Emotional Sensitivity (M=3.18)	-0.08	-0.00	-0.13	-0.18	-0.14
Anxiety (M= 3.30)	-0.15	-0.15	-0.15	-0.15	-0.09
Ego Strength (M=3.21)	-0.06	-0.16	-0.19	-0.07	-0.09

Table 15 shows the Pearson's r values showing the associations between the librarians' behavioral performance and emotional stability. As found, emotional stability was not associated with behavioral performance. The result may be attributed to the small number of participants or to the cultural context wherein Filipinos tend to be relaxed, unflustered, and non-confrontational in the face of conflict and hostility.

Problem 5: Is there a significant difference in the students' assessments of the librarians' behavioral performance considering year level?

Ha3: The students' assessments of the librarians' behavioral performance significantly vary considering year level.

Table 16. Results of the Analysis of Variance on the Students' Assessments of the Librarians' Behavioral Performance Considering Year Level

Behavioral Performance	Year Level					F	p
	First	Second	Third	Fourth	Fifth		
Approachability	5.63	5.63	5.36	5.24	4.82	8.01**	0.000
Interest	5.78	5.76	5.52	5.41	5.21	6.38**	0.000
Listening	5.74	5.69	5.47	5.30	5.46	7.85**	0.000
Searching	5.62	5.56	5.34	5.12	5.30	8.32**	0.000
Follow Up	5.60	5.47	5.29	5.06	4.93	7.69**	0.000

*Significant at 0.05 level
**Significant at 0.01 level

Table 16 shows the results of the analysis of variance in the students' assessments of performance of librarians considering the students' year level. As revealed, there were significant differences in the students' assessments of the behavioral performance of the librarians considering year level. The finding support the hypothesis forwarded in this study. The first and second year students gave higher ratings to the librarians in terms of their approachability in comparison with students in the other year levels.

It is also worth noting that in the other areas of behavioral performance such as interest, listening, searching and follow-up, the first year students were found to have higher ratings than other students

The high ratings that the first and second year students gave on the librarians' behavioral performance can be explained by the fact that they are new library users and they rely much on the librarians' assistance in finding information. In addition, information literacy programs are more frequent in the lower years than in the higher years. Also, the first and second year students composed the largest group of participants in this study. On the other hand, these findings point to the need of librarians to consider the diverse needs of students in each year level and provide resources and services appropriate to them.

CONCLUSION AND RECOMMENDATIONS

The academic librarians under study are generally emotionally stable and know how to manage their emotions at work. Though students may be noisy or unruly, yet librarians manage to keep their emotions and are able to keep the library conducive for learning. The academic librarians also exhibit the behavioral performances reflected in the Guidelines for Behavioral Performance for Reference and Information Service Providers especially on skills interest and listening. The findings tend to show that the librarians are sensitive to the needs of their library users and show professionalism in performing their tasks and responsibilities.

The following recommendations are drawn based on the findings and conclusions of this study:

1. For the library administrators to consider developing a training program that enhances librarians' emotional stability and performance behaviors.
2. For the library staff to study the possibility of adopting the behavioral guidelines in the reference and user services as a practical evaluation tool.
3. For the librarians to continue exhibiting the behaviors especially on interest and listening skills.
4. For future researchers to consider replicating this study to include libraries of different types and sizes to validate further the findings of this study.

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TECHNOSTRESSORS AND THE COPING MECHANISM OF ACADEMIC LIBRARIANS IN DAVAO CITY, PHILIPPINES

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ABSTRACT

Craig Brod (1984) coined the word technostress. a modern disease affecting workers caused by an inability to cope with the new computer technologies in a healthy manner. A study determining the relationship between technostressors, and the level of coping using descriptive correlation in a population of 57 academic librarians, 3 sets of questionnaires consisting of a researcher-made personal profile, techno-stressors by Ragu-Nathan (2008), and Lazarus's coping mechanism (1991), were highly-validated at 4.14. Means and Pearson r reveal low levels from overload, invasion, complexity, insecurity, and uncertainty, and moderate levels in confrontive coping, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, planful problem solving, and positive reappraisal. Significant relationship exists between techno-stressors and coping mechanism. Academic librarians practice positive reappraisal coping. Library heads should regularly hold seminars and workshops on accepting responsibility, escape-avoidance, self-controlling, confrontive, and distancing coping; and, organize technology-based training.

Keywords— Technostressors, Coping Mechanism, Academic Librarians, Davao City

INTRODUCTION / BACKGROUND OF THE STUDY

Library and information personnel in colleges and universities now work assiduously in networked environment where bigger, better, and more technology remains one of the constant ways they can manage their jobs. Technology evolution (Al-Qualiaf, 2006) implies for library operations to change rapidly that librarians need to adapt to new plans, tasks and activities. Technology, however, can cause

stress. For those who use it, and find it hard to cope with stressful jobs, technology affect workers psychologically, emotionally, physically, socially, and increased mental workload (Bakke, et al., 2011).

Craig Brod, a clinical psychologist, coined technostress in 1984. Brod defines technostress as a modern disease of adaptation caused by an inability to cope with the new computer technologies in a healthy manner which manifests itself in two distinct but related ways: the struggle to accept computer technology, and in the more specialized manner over-identification with computer technology. Ennis (2005) pointed six primary causes of technostress. These are lack of training, increased workload, reliability of technology, the changing role of librarians, pace of change, and lack of standardization, with the last two appearing to be the most stressors.

1.a. Technostressors

Technostress has become a serious issue for both information technology (IT) users, and professionals due to its potential effect on mental health and on-the-job productivity. Employers strategize mechanisms on how to cope with the trend to make human resources increase production instead of suffering from poor performance (Tu, et al., 2005). People employ coping strategies whenever they find themselves in uncomfortable, or unsatisfactory situations, and when they do not possess the desirable level of comfort or satisfaction (Ansourian, 2008).

Technostressors is studied along five sources, namely: overload, invasion, complexity, insecurity, and uncertainty. Techno-overload describes situations where use of information system forces professionals to work faster. Mobile computing devices together with social networking and collaborative applications make it possible to process simultaneous streams of real time information, resulting in information overload, interruptions, and multitasking. Multitasking implies simultaneous work on different applications and tasks, trying to do more in less time, and experiencing tension (Tarafdar, et.al., 2007).

Techno-invasion describes situations where professionals can potentially be reached anywhere and anytime, and feel the need to be constantly connected. The regular workday extends into family hours including vacations; "not connecting" becomes disquieting. At the same time, due to this kind of continual connectivity, individuals feel tethered to these technologies and experience intrusion on their time and space. Hence, they experience frustration and stress (Tarafdar, et.al., 2007).

Techno-complexity describes situations where the complexity associated with information system forces professionals to spend time and effort in learning

and understanding how to use new applications. Even as competitive and vendor pressures to keep using the latest hardware, software, and applications have increased, technical capabilities and terminology associated with information system have become more complex. New applications can take months to learn, and manuals can be unwieldy and impenetrable. Users can thus find the variety of applications, functions, and jargon, intimidating and difficult to understand, and consequently, feel stressed (Tarafdar, et.al., 2007).

Techno-insecurity emerges in situations where users feel threatened about losing their jobs to other people who have a better understanding of new information system. As the overall technology cognizance of professionals increases, it is common to find newer, often younger recruits, who come equipped with a higher comfort level with, and greater inclination, and enthusiasm to use new information system. Existing professionals may, thus, feel insecure or cynical about information system, leading to tension and stress (Tarafdar,et.al.2007).

Techno-uncertainty refers to contexts where continuing changes and upgrades to information system do not give professionals a chance to develop a base of experience for a particular application or system. Professionals find this unsettling because their knowledge becomes rapidly obsolete. Although they may initially be enthusiastic about learning new applications and technologies, constant requirements for refreshing and updating eventually create frustration and anxiety. Further, off-the shelf workflow applications cannot be used "as is." They require configuration and customization during implementation, which are highly political and stressful processes. Even after implementation, individuals are apprehensive about using them because applications take time to stabilize, and documentation and information technology department support may be poor Tarafdar, et.al., (2007).

1.b. Coping Mechanisms

In order to combat techno-stressors, Lazarus and Folkman (1984) identified eight coping mechanism strategies. These are confrontive coping, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, planful problem solving, and positive reappraisal.

Confrontive coping is an aggressive effort to alter the situation with some degree of hostility and risk-taking described as anger. The anger may have come as a result of frustrating situation, or it may be due to the behavior of another individual (Lazarus and Folkman, 1984).

Distancing describes cognitive efforts to detach oneself and to minimize the significance of the situation described as denial. Leana and Feldman (1995) found

a positive association between distancing, although those who used distancing were also more likely to be dissatisfied with their new job.

Self-controlling describes efforts to regulate one's feelings and actions that is difficult to achieve (Weiten and Lloyd, 2006). Fortunately, the last several decades have produced major advances in the technology of self-control. These advances have emerged from research on behavior modification, an approach to controlling behavior that utilizes the principles of learning and conditioning.

Seeking social support describes efforts to seek informational support, tangible support, and emotional support. Closeness of friends and colleagues will help individuals to cope with that kind of stress or feeling (Newstron, 2002). Social support is information and feedback from others that one is loved and cared for, esteemed and valued, and included in a network of communication and mutual obligation. Social support (Santhrock, 2001), especially diverse social ties, help people cope with stress and live healthier lives.

Accepting responsibility is acknowledging one's own role in the problem with a concomitant theme of trying to put things right. Kaelin (2008) says that accepting responsibility for everything that happens in our life a whole lot easier, and once we do that, it is so much easier to feel solid, grounded and empowered. The reasons many individuals seem to consistently struggle with the concept of stress management is that these people fail to take responsibility for their part in the stress that is actually being experienced.

Escape-avoidance is described as wishful thinking and behavioral efforts to escape or avoid the problem which is as bargaining. Aldwin (2007) identifies controllability of the problem as a key in evaluating the effectiveness approach–avoidance coping styles. Two other factors are the point in time that outcome is assessed, and the goodness of fit between the coping style and situational demands. The avoidant strategies are more effective in reducing emotional distress in the short term, while approach strategies are more effective over the long term.

Planful problem-solving is a deliberate problem-focused efforts to alter the situation, coupled with an analytic approach to solving the problem. This is described as acceptance. Eshenbeck (2008) as cited by Divino (2011) says that problem-focused coping can work quite well, but is not a method that people can use. Most people use people-focused coping to successfully deal with controllable stressful events. Coping also has a temporal aspect. No one can cope with stress even before it takes place or while it is happening. Dewe, O'Driscoll and Cooper (2010), state that problem-focused coping tends to be more useful when one feels that he or she can actually do something about the situation. Problem-focused coping is more likely to head to a more positive health outcome.

Positive reappraisal is an effort to create positive meaning by focusing on personal growth. It often also has a religious dimension. Positive reappraisal is a form of meaning-based coping, an adaptive process by which stressful events are re-construed as benign, valuable, or beneficial (Schweitzer, 2011). Research has demonstrated that the ability to find benefit from adversity is associated with improved health outcomes.

These coping mechanisms refer to specific efforts, both behavioral and psychological, that individuals employ to reduce or minimize stressful events. The predominance of one type of strategy over another is determined, in part, by personal style and also by the type of stressful event. In summary, stress-coping theory suggests that stress from the physical and social environment generates a state of internal arousal which influenced coping.

PURPOSE OF THE STUDY

The purpose of this study is to find out the relationship between technostressors and the coping mechanism of academic librarians in Davao City. Specifically, the study seeks for answers to the following questions: (1) what is the extent of technostressors experienced by academic librarians in Davao City in terms of techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty; (2) what is the level of coping mechanism of academic librarians in Davao City in terms of confrontive coping, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, planful problem-solving, and positive reappraisal; and, (3) is there a significant relationship between technostressors and the coping mechanism of academic librarians? Further, this study worked on the hypothesis that there is no significant relationship between technostressors and the coping mechanism of academic librarians.

METHODOLOGY

This study was anchored on Lazarus and Folkman's (1984) cognitive-phenomenological theory of stress and coping. The theory and model suggest that an individual experiences stress due to stress-creating factors or conditions, and that coping behavior is influenced by coping resources, including control beliefs, self-esteem, neuroticism, denial, and social support.

Descriptive-correlation was used in investigating the main research problem, sub-problems and hypotheses on technostressors, and coping mechanism. Data were collected through a researcher-constructed questionnaire (Calmorin,

1995), a modified questionnaire formulated by Lazaruz (1991) and Folkman (1984) for coping mechanisms, and Ragu-Nathan, Tarafdar, and Ragu.Nathan, (2008) for technostressors. Experts validated both the constructed and the modified questionnaires at a high validity of 4.14. Responses to technostressors and coping mechanisms were interpreted through a range of means, and their corresponding description. These are presented in Table 1.

Table 1. Interpretation of Responses to Technostressors and Coping Mechanism

Range of Means	Technostressor		Coping mechanism	
	description	happens	description	is
4.50–5.00	Very Highly Stressed (VHS)	all the time	Very Much Extensive (VME)	practiced at all times
3.50–4.49	Highly Stressed (HS)	frequently, but not all the time	Much Extensive (ME)	practiced, but not all the time
2.50–3.49	Moderately Stressed (MS)	now, and then at short intervals of time	Moderately Extensive (MOE)	used now, and then at short intervals of time
1.50–2.49	Slightly Stressed (SS)	in a while at long intervals of time	Least Extensive (LE)	used once in a while, at shortest intervals of time
0.50–1.49	Not Stressed (NS)	never	Never (N)	not used

Product moment correlation, or Pearson r was computed to determine the significance of the relationship between technostressors and coping mechanism, and in answer to subproblem five. Using the universal sampling method, research subjects of this study were the 57 academic librarians from the 10 Davao Colleges and Universities Network (DACUN) member-schools of Assumption, Brokenshire, Davao Doctors, Holy Cross, Philippine Women's, Rizal Memorial, University of Southeastern Philippines, University of the Immaculate Conception, University of Mindanao, and the University of the Philippines-Mindanao.

RESULTS AND DISCUSSION

Table 2 presents the level of technostressors experienced by academic librarians. Sources of stress are overload, invasion, complexity, insecurity, and uncertainty.

Table 2. Technostressors Experienced by Academic Librarians

Technostressors	Item No.	Item Result			Overall		
		SD	Mean	DE	SD	Mean	DE
Overload	1-5	1.29, 1.31, 1.22, 1.33, 1.29	2.84, 2.88, 2.75, 2.88, 2.77	all MS	1.19	2.82	MS
Invasion	6-9	1.06, 1.20, 1.10, 1.14	2.21, 2.35, 2.04, 2.04	all SS	.91	2.15	SS
Complexity	10-14	1.32, 1.03, 1.10, 1.04, 1.05	3.07, 2.39, 2.67, 2.39, 2.33	MS for 10 and 12, while the rest are SS	.94	2.56	MS
Insecurity	15-19	1.19, 1.17, .96, .96, .90	2.09, 2.28, 1.75, 1.77, 1.72	all SS	.87	1.92	SS
Uncertainty	20-23	1.42, 1.32, 1.31, 1.32	3.18, 2.88, 2.91, 3.07	all MS	1.26	3.00	MS
Overall					.84	2.49	SS

In terms of techno-overload, librarians are moderately stressed with an overall mean level of 2.82. This means that stress happens, and then at short intervals of time when librarians are forced to work faster. This conforms to the study of Clarkson (2011), that all who have experienced techno-overload have a better understanding of communications technology, and appeared to have a more balanced relationship with it.

Techno-invasion with an overall mean of 2.15 is a rare manifestation. The presence of technology does not require librarians to report for work even during vacation. Spending less time with family due to computer technology is a slight stressor having a mean of 2.21.

Academic librarians experience moderate stress, and at short time intervals in terms of techno-complexity, which has an indicator of 2.56. Other moderate stressors under techno-complexity are knowing enough about computer technology to handle job satisfactorily with 3.07 mean, and finding enough time to study and upgrade computer technology skills at a mean of 2.67. Slight stressors include needing a long time to understand, use new computer technologies, and finding new recruits to the organization who know more about computer technology, with means of 2.39 and 2.33, respectively.

Technology does not threaten academic librarians with its overall mean of 1.92, interpreted as a slight stressor in terms of techno-insecurity. Items under this category are constantly updating skills to avoid being replaced with a mean of 2.28, and feeling the constant threat to job security due to computer technologies with a mean of 2.09. Items with the lowest mean are sharing one's knowledge with coworkers for fear of being replaced with a mean of 1.77 or slightly stressed, being threatened by coworkers with newer computer technology skills with a mean of 1.75 or slightly stressed; and, feeling there is less sharing of knowledge among coworkers for fear of being replaced with a mean of 1.72 or slightly stressed. This means that respondents are not threatened by coworker with technology skills and did not feel the fear of being replaced by coworker with better knowledge about technology. This result negates the definition of techno-insecurity that academic librarians are not threatened about losing their jobs to other people who have a better understanding of new information system, thus, feel insecure or cynical about technology, leading to tension and stress (Ragu-Nathan, Tarafdar, and Ragu-Nathan, 2008).

Overall mean for techno-uncertainty is 3.0, or moderately stressed. This indicates that the level of techno-uncertainty happens now, and then at short intervals of time. Although, librarians are still enthusiastic about learning new applications of technologies, constant requirements for refreshing, anxiety, and that updating eventually creates frustration. Techno-uncertainty items that moderately stress librarians are constant new developments in the computer technologies being used in the organization with a mean of 3.18, frequent upgrades in networks in the organization 3.07, constant changes in hardware in the organization 2.91, and constant changes in software in the organization 2.88.

In summary, academic librarians are moderately stressed in techno-uncertainty, techno-overload, techno-complexity, low stress in techno-invasion, and slightly stressed in techno-insecurity. Academic librarians cope with these techno-stressors through confrontive coping, distancing, self-controlloing, seeking social support, accepting responsibility, escape avoidance, planful problem solving, and positive reappraisal.

Results on the levels of coping mechanism by academic librarians are presented in Table 3.

Table 3. Coping Mechanism of Academic Librarians

Coping Mechanism	Item No.	Item Result			Overall		
		SD	**Mean**	**DE**	**SD**	**Mean**	**DE**
Confrontive Coping	1-6	1.17, 1.10, 1.13, .93, 1.06, 1.10	3.05, 2.67, 2.32, 2.67, 2.42, 2.67	ME for 1,2, 4, and 6, and LE for 3 and 5	.78	2.63	MOE
Distancing	7-12	.94, .99, 1.19, 1.10, .96, 1.09	2.16, 2.30, 3.32, 2.58, 2.53, 2.89	LE for 7 and 8, while the rest are MOE	.81	2.62	MOE
Self-Controlling	13-18	1.18, 1.10, 1.13, 1.15, 1.07, 1.18	3.33, 3.12, 3.09, 2.74, 2.88, 3.25	all are MOE	.95	3.06	MOE
Seeking Social Support	19-24	1.03, 1.03, 1.17, 1.19, 1.10, 1.04	3.47, 3.54, 3.11, 3.30, 3.32, 3.19	all are MOE, 20 is ME	.87	3.32	MOE
Accepting Responsibility	25-28	1.09, 1.06, 1.00, 1.03	3.14, 3.40, 2.98, 3.46	all are MOE	.88	3.24	MOE
Escape-Avoidance	29-34	1.36, .96, .86, 1.01, .80, 1.01	2.58, 2.16, 1.56, 2.00, 1.70, 1.89	29 is MOE, while the rest are LE	.68	1.98	LE
Planful Problem Solving	35-40	1.06, .89, 1.02, 1.01, 1.05, 1.11	3.72, 3.89, 3.63, 3.58, 3.77, 3.74	all are ME	.87	3.71	ME
Positive Reappraisal	41-46	1.06, .89, 1.02, 1.01, 1.05, 1.11	3.72, 3.89, 3.63, 3.58, 3.77, 3.74	all are ME	.88	3.97	ME
Overall					.59	3.07	ME

Among the coping mechanism used by academic librarians, planful problem-solving and positive reappraisal have the two highest means at 3.71 and 3.97, respectively. This posits the fact that these are practiced by academic librarians, but not at all times.

Confrontive coping, distancing, self-controlling, seeking social support, and accepting responsibility, all have means that fall within the moderately extensive level. Academic librarians practice these coping mechanisms at certain times, and then at short intervals of time. Meaning, they frequently occur in the coping process.

Confrontive coping mechanisms include doing something which does not work, but the librarian at least tried doing it; trying to get the person responsible to change one's mind; expressing anger to the person who cause the problem; letting feelings get out somehow; taking a big chance or doing something very risky; and, standing one's ground and fighting for what one wants.

Distancing coping mechanisms are going along with fate; going on as if nothing happened; looking for the silver lining, or trying to look on the bright side of things; trying to forget the whole thing; refusing to think about it too much; and, making light of the situation by refusing to get too serious about it.

Trying not to burn bridges, but leaving thing open somewhat is one of the coping mechanisms under self-controlling. The others are trying to keep one's feelings to oneself, trying not to act too hastily or follow the first hunch, keeping others from knowing how bad things are, trying to keep one's feelings from interfering with other things too much, and going over in one's mind what one would say or do.

Seeking social support means reaching out to the social circle of an individual for their help. These can be done by talking to someone to find out more about the situation, accepting sympathy and understanding, getting professional help, talking to someone who could do something concrete about the problem, asking a relative or friend being respected for advice, and talking to someone about how one was feeling about a certain stressor that has occurred.

Accepting responsibility is to attribute the blame on one's self. To do this one could either criticize or lecture oneself, apologize or doing something to make up, realizing that one is bringing the problem to oneself, or making a promise that things would be different the next time around when the stressor crops up again.

Another coping strategy is to avoid the stressor. This could happen only by hoping for a miracle; sleeping more than the usual number of hours; trying to make oneself better by eating, drinking, smoking, using drugs or medication; avoiding being with people in general; taking the stressor out on other people; and, refusing to believe that it had happened.

A more scientific approach to coping is to plan how to solve it. An academic librarian under stress could either concentrate on what steps to do next; making a plan of action and following the plan; changing something so things would turn out all right; drawing out from past experiences; knowing what had to be done, so doubling efforts to make things work out right; and, coming up with a couple of different solutions to the problem.

The stressor can also be treated by academic librarians from a positive perspective, and from there reappraise it. Positive reappraisal can be in the form of being inspired to do something creative; changing, or growing up as a person in a good way; coming out of the experience better than when one went in; finding a new faith; rediscovering what is important in life, or setting priorities; and changing something about oneself.

Relationship Between Technostressors and Coping Mechanism

The null hypothesis formulated earlier for this study was that there is no significant relationship between technostressors and the different coping mechanisms of academic librarians. Several statistical computations were used to determine if such a relationship exists.

Among the statistical tools used were means and Pearson r at 0.05 significant level. The p value was also computed. These data were used for all six technostressors, and for all eight coping mechanisms. These then are computed and compared across both variables, the technostressor and coping mechanisms.

Presented in Table 4 are the resulting relationship between technostressors and coping mechanism.

Table 4. Relationship Between Technostressors and the Level of Coping Mechanism

Coping Mechanisms	Technostressors					
	Techno-Overload r-value (p value)	Techno-Invasion r-value (p value)	Techno-Complex-ity r-value (p value)	Techno-Insecurity r-value (p value)	Techno-Uncer-tainty r-value (p value)	Overall r-value (p value)
Confrontive Coping	.432 (.001)	.344 (.009)	.199 .138	.282* (.034)	.343 (.009)	.403 (.002)
Distancing	.152 (.260)	.273* (.040)	.135 (.318)	.213 (.111)	.186 (.165)	.232 (.082)
Self-Control-ling	.130 (.334)	.189 (.160)	.137 (.311)	.151 (.261)	.193 (.151)	.197 (.141)
Seeking Social Support	.276* (.037)	.128 (.343)	.329* (.012)	.174 (.195)	.363 (.006)	.325* (.014)

Accepting Responsibility	.266* (.045)	.290* (.029)	.289* (.029)	.155 (.251)	.326* (.013)	.333* (.011)
Escape-Avoidance	.107 (.427)	.232 (.083)	.271* (0.42)	.312* (.018)	.075 (.578	.228 (.087)
Planful Problem-Solving	.079 (.558)	-.045 (.737)	-.079 (.557)	-.187 (.163)	.236 (.077)	.027 (.844)
Positive Reappraisal	.018 (.897)	-.056 (.676)	-.016 (.906)	-.189 (.167)	.164 (.223)	.000 (.999)
Overall	.256 (.055)	.232 (.083	.218 (.104)	.149 (.268)	.337* (.010)	.303* (.022)

* significant at a 0.05

The overall r value mean of .303 on the relationship between technostressors and the coping mechanisms is considered significant since the probability value of .022 is lesser than α .05 level of significance.

When confrontive coping is correlated with techno-overload with an r-value of .432, techno-invasion with r-value of .344, techno-complexity with r-value of .199, and techno-uncertainty with r-value of .343, all results indicate no significant relationships since their probability values are greater than .05. When confrontive coping is correlated with techno-insecurity, its r-value of .282 is significant, since its probability value is lesser than .05. This means that confrontive coping, with an overall r-value of .403 is not significant with the technostressors since its probability value is lesser than α .05.

When distancing is correlated with techno-overload with r-value of .152, techno-complexity with r-value of .135, techno-insecurity with r-value of .213, and techno-uncertainty with r-value of .186, all of them are not significant since their probability values are all greater than α 0.05. When distancing coping is correlated with techno-invasion with r-value of .273, it is considered significant. But with technostressors, distancing coping with overall r-value of .232 is not significant.

When self-controlling is correlated with techno-overload with r-value of .130, techno-invasion with r-value .189, techno-complexity with r-value of .137, techno-insecurity with r-value of .151, and techno-uncertainty with r-value of .193, all indicators are not significant, considering their probability values are greater than α.05. This means that self-controlling with an overall r-value of .197 is not significant between technostressors, since its probability value is lesser than α .05.

Seeking social support is not significant when correlated with techno-invasion with r-value of .128, techno-insecurity with r-value of .174, and techno-uncertainty, since their probability values are greater than α 0.05. Two indicators on seeking social support are significant when correlated with techno-overload with r-value of .276 and techno-complexity with r-value of .329. This means seeking social support coping with overall r-value of .197 is significant between technostressors.

Accepting responsibility is not significant when correlated with techno-insecurity with r-value of .155, considering its probability value is greater than α 0.05. Four indicators are significant when accepting responsibility is correlated with techno-overload with r-value if .266, techno-invasion with r-value of .290, techno-complexity with r-value of .289, and techno-uncertainty with r-value of .326. This means that accepting responsibility with overall r-value of .325 is significant, considering the probability value is lesser than α 0.05.

Escape avoidance is not significant when correlated with techno-overload with r-value of .107, techno-invasion with r-value of .232, and techno-uncertainty with r-value of .075.since their probability values are greater than α 0.05. Two indicators are significant when correlated with techno-complexity with r-value of .271 and techno-insecurity with r-value of .312.

Planful problem-solving indicators are no significant when correlated with techno-overload with r-value of .079, techno-invasion with r-value -.045, techno-complexity with r-value of -.079, techno-insecurity with r-value of -.187, and techno-uncertainty with r-value of .236 considering that their probability values are greater than .05.

Positive reappraisal indicators are not significant when correlated with techno-overload with r-value of .018, techno-invasion with r-value -.056, techno-complexity with r-value of -.016, techno-insecurity with r-value of -.189, and techno-uncertainty with r-value of .164, since their probability values are greater than α 0.05.

Taken in its totality, a significant relationship exists when coping mechanism is correlated with technostressors since its r-value of .303 is lesser than the probability value of α0.05 level of significance. This means that this study conforms to the theory of Lazarus and Folkman (1984) cognitive-phenomenological theory of stress and coping, and that stress is manifested in adverse outcomes for the individual, where inhibiting mechanisms reduce stress. Results further imply that the null hypothesis that there is no significant relationship between technostressors and the coping mechanism of academic librarians in Davao City, which was tested at α 0.05 level significance is, hereby, rejected.

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Based on the results, this study yields the following findings:

1. The mean level on the extent of technostressors of academic librarians in Davao City are as follows; 2.82 techno-overload, 2.15 techno-invasion, 2.56 techno-complexity, 1.92 techno-insecurity, 3.00 for techno-uncertainty, and, the overall level on the extent of technostressors experienced by academic librarians has a 2.49 mean rating.

2. The mean level of coping mechanism of academic librarians in Davao City in terms of confrontive coping is 2.63, 2.62 for distancing coping, 3.06 for self-controlling, 3.32 for seeking social support, 3.24 for accepting responsibility, 1.98 for escape-avoidance, 3.71 for planful problem-solving, 3.97 for positive reappraisal, and the 3.07 for overall level of coping mechanism.

3. There is a significant relationship between the extent of techno-stressors experienced and the level of coping mechanism of academic librarians since the probability value of .022 was greater than the $\alpha 0.05$ level of significance. Therefore, the null hypothesis that there was no significant relationship between the level of technostressors and the coping mechanisms of academic librarians in Davao City is, hereby, rejected.

Based on the findings, the following conclusions are drawn:

1. The extent of technostressors experienced by academic librarians in Davao City is least extensive.

2. The level of coping mechanism of academic librarians in Davao is moderately extensive.

3. Technostressor is significantly related to the coping mechanism of academic librarians.

4. The formulated null hypothesis tested at α 0.05 level of significance between technostressors and the coping mechanisms of academic librarian in Davao City is, therefore, rejected.

On the basis of the findings and conclusions, the following recommendations are given:

1. The head of libraries should conduct regular seminars and workshops for academic librarians on coping mechanisms with technostressors especially on accepting responsibility, escape-avoidance, self-controlling, confrontive, and distancing coping.

2. Academic librarians should organize technology-based training in order to be comfortable with new technologies, and continue to support technology for better service to make sure they acquire technological skills continuously.

3. Similar studies may be conducted in other forms and types of libraries involving technostressors and coping mechanisms for a comparison of results.

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