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INFORMATION LITERACY PROGRAM FOR LIFELONG LEARNING IN HIGHER EDUCATION

A Dissertation

**Presented to the Faculty of the College of Graduate Studies and
Teacher Education Research
Philippine Normal University
Taft Avenue, Manila**

**In Partial Fulfillment of
the Requirements for the Degree
Doctor of Philosophy in Educational Management**

**Ana Mae Kristine Urcia Hubilla
March 2017**



APPROVAL SHEET

In partial fulfillment of the requirements for the degree of Doctor of Philosophy in Educational Management, this dissertation entitled **"INFORMATION LITERACY PROGRAM FOR LIFELONG LEARNING IN HIGHER EDUCATION"**, prepared and submitted by **Ana Mae Kristine Urcia Hubilla**, is hereby recommended for approval and acceptance.

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ABSTRACT

Name: ANA MAE KRISTINE URCIA HUBILLA

Title: INFORMATION LITERACY PROGRAM FOR LIFELONG LEARNING IN HIGHER EDUCATION

Key Concepts: Information Literacy, Management Functions, Big 6 Skills, 21st Century Skills, Lifelong learning

Degree: Doctor of Philosophy

Specialization: Educational Management

Advisers: Leticia V. Catris, Ph.D.
Mel Greg O. Concepcion, Ed. D.

The main objective of the research is the development of an Information Literacy Program for lifelong learning. Specifically, it aims to determine the information literacy skills of tertiary students and school administrators from various universities. It defines the management competencies of the school administrators in terms of planning, organizing, controlling, and leading. It probed into how the students and the school managers find, evaluate, and use information wisely and effectively. The study also identified the different information literacy skills that need to be improved and the information literacy program suited for the students.

The participants in the research included 502 college students and 58 school administrators from different universities in the National Capital Region (NCR). The respondents were selected randomly since the focal point of the study was exclusively on

universities that offer accredited education courses. The study was conducted within the School Year 2014 – 2015.

The study utilized the descriptive developmental research design. The developed guidelines for the management and utilization of the information literacy program were based on the results of the analysis of the responses made by the respondents to three research instruments.

The information literacy skills of students are above average in task definition, information seeking strategies, location and access, use of information, and synthesis. However, the evaluation skills are interpreted as average and need to be improved for the research activities.

On the other hand, the school administrators are superior in task definition, information seeking strategies, location and access, use of information, synthesis, and evaluation. In terms of their management functions, they are competent in planning, organizing, controlling, and leading. Controlling was more dominant skill than planning among the school administrators. More so, in terms of the relationship between the information literacy skills and managerial competencies of the school administrators, there is a significant relationship, interpreted as a low positive rectilinear coefficient.

The information literacy skills of students and managerial competencies of the school administrators are essential factors in creating and sustaining an information literacy program for higher education. The crafted guidelines for the management and the utilization

of Information Literacy Program for school administrators will greatly support the sustainability of the Information Literacy Program.

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To God who has the power over her, allowing her to continue what she had started despite her imperfections and weaknesses. God was her strength and her trust in him made all her prayers answered according to his will.

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A.M.K.U.H.

DEDICATION

This paper is wholeheartedly dedicated to the significant persons in the researcher's life. First to her dear father Jose Fulay Hubilla(+), for being the source of strength and courage. Second, to her dear mother Estelita Urcia Hubilla for always believing in her and pushing her to the limits. Third, to her loving sister, May Erica Urcia Hubilla(+), who inspires and made her realize how wonderful life is.

This product of hard work is also dedicated to the Filipino Librarians, Information Seekers, and Information Specialists who aim to build a society of information literates. Above all this paper is offered back to God Almighty, the researcher's source of knowledge and wisdom.

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TABLE OF CONTENTS

	Page
Title Page	i
Approval Sheet	ii
Abstract	iii
Acknowledgement	vi
Dedication	ix
Table of Contents	x
List of Tables	xiii
List of Figures	xv
List of Appendices	xvi

CHAPTER

I – THE PROBLEM AND ITS BACKGROUND

Introduction	1
Setting	5
Theoretical and Conceptual Framework	5
Statement of Purpose	14
Significance of the Study	15
Scope and Delimitation of the Study	16
Definition of Terms	18

II – REVIEW OF RELATED LITERATURE AND STUDIES

21 st Century Skills	22
Information Literacy	25
Characteristics of Programs of Information Literacy	61
Management Functions	65

III - METHODOLOGY

Research Design	76
Respondents and Sampling	77
Research Instruments	84
Validation of the Instruments	90
Data Collection Procedure	92
Development of Information Literacy Program for Lifelong Learning in Higher Education	96
Statistical Analysis of Data	104

IV – PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

Information literacy skills of the tertiary students and school administrators in terms of Task Definition, Information Seeking Strategies, Location and Access of Information, Use of Information, Synthesis, and Evaluation	108
Managerial competencies of school administrators in terms of planning, organizing, leading, and controlling	133

Correlation between the information literacy skills and managerial competencies of school administrators	143
Design, develop and craft guidelines for the management and utilization of an Information Literacy Program	154
V – SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	
Summary	160
Findings of the study	161
Conclusions	175
Recommendations	177
BIBLIOGRAPHY	180
Curriculum Vitae of the Researcher	262

LIST OF TABLES

Table		Page
1	Frequency and Percentage of School Administrators and Students from each university	79
2	School Administrators' Profile in terms of Age, Years in Management Position and Educational Attainment	81
3	Students' Profile in terms of Course, Age and Gender	83
4	Interpretation of Pearson r	106
5	Interpretation of p-levels	107
6	Information Literacy Skills of the Tertiary Students on Task Definition	109
7	Information Literacy Skills of the Tertiary Students on Information Seeking Strategies	111
8	Information Literacy Skills of the Tertiary Students on Location and Access of Information	113
9	Information Literacy Skills of the Tertiary Students on Use of Information	115
10	Information Literacy Skills of the Tertiary Students on Synthesis	117
11	Information Literacy Skills of the Tertiary Students on Evaluation	119
12	Summary of Information Literacy Skills of the Tertiary Students	122
13	Information Literacy Skills of the School Administrators on Task Definition	123
14	Information Literacy Skills of the School Administrators on Information Seeking Strategies	125
15	Information Literacy Skills of the School Administrators on Location and Access of Information	126

16	Information Literacy Skills of the School Administrators on Use of Information	128
17	Information Literacy Skills of the School Administrators on Synthesis	129
18	Information Literacy Skills of the School Administrators on Evaluation	131
19	Summary of Information Literacy of the School Administrators	132
20	Managerial Competencies of the School Administrators on Planning	134
21	Managerial Competencies of the School Administrators on Organizing	136
22	Managerial Competencies of the School Administrators on Leading	139
23	Managerial Competencies of the School Administrators on Controlling	141
24	Summary of Managerial Competencies of the School Administrators	142
25	Correlation Between the Managerial Competency on Planning and Information Literacy Skills of the School Administrators	145
26	Correlation Between the Managerial Competency on Organizing and the Information Literacy Skills of the School Administrators	148
27	Correlation Between the Managerial Competency on Leading And the Information Literacy Skills of the School Administrators	150
28	Correlation Between the Managerial Competency on Controlling and the Information Literacy Skills of the School Administrators	152
29	Summary of the Correlation Between the Managerial Competency And the Information Literacy Skills of the School Administrators	153
30	Results of the Survey on the Information Literacy Skills of the Tertiary Students: Basis for the Design of the Information Literacy Program	157
31	Results of the Survey on the Managerial Competency of the School Administrators: Basis for crafting the guidelines on the management and utilization of the Information Literacy Program	159

LIST OF FIGURES

FIGURE		Page
1	Theoretical and Conceptual Framework	10
2	Steps in Designing a Questionnaire	86
3	The Data Gathering Procedures	93
4	Four Stages in Creating the Information Literacy Program (ILP)	97
5	Cycle in Sustaining the Information Literacy Program (ILP)	222

List of Appendices

A	Information Literacy Program (User's Guide)	207
B	Guidelines for the Management and Utilization of an Information Literacy Program for Lifelong Learning in Higher Education	213
C	Indicators of Information Literacy, Independent Learning and Social Responsibility for Lifelong learning	227
D	Table of Specifications for the Student's Information Literacy Skills Test	230
E	Table of Specifications for the Managerial Competencies Assessment	237
F	Experts' Validation: Information Literacy Skills Test and Managerial Competencies Assessment	242
G	Item Analysis: Information Literacy Skills Test	254
H	Letter of Permission to Conduct the Study	259
I	Student's Activity Sheet	260
J	Narrative Reports of the Tertiary Students	267
K	Narrative Reports of the School Administrators	273
L	Analysis of the Narrative Reports	274
M	Interview Guide	276
N	Evaluators' Educational Qualifications	277
O	The Researcher's Curriculum Vitae	278

CHAPTER I

The Problem and its Setting

Introduction

The globalization, the fast technological development, networking, constant learning and acquiring of modern knowledge are the main references of today's information society. In the abundance of new information, individuals must be able to recognize and use the information in the right way. The search, choice and the valid use of information require much more than computer skills. They require information literacy, which is interpreted as the ability of an individual who is able to recognize, locate, evaluate and use efficiently the information needed (Shinew and Walter, (2003) in Mandusic and Blaskovic, 2013).

Universities are faced with a dual problem of working with entering students who lack the basic skills of information literacy and having to prepare graduates who possess these skills and are capable of adapting to the demands of the knowledge economy change (Knapper, 2000). The world is full of information, and it keeps on changing and expanding. No wonder that people get confused and frustrated. Nevertheless, in this information society, in order to survive, people must cope with ongoing changes, prepare for the world they can only imagine and retool themselves several times during their lives as jobs change. Lifelong learning has become a necessity (Farmer, 2011).

Some students have a hard time also in understanding how search engines transform queries by using a variety of default search mechanisms, such as automatic Boolean

operators, stop words, truncation and term order sensitivity. Researchers have similarly found a lack of attention of students to the issue of the authority of information. Despite what libraries can offer, the variety of electronic resources is not well exploited. According to Bates and Sangra (2011), to be a scholar now means knowing how to find, analyze, organize, and apply digital information. Studying without the use of technology is increasingly like learning to dive without water. Information and communication technologies are essential for developing these skills.

Information literacy is the ability to find, evaluate, and use information efficiently, effectively, and ethically to answer an information need (Lanning, 2012). Information needs can be anything from determining a price of a beautiful house to creating a new design. The information literacy process is like writing a research paper. It involves finding and applying information to answer a research question, to either support or disprove a hypothesis. The information used must be evaluated to ensure its quality. In recording the publication information, credit should be given to those people whose ideas are used. Students need to understand how the skills they are learning can be applied in home and work situations. Indeed, transferability is the essence of information literacy. According to Wertz et al. (2013), information literacy is only a subset of the skills necessary for lifelong learning. Students need further instruction to develop the information literacy skills that they will need as they independently engage in learning throughout their professional careers.

To acquire the information literacy skills that are essential to lifelong learning and active citizenship, students need to begin by developing more sophisticated information

management skills that enhance active and integrated learning experiences in line with various disciplines. Acquiring information-literacy skills is a natural expansion of the problem-solving skills. Schools with different approaches to basic skills acquisition can incorporate information literacy into their existing structures. Library management should prioritize helping the students in getting the right information that they need. An information literacy program for a school library will greatly enhance the students' information literacy skills. It will be a solution to the problem of library users in dealing with information and library resources. Teachers and librarians need to work together to ensure that students will be not only knowledgeable about specific fields but that they will be well prepared for lifelong learning and active citizenship. How information literacy programs are offered in a school will depend on the importance placed on the skills and resources by the administrators. It will also depend on how other basic skills are developed through the curriculum. Incorporating information-management learning in the curriculum will work well for schools or programs with a commitment to integrate the necessary skills across the curriculum.

Explicitly, the study was conceptualized for the following reasons: first, the study can provide a comprehensive discussion on information literacy in the Philippine setting and abroad. Second, most of the studies here in the Philippines regarding information literacy focus on assessment only. The study employed a descriptive-developmental research design in data gathering. It is descriptive since it presents the current status of the information literacy in higher education. It is a developmental research because the study aimed to

develop an information literacy program based on the results of the assessment. Several ways on how students obtain information have been discussed but these students continue to demonstrate weakness in seeking information. Libraries offer different information resources, orientation, and library instruction and still they lack the ability to teach and train students to be more critical, meticulous, and careful in finding and selecting the right information. Students should be properly guided and this could only be done if schools will develop an Information Literacy Program. This will adhere to the advocacy of libraries to make students realize the importance of information skills and their application to lifelong learning.

Furthermore, based on the studies conducted here in the Philippines, no one has attempted to involve the school administrators in terms of the program implementation. It has been simply a recommendation in the study (Daligdig, 2012; Crame, 2012; Sadang, 2012; Ramos, 2010; Castillo; 2009; and Rulloda, 2009). In this research, the school administrators play an essential role in the implementation and sustainability of the program. Guidelines for the utilization of the program were formulated for them to provide support in the implementation of the program.

Setting

The study was conducted in sectarian, non-sectarian and public universities from Local Government Units (LGU), State Universities and Colleges (SUC), private sectarian universities, and non-sectarian universities. The respondents of the research were students from the College of Education. The thirteen (13) universities are all accredited and they offer education courses. They also maintain libraries that provide essential information resources for learning.

Theoretical / Conceptual Framework

The proposed study focused on determining the information literacy skills of students and school administrators to develop and sustain an information literacy program using descriptive developmental research technique as the research approach.

Information literacy is “a set of abilities requiring individuals to recognize when information is needed, and the ability to locate, evaluate, and use effectively the needed information” (Association of College and Research Libraries, 2000). The information literate person clarifies, stores, and manipulates information, and identifies information literacy as a prerequisite for lifelong learning. He or she is a person who has learned how to learn. A person that learned how knowledge is organized, how to find the needed information and how to recycle and use found information in a way that helps others to learn from them. Through this, a person is prepared for lifelong learning because he can

always find the information necessary for tasks or decisions that may be encountered (Mandusic and Blaskovic, 2013).

According to Mandusic and Blaskovic (2013), the concept of information literacy is interpreted by several principles. *First*, the purpose of information literacy is to know how to recognize the nature and extent of information, to know how to formulate the question that demands an answer, to know the different sources of information and the ways in which information can be processed. *Second*, the need to know how to access the needed information. *Third*, there is a need to know the system, bibliographic databases, scientific journals, search engines, portals, and libraries. Found information needs to be stored for later use. *Fourth*, it is necessary to evaluate the information. *Fifth*, it is necessary to learn to use the information independently and know how to use it in teamwork to perform a specific task. Last, it is necessary to understand the legal, economic and ethical uses of information.

Information literacy acknowledges the variation of learning experienced by the learners and thereby employs delivery practices that address the complex learning needs of an increasingly diverse student population. In support to this, the Big 6 skills were developed by information literacy educators Michael Eisenberg and Robert Berkowitz (2011). One view of the components of information literacy is based on the Big6 Information Literacy Process which is a six-stage model to help anyone solve problems or make decisions by using information as a reference in creating components for information literacy skills. Using the Big 6 skills will determine the students and school administrators' information literacy skills in terms of (i) Task Definition (Define the information problem); (ii) Information Seeking Strategies (Determine and evaluate the of possible sources); (iii)

Location and Access (Locate sources - intellectually and physically); (iv) Use of Information (Engage (e.g., read, hear, view, touch) the information in a source); (v) Synthesis (Organize information from multiple sources); (vi) Evaluation (Judge the product (effectiveness) and the information problem-solving program (efficiency)).

Information literacy is often described as a key part of lifelong independent learning and as a set of skills, attributes and behavior that underpin student learning in the digital age. It has been linked to graduate employability, and increasingly universities are developing strategies to ensure that their students acquire and develop these competencies during their undergraduate studies. (Secker and Coonan (2012) in *Information Literacy beyond library 2.0*)

Information literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations. (Garner, (2005) in Farmer, 2011)

The Association of College and Research Libraries (2000) in *The Routledge International Handbook of Lifelong Learning*, (2009) states that information literacy forms the basis for lifelong learning. It is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to master content and extend their investigations, become more self-directed and assume greater control over their own learning.

The inter-relations of the two concepts – Information Literacy and Lifelong Learning are 1) both largely self-motivated and self-directed. They do not require the mediation of an

outside individual, an organization, or a system beyond the individual himself or herself, although advice and assistance from a respected friend such, as a mentor or a coach, can be helpful. 2) They are both self-empowering. They aimed to help individuals of all age groups to help themselves, regardless of their social or economic status, role or place in society, gender, race, religion or ethnic background. 3. They are self-actuating. The more information-literate an individual becomes, and the longer the individual sustains good information literacy learning and practices those habits, the greater the self-enlightenment that will occur, especially if practiced over an entire lifetime.

The concept of lifelong learning seems self-evident. As long as one is alive, one is likely to encounter new situations that need to be resolved; each of these encounters is a potential learning moment. Nevertheless, today's information society drives changes in so many aspects of life, lifelong learning takes on new and explicit meanings. People consciously have to pay attention to the world around them and decide if they want to change – and what they need to do to accommodate that change. In this, respect, the information society has sometimes been called the learning society to emphasize the dynamic nature of social change throughout people's lives (Field (2006) in Farmer, 2011).

Information literacy and lifelong learning have a strategic, mutually reinforcing relationship with each other that is critical to the success of every individual, organization, institution, and nation state in the global information society. These two modern paradigms should ideally be harnessed to work symbiotically and synergistically with one another if people and institutions are to successfully survive and compete in the 21st century and beyond (Lau, 2006).

Management is the attainment of organizational goals in an effective and efficient manner through the four fundamental functions: planning (setting goals and deciding activities), organizing (organizing activities and people), leading (motivating, communicating with and developing people), and controlling (establishing targets and measuring performance). Depending on the job situation, managers perform numerous and varied tasks, but they all can be categorized within these four primary functions. (Daft and Marcic, 2017)

Three distinct approaches characterize the conceptualization of information literacy programs: (1) *information literacy as a set of skills and attributes*, (2) *information literacy as knowledge construction*, and (3) *information literacy as enabling critical thinking*. The most pervasive conceptualization is information literacy as *information skills acquisition* with the purpose of achieving discrete outcomes. This approach is rooted in library skills instruction, including teaching students about specific library resources. It is ascribed as a list of discrete attributes of an information literate person, such as the ability to recognize the need for information, formulate questions based on information needs, develop search strategies, access sources of information, and evaluate information (Kerr, 2010).

Based on the foregoing discussions, the researcher was able to come up with the framework. The theoretical / conceptual framework is shown in Figure 1.

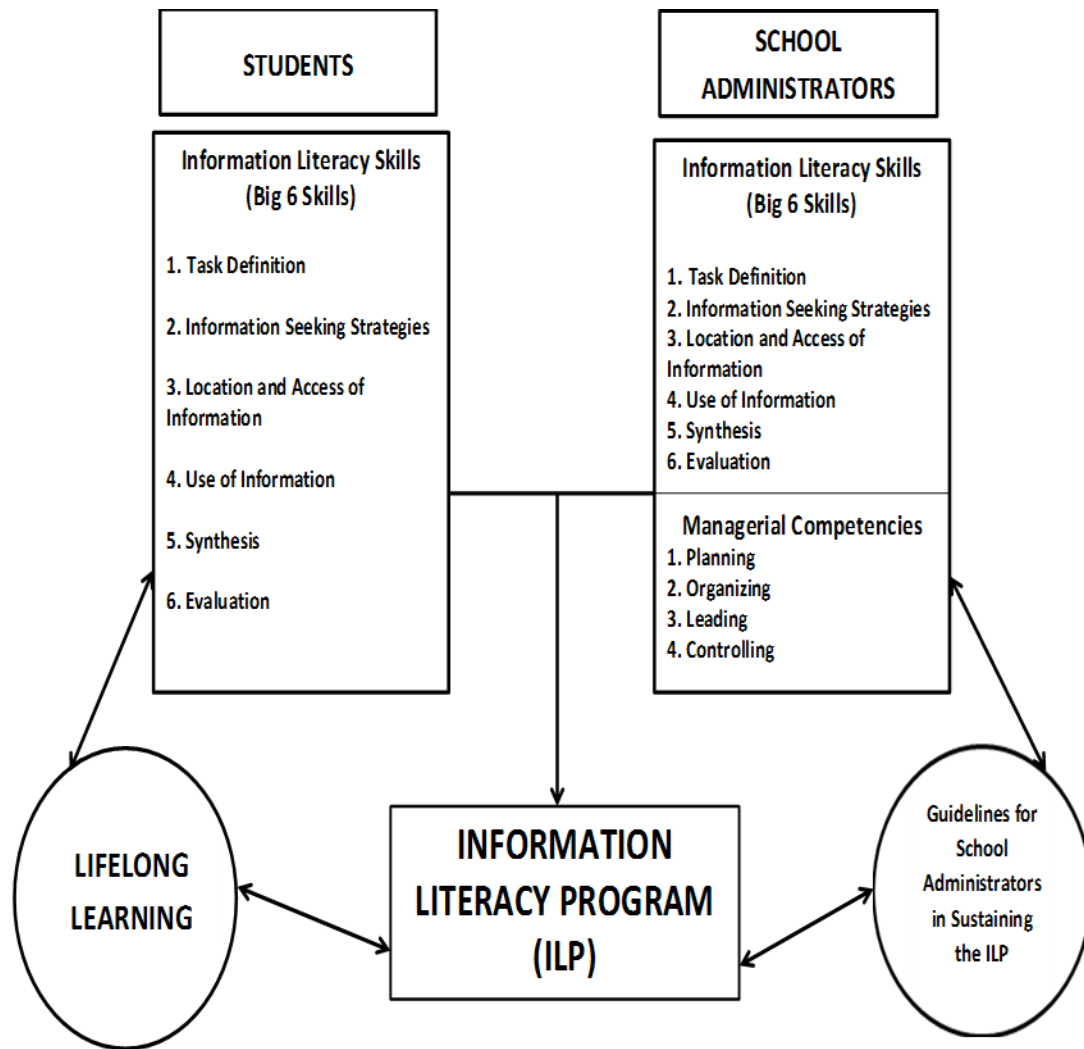


Figure 1: Theoretical and Conceptual Framework

The theories and concepts discussed immensely support and elaborate the students' way of learning at their own pace and how these could be applicable to their lifelong learning. The theoretical/conceptual framework shows the different information literacy skills of the students and the school administrators.

Information plays a vital role in the changing life of an individual. Their easiest way to access information is to use the various library resources. Once an individual is given assignments, research, projects, and problem solving, their first instinct is to seek the right information that will help them in their course requirements.

In this study the information literacy skills of the students and school administrators were assessed using the Big 6 skills in terms of task definition, information seeking strategies, location and access, use of information, synthesis, and evaluation. The Big 6 skills identify if an individual is information literate and the skills that need to be enhanced. Individuals who are information literate possess other skills and share other characteristics. In addition to being able to access, evaluate, and use information wisely, they also enjoy reading and learning about things that are important to them. They seek information to satisfy personal needs or interests. They observe copyright laws and respect intellectual freedom. They participate cooperatively in groups, respect others' contributions and viewpoints, and willingly share their own knowledge. They are creative thinkers and problem solvers and recognize that there is not always one right answer to every question. They see patterns, not just in things or events but also in ideas, concepts, and actions, and they use these insights to predict outcomes or make decisions. They can apply a skill learned in one discipline or setting to other subjects and to new situations. They connect new information to their previous experiences and knowledge, changing or modifying their own perceptions and opinions, as necessary. They analyze and critique their own work, their search processes, information findings, and communication products, regularly formulating

strategies and methods for improvement. Most important, they experience the joy of learning and they are lifelong learners.

The managerial competencies of the school administrators were also assessed based on the management functions in terms of planning, organizing, leading, and controlling. Information Literacy Program (ILP) requires management functions such as planning which provides guiding direction, controlling monitors the organization's progress towards its goals, organizing determines how to group activities and resources, and leading influence others to carry out tasks. The leadership and support of school administrators are a big help in sustaining the ILP. Such leadership is not limited to budgetary support. It also includes helping create a supportive atmosphere and practical opportunities for cooperation among librarians, classroom faculty and information technologists. Effective management should promote a vision of liberal education as an empowering and transform endeavor that develops students as skilled independent learners. The school administrators play a pivotal role in, creating a school culture of collaboration and learning; collaborative planning and assessment; recognizing professional partners; involving the teacher-librarians to curriculum and other decision-making committees; encouraging active participation in staff development sessions; delegating responsibility, such as budgeting and program management; seeking outside support and funding to facilitate information literacy; recognizing and rewarding information literacy efforts; and advocating for information literacy within the school and the larger community (Farmer, 2008).

The information literacy is about the transition to future learning – a new kind of lifelong learning that has adaptability at its core (O'Connell (2008) in Information Literacy

beyond library 2.0, 2012). The developed Information Literacy Program is designed and responsible in preparing the students to be information-literate, lifelong learners and to move from the world of school to the world of adulthood, employment, further education, vocational training and community participation. It is a responsibility to work with these students, who are immersed in creative, collaborative and socially networked environments.

The results of the survey on the information literacy skills and managerial competencies of the students and school administrators were used as the basis for developing and validating the Information Literacy Program (ILP). The Association of College and Research Libraries (2003) has created characteristics of programs of Information Literacy and these were used in this study. Thus, all the concepts and theories presented and integrated determine the different aspects of information literacy and the skills that a student should have. This supported the goal of the study to develop an information literacy program for lifelong learning and to craft guidelines for the management and utilization of Information Literacy Program for school administrators. The guidelines created were based on the result of the management competency skills test. This will be beneficial in sustaining the information literacy program.

The Statement of Purpose

This study aimed to develop an Information Literacy Program for lifelong learning.

Specifically, the study aimed to:

1. Determine the information literacy skills of a) tertiary students and b) school administrators in terms of:
 - 1.1 Task Definition
 - 1.2 Information Seeking Strategies
 - 1.3 Location and Access of Information
 - 1.4 Use of Information
 - 1.5 Synthesis
 - 1.6 Evaluation
2. Determine the managerial competencies of school administrators in terms of:
 - 2.1 planning
 - 2.2 organizing
 - 2.3 leading
 - 2.4 controlling
3. Determine the relationship between the information literacy skills and managerial competencies of school administrators.
4. Design, develop, and craft guidelines for the management and utilization of an Information Literacy Program.

Significance of the Study

It is hoped that the school administrators, librarians, teachers, students, and other school personnel may profit from the findings of the study. They may eventually gain deeper insights and understanding of the need to develop an Information Literacy Program for lifelong learning.

Results of this study are of great advantage to the following:

School Administrators. The results of the study will enlighten them of the importance of the various information resources to the students especially in improving their information literacy skills, which can be a way to measure the teachers' ability to encourage their students in doing so. Including information literacy in general education courses is a key strategy in closing the gap across curricular boundaries, because general education courses form the foundation of a common learning experience for all students. Such courses help students to make intellectual connections between disciplines, solve problems, and think deeply, independently, and critically outside of their major areas of study.

Teachers. The results of the study will guide them in teaching their students to do their research work properly by utilizing the library resources and services. Moreover, the faculty wants to see an improvement in the quality of student work, and students want to become more confident in their ability to complete assignments, carry out research projects, and become active, independent learners.

Librarians. The outcomes of the study will encourage them to pay more attention in training their clientele to seek information through fast and economical mean. Through the results and recommendations, collaborative alliances among library personnel, faculty, information technologists, administrators, and other higher education professionals could be encouraged and become a priority to sustain the information literacy program. The results could also motivate students to develop a process for personal empowerment by becoming and remaining information-literate throughout their lives.

Students. The output of this study will be beneficial throughout their lives because it will give them an opportunity to learn about a process in becoming information-literate—that is, acquiring the skills required to intelligently and systematically find, interpret, select, evaluate, organize, and use information for specific purposes.

Researchers. This will provide guidelines in developing their own Information Literacy Program. They can develop a program suited to their students' needs and formulate guidelines for school administrators.

Scope and Delimitation of the Study

The study focused only on the information literacy skills of students and the school administrators and also the managerial competencies of the latter. The type of participants in the study is unique in the sense that not only the tertiary students but also the school

administrators such as the middle-level managers, deans, chairpersons, and program coordinators were involved. The study delimited its respondents and the setting to the different universities in the National Capital Region (NCR). These respondents came from selected sectarian and non-sectarian private and public universities. It was mainly premised on determining the level of the information literacy skills of the students in terms of the Big 6 steps of Eisenberg and Berkowitz (2011), a commonly known and used information /literacy approach. In this approach, students undergo some processes or steps in searching and using information effectively. These processes are: (i) task definition; (ii) information seeking strategies; (iii) location and access; (iv) use of information; (v) synthesis; and (vi) Evaluation.

Likewise, the managerial competencies of school administrators were determined using the four functions of management, which are planning, organizing, leading, and controlling that will help and guide them in managing the information literacy program.

The respondents were students from the College of Education in the selected universities. The study utilized the descriptive developmental research design. Thus, another important concern of the study was the development of an Information Literacy Program and the crafting of guidelines for the school administrators.

Definition of Terms

The following terms are defined within the context of the study.

Big 6 skills. It is a six-stage process model for information solving and decision making.

Information. It is an assemblage of data in a comprehensible form capable of communication. This may range from content in any format-written or printed on paper, stored in electronic databases, collected from the internet etc. – to the personal knowledge of the staff of an organization.

Information and Communication Technologies (ICT). It provides new opportunities for teaching, learning and training through the delivery of digital content.

Information Competencies. They enable a competent citizen, whether a student, a professional or a worker to recognize her/his information needs, to locate, identify access, retrieve, evaluate, organize, and use information. They are compound skills and goals of information literacy.

Information Literacy Assessment. It measures the ability of an individual to identify the information needed for a task, to locate, understand, evaluate, and use information efficiently and effectively within appropriate ethical and legal limits.

Information Literacy (IL). It is defined as the ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand (Bawden and Robinson, 2012). It is seen as a basic human right and an essential component in the acquisition of life-long learning.

Information Literacy Program. It helps students to master information skills that will enrich their academic and personal lives and enable them to become independent lifelong learners (<http://www.library.ucla.edu/service/6342.cfm>). It is a program of information provided by libraries to users, to enable them to make more efficient, independent use of the library's stock and services. It is a program of user education that includes tours, lectures, workshops and the provision of support materials.

Information Need. It is often understood in information science as evolving from a vague awareness of something missing and culminating in locating information that contributes to understanding and meaning. As used in this study, it also pertains to

when the students seek a solution to their problems and search answers to their queries (Kuhlthau, 1993).

Information Skills. This focuses on information abilities.

Library Management. It represents the managerial aspects of administering and organizing the library and involves the control of library personnel, building, equipment, furniture, and fittings, services and finances of the library.

Lifelong learning. It is the process of transforming experience into knowledge and skills, etc., resulting in a changed person – one who has grown and developed as a result of the learning (The Routledge International Handbook of Lifelong Learning, 2009).

It is a process whereby people continue their own education by formal and informal means – training courses, academic courses, reading, evening classes, work-based activities, discussion groups etc. – which will be increasingly essential in an age of technological advancement and an employment situation in which short-term contracts, self –employment and teleworking are expected to be common.

Management. The attainment of organizational goals in an effective and efficient manner through planning, organizing, leading, and controlling. (Daft and Marcic, 2017)

Managerial Competencies. They are the skills, motives, and attitudes necessary to a

job and they include such characteristics as communication skills, problem- solving, customer focus and the ability to work within a team.

School Administrators. These include middle-level managers, department heads, team leaders, coordinators, administrative librarians, president, vice-president, college deans and members of the administration council.

CHAPTER II

Review of Related Literature

This chapter contains the related literature reviewed by the researcher. An attempt has been made to cover a number of works that go beyond discussions of the information literacy itself and its direct applications to closely related topics such as information, library management, and lifelong learning. The literature has the main purpose to contribute to the development of an information literacy program for lifelong learning to help students master their information literacy skills and maximize the use of library resources and services.

21st Century Skills

Langhorne, Rehmke, and the Iowa City Community School District (2011) stated that in their 2007 report, the Educational Testing Service (ETS) defined 21st century skills as the ability to: a. collect and / or retrieve information, b. organize and manage information, c. interpret and present information, d. evaluate the quality, relevance, and usefulness of information, e. generate accurate information through the use of existing resources (ETS, 2007).

The Partnership for 21st-Century Skills (2011) has developed a vision for student success in the new global economy. "The goal at Learning.com is to help today's students develop the 21st-century skills they need for tomorrow's success, so working with P21 is a natural fit". To help educators integrate skills into the teaching of core academic subjects, the Partnership has developed a unified, collective vision for learning, known as the Framework for 21st-Century Learning. This Framework describes the skills, knowledge, and

expertise students must master to succeed in work and life; it is a blend of content knowledge, specific skills, expertise, and literacies.

At present, we live in a technology and media-driven environment, marked by access to an abundance of information, rapid changes in technology tools and the ability to collaborate and make individual contributions on an unprecedented scale. Effective citizens and workers must be able to exhibit a range of functional and critical thinking skills, such as Information Literacy, Media Literacy, and ICT (Information, Communications, and Technology) Literacy.

Information, Media and Technology Skills

People in the 21st century live in a technology and media-suffused environment, marked by various characteristics, including 1) access to an abundance of information, 2) rapid changes in technology tools, and 3) the ability to collaborate and make individual contributions on an unprecedented scale. To be effective in the 21st century, citizens and workers must be able to exhibit a range of functional and critical thinking skills related to information, media, and technology.

The Information Literacy Skills deal with Access and Evaluate Information such as a) access information efficiently (time) and effectively (sources) and evaluate information critically and competently. It also includes use and manages information such as a) use information accurately and creatively for the issue or problem at hand, b) manage the flow of information from a wide variety of sources, and c) apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information.

The Media Literacy Skills includes analyzing media such as a. understands both how and why media messages are constructed, and for what purposes, b. examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors, and c. apply a fundamental understanding of the ethical/legal issues surrounding the access and use of media. It also creates media products such as a) understand and utilize the most appropriate media creation tools, characteristics and conventions and b) understand and effectively utilize the most appropriate expressions and interpretations in diverse, multi-cultural environments.

The Information, Communications, and Technology (ICT) Literacy Skills, apply technology effectively such as a) use technology as a tool to research, organize, evaluate and communicate information, b) use digital technologies (computers, PDAs, media players, GPS, etc.), communication/networking tools and social networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy, and apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information technologies.

Strategic Goals for Information and Communications Technologies

Sangra (2008) in Bates and Sangra, (2011) examined the Web-based strategic plans for technology integration in 16 universities worldwide. Based on the survey, most institutions saw the integration of information and communications technologies as a vital component in becoming a twenty-first-century university. This is articulated in a set of strategic goals for information and communications technologies. Among these goals are as

follows: 1. To promote and facilitate research, through accessing and sharing large databases and high capacity computation. 2. The development of online professional networks and the development of online “virtual” libraries. 3. To expand and improve teaching and learning through the: use of technology to support classroom teaching, development of blended or fully online learning courses/programs, access to digital resources, for example, enabling online access to library catalogues, design or purchase and installation of software to support teaching and learning, for example installing a learning management system, and faculty development and training on the use of technology.

Information Literacy

Information Literacy is the set of skills needed to find, retrieve, analyze, and use information. The beginning of the 21st century has been called the Information Age because of the explosion of information output and information sources. It has become increasingly clear that students cannot learn everything they need to know in their field of study. Information literacy equips them with the critical skills necessary to become independent lifelong learners.

The American Library Association (1989) states that “to be information literate a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the information obtained. They developed nine information literacy standards for student learning, which are: (i) accesses information efficiently and effectively; (ii) evaluate information critically and competently; (iii) uses information accurately and creatively; (iv) pursues information related to personal interests; (v)

appreciates literature and other creative expressions of information; (vi) strives for excellence in information seeking and knowledge generation; (vii) recognizes the importance of information to a democratic society; (viii) practices ethical behaviour in regard to information and information technology; (ix) participates effectively in

Information literacy was seen less as a series of competencies to be mastered, and more as a set of general knowledge and attitudes to be possessed by an information-literate person. A well-known example is the set of seven key characteristics presented by Bruce (1997) in Bawden and Robinson, (2012). According to him the information-literate person is one who: a) engages in independent self-directed learning, b) uses information processes, c) uses a variety of information technologies and systems, d) has internalized values that promote information use, e) has a sound knowledge of the world of information, f) approaches information critically, and g) has a personal information style groups. The study of Shenton (2009) noted that activities which may be believed to lead to the acquisition of information literacy are frequently undermined in schools by detrimental attitudes and practices, some of which give priority to other concerns. UNESCO (2011) defines the term Information Literacy as follows: Information literacy is a basic human right in the digital world (The Alexandria Proclamation, 2005). A set of individual competencies needed to identify, evaluate and use information in a most ethical, efficient and effective way across all domains, occupations, and professions. Enables people to make good use of information and communication technology.

According to the American Library Association (1989) in Welsh and Wright, (2012), information literacy is increasingly becoming important in the contemporary environment of rapid technological change and proliferating information resources:

a. Information literacy is a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.

b. Information Literacy forms the basis for lifelong learning and is common to all disciplines, to all learning environments, and to all levels of education.

c. The information comprises the basic facts with context and perspective.

Finger (2005) in Bawden and Robinson (2012), stated that a major reason why a person must be information-literate is globalization, which may be defined as a movement of economic integration, of cultural homogenization and of technological uniformization. Based on Woody (2013), UNESCO, an international organization, which promotes information literacy, considered that in the 21st century, information society will be on the throne. Every educational system needs to know how to deal with the proliferation of information and to demonstrate a critical spirit to find their way among the piles of information. A large number of documents of UNESCO and other international organizations speak of “digital gap” which creates a danger of division and inequality, because of new technologies. Lau and Cortes (2009) give emphasis on the Declaration of Prague that urges the world’s governments to develop interdisciplinary programs to promote information literacy, as a necessary step toward creating a literate citizenry, an effective

civil society, and a competitive workforce. Although the appeal was addressed to governments, this is clearly a task incumbent on all societal sectors.

More so, Tuazon (2011), one of the Philippine representatives to the UNESCO conference on the National Forum on Information Literacy agreed to the following statements based on the Declaration of Prague:

a. The creation of an information society is key to the social, cultural, and economic development of nations and communities, institutions, and individuals in the 21st century and beyond.

b. Information Literacy encompasses knowledge of one's information concerns and needs and the ability to identify, locate, evaluate, organize, and effectively create, use, and communicate information to address issues or problems at hand; it is a prerequisite to participating effectively in the information society and is part of the basic human right for lifelong learning.

c. Information literacy, in conjunction with access to essential information and effective use of information and communication technologies, plays a leading role in reducing the inequities within and among countries and peoples and in promoting tolerance and mutual understanding through information use in multicultural and multilingual contexts.

d. Governments should develop strong interdisciplinary programs to promote information literacy nationwide as a necessary step in closing the digital divide through the creation of an information literate citizenry, an effective civil society, and a competitive workforce.

More so, the study conducted by Mandusic and Blaskovic (2013) on information literacy, theory and practice in education, concluded that information literacy should be the foundation of knowledge in higher education institutions, to remove barriers toward creativity caused by the misunderstanding of the research process. The students should be familiar with skills that enable them to succeed in their future study and life. Information literacy is not only a necessity for students but for all of us as professionals in our workplaces and personal lives. Information literacy should be “functional” to young people and adults as a new tool of expression, communication, and learning. It should be developed in all levels of education, and one goal of our educational institutions should be the education of IT literate professionals prepared for lifelong learning.

The results of the study of Wertz et al. (2013) indicate that the first-year engineering students did not gather sufficient information to develop well-supported claims in their assignments. The information they gathered was often from sources that were convenient to access but provided mostly superficial information. Overall, while students may know about, and will at least occasionally use, sophisticated information search techniques for course-related work, their leading choice is the abundant information easily available through the Internet.

Based on the findings of the study of Foo et al. (2013) on Information Literacy Skills of Humanities, Arts, and Social Science Tertiary Students in Singapore, the students show moderate information literacy skill scores with a need for improvement especially in higher-level skills related to information use, synthesis, and evaluation. Students receiving pre-tertiary education in Singapore scored higher than those from overseas, which, to some

extent, show that information literacy education in Singapore is still more effective than in some other countries. The information literacy course offered in the university was found to be useful and helped lead to higher information literacy assessment scores. “Task definition” and “information use” are areas in the course that can be further strengthened.

The research of Mahmood (2013) on the relationship of students’ perceived information literacy skills with personal and academic variables indicates that the students were more comfortable in basic computing and internet-related activities but less comfortable on specialized information searching tasks. This implies that they did not attend a comprehensive information literacy instruction program in their academic career anywhere in school, college or university, or if they did attend such a course, it had little or no impact. An implication of this is that an effective IL instruction program should be designed for students to develop a culture of information literacy at all levels in Pakistan.

Al Awadhi and Rehman (2012) in a study on evaluation of an information literacy course found out that there is a lack of clarity about who is responsible for promoting information literacy in campuses. The students need to be exposed to the concepts and principles of information literacy throughout their academic careers as early as possible. This study also provides support for the proponents of integrating information literacy in the general education program in both basic school education and at the level of undergraduate studies.

Ivanitskaya’s study (2012) on developing health information literacy on pre-professional health students revealed that many students reflected on the need to build their library skills, internet skills, and information evaluation skills. The participants also reported

the need to learn more about citations and plagiarism. The study highlighted the importance of providing students with resources for self-study, while also building student-librarian and faculty-librarian connections.

The study of Baro and Timi (2011) revealed that university libraries in Nigeria were found to be engaging in different information literacy (IL) practices ranging from library tour/orientation sessions to introductory information skills, database searching skills, bibliographic training and use of the library. Barriers, such as lack of interest showed by students, teachers, and the management, inadequate human resources to handle IL training, lack of facilities, low acceptance of online IL delivery approach and absence of IL policy were identified as factors militating against the librarians' efforts when advocating and providing IL programs in university libraries in Nigeria.

Hence, the data from the study of Conley and Gil (2011) open the door for a variety of additional research on this topic. With such support, librarians would be able to integrate key ideas and strategies into business curricula and course development and open up the doors for broader engagement as well as more meaningful business information literacy instruction.

The emergence of the internet and World Wide Web has had a profound impact on information literacy instruction because the Web is the starting point for most people's search for information (Becker (2003) in Markey, Leeder, and Rieh, 2014). The abundance of information sources available online and their lack of traditional markers of authority present new challenges to both information seekers and information literacy instructors.

Information Literacy is not about learning to cruise databases. Nor is it about optimizing Google searches. It isn't even about knowing how to rummage through multiple results to find the best ones. It's about a mindset that sees information as a system and understands how to advantageously work the system to solve problems and advance knowledge (Badke, 2014).

Thus, information literacy is the solution to avoid information pollution. It allows the students to cope by teaching them the skills to know when they need information and where to locate it effectively and efficiently. It includes the technological skills needed in the modern library as a gateway to information. It enables them to analyze and evaluate the information they find, thus giving them confidence in using that information to make a decision or create a product.

Definitions of Information literacy

According to Grassain (2009), Paul G. Zurkowski first coined the phrase Information Literacy in 1974. Zurkowski (1974) defined an information-literate individual as anyone who has learned to use a wide range of information sources in order to solve problems at work and in his or her daily life. Over 35 years Zurkowski's definition continues to have validity. The term did not catch attention immediately but the concepts underlying it certainly did. Numerous terms were used to describe the concept over the years, but it was not until the mid-1980's that the term Information Literacy returned to the forefront. Grassain (2009) also discussed the term Information Literacy in different years.

Zurkowski's (1974) defines an 'information-literate' as a person who knows the techniques and skills in using information tools in molding solutions to problems and characterized the content of such training as "methods of information handling".

Breivik (1985) described Information Literacy as an integrated set of skills and the knowledge of tools and resources. In her view, IL is developed through persistence, an attention to detail, and a critical, evaluative view of the material found. It is also depicted as a problem-solving activity.

The American Library Association (ALA) Presidential Committee on Information Literacy's Final Report, published in 1989, states that the information literate individual is someone who has the ability to recognize an information need, and can locate, evaluate, and use information effectively. The emphasis is on preparing people for lifelong learning.

The American Association of School Librarians' (AASL), Association for Educational Communications and Technology (AECT) 1998, defined the information-literate student as one who accesses information efficiently and effectively, critically evaluates the information, and uses it accurately and creatively. There is an emphasis on independent learning and also an element of social responsibility. The information literate individual is someone who contributes positively to the learning community and to society. Underlying this definition is the belief that an information literate populace is the cornerstone of democracy.

Kuhlthau (1990) pointed out that one of the most important aspects of Information Literacy is an understanding of the amount of time and work involved in information seeking and use. The information-literate individual must be aware that information

gathering is not linear. It is a complex process in which questions change and evolve as new information is gathered and thought about.

Bjorner (1991) states that information literate individuals respond positively to the need for an investigation, construct a variety of strategies to reduce the information gap, evaluate and select the most appropriate strategy, and assess the effectiveness of the chosen strategy. An information Literate individual not only uses the information now, he or she also stores it for future use.

Rader (1991) discussed the information-literate individual as someone who can survive and be successful in a rapidly changing information environment. Being information-literate allows one to lead a productive and satisfying life in a democratic society and to ensure a better future for coming generations.

Eisenberg and Brown (1992) believe that an information literate individual recognizes a need for information; engages in information seeking; explores, accesses, and locates materials; interacts with the information to formulate hypotheses; synthesizes, interprets, and organizes the information and finally evaluates the results.

The research of Doyle (1996) characterized an information-literate individual as someone who recognizes an information need and acknowledges that accurate and complete information is the basis for decision making. These information-literate persons can formulate questions based on this information need, develop appropriate search strategies, and access information from a variety of sources. Furthermore, the information-literate individual must be able to organize information and to use it in critical thinking and problem solving.

Bruce (1997) describes an information literate person as one who engages in independent, self-directed learning using a variety of sources (print and electronic).

Information Power: Building Partnerships for Learning (AASL and AECT 1998) identified some Information Literacy Standards for Student Learning. They state that an information-literate student “accesses information efficiently and effectively” (Standard 1), “evaluates information critically and competently” (Standard 2), and “uses information accurately and creatively” (Standard 3).

ACRL (2000) further defined information literacy as “a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information”.

According to the American Association of School Librarians (AASL, 2007), the Information literacy elements are now described as “applying critical-thinking skills” (analysis, synthesis, evaluation, organization) to information and knowledge in order to construct new understandings, draw conclusions, and create new knowledge.

The Partnership for 21st-Century Skills (2011) advocates 21st century readiness for every student, “identifying specific” skills, knowledge, and expertise that students should master to succeed in their work and life in the 21st century. These include “Learning and Innovation skills” (creativity and innovation, critical thinking and problem solving, and communication and collaboration) and Information, Media, and Technology Skills (information literacy, media literacy, and information and communications technology known as ICT-literacy).

The International Society for Technology in Education (ISTE) and National Educational Technology Standards for Students (NETS'S, 2007) described the “standards for evaluating the skills and knowledge students need to learn effectively and live productively in an increasingly global and digital world”. “NETS'S includes subsections on “Research and Information Fluency” (described as applying digital tools to gather, evaluate, and use information) and “Critical Thinking, Problem Solving and Decision Making” (using critical thinking to plan and conduct research).

Information literacy has been recognized as one of the key abilities which people in society should have for the 21st century. Because of the rapid expansion of technology and the ever growing amount of complex information (in a range of formats), which students, school staff, and the general population need to review, select, evaluate and use effectively, information literacy is one of the fundamental aspects of education for today's student (Herring, 2011).

CILIP (2007) defined information literacy as “knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner’.

UNESCO (2008) in Information Literacy beyond library 2.0, (2012) describes information literacy as empowering people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and it promotes social inclusion in all nations.

The information-literate person sees the bigger picture. Information literates find the alternatives and see the opportunities. Even if every database is up and running, the information-literate person knows when to use one particular resource as opposed to another, and when to abandon the digital favor of the analog (Badke, 2014).

As librarians became more engaged in the internet environment and more cognizant of how users are interacting with information on the internet, their views of what they should be teaching, Information Literacy began to evolve and expand, with the emphasis on teaching critical thinking and concepts becoming more important (Grassain, 2009).

Information Literacy Competency Standards for Higher Education

The **Information Literacy Competency Standards for Higher Education** formulated by **Association of College and Research Libraries (ACRL)** developed standards that can be used to assess the information literacy skills of teachers, librarians, etc. The standards focus on the needs of students in higher education. The standards also list a range of outcomes for assessing student progress toward information literacy. In implementing these standards, institutions need to recognize that different levels of thinking skills are associated with various learning outcomes and therefore different instruments or methods are essential to assess those outcomes.

Standard One: The information literate student determines the nature and extent of the information needed. Performance Indicators: 1. The information literate student defines and articulates the need for information. 2. The information literate student

identifies a variety of types and formats of potential sources for information. 3. The information literate student considers the costs and benefits of acquiring the needed information. 4. The information literate student re-evaluates the nature and extent of the information needed.

Standard Two: The information literate student accesses the needed information effectively and efficiently. Performance Indicators: 1. The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information. 2. The information literate student constructs and implements effectively-designed search strategies. 3. The information literate student retrieves information online or in person using a variety of methods. 4. The information literate student refines the search strategy, if necessary. 5. The information literate student extracts records and manages the information and its sources.

Standard Three: The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system. Performance Indicators: 1. The information literate student summarizes the main ideas to be extracted from the information gathered. 2. The information-literate student articulates and applies initial criteria for evaluating both the information and its sources. 3. The information literate student synthesizes main ideas to construct new concepts. 4. The information literate student compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information. 5. The information literate student determines whether the new knowledge has an impact on his/her value system and takes steps to reconcile

differences. 6. The information literate student validates understanding and interpretation of the information through discourse with other individuals, subject-area experts, and/or practitioners. 7. The information literate student determines whether the initial query should be revised.

Standard Four: The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose. Performance Indicators: 1. The information literate student applies new and prior information to the planning and creation of a particular product or performance. 2. The information literate student revises the development process for the product or performance. 3. The information literate student communicates the product or performance effectively to others.

Standard Five: The information literate student understands many of the economic, legal and social issues surrounding the accesses and use of information to use information ethically and legally. Performance Indicators: 1. The information literate student understands many of the ethical, legal and socio-economic issues surrounding information and information technology. 2. The information literate student follows laws, regulations, institutional policies, and etiquette related to the access and use of information resources. 3. The information literate student acknowledges the use of information sources in communicating the product or performance.

The Big 6 Skills Information Problem-Solving Approach

There are many Information Problem-Solving models being applied around the globe and one of them is Big6 Skills Information Problem-Solving Approach that is a well-accepted model.

It is an information and technology literacy model and curriculum, implemented in thousands of schools – through higher education. Some people call the Big6 an information problem-solving strategy because with the Big6, students are able to handle any problem, assignment, decision or task. This model bases learning around the six steps: (i) task definition; (ii) information seeking strategies; (iii) location and access; (iv) use of information; (v) synthesis; (vi) evaluation.

In **Task Definition**, the student demonstrates the ability to: determine the information problem to be solved; reformulate a complete statement of the task; pick out keywords embedded in a question, and understand and follow printed and/or oral directions.

Information Seeking Strategies, the student demonstrates the ability to: develop alternatives and to seek a variety of materials; determine which information is most/least important; recognize that information can be gathered from many sources, including investigation, observation, and human resources; and use of appropriate criteria for selecting sources.

Location and Access, the student demonstrates the ability to: determine what sources are available; independently gather resources; determine if the source is usable; and access appropriate information systems, including online databases, online public access catalog, and electronic multimedia. **Use of Information**, the student demonstrates the ability to: distinguish facts from opinion; accurately and completely summarize/paraphrase

the main idea from written and oral sources; accurately cite sources; and read, listen, view, and touch carefully to acquire information. **Synthesis**, the student demonstrates the ability to: organize information in clear, coherent presentations; present information in ways appropriate to the task; participate effectively in discussions and debates; and produce personally designed products to communicate content. **Evaluation**, the student demonstrates the ability to: demonstrate a high degree of confidence in the quality of the product produced; assess the product for completeness, strengths, and weaknesses; develop criteria to determine the effectiveness of the process used to solve the problem; provide recommendations to improve results; and determine the need for further information (Eisenberg and Berkowitz, 2011).

The Big6 skills have been used in a variety of settings to help those with a variety of needs. According to Story-Huffman (2009), using Big 6 at the college level “has transcended cultural and physical boundaries to provide a knowledge base to help students become information literate”. Jansen (2009) states that differentiated instruction and the Big6 appear to be made for each other. While it seems as though all children will be on the same Big 6 step at the same time during a unit of instruction, there is no reason why a student cannot work through steps at an individual pace. In addition, the Big 6 process allows for seamless differentiation by interest. Eisenberg and Berkowitz (2011) has recognized that there are a number of challenges in effectively applying the Big6 skills, not the least of which is information overload which can overwhelm students. Part of Eisenberg’s solution is for schools to help students become discriminating users of information.

Methods of Information Literacy Instruction

Markey, Leeder, and Rieh (2014) recognized some of the major methods used in information literacy instruction at the higher education level.

1. ***For-credit or not-for-credit stand-alone courses.*** The stand-alone course is the most traditional form of library instruction, featuring a full-or half-semester class with a syllabus, learning objectives, assignments, and hands-on experiences using information resource discovery tools.
2. ***Web-based online instruction.*** In response to students' calls for flexible and convenient educational opportunities, academic librarians have explored online instruction as an option. Typically, multimodal learning objects such as text, graphic, audio, video, and instant messaging are used.
3. ***Online tutorial.*** The online tutorial method features Web-based documentation describing information literacy tools, concepts, and skills (Kerr 2010). The tutorial method is economical with regard to text, relying on multimedia effects to convey basic concepts and involve users in the ongoing discussion.
4. ***Course-related instruction.*** Course-related instruction depends on the librarians' success at convincing the academic instructors to incorporate information literacy instruction into their courses. Such instruction is often a single lesson devoted to research skills or strategies, and librarians strive to coordinate the instruction with each course's learning objectives, content, and disciplinary coverage.
5. ***Course-integrated instruction.*** Librarians advocate information literacy instruction that is an integral part of the academic curriculum in the form of individual courses

and collaboration between librarians and academic instructors (Anderson and Frances 2010). As the information literacy instruction is embedded in academic courses, this method enables students to have repeated and meaningful experiences with information sources and search processes in specific disciplines (Kim and Sin, 2011).

6. **Web 2.0.** Librarians have responded to the young people's fondness for Web 2.0 tools by integrating them into information literacy instruction. Web 2.0 encourages and reinforces engagement and interactivity among individuals, thus providing new opportunities for information literacy instruction.

Implementation of Information Literacy Instruction

For information literacy instruction to be effective, everyone in the school community needs to become involved. According to Thompson and Henley (2000) administrators, teachers, parents, students, and librarians contribute to information literacy goals by actively participating in school-wide reforms and implementation processes.

Administrators

Administrators foster information literacy by providing support – support in funding, planning, and scheduling. Administrators establish the priorities that are the basis for decisions concerning how money is spent when planning is accomplished, and how the school day is scheduled. To foster information literacy, these priorities need to ensure

adequate information sources and personnel, adequate planning time for teachers and the librarians, and flexible scheduling for the use of the library.

Teachers

Information literacy skills cannot be taught solely in the library; they must be introduced and practiced daily in the classroom as well. Teachers foster information literacy by engaging students in thoughtful, authentic learning experiences using a wide variety of information sources, by providing guidance in the research process, and by modeling information literacy skills and thinking processes.

The results of the research of Rinto and Seiders (2014) indicated that library instruction contributes to information literacy skill development as evidenced by a course assignment, and point toward the possibilities of section theme as a contributing factor.

Parents

Parents are not the student's first teachers; they are their constant teachers. As such, they are the most influential and have the greatest, lasting impact on student learning. Families have many opportunities to foster information literacy skills. One of the best ways to encourage information literacy is to encourage reading. Most information resources require the ability to read.

Students

Students are partners in the learning process. As partners in their own learning, students have a responsibility to come to school prepared to learn, to be willing to learn, to cooperate with their teachers and peers, to complete assignments, and to participate in learning activities. Students who realize early that they are responsible for their own learning will acquire the information literacy skills and abilities to become lifelong learners.

Stewart and Basic (2014) concluded that information literacy skills assist in reducing information overload by helping students sift through information that they have sought, but it does not help them in the case of encountered information since it was not solicited in response to an information need. Information literacy instruction needs to address not only the psychological elements of the information encountered but also the practical skills required to handle this information.

Librarians

Librarians are leaders in the information literacy movement and as such, they will be the leaders in the school-wide implementation of the information literacy implementation programs. Although other educators acknowledge the importance of information literacy instruction, librarians are the first to develop standards and indicators for information literacy goals and objectives. Therefore, librarians must take the initiative to introduce the standards to the school community and to coordinate the adoption of the school-wide program.

The librarians have the following functions: 1) Introducing - Librarians can introduce the concept of information literacy to the faculty through in-service training, formal and informal planning sessions, and casual conversations. 2) Justifying - It is important to demonstrate to the teachers the significance of information literacy instruction. The background information and the supporting documents will help the librarians with this task. 3) Coordinating - The librarians serve all teachers and all students. As coordinators, they work with individual teachers or teams of teachers to develop thought-provoking units of study that include information literacy goals and objectives. These units are taught cooperatively by the teachers and the librarian.

Based on the research of Dold (2014), the librarian can bring the range of information into focus in order to analyze a research question and enrich the researcher's understanding of the complexity and interconnectedness of the contributing data sources. By guiding researchers to examine information from multiple perspectives and across disciplines, the librarian may help students learn to analyze the bias of information that is available to them, and become mindful that bias may include the lack of information. Critical information literacy offers a holistic approach to problem-solving that is well-suited to students and practitioners in the behavioral sciences since this discipline examines the individual's health needs in a comprehensive manner.

Barriers to Information Literacy Instruction

The work of Markey, Leeder, and Reih (2014) on “Designing Online Information Literacy Games Students Want to Play”, lead them to identify some of the common barriers to information literacy instruction.

A **faculty problem** is their apathy toward or outright obstruction of information literacy instruction. Many faculty members consider librarians as support staff and providers of support services instead of partners in the educational enterprise. They feel that librarians are not qualified to teach (Saunders, 2012). The faculties are unwilling to cede valuable in-class time to librarians. Also, they do not connect with the librarians’ language, standards, and outcomes and consider information literacy instruction to be an administrative or bureaucratic imposition (Bell, 2011). With these challenges, librarians initiate and maintain discussions with faculty about information literacy instruction and to be proactive about building collaborative relationships (Saunders, 2012).

While college faculty appears to value information literacy competencies **they do not necessarily agree about how students should be taught these skills** (Saunders, 2012). Some instructors expect that students will acquire the necessary competencies on their own (McGuinness 2006). Others assume that students received instruction in high school, in college orientation, or in introductory courses or that teaching these skills are someone else’s responsibility (Saunders 2012). Regardless of the rationale, few instructors actively integrate information literacy, knowledge and skills into their courses in a systematic way (McGuinness 2006; Saunders 2012).

A small percentage of higher education institutions with first-year experience programs include a required information literacy component (Boff and Johnson, (2002) in Markey, Leeder, and Rieh, 2014). When information literacy instruction is available, it is usually located at the periphery of the curriculum. The lack of consistent, uniform program implementation in the curriculum creates a tension between the official standards and competencies models developed by library leaders, library associations, and national committees, on one hand, and the practical experience of librarians who deliver the instruction, on the other.

Instructors allocate so little time to information literacy instruction that it becomes a singular event, and efforts to promote conceptual understanding must be reduced to skills demonstrations. Librarians fill the available time with coverage of the most basic topics (van Meegan and Limpens, 2010).

Several reasons why students prefer the open web to the library such as the web is either their starting point or their sole source of information for academic pursuits; the speed, convenience, and ease of use attract college students to open Web resources; and the students do not use their library's website for their academic- related information needs (OCLC, 2006).

The unsophisticated online searching skills. Julien and Barjer (2009) in Markey, Leeder, and Rieh, (2014), report that high schools' students begin their online searches by copying and pasting the assignment question into Google dialogue box, scanning the three or four top-ranked search results and comparing these retrievals' content for consistency.

Students are more challenged by the research process than by online searching. Course-related research is confusing and frustrating to them. They do not know how to meet the instructors' expectations, how to narrow down a topic, or how to make it manageable (Head, 2007).

Research results are clear and unequivocal about the urgent need to reduce college students' reliance on the Web for information for their serious academic pursuits and to improve their online searching skills. Information literacy instruction needs to put students into situations where they experience library databases firsthand so that they can judge for themselves whether or not their search results yield quality information for academic pursuits.

The Conditions for Information Literacy Assessment

Farmer and Henri (2008) investigated the factors affecting information literacy such as instructional strategies, learning activities, collaborative practices, resources, learning environment, curriculum, and administrative support. These factors are comprehensively discussed as the conditions for information literacy assessment.

Curriculum as a condition for information literacy. Information literacy needs to be realized through its presence in the curriculum, which is in turn impacted by the model's factor. It needs to be explicitly addressed through direct instruction and meaningful learning activities, and it needs to be integrated throughout the school program rather than isolated in some sort of a parallel universe of learning. Its assessment should be an essential aspect of the whole-school planning and implementation. To support information literacy, curriculum

throughout that educational community needs to look different. Basic information literacy skills across disciplines and grades: identifying an information task, determining keywords, reading information, evaluating resources, communicating information. However, information literacy needs to be contextualized in order to give it meaning.

The data from the research of Conley and Gil (2011) opens the door for a variety of additional research on this topic. With such support, librarians would be able to integrate key ideas and strategies into the business of curricula and course development and open up the doors for broader engagement as well as more meaningful business information literacy instruction.

Likewise, the study of Wertz et al. (2013) also suggests three overarching curricular needs: raising students' awareness of their need for information gathering, helping students develop appropriate strategies to access and evaluate information, and teaching students how to completely and accurately document information sources, especially from the web. These curricular goals are important not only to improve student information literacy skills but also to ensure that students can access appropriate and accurate information as they engage in lifelong learning.

The study of Foo et al. (2013) recommends a systematic investigation of the various ways of incorporating higher order information literacy skills into the school curriculum. There is also a need to investigate how information literacy skills may affect the individual's well-being in participating in a democratic society, beyond academic achievements. Moreover, public and national libraries may want to put more effort to

increase tertiary students' awareness to use their resources and facilities as a supplementary to their university libraries.

Furthermore, Canovan et al. (2010) concluded that the assessment program has provided data demonstrating the library's vital role in the institutional mission of teaching and learning. Librarians and faculty have created a sustainable program in the core curriculum by targeting specific information literacy outcomes in selected courses. Faculty members contextualize information literacy in their courses and librarians link these concepts to the core. These roles allow librarians and faculty together to engage in meaningful assessment to improve teaching and foster student learning.

Intellectual capital as a condition for information literacy. The heart of education is the people involved. Education exists because of the students and is only as effective as the personnel who facilitate student learning. The entire school community has the potential to contribute to information literacy efforts, both individually and collectively: principals, classroom teachers, teacher-librarians, technology, reading specialists, special, counselors and psychologists, health personnel, co-curricular personnel (e.g., activities personnel), and school board.

Leadership as a condition for information literacy. For intellectual capital to be wisely "invested" and used, it needs to be supported through resources and expectations that good leadership can facilitate. In 2004, the Australian government established a national research project, "Leadership and Learning with Information and Communication Technologies," to investigate school-based leadership models that support teacher development and student learning through the incorporation of ICT (Information and

Communication Technology). Principals were identified as leaders in spearheading a shared vision of what is valued in teaching and learning, developing a school culture, setting the instructional direction, and developing leadership in others. Focusing on the principal's role in mainstreaming information literacy instruction, Campbell found similar roles: vision building, evolutionary planning and restructuring, resource mobilization, monitoring, and problem solving, and empowerment.

Teacher-librarians must collaborate closely with administrators to facilitate active advocacy and support, aligning the library program's information literacy agenda to the school's vision and strategic plan. The library program can showcase best practices relative to information literacy. Teacher-librarians can also support administrators' efforts to incorporate information literacy. This collaborative model also facilitates the typical teacher librarian's leadership style: leading from the middle.

In her study of situating information literacy, Asselin (2005) asserts that "teacher librarians need to reposition themselves as leaders in the new literacies required for learning and solving problems with the Internet and ICT. There is a clear need for instructional leadership in the existing critical-level new literacy learning outcomes and in the assessment and evaluation of all aspects of the new literacies of the information age".

In terms of information literacy advocacy, teacher librarians can lead in several areas such as the following: developing curriculum that incorporates information literacy; collecting and analyzing student work to assess student information literacy levels, conducting literacy reviews and action research projects to provide evidence-based practice about information literacy; developing and implementing a staff development program

about information literacy; feeding relevant information to decision-making boards that allocate resources for information literacy; creating policies that value and support information literacy; and collaborating with community members who are involved in information literacy efforts.

The community as a condition for information literacy. Education is ultimately a community-based endeavor. Even with the national curriculum and standards, how information literacy is played out depends on the community's resources and expectations. On a broader scale, the public sector plays several significant roles in support of information literacy. Facilitation: providing financial and political backing for information literacy initiatives; providing venues for discussing information literacy priorities; advancing information communication infrastructure. Regulation: providing and enforcing ICT laws and regulations; accrediting educational institutions; establishing ICT standards and guidelines. Use: bridging educational and economic information literacy and applications; identifying and meeting information needs; producing and disseminating information; keeping current information literacy trends; promoting ICT development and education (Khoury, 2004).

Collaboration as a condition for information literacy. Particularly in today's educational environment where schools are asked to assume so many responsibilities, ongoing communication and collaboration are keys for optimal results. Since any two entities can form a potential collaborative relationship, when several entities collaborate, group dynamics can emerge. According to the study of Sung Un and Shumaker (2015), librarians and instructors must communicate and collaborate to effectively integrate

information literacy instruction in the different courses, to avoid duplication and gaps in coverage. A librarian or instructor, who teaches information literacy, must recognize that part of the job is convincing students of its importance. The fact that students have significantly lower opinions about the value of information literacy reinforces the view that students will not be receptive automatically. The findings of the study of Harrison and Newton (2009) in *Collaborative Information Literacy Assessments*, clearly states that to make sense of the rapid changes in the landscape of academic information, and the implications of these changes for undergraduate study, academic staff and librarians must continue to develop and deepen their working relationships, sharing their skills and knowledge necessary to produce information literate students. Sustaining successful information literacy curriculum interventions will depend on creating long-term relationships between academicians and librarians.

The research of Bostock, Graves, and Wilson (2010) concluded that the development of competent information-literate students in the twenty-first century requires a willingness on the part of university staff to engage in the collaborative activity by means of a new academic team. Online learning provides an environment that enables access to information for a wide variety of learners. Dold (2014) concluded that collaboration is an essential component of critical information literacy in order to conduct transdisciplinary research. The librarian may play a role here too, as an information specialist, by focusing the query and research on essential information to solve the problem, and by challenging the disciplinary silos concerning research methods and evaluation. The study of Thompson and Lathey (2013) concluded that integrated information literacy model and research findings

show how librarians and college faculty can collaborate in new partnerships to strengthen disciplinary information literacy in undergraduate curricula.

Plans and policies as a condition for information literacy. For information literacy to be supported, plans and policies must be in place and monitored. Policies may also set up the conditions for information literacy planning and implementation. While plans and policies are necessary for information literacy efforts, they are not sufficient in themselves. Policies should stem from identified needs and values. For policies to be effective, they should be created by all of the stakeholders who are influenced by them. Thus, a policy on student information literacy outcomes should include inputs from library staff, students, faculty, administrators, and possibly community members.

Information Literacy in the Philippines

The Philippines had also undertaken several literacy advocacies to promote the value of books and libraries, reading, and transfer of skills at almost all levels (R.A. 7743). The Philippines is ranked third among the Southeast Asian countries in terms of Internet penetration, with an Internet access rate of 33 percent (Nielsen, 2011). The average time each user spends online is 16.7 hours. Proclamation No. 614 supports the UNESCO's Call for Action during the United Nations Literacy Decade issued by former President Gloria M. Arroyo in 2004. The said Act has commissioned the Literacy Coordinating Council (LCC) and the agencies from the private and government sectors to promote literacy to provide the overall coordination in policy formulation and program implementation.

Based on Llaneta (2011), the apparent lack of appreciation for the value of information is a concern. In a number of studies, they have reviewed and undertaken in development communication, findings indicate that respondents from farming, fishing, and rural communities (which form the majority of our population) are more passive information receivers than proactive information seekers. Information is perceived as a public good that should be given for free. The lack of appreciation for the value of information results in general passivity, reactivity, and disempowerment. This is more striking in the case of chronically information-deprived communities. This situation is present in developed nations, as well as in developing countries. Governments, business, educational agencies, organizations, and citizens worldwide feel the need to address information problems in a variety of settings. Educating citizens to achieve information literacy is quickly becoming an important goal in any country.

According to the study of Crame (2012) on the assessment of the students' information literacy competencies of a Polytechnic College, the respondents believed that to improve the library services in support to students' information necessity, there is a need to start user education program for students, strengthen the library collections, add trained and skilled library personnel and introduce the concepts of information literacy to the school community as part of the program.

The findings of the study of Bahia (2012) on printed and online resources utilization among students of a private academic institution indicate that the students rely on the information they could get in printed books and they consult it first. More so, the respondents still find most of the information they need in books and journals.

The research of Daligdig (2012) on the assessment of the library research skills of college freshmen in De La Salle Canlubang, Binan Laguna, found that the students were average in, each of the five (5) standards in the Information Literacy Competency Standards prepared by the Association of College and Research Libraries (ACRL). However, the result is not satisfactory considering the vast and varied collection of the college library; it only means that it has not been fully utilized to serve its purpose. The students need to be aware of the benefits they could get out of the human resources (librarians) and the information available in the library. The students' visit to the library does not really guarantee a high level of research skills.

The study undertaken by Sadang (2012) on the assessment of information literacy skills of high school freshmen students revealed that on the need for information, students failed to prove that they possess the ability to identify situations that require additional information. Students also showed the lack of quality research output when they manifested poor research skills in looking for the meanings of in-depth concepts. This stemmed from the unsatisfactory strategy in locating relevant scholarly journals. They also displayed difficulty and limited knowledge in extracting information regarding materials found in the periodical section particularly on the scholarly journals. The researcher also found out that the students have poor comprehension and very little understanding of the World Wide Web vernacular. They also lack skills on how to use the Boolean operators such as AND, OR, BUT.

Ortega (2012) found out in a study on the assessment of the information literacy competency of engineering students that the level of awareness of the respondents on

information literacy is high in terms of understanding what type of resources exist in the library. However, the respondents have the low level in terms of knowledge on how to do academic research and determining whether the OPAC is used for books or a periodical database for periodical articles.

More so, the findings of the study of Santos (2011) on classroom learning activities that influence the development of information literacy among senior high school students revealed that students have basic to moderate proficiency in their information literacy skills. They have the lowest score in evaluating information which can be attributed to their use of the World Wide Web for almost all activities. The majority of the students do not use the library in answering the classroom learning activities given to them by their teacher. The subject Filipino reported the lowest number of library users. Teachers do not require their students to use the library; instead, the World Wide Web is their preferred source.

Samson (2010) conducted a research on the information literacy competencies of English 10 and Komunikasyon 2 students which revealed that their perceptions on information literacy as a general education course were just above average and they practiced the information literacy skills from “sometimes” to “often”. The study also showed that the respondents were weak in ACRL Standard 2, satisfactory in standards 3 and 4, and very satisfactory in standards 1 and 5. Since the information literacy competencies of the students are not enough to make them information-literate, information literacy should be integrated into the curriculum focusing on skills not being taught in their classes.

Ganipes (2010), in a study on assessing the information literacy of selected high school students of Saint Louis High School-Philex found out that the information literacy of

the students was below average based on their library instruction literacy results. The students' ratings of basic library research skills were average while their resource evaluation skills and source evaluation skills were below average. The students need to apply what they learn especially in searching for periodical articles, scientific journals, periodical indexes and abstracts, and in narrowing down electronic searches, the library catalog, and search engines. Additional instruction should focus on familiarization with the proper uses of an encyclopedia, dictionaries, almanacs, and the internet. Students should be trained extensively on the use of government sources, credible web pages and domains, evaluating the date of sources, citing reference materials, narrowing down searches, and properly using descriptors.

Ramos (2010) recommends that should the proper opportunity arise as well as an appropriate venue for testing all of the five standards become available; it must be conducted to further improve the accuracy and reliability of continuing exploration in this budding field in the Philippines. More in-depth and complete assessment of the various skills and abilities involved in information literacy among primary, secondary and tertiary students in the Philippines could aid efforts in developing a distinct and contextually relevant set of information literacy standards for the Filipino educational system.

The research of Castillo (2009), on the Information Literacy of the Students of the Central Luzon State University Science High School, revealed that students lack the essential information literacy skills prescribed by the American Library Association. The students are at the average level of information literacy competencies, passing in five and failing in four standards. Moreover, the year level, age, gender, socio-economic bracket,

type of community, type of elementary school, academic standing, access to internet and reference materials at home, research training, and frequency of library resources use are not significantly correlated with the students' information literacy competency performance.

Pavo (2009) conducted a survey on the information needs of Ramon Magsaysay (Cubao) High School students. The results of the analysis show that the students have an average library skills level. They preferred information to be presented to them visually and verbally. The results were then used to create the information literacy program for the library. Library orientation was found out to be the best way to introduce to the students the “ins” and “outs” of the library. The information needs, learning preferences and the kind of learning environment students are exposed to greatly affect their basic library skills.

Several studies have been conducted in the country which aimed to achieve common objectives, such as: evaluating library collections and services; determining the needs of libraries to have a basis for formulating effective development programs, and building up a comprehensive collection of materials and enhancing library services.

Thus, the library as a key component in nation-building and the education of the citizens must also carry out the program on literacy promotion of the government. Libraries are gateways to knowledge and provide the basic condition for lifelong learning, independent decision-making and cultural development of individuals and social groups.

Characteristics of Information Literacy Program

The Association of College and Research Libraries (2003) created the Characteristics of Programs of Information Literacy that Illustrate Best Practices: A Guideline. It attempts to articulate the elements of exemplary information literacy programs for undergraduate students enrolled in four-year and two-year courses. They are also applicable for basic education students. They are primarily intended to help those who are interested in developing, assessing, and improving information literacy programs. This involves faculty, librarians, administrators, and technology professionals, as well as others involved in information literacy programming at a particular institution.

These are the characteristics of programs of Information Literacy that illustrate Best Practices: **Category 1: Mission** - A mission statement for an information literacy program includes a definition of information literacy; consistent with the “Information Literacy Competency Standards for Higher Education” and corresponds with the mission statements of the institution. **Category 2: The Goals and objectives** of an information literacy program are consistent with the mission, goals, and objectives of programs, departments, and the institution. They establish measurable outcomes for the evaluation of the program; accommodate student growth in skills and understanding throughout the college years; and apply to all learners, regardless of delivery system or location. **Category 3: Planning** for an information literacy program. It articulates its mission, goals, objectives, and pedagogical foundation. It anticipates and addresses current and future opportunities and challenges. It is tied to the library and institutional information technology planning and budgeting cycles.

Category 4: Administrative and Institutional Support. It identifies or assigns information literacy leadership and responsibilities. It provides funding to establish and ensure ongoing support for formal and informal teaching facilities and resources. **Category 5: Articulation with the curriculum,** for an information literacy program, is formalized and widely disseminated. Emphasize student-centered learning. **Category 6: Collaboration** - Collaboration among discipline faculty, librarians, and other program staff in an information literacy program will support student learning and the development of lifelong learning skills. **Category 7: The Pedagogy** of an information literacy program supports diverse approaches to teaching. It incorporates appropriate information technology and other media resources. It links information literacy to ongoing coursework and real-life experiences appropriate to the program and course level. **Category 8: Staffing** - Staff for an information literacy program includes librarians, faculty, administrators, program coordinators, graphic designers, teaching/learning specialists, and others as needed. **Category 9: Outreach** - Outreach activities for an information literacy program: includes the following: a. communicate a clear message defining and describing the program and its value to targeted audiences; b. provide targeted marketing and publicity to stakeholders, support groups, and media channels. **Category 10: Assessment/evaluation** of information literacy includes program performance and student outcomes. It establishes the process of ongoing planning/improvement of the program. It measures directly progress toward meeting the goals and objectives of the program. For student outcomes, it focuses on student performance, knowledge acquisition, and attitude appraisal. It assesses both process and product. For all, it includes periodic review of assessment/evaluation methods.

Information literacy programs or sessions are often run by academic libraries; however, in order for them to be most effective, experts recognize that information literacy should be embedded within a subject curriculum and ideally taught in partnership with academic and academic support colleagues (Secker and Coonan, (2012) in *Information Literacy beyond library 2.0*).Based on the results of a study, indicated by Bruce (2004) in Cakmak, (2010), successful information literacy programs do not focus only on teaching information skills, but also on designing learning experiences that necessitate the use of information skills. Even if lessons directly related to information literacy are not included in the curriculum of e-learning programs, ensuring that students use certain learning and motivational strategies during lectures and learning activities will affect their information literacy levels positively.

The research of Bhatt (2011) concluded that the inclusion of information literacy programs in universities in India is entirely the responsibility of library and information professionals. Universities in India recognize the need to train and provide the right skills not only to their library and information professionals but also to the users of libraries. It is also suggested that all Indian universities should unify and undertake a program in information literacy and further make it compulsory for all students whether undergraduates, postgraduates or research scholars. Islam and Tsuji (2010) found out that students have limited skills in the area of information literacy, as it is not discussed extensively in their academic course curriculum. This study urges the incorporation of an information literacy program in the course curriculum, and more writing, discussion, and

other relevant issues that will make the students become more information literate, should be included.

Moreover, individuals involved in information literacy programming are encouraged to use the characteristics in a variety of ways. These characteristics present a set of ideas that can be used when establishing, developing, advancing, revitalizing, or assessing an information literacy program. The characteristics also provide a framework within which to categorize the details of a given program and to analyze how different program elements contribute to attaining excellence in information literacy programming.

According to Juntunen et al. (2008) in *Information Literacy: International Perspectives*, the development of information literacy is a major challenge to university. Library personnel will have to allocate more resources for this area. At the same time, they have to collaborate with other personnel within the university. The use of new technological options provides a wealth of teaching and learning opportunities and innovations in the area of information literacy teaching. One of the major challenges will be how to support the network of library educators in the future without any allocated funding. More studies are also needed to improve the standards, methods, assessment and evaluation of our information literacy teaching.

Bates and Sangra (2011) opined that programs can now be delivered in a variety of ways to an increasingly wide variety of students, through face-to-face, blended, or fully online learning. We can use technology not only to improve the quality of services to students but also to enable students to study in a more effective way.

The essential components of an effective information literacy program include instruction and practice in the research process, a resource-based curriculum, and opportunities to engage in critical thinking and problem solving. All these components are connected through an interdisciplinary unit approach to teaching and learning.

Librarians and teachers should use evaluation rubrics to assess students' levels of information literacy and the effectiveness of information literacy instruction. It also is essential that students be a part of the evaluation process and use rubrics to critique their own research techniques, as well as the products they have created. This activity helps the students form an accurate judgment of their own work and become responsible for their own learning.

Management Functions

A well-managed library or information center accomplishes all these objectives better than one that is poorly managed. Libraries will need to continue to change in order to succeed in the future, as they face a redefined world of information. For the libraries and information centers to remain viable entities in the future, they must be able to compete with often aggressive information industry that requires flexibility and adaptability to change. The importance of management to librarians has grown over the years as libraries have become larger - larger in terms of budgets, collections, and staff. There is a great need for management skills at the level of library director or chief librarian especially in large libraries (Stueart and Moran, 2007).

Libraries can benefit from the opportunities that the 21st century has to offer and this is through well-designed strategic plans, efficient organization, capable leadership and effective control measures. It is only when these management tools and strategies are in place that the libraries can ensure the achievement of their goals and objectives. Prajapati (2013) stated that the main functions of a manager are planning, organizing, leading, and controlling.

Planning

According to Stueart and Moran (2007), planning the first function carried out by all managers and it provides direction, minimize uncertainty and impact of changes, reduce waste and establish standards for goal achievements. The planning process incorporates the following steps: a. The setting of goals and objectives; b. Formulating strategies; c. Developing action plans; d. Coordinating activities; e. Monitoring accomplishment of goals; and f. Reviewing/ Revising plans. For the libraries, it is crucial that they understand what their core business is, which is 'services'. Their core business must be integrated into the core business of their organization. In designing the strategies, the library has to first determine a strategic focus which will be incorporated in its: vision, mission and objective statements.

Griffin (2013), stated that planning means setting an organization's goals and deciding how best to achieve them. Decision-making, a part of the planning process, involves selecting a course of action from a set of alternatives. Planning and decision making help maintain managerial effectiveness by providing both general and specific

directions for future activities. The organizational goals and plans clearly help managers to allocate their time and resources. Moreover, planning and decision making require an understanding of the role and importance of organizational goals, strategy and strategic planning, tactical planning, and operational planning. While all of the core management skills affect planning, conceptual and diagnostic skills are often the most important, and decision making skills are at the heart of effective decision-making as a basic management function.

Schermerhorn et al. (2014) explicate the importance of planning in the management process as it provides the guiding direction for the other important management functions of organizing, controlling, and leading. Planning may involve strategies for obtaining and maintaining an organization's competitive edge over other organizations in the industry, but it may equally involve joint ventures and cooperative arrangements with competitors.

The planning process begins with an organization identifying specific outcomes that it wishes to achieve. It may set different targets depending on the environment it encounters, especially where the environment is uncertain or changing rapidly. There are five sequential action steps in the systematic planning process: 1. define your objectives, 2. determine where you stand in relation to objectives, 3. develop premises regarding future conditions, 4. analyze and choose among alternatives, and 5. implement the plan and evaluate results (Schermerhorn et al. 2014).

Organizing

Organizing is the second function of management. Managers must establish the formal structure of authority through which work subdivisions are arranged. The organization structure should facilitate the achievement of goals, so it is important that the organization structure is designed to facilitate workflow (whether via function, specialization or process), define the chain of command (whether hierarchical, flat, etc.), define the span of control (the wider the less effective) and clarify issues such as centralization versus decentralization. The library management would have to structure the organization in such a way as to ensure that the organization structure facilitates rather than hinders the achievement of goals.

Griffin (2013) believes that once a manager has set goals and developed a workable plan, the next management function is to organize people and other resources necessary to carry out the plan. Organizing involves determining how to group activities and resources. Organizing requires an understanding of job design, departmentalization, authority relationships, the span of control, and line-and-staff roles. It also requires an understanding of how managers fit these elements and concepts together to form an overall organization design. Further, organizing requires an understanding of how to manage the organizational change and innovation and processes associated with managing the organization's workforce. Technical, conceptual, and diagnostic skills also often play important roles in organizing.

Leading

The basic managerial function is **leading**. It is the set of processes used to get members of the organization to work together to further the interest of the organization. To effectively engage in the leading function, managers must possess an understanding of individual and interpersonal processes. They also must have an appreciation for employee motivation, interpersonal relations and communication, the dynamics of managing work groups and teams, and leadership itself. Interpersonal and communication skills may be especially important in carrying out the leading function.

Leading is influencing others to carry out tasks towards the achievement of goals. It is not limited to being the chief librarian or the library director but leadership is found at all levels. Leaders may be managers but not all managers are leaders. The quality of human resource in any organization depends on the quality of leadership. In this way, the library manager should be held accountable if staff cannot perform and goals cannot be achieved.

Controlling

As the organization moves toward its goals, managers must monitor progress to ensure that it is performing in such a way as to arrive at its destination at the appointed time. Controlling helps ensure the effectiveness and efficiency needed for successful management. To engage effectively in the control function, managers need to understand the basic elements of the control process, including the increasing importance of strategic control; the management of operations, quality and productivity; and the management of

information and information technology. Technical, diagnostic, decision-making, and the time-management skills all play important roles in control.

Control measures must be in place to monitor activities and ensure that goals are achieved. The effectiveness of any control system depends on how effectively it can facilitate the achievement of goals. The control system is important in measuring whether the goals are met or not, to have well-formulated strategic plans, well-designed organization structure, and highly motivated staff. There are three types of control measures that libraries can use: Monitoring, ISO, and Benchmarking. The demands and challenges of the 21st century should serve as a catalyst for reviewing the library's relevance to its organization.

The control process, as practiced in organizations, follows similar principles and it involves four steps. Step 1. Establish objectives and Standards. Step 2. Measure Actual Performance. Step 3. Compare results with objectives and standards. Step 4. Take Corrective Action.

Synthesis

A study is considered compelling, reasonable, and justifiable if it is grounded in previous studies in order to ascertain its place in research. The discussion of the foregoing literature and studies provided numerous pieces of information, enlightenment, and insights that helped in the enhancement of the present study. The focal point of the study is the identifications of the information literacy skills of students and the management competencies of school administrators. The instruments used in the study were anchored on

the six domains of information literacy and the four functions of management and their respective indicators. The study covered comprehensively the origin of information literacy, both international and local. Furthermore, it explicated the characteristics and the implementation of an information literacy program.

First and foremost is the literature concerning about the 21st – century skills wherein the study was yielded. The Partnership for 21st - century skills (2011) aimed to help today's students to develop the 21st century skills they need for tomorrow success. They established a framework that describes the skills, knowledge and expertise student must master to succeed in work and life; it is a blend of content knowledge, specific skills, expertise, and literacies. One of these skills is the information literacy skills, which deals with access and evaluate information.

The literature also provided the description about the information literacy. The review culminated with a common definition by the American Library Association (1989) states that “to be information literate a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the information obtained. The emphasis is on preparing people for lifelong learning. The definition is the core of all studies conducted about information literacy as well as the present study.

The information problem-solving model applied in this study is the Big6 Skills Information Problem-Solving Approach by Eisenberg and Berkowitz (2011) which is a well-accepted model. The instruments developed for students and school administrators were based on this model. It is an information and technology literacy model implemented in thousands of schools – through higher education. Through the Big 6, students are able to

handle any problem, assignment, decision or task. This model bases learning around the six steps: (i) task definition; (ii) information seeking strategies; (iii) location and access; (iv) use of information; (v) synthesis; and (vi) evaluation.

The foreign and local studies were also given preference in the review. The gathered information was considered in support of the findings of the study. Foreign and local studies were the basis for the development of the Information Literacy Program (ILP). The foreign studies explored the importance and implications of developing the ILP. The ILP should be developed in all levels of education to prepare students for lifelong learning (Mandusic and Blaskovic, 2013 and Al Awadhi and Rehman, 2012). The universities should unify and undertake a program in information literacy and make it compulsory for all students (Bhatt, 2012). The information literacy course offered in the university was found useful and helped lead to higher information literacy assessment scores (Foo et al., 2013). An effective ILP should be designed for students to develop a culture of information literacy (Mahmood, 2013). Developing the library, the internet, and evaluation skills is significant in the ILP (Ivanitskaya, 2012). The success of the ILP does not focus on designing learning experiences that necessitate the use of information skills (Bruce, 2004 in Cakmak, 2010). Incorporating the ILP in the curriculum for a sustainable program (Conley and Gil, 2011; Wertz et al., 2013; and Canovan et al., 2009). Sustaining successful ILP depends on creating long-term relationships between academicians and librarians (Harrison and Newton, 2010; Dold, 2014; Sung Un and Shumaker, 2015)

The assessment in the local setting also contributed to the importance of developing the Information Literacy Program (ILP). The focused is on introducing the concepts of

information literacy to the school community as part of the program (Pavo, 2009 and Crame, 2012). Based on the findings of the studies conducted there are factors to be considered in developing the ILP such as: the students' visit to the library does not really guarantee a high level of research skills (Daligdig, 2012); the poor knowledge on how to do academic research and low-quality research output that manifest poor research skills (Sadang and Ortega, 2012); the integration of ILP in the curriculum which focuses on skills not taught in the class (Samson, 2010); training the students in evaluating information (Ganipes, 2010 and Santos, 2011); and the development of a distinct and contextually relevant set of information literacy standards for the Filipino educational system (Ramos, 2010).

The essential elements on implementing the Information Literacy Program (ILP) were also revisited. The information was considered essential in crafting guidelines for management and utilization of the ILP. The characteristics of Information Literacy Programs are guidelines that articulate the elements of exemplary ILP that primarily intended to help those who are interested in developing, assessing and improving information literacy programs such as the mission, goals and objectives, planning, administrative and institutional support, articulation with the curriculum, collaboration, pedagogy, staffing, outreach, and assessment/evaluation (ACRL, 2003). This also includes the different persons who will contribute and actively participate in school-wide reform and implementation processes such as the administrators, teachers, parents, students, and librarians (Thomson and Henley, 2000).

More so, the researcher found the relevance of the information in the conditions for information literacy assessment in terms of curriculum, intellectual capital, leadership, community, collaboration, plans and policies (Farmer and Henri, 2008).

The barriers to information literacy instruction were reviewed because they gave the researcher updates on challenges and difficulties on the implementation of an Information Literacy Program. It focused on issues on building collaborative relations between teachers and librarians (Saunders, 2012). The integration of information literacy, knowledge, and skills into the courses in a systematic way (McGuinness 2006 and Saunders 2012). The lack of consistent and uniform program implementation in the curriculum (Boff and Johnson, 2002 in Markey, Leeder, and Rieh, 2014). Instructors allocate so little time to information literacy instruction (van Meegan and Limpens, 2010). Lack of interest showed by students, teachers, and the management, inadequate human resources to handle information literacy training, lack of facilities, low acceptance of online delivery approach, and absence of policy (Baro and Timi, 2011).

The review was extended in the management functions in order for the researcher to be familiar with the indicators of the four fundamental functions such as planning, organizing, leading, and controlling. The said literature was contributory in crafting guidelines for the management and utilization of the Information Literacy Program for school administrators.

In general, the study emerged as one that is similar to the preceding reviewed actual research studies because it also utilized the descriptive research design. Nonetheless, the study is different because it is a developmental research. It aimed to obtained reliable

information about a program by using an approach in seeking to understand differences, examine issues and ideas, and develop skills to help solve problems. Based on the results of the assessment conducted, an information literacy program for higher education was developed. The information literacy program will be implemented through a case study followed by an evaluation to gauge its effectiveness.

Thus, just like the aforementioned studies, it also used students as its respondents. However, the study is uniquely different because it involved also the school administrators who play a vital role. The school administrators are stewards in implementing the information literacy program developed in the study by using the guidelines which were also generated in this study. The study expounds the importance of the support of school administrators in sustaining the information literacy program.

CHAPTER III

METHODOLOGY

This chapter presents the methods and procedures employed in conducting this study. It describes among others, the research design, respondents of the study, the instruments used, research procedures, as well as data analysis.

Research Design

In this study, the Descriptive Developmental research design was used. In a descriptive design, the study focuses on the present situation. The purpose is to find new truth. The truth may have different forms such as increased quantity of knowledge, a new generalization or a new “law,” an increased insight into factors, which are operating, the discovery of new causal relationship, a more accurate formulation of the problem to be solved, and many others (Calmorin, 2010).

It is also a developmental study because it intended to get reliable information on how to develop an Information Literacy Program. Developmental Studies seek to understand differences, examine key development issues and ideas, and develop skills to help solve problems (Parkash, 2005). The content of the Information Literacy Program was based on the components and indicators of information literacy and the Big 6 skills which are an information problem-solving strategy.

This study aimed to develop an information literacy program that would enhance the students’ information literacy skills that they need when they will independently engage in learning throughout their professional careers. This study also measured the managerial competencies of the school administrators in sustaining the program. The researcher

developed an instrument for the students to gauge their level of information literacy skills. The questions were based on the indicators of the Big 6 skills of Michael Eisenberg and Robert Berkowitz (2011).

Respondents and Sampling

The selection of the universities was based on the following criteria: education course is offered, accreditation status, and the number of enrollees. Letters to the President, Vice President for Academics and the Dean of the College of Education of each university were sent to request permission for the universities participation in the study. A copy of the questionnaires was included to allow them to have background information and to assess the importance of the study. Among the twenty (20) universities identified, only thirteen responded. Some of the reasons of those universities who were not included or declined to participate in the study were: lack of time, final examination of the students, low enrollees in the College of Education, and the research policies of the university that need to be satisfied before the study may be considered and conducted. The universities that participated in this research are as follows:

- a. University of Makati (UMAK), Local Government Unit (LGU)
- b. City University of Pasay (CUP), Local Government Unit (LGU)
- c. Philippine Normal University (PNU), State Universities and Colleges (SUC)
- d. Polytechnic University of the Philippines (PUP), State Universities and Colleges (SUC)
- e. University of the Philippines-Diliman (UP), State Universities and Colleges (SUC)

- f. Technological University of the Philippines (TUP), State Universities and Colleges (SUC)
- g. Rizal Technological University (RTU), State Universities and Colleges (SUC)
- h. Centro Escolar University-Mendiola (CEU), private non-sectarian university
- i. University of Santo Tomas (UST), private sectarian university
- j. St. Paul University-Manila (SPU), private sectarian university
- k. St. Paul University-Quezon City (SPU), private sectarian university
- l. Adamson University, private sectarian university
- m. Philippine Christian University-Manila (PCU), private sectarian university

Among the thirteen (13) universities, two (2) are public universities under Local Government Units (LGUs), five (5) are State Universities and Colleges (SUC), one (1) is a private non-sectarian university, and five (5) are private sectarian universities. The school administrators such as the middle-level managers, Dean, department chair, department heads and coordinators and the college students from the thirteen (13) universities were the respondents of the study.

Table 1: Frequency and Percentage of School Administrators and Students from each university

School Administrators			Students	
School	<i>f</i>	%	<i>f</i>	%
A	4	6.9	33	6.6
B	2	3.4	25	5.0
C	6	10.3	50	10.0
D	5	8.6	37	7.4
E	6	10.3	49	9.8
F	3	5.2	45	9.0
G	7	12.1	47	9.4
H	2	3.4	22	4.4
I	4	6.9	16	3.2
J	5	8.6	50	10.0
K	7	12.1	50	10.0
L	3	5.2	44	8.8
M	4	6.9	34	6.8
Total	58	100.0	502	100.0

	<u>School Administrators</u>		<u>Students</u>		<u>Total</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Distributed	91	100.0	650	100.0	741	100.0
Retrieved	58	64.0	502	77.0	560	76.0

As shown in Table 1, the thirteen (13) universities were given seven (7) questionnaires each for the school administrators and fifty (50) questionnaires for the students. Out of ninety-one (91) questionnaires distributed to school administrators only fifty-eight (58) questionnaires were retrieved, which is equivalent to 64%. Of the six

hundred fifty (650) questionnaires distributed to the students, only five hundred two (502) questionnaires were retrieved, which is equivalent to seventy-seven percent (77%).

The Random Sampling Technique was employed as a sampling procedure. In this technique, each member of the defined population has an equal chance of being selected for inclusion, and the selection of one participant depends on the selection of any other from that population (Pickard, 2013).

The researcher applied the guidelines of Denscombe, (2010) in getting a random sample such as:

1. A known population from which the sample is to be taken is identified. The researcher needs to know something about the make-up of the overall population from which the sample is to be extracted (such as the total number, who they are or where they exist).
2. A sampling frame that provides a list of all the items in the population is prepared. This allows the items to be picked via some unique identifier (such as a name, an address, an employee number or a birth date).
3. A process of random selection which provides the basis for including specific units in the sample, for research purposes is done. This can involve the use of a random number generator – a utility available for free online or through appropriate computer software packages.

Table 2: School Administrators' Profile in terms of Age Distribution, Years in Management Position and Educational Attainment

(N = 58)

Age	<i>f</i>	%	Years in Management Position	<i>f</i>	%	Educational Attainment	<i>f</i>	%
71 – 75	2	3.4	26 – 30	2	3.4	Doctorate Degree	31	53.4
61 – 65	3	5.1	21 – 25	1	1.7	Master's Degree	26	44.8
56 – 60	5	8.6	16 – 20	1	1.7	Bachelor's Degree	1	1.7
51 – 55	5	8.5	11 – 15	6	10.3	Total	58	100.0
46 – 50	20	34.5	6 – 10	16	27.6			
41 – 45	13	22.4	0 – 5	32	55.2			
36 – 40	9	15.4	Total	58	100			
31 – 35	1	1.7						
Total	58	100						

Table 2 presents the school administrators' profile in terms of age distribution, years in the management position and educational attainment. The age distribution of the school administrators in management position ranges from thirty-one (31) to seventy-five (75). The highest and dominant age group is 46 – 50 with a frequency of 20, which is equivalent to 34.5%, followed by 41 – 45 with a frequency of 13, which is equivalent to 22.4%, and 36 –

40 with a frequency of 9, which is equivalent to 15.4%. On the other hand, the age group with the lowest frequency of 1, which is equivalent to 1.7%, is 31-35.

The number of years in the management position of the school administrators ranges from zero (0) to thirty (30) years. The highest or dominant bracket in terms of number in years of management position of the school administrators is 0 – 5 years with a frequency of 32, equivalent to 55.2%, followed by 6 – 10 years, with a frequency of 16, equivalent to 27.6%, third is 11 – 15 years with a frequency of 6, equivalent to 10.3%, and fourth is 26 – 30 years with a frequency of 2, equivalent to 3.4%. One school manager has 16-20 years in management position, and another one has 21-25 years in the management position.

The least number of school administrators in terms of years in the management position have 16 – 20 years with a frequency of 1, equivalent to 1.7% and 20 – 25 years with a frequency of 1, which is equivalent to 1.7%.

The educational attainment of the school administrators ranges from bachelor's degree, master's degree, to doctorate degree. The highest educational attainment of school administrators is doctorate degree with a frequency of 31, which is equivalent to 53.4%, followed by master's degree with a frequency of 26, which is equivalent to 44.8%. Only one, equivalent to 1.7%, school administrator has a bachelor's degree.

Table 3: Students' Profile in terms of Course, Age and Gender

(N = 502)

Course	<i>f</i>	%	Rk	Age	<i>f</i>	%	Rk	Gender	<i>f</i>	%	Rk
<i>BSE Computer Education</i>	24	4.8	6	16	81	16.1	3	Male	145	28.9	2
<i>BSIE Industrial Arts</i>	26	5.2	5	17	65	12.9	4	Female	357	71.1	1
BEED	148	29.4	1	18	52	10.4	5		502	100.0	
BSE	33	6.6	4	19	130	25.9	1				
BEED-SPED	70	14.0	2	20	125	24.9	2				
BSE Mathematics	52	10.4	3	21	49	9.8	6				
BSE Health Education	8	1.6	17		502	100.0					
BSE Physics	9	1.8	14								
BSE Social Studies	8	1.6	17								
BSE English	20	4.0	7								
BSE Filipino	9	1.8	14								
BS Biology for Teachers	9	1.8	14								
BSE General Science	15	3.0	9.5								
BSE Technology and Livelihood Education	5	0.9	8								
BLE	10	1.9	12								
BSED	17	3.4	8								
BBTE	15	3.0	9.5								
BEED-ECHED	12	2.4	11								
BSED-MAPEH	8	1.6	17								
BSED-HISTORY	4	0.8	19								
TOTAL	502	100.0									

Table 3 presents the students' profile in terms of course, age and gender. Most of the student-respondents were pursuing a Bachelor of Elementary Education (BEED) degree with a frequency of 148, which is equivalent to 29.4%. The lowest number of the student-respondents were enrolled in Bachelor of Secondary Education Major in History (BSED) with a frequency of 4, which is equivalent to 0.8 %.

The highest and dominant age of the respondent is 19 with a frequency of 130, which is equivalent to 25.9 %, followed by 20 with a frequency of 125, which is equivalent to 24.9%. The third is age 16 with a frequency of 81, which is equivalent to 16.1%, fourth is 17 with a frequency of 65, which is equivalent to 12.9% and the fifth is 18 with a frequency of 52, which is equivalent to 10.4%. On the other hand, the age with the lowest frequency of 49, which is equivalent to 9.8%, is 21.

In terms of gender, more than two thirds of the student-respondents were females with a frequency of 357, equivalent to 71.1%. Whereas, there were only 145 male respondents, equivalent to 28.9%.

Research Instruments

In constructing the instrument, the variables of the study were first carefully reviewed and analyzed for clarity and to make them distinctive. Existing instruments that measure similar variables were also reviewed in order to decide on the format and to obtain ideas on specific items. The researcher, together with her advisers, decided on a format for each variable.

The instrument utilized in the study is the questionnaire. It consists of a written list of questions designed to collect information, which can be used subsequently as data for analysis (Denscombe, 2010). The researcher identified and read some of the frameworks, models and standards of information literacy that would be essential in formulating the questionnaire. The questionnaire to measure the information literacy skills of the students was constructed based on the Big 6 skills of Michael Eisenberg and Robert Berkowitz

(2011). The Big 6 skills consist of six domains that contain various indicators. These were carefully reviewed and analyzed to avoid vagueness or imprecision. The researcher opted to have a clear vision of exactly what issues are at the heart of the study, and what kind of information would enlighten those issues.

After having identified the model of information literacy, it was suggested that each component should contain items to operationalize ideas in the different domains. The researcher determined the specific content of the questionnaire. She was advised to classify the items and make a table of specifications for each domain. (Please refer to Appendix D, p.230, for the Tables of Specifications.)

The initial draft of the questionnaire was presented to her advisers. The questionnaire was initially composed of closed-ended questions, such that only answers which fit into the categories that have been established in advance will be accepted. The respondent is instructed to answer by selecting from a range of two or more options supplied in the questionnaire. The options can be restricted to as few as two or can include quite complex lists of alternatives from which the respondent can choose. The items were in English, with simple directions, and clear language.

In this study, the researcher adopted the steps in designing a questionnaire by Pickard (2013), cited in Research Methods in Information.

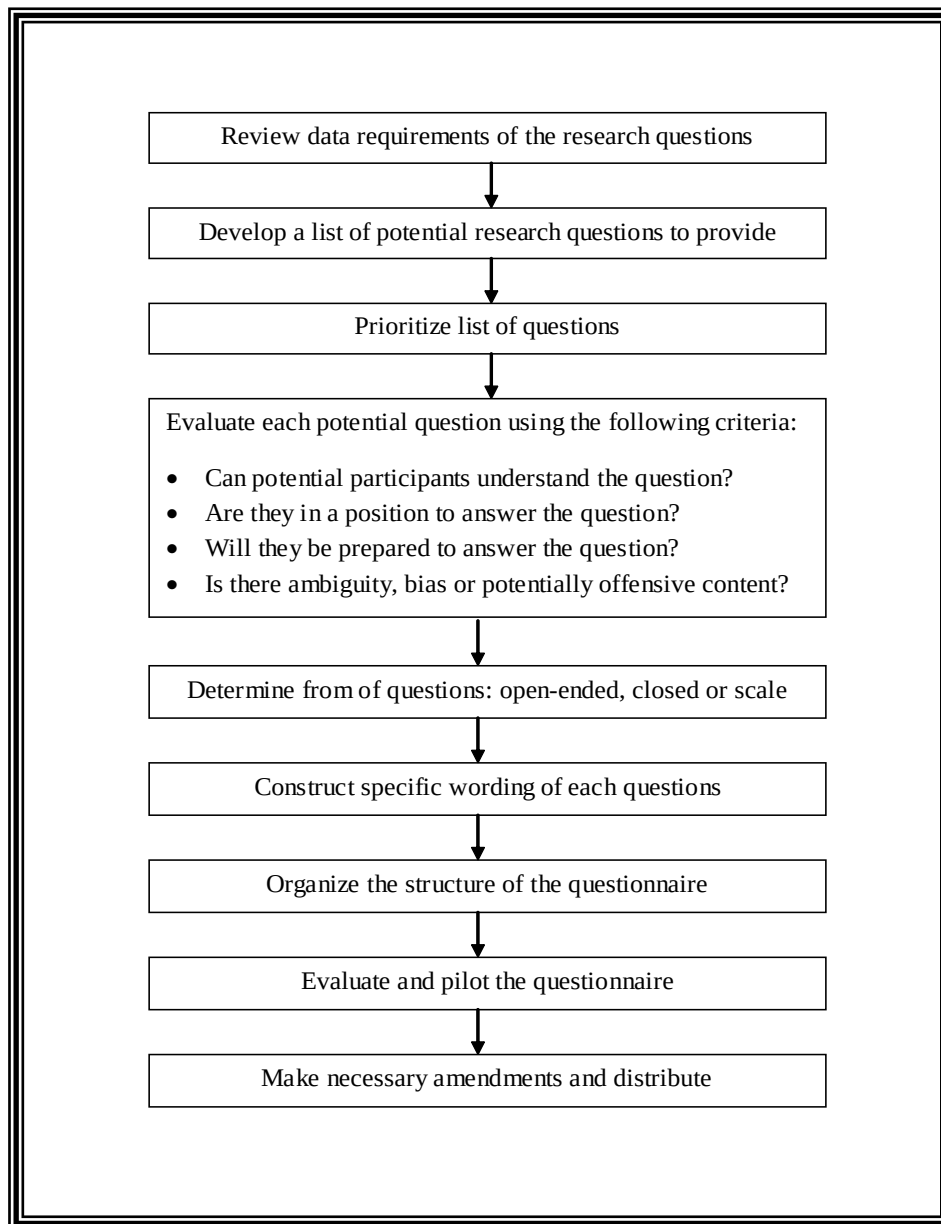


Figure 2: Steps in Designing a Questionnaire

The researcher utilized three questionnaires in the study. The Information Literacy Skills Test was administered to the students, while the school administrators answered the Managerial Competencies Assessment and the Information Literacy Assessment.

1. Information Literacy Skills Test for Students

The questionnaire for students was entitled Information Literacy Skills Test. This is based on the Big6 skills by Eisenberg and Berkowitz (2011), which is a six-stage process model for information problem-solving and decision making. It consists of six skills: Task Definition, Information Seeking Strategies, Location and Access, Use of Information, Synthesis, and Evaluation of Information. The Big6 skills learning objectives were used as the indicators in developing the questions for each domain. The questionnaire is composed of multiple-choice items. Each item consists of two parts: the stem, which contains the question and several (usually four) possible choices. The researcher decided to construct multiple-choice items because the questions are all situational, and it is easy to use, score, and code for analysis. It is a thirty (30)-item test and each of the six (6) domains are represented with five (5) questions each.

Part I of the questionnaire is a Personal Descriptive Questionnaire (PDQ). It gives the directions, background of the questionnaire, instructions on how to answer the questionnaire, and the profile of the students in terms of name, year and course, age, and school, and a scoring box.

Part II aims to gather data about the Information Literacy Skills of the students. It is made up of thirty (30) multiple choice questions which were based on the Big 6 skills. The

respondents select their answers from four options. The students are requested to shade the circle that corresponds to their answer to each question.

2. Managerial Competencies Assessment

To gauge the managerial competencies of the school administrators of the universities, the researcher adapted some indicators for the instrument from the International Society for Technology in Education (ISTE) National Educational Technology Standards (NETS). The researcher identified the indicators that suit the four functions of management which are planning, organizing, leading and controlling. It is a thirty-three (33)-item scale test. The scaled questions offer greater uniformity of response and they are easier to code. The Likert scale was employed to allow the respondents to select an option that best demonstrates their level of agreement with a given statement. This also gauged the intensity of attitude of the respondents in relation to other respondents. The four points in the scale are ‘1- Never, 2-Rarely, 3-Often, and 4-Always’.

3. Information Literacy Assessment

The other instrument used for school administrators was the Information Literacy Assessment (ILA) which was also adopted from the Big 6 skills model and the Association of College Research Libraries (ACRL) Information Literacy Competency Standards for Higher Education. The ILA provides a framework for assessing the information literate individual. The competencies were all considered useful because they provide a framework for gaining control over how respondents interact with information in their environment.

The ILA helps sensitize the need to develop a metacognitive approach to learning, making the school administrators conscious of the explicit actions required for gathering, analyzing, and using information. The school administrators are expected to demonstrate all of the competencies described but not everyone will demonstrate the same level of proficiency or the same speed. The Big 6 skills and the Association of College Research Libraries (ACRL) Information Literacy Competency Standards were combined to come up with a valid and reliable literacy assessment. The Big 6 skills were utilized as the domains while the ACRL standards were employed as the indicators. All the questions made use of scales. The Likert scale was also used to judge whether a particular behavior is present or absent.

An open-ended question was included in the last part of the instrument. It consists of three essentially descriptive questions that require more detailed and personal responses. The respondents had an opportunity to make their own comments about an issue and discussed precisely the importance and their insights about the topic.

A profile index of Personal Descriptive Questionnaire (PDQ) for the middle-managers was also in the first part. This part includes the name, sex, age, designation, number of years in the position, and educational attainment. It also includes the profile of the school in terms of name of school, number of faculty, and number of students enrolled.

Part II of the questionnaire is the managerial competencies assessment and it is composed of thirty-three (33) items. The Information Literacy Assessment (ILA) is composed of forty-one (41) statements on accessing, locating, and evaluating information. The respondents indicate their answers through a four-point scale: one (1) – Never, two (2) – Rarely, three (3) – Often, and four (4) – Always.

Part III is composed of three open-ended questions and empty lines are provided for the respondents to write their thoughts on the matter. The information gathered from the responses reflect the richness and complexity of the views held by the respondents. These questions dealt with reasons for implementation of the program, significance and use, and the process of implementation.

Validation of the Instruments

As she reviewed and considered the domains of information literacy and managerial competencies, the researcher prepared the first draft of the questions, which was shown to her advisers. Comments and suggestions were made to improve the instrument. Revisions were incorporated based on the recommendations of the advisers. The instruments were then subjected to validation. The questionnaires were given to six experts in educational management, librarianship, and information communication technology.

The six experts who evaluated the questionnaires were the following: (1) Professor and Department Head at Philippine Normal University, (2) Professor and Program Coordinator at Philippine Normal University, (3) Professor II at Philippine Normal University, (4) Learning Resource Center Coordinator from a private catholic school, (5) Library Director from a State University, and (6) Instructional Media Center Coordinator from a Catholic Parochial School. (Please refer to Appendix N, p.277, for the Evaluators' Educational Qualifications.)

The validation started on November 3, 2014. Formal letters and sample questionnaires were submitted to the six experts for evaluation. The six experts evaluated the content, language, and structure of the questionnaires using a 3-point rating scale with the following descriptions and corresponding values. Acceptable without revision – 3, Acceptable with revision – 2, and Not acceptable – 1. Some technical revisions were also made on grammar, choice of words and the negative statement to make them more acceptable and appropriate. The comments and suggestions of the experts were also considered in coming up with the final copy of the questionnaires. The researcher was able to retrieve the evaluated questionnaires on December 12, 2014. The Information Literacy Skills Test was pilot tested among the fourth year high school students of Don Bosco Technical Institute, Makati City, school year 2014-2015, last January 21, 2015. The results of the instrument validation of the Information Literacy Skill Test and the Managerial Competencies Assessment are presented in Appendix F, p.242.

a. Validation of the Information Literacy Skills Test

The experts' validation of the Information Literacy Skills Test in terms of the mean scores in the six (6) domains of content, language, structure and composite yielded positive results, which means that all the items were accepted without revision. The inter-rater agreement of the six (6) domains in terms of content is very high while the language, structure and composite were rated "substantial". Please refer to Appendix F, p.242.

The item analysis of the information literacy skills test for students on the thirty (30) items were proportionate and within the inclusive rate of 0.20 to 0.80, with a remark of

“Acceptable without revision”. There are also five (5) items which are “Acceptable with revision” they are: item number 6 “information seeking strategies”, item number 13 “use of information”, item number 16 “task definition”, item number 17 “use of information”, and item number 26 “information seeking strategies”. These five (5) items needed revision because they were not proportionate and did not meet the inclusive rate of 0.20 to 0.80. This is shown in Appendix G, p.254.

The expert validation also gave some suggestions on the items for each component that needed to be modified and enhanced.

b. Validation of the Managerial Competencies Assessment

The experts’ validation of the managerial competencies assessment in terms of acceptability and inter-rater agreement on content, language, structure, and composite is shown in Appendix F, p.242. The mean scores of the four (4) items on planning, organizing, leading, and controlling in terms of acceptability of content, language, structure and composite were acceptable without revision. The inter-rater agreement of the four (4) items in terms of content, language, structure and composite was substantial based on the percent agreement.

Data Collection Procedure

The whole process of data gathering and analysis was crafted based on the review of the conceptual literature and the examination of related research studies. To attain the objectives of the study, the researcher followed five stages, namely: (1) School Mapping;

(2) Asking Permission; (3) Distribution of Questionnaire; (4) Retrieval of Data; and (5) Analysis of the Data.

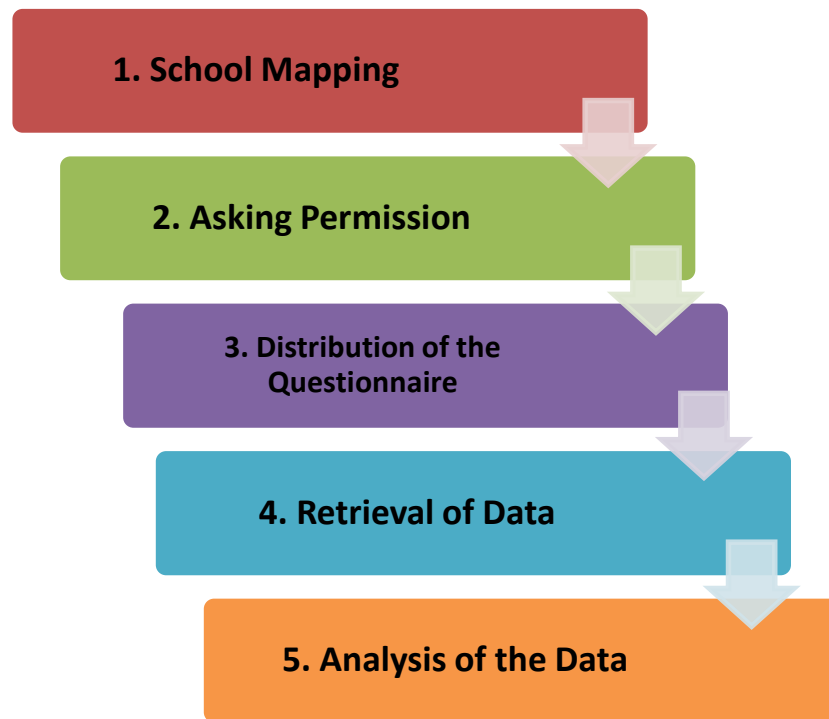


Figure 3: The Data Gathering Procedures

1. School Mapping

After an extensive evaluation and validation of the instruments, the researcher listed the different universities in the National Capital Region (NCR), which comprise the population of the research. The final list consisted of twenty (20) universities that offer education courses and they are all accredited schools. To have background information on

the selected universities, the researcher visited their websites. The mission and goals, information on the college of education in each university were analyzed, and the accreditation status was evaluated. The researcher listed all the important information of each university such as the President, Vice President for Academics, and the Dean's full name, location, contact numbers, and email addresses for easy access when sending the letters of communication to the concerned university officials.

2. Asking Permission

As soon as the school mapping was done, the researcher wrote a formal letter asking permission to conduct the study. The formal letter was checked and edited by the advisers before the distribution. A copy of the letter is shown in Appendix H, p.259. Formal letters of communication were given to the President, Vice President for Academics and College Dean of each university through their secretaries last February 17, 2014. Moreover, the researcher notified the secretaries about the schedule of the distribution of the questionnaires and the possible dates of collection.

3. Distribution of the Questionnaires

As soon as the final revision was done, formal letters were delivered and the questionnaires were distributed. The researcher followed up through phone calls, emails, and text messages about the status and schedule of fielding the instruments. There were only thirteen (13) out of twenty (20) universities who participated in the study. The secretaries and the program chairs from the nine (9) universities distributed the questionnaires to the

school administrators and students. In the four (4) other universities, the researcher was given a schedule to personally distribute the questionnaires to the school administrators and the students. The questionnaires were given to seven (7) school administrators and fifty (50) students in each university. Although the questionnaires can be accomplished in twenty (20) minutes, the respondents were given ample time to finish answering it.

4. Retrieval of Data

To ensure high percentage and easy retrieval of data, the researcher personally collected the questionnaires. The researcher established contact with the deans, subject area heads, coordinators, and college secretaries to follow up the status of the administration of the questionnaire. Likewise, the researcher also made it a point to personally call, send emails and text messages to the college secretaries every day or thrice a week. The researcher also established a convenient time and day in collecting the questionnaires. Due to some delays, like final exams, graduation preparations, dean's availability, and the university research policy, the researcher spent two months and two weeks for the distribution until the retrieval of the questionnaires. As one of the research policies of some of the universities who participated in this study, a copy of the research when it is finally done will be given to them.

5. Analysis of the Data

The last day of retrieval of data was on April 4, 2015. All the questionnaires were collated and examined to make sure that everything was intact. In analyzing the data, the

researcher organized first the raw data in a way that makes them more easily understood. The researcher also reviewed the related literature for clarity of appropriate statistical measures to be undertaken. To have a systematic way of analyzing the data, the researcher followed the different stages of data analysis by Denscombe (2010) which include: (1) Grouping the data; (2) Describing the mid-point or average; (3) Describing the spread of data; (4) Looking for patterns and relationships in the data; (5) Doing statistical test for association and difference; (6) Presenting the data through tables and charts; and (7) Validating the data.

Development of the Information Literacy Program for Lifelong Learning in Higher Education

In developing the Information Literacy Program, there was a need to consider who, when, where, and how the planning process would happen. The persons involved, timing, and the goals that need to be achieved should be given consideration. The situation in the institution, the written and unwritten rules, the organization of the institution and how it works should also be looked into. The procedure employed in developing the Information Literacy Program includes four stages patterned after the work of Concepcion (2004). These stages are: 1) Needs Analysis; 2) Design Stage; 3) Development stage and 4) Implementation.

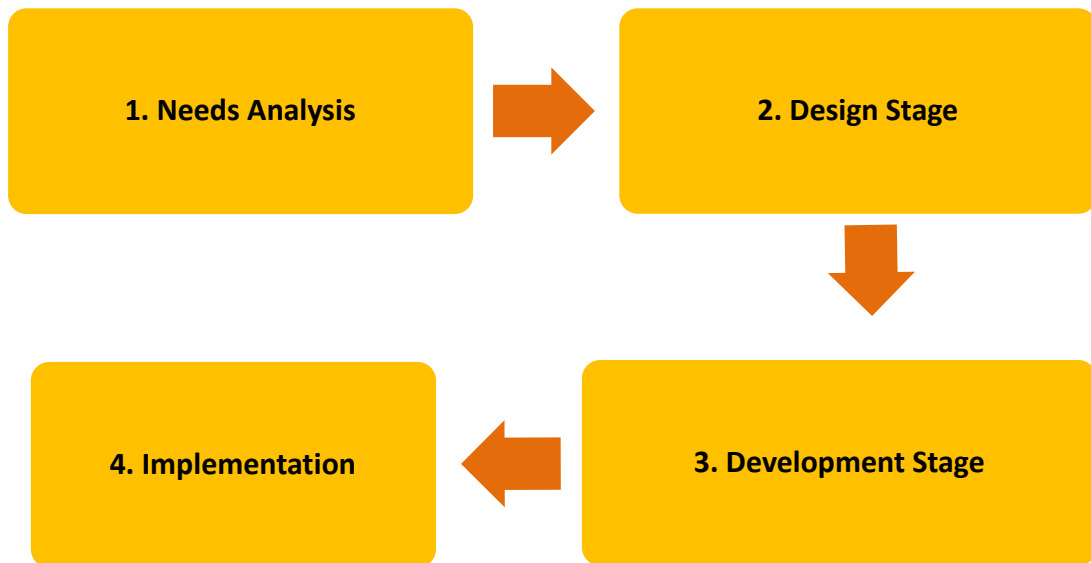


Figure 4: The Four Stages in Creating the Information Literacy Program (ILP)

1. Needs Analysis

In this stage, the needs analysis was done to determine and establish the need for an Information Literacy Program. The goal of conducting this is to provide a clear rationale for the program. There should be as complete and accurate set of data as possible. The school administrators may be very supportive of the idea of the program in the institution but it is best to be armed with assessment results as back up. This will better address the request for funding and staffing for the program. The results of the information literacy skills test for the students and the information literacy assessment for the school administrators were used in the needs analysis.

The needs analysis started as soon as the assessment of information literacy skills was conducted last February 17, 2014. The Information Literacy Skills Test for students, Information Literacy Assessment for school administrators, and Managerial Competencies Assessment were utilized in this stage. The information literacy measures the six (6) skills, which are Task Definition, Information Seeking Strategies, Location and Access, Use of Information, Synthesis, and Evaluation. The managerial competencies assessment gauges the four (4) management functions, which are Planning, Organizing, Controlling, and Leading. The results of these assessments served as guide in determining the content, and features of the ILP and in crafting the guidelines for the management and utilization of the program in terms of the design.

2. Design Stage

After the needs analysis, the researcher reviewed and gathered useful background information to come up with the big picture or the design of the program. It was necessary to have a broad knowledge about the information literacy programs of other universities of the same size, type or geographical location, to find out how they are implementing their programs.

This stage also includes brainstorming, storyboarding, and flow charting about the content of the Information Literacy Program (ILP) that was developed. Consultation with information technology experts and website developers was done for further clarity and insights. Searching the web for samples and standards to be considered was also done.

In brainstorming and creating an outline of the possible topics, information literacy plans and programs were examined. The researcher took into account the different content, various delivery methods, and levels of intensity of each plan, applying the ACRL Best Practices Initiative document, “Characteristics of Programs of Information Literacy that Illustrate Best Practices: A Guideline” which served as a guide in conceptualizing the program. The design of the Information Literacy Program focuses on the six (6) main skills which are: 1) Task Definition, 2) Information Seeking Strategies, 3) Location and Access, 4) Use of Information, 5) Synthesis, and 6) Evaluation. The program features the important skills that need improvement based on the results of the assessment. However, the guidelines for the management and utilization of the ILP, the four (4) management functions such as 1) Planning, 2) Organizing, 3) Leading, and 4) Controlling will be the focal points in sustaining the program.

The design of the Information Literacy Program is in a website form or it is an online resource. This was designed for independent learning with well-integrated learning sources, explanatory segments, and evaluation activities. In developing the design, some of the features and contents include: 1) Vision/Mission; 2) Goals and Objectives; 3) Categories of Information Literacy; 4) Implementation of the ILP. The contents of the program are 1) Objectives; 2) Skills; 3) Topic; 4) Content; 5) Evaluation Activities; and 6) Outcomes.

3. Development Stage

The results obtained from the design stage, particularly from the results of the information literacy skills tests given to the students, the information literacy assessment of the school administrators and the outlined topics for the program were used to develop the information literacy program for higher education. The essential parts of the information literacy program cover the task definition or recognize the need for information in which the students were rated superior. The information seeking strategies, location and access, use of information and evaluation in which they were rated above average, synthesis in which they were rated average. The program created is an online or website form which the students could use as an instructional tool for easy location and access to information. To support this, is a “Guidelines for the management and utilization of Information Literacy Program”.

In developing the website or online program, the three languages were used the HyperText Markup Language (HTML), Cascading Style Sheets (CSS), JavaScript. The HyperText Markup Language (HTML) defines the content of web pages and it can be edited using the notepad. The Cascading Style Sheets (CSS) specify the layout of web pages. The JavaScript programs describe the behavior of web pages. The four basic steps used in creating the website are the following: 1) Open the Notepad or Wordpad, 2) Write or copy some HTML into Notepad, 3) Save the HTML page, and 4) Open the saved HTML file in your chosen browser and view HTML page in your browser.

In the process of developing the Information Literacy Program (ILP), the researcher considered the following to make it effective to students such as it aims to develop

students' independence. The ILP should motivate students to become engaged in learning. It should also establish the environment of autonomous learning relevant to students' personal knowledge and situation. Students should be able to perceive and solve problems leading to confidence and readiness. The program should be able to motivate interaction between students and assignments.

The results of the managerial competencies assessment served as the basis in crafting the guidelines on the management and utilization of the Information Literacy Program for School Administrators. The management functions which are planning, organizing, leading, and controlling were the four categories featured in the guidelines. The program contains procedures that are useful and aligned based on the four functions. There are additional features in the program, such as the process or cycle in sustaining the program like needs assessment, curriculum integration, collaboration, and progress report. The guidelines were created to sustain the program.

4. Implementation Stage

In the implementation of the Information Literacy Program (ILP), a case study or case method was utilized. The case study method offers the opportunity to study a 'cross-section' of an organization or other educational setting. It focuses on a situation and attempting to analyze the various forces and influences which shape the situation (Sood, 2016). It also seeks insights into why things have happened the way they have. The researcher facilitated the pilot testing of the program.

The implementation of the program started last October 2015 and ended last December 2015. There were thirty-three (33) freshman-students of I-12 (Transition Course) from the Outcomes Based Teacher Education Curriculum (OBTEC) and six (6) school administrators who were selected for the try-out of the program. The students were given an orientation about the information literacy program and how to use it. To achieve the information literacy learning objectives, the researcher guided the students' learning step by step. The students were given an overview about Information Literacy with the focus on the mission, vision, and goals of the Information Literacy Program (ILP). The important features and content of the ILP which are: 1) Task Definition; 2) Information Seeking Strategies; 3) Location and Access of Information, 4) Use of Information and 5) Synthesis, and 6) Evaluation were comprehensively discussed. The students were given copies of the program in compact discs (CD) and Universal Serial Bus (USB) or flash drive. To make the ILP more effective, the researcher requested the teacher assigned to provide them with an activity or assignment to be done using the program. The students were then required to conduct research in order to answer questions or their information needs based on the activity or assignment. The ILP is applicable in any subject or course that requires information. By using the program, they should develop their information literacy skills. The students had a one-semester session in utilizing the program. To monitor the students' different activities in which they applied the ILP, the researcher provided them an activity sheet wherein they can write the date, topic, activity/assignment, skills, actions taken using the ILP and comments/remarks. This is shown in Appendix I, p.260.

Based on the activity sheet, the students applied the ILP from October 26, 2015 to December 7, 2015. The topics varied from natural resources, environmental science, understanding oneself, Philippine constitution, six-year agenda of the president, contemporary world literature, and history. To gain more insights from the experiences of the students with the program the researcher also conducted an interview with selected students. (Please refer to Appendix J, p.267.)

According to the narrative analysis in conducting a research, most of the students searched the internet on the topic given. This reflects their excessive reliance on the open access Internet. There was also a need to improve their ability to chose high-quality sources of information for their academic assignments. The students also felt the usefulness of the ILP since 75% of them stated that it provides guidelines and strategies. In selecting the best results often times they choose the most relevant information on the topic. Using keywords is the most common search strategy they used. Among the six skills, they performed frequently the Task Definition. Though the university library offers different databases for scholarly sources the students are most familiar with the Online Public Access Catalog (OPAC). Some are not aware that the library provides such service. It is evident that the students practice the ethical use of information. Several of them created bibliography or cited sources of information. In terms of what they would like to improve in their research activity, they felt that they need to improve their skills in locating and accessing and in evaluating information. As they used the ILP they also observed some changes or improvements in their search such as: 1) it is easier and not time- consuming, and 2) provides strategies and techniques. The students

evaluate the information before using it. It is also notable that the students felt that the ILP is useful in daily activities, applicable in professional work, and useful in lessons preparation. This simply states that the ILP is essential for lifelong learning.

Statistical Analysis of Data

The data gathered from each set of the instruments administered to the students were tallied, synthesized, and organized by using frequencies, percentages, means, and standard deviations. These were used to determine the findings of the study. The statistical tools applied improved the quality of the data. They were applied to achieve clearer interpretation of the results. The tallied responses were treated using the following statistical procedures:

1. **Frequency.** It was used to indicate the number of times an answer or response in the questionnaire occurred.
2. **Simple Percentage.** It was employed to determine the proportion of respondents' multiple responses.
3. **Ranking.** It is the process of ordering items from greatest to least or vice versa. The ranking was used to order the observations from "most to least".
4. **Arithmetic mean.** It is the point on the scale above and below which the sums of the deviations are equal. It is the sum of the scores divided by their number of occurrence.
5. **Weighted mean.** The organized data were statistically treated through a descriptive statistics using weighted means. This was used particularly in determining the information literacy skills of the students and school managers, as well as their school

administrators' managerial competencies. The following scale was used for the quantitative and qualitative interpretation of the data.

Students' Descriptive Rating

Descriptive Rating	Range of the Weighted Mean
Superior	0.81 – 1.00
Above Average	0.61 – 0.80
Average	0.41 – 0.60
Below Average	0.21 – 0.40
Poor	0.00 – 0.20

School Administrators' Descriptive Rating

Descriptive Rating	Range of the Weighted Mean
Superior	0.81 – 1.00
Above Average	0.61 – 0.80
Average	0.41 – 0.60
Below Average	0.21 – 0.40
Poor	0.00 – 0.20

6. **Standard Deviation.** This method was utilized to measure the spread and dispersion of the data. It is useful to know how far, on average, the values vary from the mean.
7. **Pearson r.** This was employed to measure the relative and absolute correlation between managerial competencies and the information literacy level of the school administrators. The matrix for interpreting perfect and negligible positive or negative rectilinear correlations (Pearson's r) is presented below.

Table 4: Interpretation of Pearson r

Range	Remark
$ r = 1.000$	perfect positive or negative rectilinear correlation
$0.900 < r < 1.00$	very high positive or negative rectilinear correlation
$0.800 < r \leq 0.900$	high positive or negative rectilinear correlation
$0.600 < r \leq 0.800$	marked substantial positive or negative rectilinear correlation
$0.400 < r \leq 0.600$	moderate positive or negative rectilinear correlation
$0.200 < r \leq 0.400$	low positive or negative rectilinear correlation
$0.000 < r \leq 0.200$	negligible positive or negative rectilinear correlation
$r = 0.000$	no rectilinear correlation

8. **T-test for significance of difference.** It was used to assess if the means of two groups are statistically different from each other. Statistical significance is determined by the size of the difference between the group averages, the sample size, and the standard deviation of the groups.
9. **p-levels.** This was used to measure the level of significance of the correlation between the managerial competencies and the information literacy levels of the school administrators. The matrix for interpreting the ranges and the corresponding remarks from not significant to extremely significant p-values are shown below.

Table 5: Interpretation of p-levels

Range	Remark
$p = 0.050$	not significant
$0.010 \leq p < 0.050$	Significant
$0.001 \leq p < 0.010$	highly significant
$p < 0.001$	Extremely significant

CHAPTER IV

Presentation, Analysis and Interpretation of Data

This chapter presents the findings of the study, their analyses and interpretations. To be logical, the order of the objectives in the statement of purpose was followed by the researcher.

Objective 1: Determine the information literacy skills of the tertiary students and school administrators in terms of Task Definition, Information Seeking Strategies, Location and Access of Information, Use of Information, Synthesis, and Evaluation

Information Literacy Skills of the Tertiary Students

Table 6 below, showing the results of the survey on task definition reveals that item number one with 95 %, mean score of 0.95 and standard deviation of 0.226 is rank 1 and is interpreted as “superior” implying that the tertiary students are superior in this skill. Item number five with 70%, mean score of 0.70 and standard deviation of 0.461 is rank 5 and is interpreted as “above average” meaning that the tertiary students are above average in this skill. A student confers with instructors to identify information need or defines the information need to achieve a manageable focus. It can also be concluded that the tertiary students need to have a better understanding about the difference between primary and secondary sources.

This result is parallel with the finding in the study undertaken by Ratcliff, Swartz, and Ivanitskaya (2012) which revealed that in the process of gaining more exposure to a wider variety of sources, students may have adopted a stricter definition of a primary source of information. Students may have come to believe that the web itself turns information into

secondary sources. Sadang (2012) concluded that on the need for information, students failed to prove that they possess the ability to identify situations that require additional information. Moreover, Foo et al. (2013) stated that “task definition” is an area that should be further strengthened.

Table 6: Information Literacy Skills of the Tertiary Students on Task Definition

Item	Skills	f	%	Mean	SD	Rk	Remark ^a
1. You were absent from your classes for three days due to fever. Your professor has given you several requirements for you to cope with the lessons you missed. With so many requirements given, you were confused with the format, procedure, and date of submission. What would be the best thing for you to do to be able to work on your requirements properly?	Confers with instructors and participates in class discussions, peer workgroups, and electronic discussions to identify a research topic, or other information needed.	475	95.0	0.95	0.226	1	Superior
A. Use online database for easy access of information	Defines or modifies the information needed to achieve a manageable focus.						
B. Search the format of the requirements on the Internet							
C. Ask the librarian about the sources of information needed							
D. Communicate with your teacher and clarify the requirements given							
2. One of your assignments in Educational Technology is to think of and develop a research topic. You also need to search for strategies in retrieving information relevant to the topic. What then will be your first step for this assignment?	Identifies key concepts and terms that describe the information needed.	387	77.0	0.77	0.421	4	Above Average
A. Develop a search strategy							
B. Examine a set of web pages							
C. Select an article from a scholarly journal							
D. Identify a topic in Educational Technology that is of great interest to you							
3. Your group was assigned to report on the “Decrease of Enrollees in the Private Schools”. As the leader of the group what will be your first step so that every member will have a clear understanding of the report during your first meeting?	Confers with instructors and participates in class discussions, peer workgroups, and electronic discussions to identify a research topic, or other information needed.	404	80.0	0.80	0.397	3	Above Average
A. List down the possible sources of information	Defines or modifies the information needed to achieve a manageable focus.						
B. Ask your members to search for information about the topic							
C. Set a schedule for a library visit for the group							
D. Define and brainstorm with the members about the topic assigned to the group							
4. Your professor asked you to read a ten-page report on “Bullying”. You have to discuss it briefly to the class because you only have limited time to read it. What is the first step that you should do to tackle all the important details?	Identifies keywords, synonyms and related terms for the information needed.	409	81.0	0.81	0.389	2	Superior
A. Discuss about the topic using a video presentation							
B. Check the Internet for background information							
C. Explain the topic based on your understanding							
D. Highlight some keywords from the report and focus on the important details							
5. You are to submit a bibliography in your Science research in which you have already made a listing of all your sources. Also, you have to write three or four paragraphs explaining how these sources will help you write your paper. To be able to work on this easily, what should you do first?	Differentiates between primary and secondary sources, recognizing how their use and importance vary with each discipline.	349	70.0	0.70	0.461	5	Above Average
A. Create a research proposal							
B. Locate substantial sources of information							
C. Craft an outline or introduction for your paper							
D. Analyze and categorize your sources of information as primary and secondary							

Interpretation of the Mean: 0.00 – 0.20 = Poor, 0.21 – 0.40 = Below Average, 0.41 – 0.60 = Average, 0.61 – 0.80 = Above Average, 0.81 – 1.00 = Superior

Table 7 below, on the results of the survey on Information Seeking Strategies, reveals that the item number one with 86%, mean of 0.86 and standard deviation of 0.351 is rank 1 and it means that the tertiary students are superior in this skill. The item number five with 48%, mean of 0.48, standard deviation of 0.500 is rank 5 which means that the tertiary students are average in this skill. More students retrieve information online or in person using a variety of methods such as using Online Public Access Catalog (OPAC). Some students develop alternatives and seek a variety of materials. It is evident that tertiary students nowadays are familiar with the different parts of a book which is very helpful in accessing the information they are looking for. Information in a book can be easily accessed by browsing the table of contents. It has topics, chapters, and page numbers to guide an individual in searching.

Thomas, Crow, and Franklin (2011), states that the complexity of the information systems and their patterns of organization are difficult for novice searchers to manage as well, both conceptually and mechanically. In the study of Neuman (1995) in Thomas, Crow, and Franklin, (2011) he found out that students often fail to identify classification numbers and other kinds of information on computer screens that would assist them in continuing their searches. Students lacked understanding of the design of online systems in addition to more basic concepts related to searching, such as how computers are used in information retrieval (Irving (1990, 1991) in Thomas, Crow, and Franklin, 2011).

Table 7: Information Literacy Skills of the Tertiary Students on Information Seeking Strategies
(N=502)

Item	Skills	f	%	Mean	SD	Rk	Remark ^a
1. You were searching for a book written by Severino Reyes. However, you forgot the title of his book. If you are using the On-line Public Access Catalog (OPAC), what should you do? A. Ask the librarian for assistance B. Encode Filipino author on the keyword entry C. Encode Filipiniana books on the search entry D. Encode Severino Reyes on the author entry and browse the list of his works	Retrieves information online or in person using a variety of methods.	430	86.0	0.86	0.351	1	Superior
2. You went to the National Library to conduct a research about Ferdinand Marcos' contributions to the Philippines. The library is an open shelf system wherein an individual should be the one to locate and get the book from the shelf. Before you proceed to Ferdinand Marcos' section, what should you do first to maximize your time? A. Ask your friend for help B. Visit the Filipiniana section C. Check the online journals for the articles D. Use the online catalog and list the titles and call numbers of relevant books	Retrieves information online or in person using a variety of methods.	385	77.0	0.77	0.423	2	Above Average
3. Your group is assigned to report on the regions of the Philippines including the cultural, social, geographic, and historic aspects of each region. You already have a list of all possible sources of information. How can you determine which among the sources suit the group's needed information? A. Check the online catalog B. Reserve the books needed in the library C. Gather information from diverse sources D. Brainstorm about the possible sources of information and decide which among them will be useful	Determines which information is most/least important.	343	68.0	0.68	0.466	3	Above Average
4. What is the best way to identify current and authoritative information for your Science research paper? A. Consult a book B. Check the encyclopedia C. Check a scientific journal D. Search on the Internet	Selects the most appropriate investigative methods or information retrieval systems.	290	58.0	0.58	0.494	4	Average
5. Your teacher assigned you to discuss about "the Hazing Law". She provided you with some books as your references. What will you do to easily determine if the books contain the information you need? A. Check the periodical indexes B. Scan the table of contents C. Ask the librarian for assistance D. Find out if the titles of the books include the words in your topic	Develops alternatives and seeks a variety of materials.	241	48.0	0.48	0.500	5	Average

Interpretation of the Mean: 0.00 – 0.20 = Poor, 0.21 – 0.40 = Below Average, 0.41 – 0.60 = Average, 0.61 – 0.80 = Above Average, 0.81 – 1.00 = Superior

Table 8 on page 113, presents the results of the survey on the location and access of information. It reveals that item number two with 81%, mean of 0.81 and standard deviation of 0.391, is rank 1, which means that the tertiary students are superior in this skill. While item number five with 52%, mean of 0.52 and standard deviation of 0.500 is rank 5. This is interpreted as the tertiary students are average in terms of this skill. With the numerous information resources available to the tertiary students they find it difficult to choose what to consult in searching for an article. Some of them are not familiar in using specialized online services available for information retrieval.

The results of the study on location and access of information are similar to those in the work of Sadang (2012), where in students showed lack of quality research output when they manifested poor research skills in looking for the meanings of in-depth concepts. This stemmed from the use of an unsatisfactory strategy in locating relevant scholarly journals. They also displayed difficulty and limited knowledge in extracting information regarding materials found in the periodical section, particularly on the scholarly journals. According to the research of Bostock, Graves, and Wilson (2010) on Collaborative Information Literacy Assessments: Strategies for Evaluating Teaching and Learning (2010), the university team recognizes that developing information literacy skills as essential in supporting student learning in higher education, particularly for students who, although they may have considerable professional and life experience, may not have the underpinning knowledge to enable them to access information for their academic study.

Table 8: Information Literacy Skills of the Tertiary Students on Location and Access of Information

(N=502)

Item	Skills	f	%	Mean	SD	Rk	Remark ^a
1. If you are going to locate a book written by Nicholas Sparks and Rick Riordan for your book report, in what area or section of the library can you find it easily? A. Fiction Area B. Filipiniana Area C. Social Science Area D. General Reference Section	Uses various classification schemes and other systems (e.g., call number systems or indexes) to locate information resources within the library or to identify specific sites for physical exploration.	383	76.0	0.76	0.426	2	Above Average
2. If you are going to search for the most current information about "Priority Development Appropriation Fund" (PDAF) for your class debate, what sources are you going to consult? A. E-Books B. Bibliographies C. Encyclopedia articles D. Online Periodical articles	Accesses appropriate information systems, including online databases, online public access catalog and electronic multimedia.	408	81.0	0.81	0.391	1	Superior
3. You are required to compile several periodical articles about teaching strategies. What should you consult to find these articles easily? Directories Newspaper Paper Indexes Periodical Indexes and Abstracts	Uses various search systems to retrieve information in a variety of formats.	378	75.0	0.75	0.432	3	Above Average
4. In one of your assignments you are required to look for current peer-reviewed articles on a topic about "children's misbehavior in school". Where are you going to locate the information? A. Websites B. Dictionary C. Newspaper D. Online journals	Accesses appropriate information systems, including online databases, online public access catalog and electronic multimedia.	342	68.0	0.68	0.466	4	Above Average
5. You are assigned to report in your Social Studies class on a speech given by President Benigno Aquino III during his visit to Harvard University. What research tool would be the most helpful in finding information about the speech? A. Encyclopedia B. Online database C. Bibliographic standard D. Yahoo news directory (online)	Uses specialized online or in person service available at the institution to retrieve the information needed.	260	52.0	0.52	0.500	5	Average

Interpretation of the Mean: 0.00 – 0.20 = Poor, 0.21 – 0.40 = Below Average, 0.41 – 0.60 = Average, 0.61 – 0.80 = Above Average, 0.81 – 1.00 = Superior

Table 9 on page 115, presents the results of the survey on the use of information and it illustrates that item number two with 80%, mean of 0.80 and standard deviation of 0.401 is rank 1 which means that the tertiary students are above average in this skill. The item number four with 54%, mean of 0.54 and standard deviation of 0.499 is rank 5. This is interpreted as average. Most students read the text and select main ideas. They identify the value and differences of potential resources in a variety of formats. They also differentiate between primary and secondary sources, recognizing how their use and importance vary with each discipline.

There are tertiary students who are having difficulty in integrating new and prior information, including quotations and paraphrasing, in a manner that supports the purposes of the product or performance. They also need to improve on integrating new information with previous information or knowledge.

This outcome is similar with that of Makani-Lim et al. (2014) research where it was concluded that students should be able to recognize the importance of maintaining their intellectual integrity by avoiding plagiarism and properly citing their sources. According to the research of Ivanitskaya (2012) on pre-professional health students, many students need to build their library skills, internet skills, and information evaluation skills. The participants in this study reported the need to learn more about citations and plagiarism. The study highlighted the importance of providing students with resources for self-study. Harrison and Newton (2009) in Collaborative Information Literacy Assessments, (2010) concluded that it is important to recognize that students require both transient and static information literacy skills, some of which will serve them for the duration of their academic studies, and in other

situations, such as in understanding the ethical issues around using information, which will be called into use beyond the lecture theater and into the world of work.

Table 9: Information Literacy Skills of the Tertiary Students on the Use of Information

(N=502)

Item	Skills	f	%	Mean	SD	Rk	Remark ^a
1. After gathering and preparing all the information that you will use in your report about "Principles in Teaching", how are you going to present this to the class? A. Cite the different sources B. Interpret information through the use of various graphs C. Locate and collect information for a specific purpose D. Extract the essential information and create a Power Point presentation	Organizes the content in a manner that supports the purposes and formats of the product or performance. Uses a range of information technology applications in creating the product or performance.	313	62.0	0.62	0.485	4	Above Average
2. Suppose you have to write an essay about the "Importance of the Filipino Language" and you already have gathered both primary and secondary sources that will provide you with related information. How will you maximize the use of these sources in your assignment? A. Jot down notes B. Define the major terms C. Record the information sources D. Read, compare, and contrast the sources of information	Reads the text and selects main ideas. Identifies the value and differences of potential resources in a variety of formats. Differentiates between primary and secondary sources, recognizing how their use and importance vary with each discipline.	401	80.0	0.80	0.401	1	Above Average
3. You were asked to give your view or stand on whether or not former President Ferdinand Marcos should be buried at the "Libingan ng mga Bayani" (Heroes' Cemetery) or not. You've done searching for different information that will support your answer. How are you going to include all the information gathered? A. Compile all the information B. Explain factual information presented C. Use details from texts to analyze them for accuracy of information D. Read and analyze the relevance of information that will support the topic and summarize it	Reads the text and selects main ideas. Analyzes the structure and logic of supporting arguments or methods. Investigates differing viewpoints encountered in the literature. Accurately and completely summarizes/paraphrases the main ideas from written and oral sources	335	67.0	0.67	0.472	2	Above Average
4. You would like to include in your related literature some of the statements, results, and conclusions from a scholarly journal and unpublished materials that you searched. To avoid plagiarism, what can you do about all the information? A. Paraphrase the main ideas B. Distinguish facts from opinions C. Analyze the information from the statement D. Compile the information and create an outline	Integrates the new and prior information, including quotations and paraphrasing, in a manner that supports the purposes of the product or performance. Integrates new information with previous information or knowledge.	269	54.0	0.54	0.499	5	Average
5. Your teacher asked you to get a copy of the State of the Nation Address of President Benigno Aquino III this 2014 and to distribute it to the whole class. Due to limited time given, you decided to search or use the Internet. What will you do next if you already got the information from the internet? A. Review information retrieval sources used B. Use a range of information technology applications C. Select efficient and effective approaches for accessing the information needed D. Browse, copy and paste the information from the Internet with proper citations	Selects among various technologies the most appropriate one for the task of extracting the needed information (e.g., copy/paste software functions, photocopier, scanner, audio/visual equipment, or exploratory instruments) Accurately cite sources.	319	64.0	0.64	0.482	3	Above Average

Interpretation of the Mean: 0.00 – 0.20 = Poor, 0.21 – 0.40 = Below Average, 0.41 – 0.60 = Average, 0.61 – 0.80 = Above Average, 0.81 – 1.00 = Superior

Table 10 below shows the results of the survey on synthesis shows that item number two with 86%, mean of 0.86 and standard deviation of 0.351, is rank 1, interpreted as the tertiary students are superior in this skill. Tertiary students are knowledgeable on how to present the information in an innovative way. Item number four with 38%, mean of 0.38 and standard deviation of 0.485 is rank 5, which means that the students are below average in this skill. This indicates that tertiary students now are digital natives. They can easily manipulate digital texts, images, and data, as needed, transferring them from their original locations and formats to a new context. They also organize the content in a manner that supports the purposes and formats of the product or performance. Some students also use various technologies to organize the information selected. An average student records all pertinent citation information for future reference.

The capacity of millennials to engage with technology in increasingly creative ways seems endless; their ability to retrieve relevant information online does not always rise to a level of expertise that translates into searching success (Thomas, Crow, and Franklin, 2011). “Students are savvy in many aspects of the new literacies of the internet but research shows they are not as proficient as popularly thought” (Asselin and Doiron, 2008).

In addition, Moran (2010) has drawn attention to ethical issues surrounding information access and has reframed the digital divide in terms of access to media literacy instruction. Moran’s own experience has led him to conclude that “students do not know how to find or evaluate information they need on the internet.” Without adequate media literacy trainings students will not succeed in a 21st century workplace.

The results on synthesis are consistent with those in the research of Foo et al. (2013) who found out that students show moderate level of information literacy skills, which need improvement especially on higher-level skills related to synthesis.

Table 10: Information Literacy Skills of the Tertiary Students on Synthesis

(N=502)

Item	Skills	<i>f</i>	%	Mean	SD	Rk	Remark ^a
1. You will submit two research proposals for your History subject and for each, you will present your research idea and its development to the class. How will you be able to present this to the class? A. Send your research proposal through email B. Write down your research proposals on the whiteboard C. Provide a hardcopy of your research proposal to the class D. Organize your research proposal and present it using power point	Manipulates digital texts, images, and data, as needed, transferring them from their original locations and formats to a new context. Organizes the content in a manner that supports the purposes and format of the product or performance (e.g. outlines, drafts, storyboards).	402	80.0	0.80	0.400	2	Above Average
2. Your organization was chosen to create and discuss a reminder for emergency preparedness in your university. How can you make your presentation more interesting? A. Organize the content B. Select potential information C. Communicate clearly with style D. Create an outline and use a slide show for the presentation	Organizes information in clear, coherent presentation. Organizes the content in a manner that supports the purposes and format of the product or performance (e.g. outlines, drafts, storyboards).	430	86.0	0.86	0.351	1	Superior
3. Your group in your Mathematics subject is assigned to report on the history and importance of Mathematics in everyday life. How can you innovatively present your report to the class? A. Create a poster to show the history B. Conduct an interview with a mathematician C. Show a diagram of the history and importance of mathematics D. Deliver the report in the form of a You Tube video	Uses various technologies to manage and organize the information selected. Manipulates digital text, images, and data, as needed, transferring them from their original locations and formats to a new context.	386	77.0	0.77	0.422	3	Above Average
4. After using all the articles and other related information for your related literature in your research subject, what should you do with the references or sources of information and articles you used? A. Compile the information used B. Consider and select information sources C. Create a bibliography of the sources of information D. Determine the authority and reliability of the information	Records all pertinent citation information for future reference.	189	38.0	0.38	0.485	5	Below Average
5. After giving you ample time to work on your Science research, your professor asked you to present the results of your work. How will you present this to the class? A. Create an outline for presentation B. Draw inferences based on information gathered C. Explain factual information through graphical presentation D. Present the research findings through power point and short video clips	Present information in ways appropriate to the task.	219	44.0	0.44	0.496	4	Average

Interpretation of the Mean: 0.00 – 0.20 = Poor, 0.21 – 0.40 = Below Average, 0.41 – 0.60 = Average, 0.61 – 0.80 = Above Average, 0.81 – 1.00 = Superior

As shown in Table 11 on page 119 on evaluation skills, item number one with 84%, mean of 0.84 and standard deviation of 0.363, is rank 1 which means that the evaluation skills of the tertiary students are above average. Item number three with 32%, mean of 0.32 and standard deviation of 0.466, is rank 5, interpreted as average in terms of this skill. The tertiary students manifested that they use consciously selected criteria to determine whether the information contradicts or verifies information used from other sources. They also examine and compare information from various sources in order to evaluate the reliability, validity, accuracy, authority, timeliness, and point of view or bias of the sources.

The findings of the study are parallel to those in the work of Koltay, Spiranec, and Karvalics (2014), which concluded that today more than ever, Information Literacy should deal less with finding information and focus more on the evaluation, use and communication of research information, considering that many paths open up as a result of Web 2.0 developments.

Furthermore, the research of Dold (2014) elaborates that the librarian can bring the range of information into focus in order to analyze a research question and enrich the researcher's understanding of the complexity and interconnectedness of the contributing data sources. By guiding researchers to examine information from multiple perspectives and across disciplines, the librarian may help students learn to analyze the bias of information that is available to them, mindful that bias may include the lack of information. Critical information literacy offers a holistic approach to behavioral problem-solving that is well-suited to students and practitioners in the sciences, since this discipline examines the individual health needs in a comprehensive manner.

Table 11: Information Literacy Skills of the Tertiary Students on Evaluation

(N=502)

Item	Skills	f	%	Mean	SD	Rk	Remark ^a
1. You are going to submit in your English class a term paper about 21st century skills and one of your references is a website. You want to find out if the website you are using is a credible one. Which criteria are the most important to consider when evaluating a website? A. Bias, integrity, and cost of website B. Authority, purpose, and currency of the website C. Navigation, structure, and format of the website D. Layout, graphics, and publisher of the website	Uses consciously selected criteria to determine whether the information contradicts or verifies information used from other sources.	424	84.0	0.84	0.363	1	Superior
2. You were asked to find articles about student's study skills in popular magazines. How would you determine if these articles in popular magazines are credible sources of information? A. Visit the library B. Consult the professor C. Seek the help of your classmates D. Evaluate the information based on criteria	Uses consciously selected criteria to determine whether the information contradicts or verifies information used from other sources.	273	54.0	0.54	0.499	3	Average
3. Your instructor recommends certain websites that can be useful to your topic about leadership. You were also asked to examine and explain the value of each web page to academic research. What are the possible criteria in evaluating the credibility of the websites? A. Title, publisher, text, and copyright B. Layout, text, illustrations, and design C. Design, usefulness, and relevance of information D. Accuracy, Authority, Objectivity, Currency, and Coverage	Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias.	159	32.0	0.32	0.466	5	Below Average
4. One of your activities is to read an editorial article about the Reproductive Health Bill. You also need to find facts which either support or refute the views expressed in the article. How would you determine if the facts used to support the views are appropriate and credible? A. Scan the online clippings B. Verify the author's credentials C. Read the editorial page in the newspaper D. Examine and assess the editorial using a rubric	Uses consciously selected criteria to determine whether the information contradicts or verifies information used in other sources.	232	46.0	0.46	0.499	4	Average
5. Suppose you have reference materials such as newspapers and magazines that indicate statistics for your report on population. How will you assess the statistics? A. Do your own census B. Check the statistics from a government source C. Use the data and make sure to cite your source D. Check the accuracy of the figures by comparing them with the previous year's newspapers or magazines	Examines and compares information from various sources in order to evaluate their reliability, validity, accuracy, authority, timeliness, and point of view or bias.	286	57.0	0.57	0.496	2	Average

Interpretation of the Mean: 0.00 – 0.20 = Poor, 0.21 – 0.40 = Below Average, 0.41 – 0.60 = Average, 0.61 – 0.80 = Above Average, 0.81 – 1.00 = Superior

Table 12 on page 122 shows the summary of the information literacy skills of the tertiary students in terms of the six domains. They are superior in task definition which is rank 1 with a mean of 4.13 and standard deviation of 0.882. Second in rank is location and access of information with a mean of 3.70, standard deviation of 0.897 and it is interpreted as above average. Third in rank is information seeking strategies with a mean of 3.55, standard deviation of 0.887 and interpreted as above average. Fourth is the use of information with a mean of 3.52, standard deviation of 0.947, and interpreted as above average. Fifth is synthesis with a mean of 3.48, standard deviation of 0.858, and interpreted as above average. Lowest in rank is evaluation with a mean of 3.15, standard deviation of 0.844, and interpreted as average. The students are described superior in task definition but there is a need to improve their evaluation skills which obtained a remark of average. In general, the tertiary students' information literacy skills are above average in all areas.

The results can be associated with those in the study of Ivanitskaya (2012) which revealed that many students reflected the need to build their library skills, internet skills, and information evaluation skills. The participants also reported the need to learn more about citations and plagiarism. The study highlighted the importance of providing students with resources for self-study, while also building student-librarian and faculty-librarian connections.

Likewise, the results are related to those in the study conducted by Mandusic and Blaskovic (2013) on information literacy, theory and practice in education. They concluded that information literacy should be the foundation of knowledge in higher education institutions, to remove barriers toward creativity caused by misunderstanding of the research

process. The students should be familiar with skills that enable them to succeed in their future study and life. Information literacy is not only a necessity for students, but for all of us as professionals in our workplaces and personal lives. Information literacy should be “functional”, for young people and adults. It should serve as a new tool of expression, communication and learning. It should be developed in all levels of education.

Furthermore, the Declaration of Prague (2003) gives a vision that the creation of an information society is key to social, cultural, and economic development of nations and communities, institutions, and individuals in the 21st century and beyond. Information Literacy encompasses knowledge of one’s information concerns and needs and the ability to identify, locate, evaluate, organize, and effectively create, use, and communicate information to address issues or problems at hand; it is a prerequisite to participating effectively in the information society and is part of the basic human right for lifelong learning. More so, information literacy, in conjunction with access to essential information and effective use of information and communication technologies, plays a leading role in reducing the inequities within and among countries and peoples and in promoting tolerance and mutual understanding through information use in multicultural and multilingual contexts.

Table 12: Summary of the Information Literacy Skills of the Tertiary Students

(N=502)

Areas	<u>Superior</u>		<u>Above Average</u>		<u>Average</u>		<u>Below Average</u>		<u>Poor</u>		Mean	SD	Rk ^a	Remark ^a
	f	%	f	%	f	%	f	%	f	%				
I. Task Definition	210	41.8	166	33.1	112	22.3	10	2.0	4	0.8	4.13	0.882	1	Superior
II. Information Seeking Strategies	78	15.5	168	33.5	221	44.0	24	4.8	11	2.2	3.55	0.887	3	Above Average
III. Location and Access of Information	99	19.7	195	38.8	178	35.5	20	4.0	10	2.0	3.70	0.897	2	Above Average
IV. Use of Information	84	16.7	160	31.9	202	40.2	45	9.0	11	2.2	3.52	0.947	4	Above Average
V. Synthesis	69	13.7	151	30.1	241	48.0	35	7.0	6	1.2	3.48	0.858	5	Above Average
VI. Evaluation	31	6.2	111	22.1	278	55.4	65	12.9	17	3.4	3.15	0.844	6	Average
All Areas	571	18.9	951	31.6	1232	40.9	199	6.6	59	1.9	3.59	0.933	—	Above Average

Table 13 below presents the information literacy skills of the school administrators on “Tasks Definition”. It is shown that they are superior in their skills in all the six items of “task definition. Item number three “Explores general information sources to increase familiarity with the topic” has a mean of 3.48, standard deviation of 0.655 and it is rank 1. The result confirms the statement of Standard One of Association of College and Research Libraries (2000), that an information-literate determines the nature and extent of the

information needed. Item number six “Reformulates a complete statement of the task” is rank six, which is also, interpreted as superior and it has a mean of 3.19, and standard deviation of 0.595. This is a performance indicator of standard three where in the information-literate determines whether the initial query should be revised.

This result of the “Task Definition” is evident in the statement of Badke (2014) “it isn’t even about knowing how to rummage through multiple results to find the best ones. It’s about a mind-set that sees information as a system and understands how to advantageously work the system to solve problems and advance knowledge”.

Information Literacy Skills of the School Administrators

Table 13: Information Literacy Skills of the School Administrators on Task Definition

(N=58)

Item	<u>Always</u>		<u>Often</u>		<u>Rarely</u>		<u>Never</u>		Mean	SD	Rk	Remark ^a
	f	%	f	%	f	%	f	%				
1. Defines or modifies the information needed to achieve a manageable focus	20	34.5	33	56.9	4	6.9	1	1.7	3.24	0.657	5	Superior
2. Identifies key concepts and terms that describe the information needed	25	43.1	30	51.7	2	3.4	1	1.7	3.36	0.641	3	Superior
3. Explores general information sources to increase familiarity with the topic	32	55.2	23	39.7	2	3.4	1	1.7	3.48	0.655	1	Superior
4. Defines a realistic overall plan and timeline to acquire the needed information	24	41.4	28	48.3	5	8.6	1	1.7	3.29	0.701	4	Superior
5. Explores general information sources to increase familiarity with the topic	26	44.8	29	50.0	2	3.4	1	1.7	3.38	0.644	2	Superior
6. Reformulates a complete statement of the task	20	34.5	30	51.7	7	12.1	1	1.7	3.19	0.712	6	Superior
All Items	25	43	30	51.7	2	3.4	1	1.7	3.32	0.595	—	Superior

Interpretation of the Mean: 1.00 – 1.49 = Fair, 1.50 – 2.49 = Good, 2.50 – 3.49 = Superior, 3.50 – 4.00 = Excellent

In table 14 on page 125, the information literacy of school administrators on “Information Seeking Strategies” it is shown that they are superior in all the six skills. It is shown that among the “Information Seeking Strategies” item number five which is “Selects efficient and effective approaches for accessing the information needed using the investigative method or information retrieval system” got a superior remark, rank one, with the mean of 3.34 and standard deviation of 0.715. On the other hand, item number six “Develops a research plan appropriate to the investigative method”, and item number eight “Constructs a search strategy using appropriate commands for the information retrieval system selected (e.g., Boolean operators, truncation, and proximity for search engines; internal organizers such as indexes for books)” both with the mean of 2.98, standard deviation 0.662, are rank 8.5, but still interpreted as superior.

This is an evidence of the performance indicator in Standard Two of the Association of College and Research Libraries (2000), which is: the information literate person selects the most appropriate investigative methods or information retrieval systems for accessing the needed information. Moreover, the information-literate constructs and implements effectively designed search strategies. The research of Mahmood (2013) indicates that there are more people comfortable in basic computing and internet-related activities but less comfortable on specialized information searching tasks. Furthermore, the study conducted by Mandusic and Blaskovic (2013) concluded that information literacy is not only a necessity for students, but for all of us as professionals in our workplaces and personal lives. Information literacy should be “functional”, for young people and adults who should consider it as a new tool of expression, communication and learning.

Table 14: Information Literacy Skills of the School Administrators on Information Seeking Strategies
(N=58)

Item	<u>Always</u>		<u>Often</u>		<u>Rarely</u>		<u>Never</u>		Mean	SD	Rk	Remark ^a
	f	%	f	%	f	%	f	%				
1. Identifies the value and differences of potential resources in a variety of formats (e.g., multimedia, database, website, data set, audio/visual, book)	24	41.4	24	41.4	9	15.5	1	1.7	3.22	0.773	3	Superior
2. Identifies the purpose and audience of potential resources (e.g., popular vs. scholarly, current vs. historical)	17	29.3	34	58.6	6	10.3	1	1.7	3.16	0.670	4	Superior
3. Differentiates between primary and secondary sources, recognizing how their use and importance vary with each discipline	26	44.8	26	44.8	5	8.6	1	1.7	3.33	0.711	2	Superior
4. Investigates the scope, content, and organization of information retrieval systems	16	27.6	35	60.3	6	10.3	1	1.7	3.14	0.661	5	Superior
5. Selects efficient and effective approaches for accessing the information needed using the investigative method or information retrieval system	27	46.6	25	43.1	5	8.6	1	1.7	3.34	0.715	1	Superior
6. Develops a research plan appropriate for the investigative method	11	19.0	36	62.1	10	17.2	1	1.7	2.98	0.662	8.5	Superior
7. Selects controlled vocabulary specific to the discipline or information retrieval source	17	29.3	32	55.2	8	13.8	1	1.7	3.12	0.703	6	Superior
8. Constructs a search strategy using appropriate commands for the information retrieval system selected (e.g., Boolean operators, truncation, and proximity for search engines; internal organizers such as indexes for books)	16	27.6	27	46.6	13	22.4	2	3.4	2.98	0.805	8.5	Superior
9. Implements the search strategy in various information retrieval systems using different user interfaces and search engines, with different command languages, protocols, and search parameters	17	29.3	29	50.0	11	19.0	1	1.7	3.07	0.746	7	Superior
All Items	17	29.2	34	58.5	6	10.2	1	1.7	3.15	0.599	—	Superior

^a. Interpretation of the Mean, 1.00 – 1.49 = Fair, 1.50 – 2.49 = Good, 2.50 – 3.49 = Superior, 3.50 – 4.00 = Excellent

Table 15 below presents the information literacy skills of the school administrators on “Location and Access of Information”, and shows that they are superior in all the skills. It is shown that item number five “Determines what sources are available” with the mean 3.48 and standard deviation of 0.682, is rank one, with a remark of superior. Item number 2 “Uses various classification schemes and other systems (e.g., call number systems or indexes) to locate information resources within the library or to identify specific sites for

physical exploration” with the mean of 3.00, and standard deviation .701, is rank five with a remark of superior also.

This finding illustrates the performance indicator of standard two of the Association of College and Research Libraries (2000), which is “the information-literate individual selects the most appropriate investigative methods or information retrieval systems for accessing the needed information” and the performance indicator of standard one. “The information-literate individual identifies a variety of types and formats of potential sources for information”. Moreover, Zurkowski (1974) in Grassain, (2009) defined an information-literate individual as anyone who has learned to use a wide range of information sources in order to solve problems at work and in his or her daily life.

Table 15: Information Literacy Skills of the School Administrators on Location and Access of Information

(N=58)

Item	<u>Always</u>		<u>Often</u>		<u>Rarely</u>		<u>Never</u>		Mean	SD	Rk	Remark ^a
	f	%	f	%	f	%	F	%				
1. Retrieves information in a variety of formats through various search systems	19	32.8	29	50.0	9	15.5	1	1.7	3.14	0.736	3	Superior
2. Uses various classification schemes and other systems (e.g., call number systems or indexes) to locate information resources within the library, or to identify specific sites for physical exploration	13	22.4	33	56.9	1	19.0	1	1.7	3.00	0.701	5	Superior
3. Access information through specialized online or in person services available at the institution to retrieve information needed (e.g., interlibrary loan/document delivery, professional associations, institutional research offices, community resources, experts and practitioners)	17	29.3	30	51.7	8	13.8	3	5.2	3.05	0.804	4	Superior
4. Retrieves primary information through surveys, letters, interviews, and other forms of inquiry	25	43.1	27	46.6	5	8.6	1	1.7	3.31	0.706	2	Superior
5. Determines what sources are available	33	56.9	21	36.2	3	5.2	1	1.7	3.48	0.682	1	Superior
All Items	16	27.5	35	60.4	6	10.2	1	1.7	3.20	0.605	—	Superior

^a. Interpretation of the Mean: 1.00 – 1.49 = Fair, 1.50 – 2.49 = Good 2.50 – 3.49 = Superior 3.50 – 4.00 = Excellent

Table 16 on page 128 shows the Information Literacy skills of the School Administrators in terms of “Use of Information” reveals that they are superior in all the skills. Item number four “Uses approved passwords and other forms of ID to access information sources” with the mean of 3.33, and standard deviation 0.758, is rank one and interpreted as superior. Item number five “Posts permission granted notices, as needed, for copyrighted material” with the mean of 3.16, and standard deviation 0.745, is rank five, but also interpreted as superior.

This result can be associated with the performance indicator of standard one of the Association of College and Research Libraries (2000), which is “the information-literate individual identifies a variety of types and formats of potential sources for information”. More so, the performance indicator of standard five states that the information literate student understands many of the ethical, legal and socio-economic issues surrounding information and information technology.

According to Mandusic and Blaskovic (2013), several principles govern information literacy such as: to learn to use information independently and know how to use it in team work to perform a specific task. It is also necessary to understand the legal, economic and ethical uses of information. There is a need to recognize the use of certain information to determine its effectiveness, and also to decide whether the use of information respected certain rules. Becoming information-literate is a difficult and a demanding task because of the many opportunities for accessing information. Ivanitskaya (2012) concluded that the participants in his study need to learn more about citations and plagiarism.

Table 16: Information Literacy Skills of the School Administrators on the Use of Information

(N=58)

Item	<u>Always</u>		<u>Often</u>		<u>Rarely</u>		<u>Never</u>		Mean	SD	Rk	Remark ^a
	f	%	f	%	f	%	f	%				
1. Restates textual concepts in one's own words and selects data accurately	25	43.1	27	46.6	5	8.6	1	1.7	3.31	0.706	3	Superior
2. Identifies verbatim material that can be then appropriately quoted	17	29.3	35	60.3	5	8.6	1	1.7	3.17	0.653	4	Superior
3. Draws conclusions based on information gathered	27	46.6	23	39.7	7	12.1	1	1.7	3.31	0.754	3	Superior
4. Uses approved passwords and other forms of ID to access information sources	27	46.6	25	43.1	4	6.9	2	3.4	3.33	0.758	1	Superior
5. Posts permission granted notices, as needed, for copyrighted material	19	32.8	31	53.4	6	10.3	2	3.4	3.16	0.745	5	Superior
6. Complies with institutional policies on access to information sources	26	44.8	25	43.1	6	10.3	1	1.7	3.31	0.730	3	Superior
All Items	29	50.0	24	41.2	4	6.9	1	1.7	3.26	0.638	—	Superior

a. Interpretation of the Mean: 1.00 – 1.49 = Fair, 1.50 – 2.49 = Good 2.50 – 3.49 = Superior 3.50 – 4.00 = Excellent

Table 17 below presents the information literacy skills of the School Administrators in terms of “Synthesis” in which they obtained superior ratings in all skills. The table indicates that item number three “Records all pertinent citation information for future reference” with the mean of 3.31, and standard deviation 0.754, is rank one, interpreted as superior, while item number six which states that “Extends initial synthesis, when possible, at a higher level of abstraction to construct new hypotheses that may require additional information” with a mean of 3.09, and standard deviation 0.736, is rank six, and also interpreted as superior.

The finding supports the performance indicator of standard three of the Association of College and Research Libraries (2000), which is the information-literate individual summarizes the main ideas to be extracted from the information gathered. The information literate individual synthesizes main ideas to construct new concepts. The performance indicator of Standard five which is “the information-literate individual acknowledges the use of information sources in communicating the product or performance,” is also illustrated.

Table 17: Information Literacy Skills of the School Administrators on Synthesis

(N=58)

Item	<u>Always</u>		<u>Often</u>		<u>Rarely</u>		<u>Never</u>		Mean	SD	Rk	Remark ^a
	f	%	f	%	f	%	f	%				
1. Selects from among various technologies the most appropriate one for the task of extracting the needed information (e.g., copy/paste software functions, photocopier, scanner, audio/visual equipment, or exploratory instruments)	20	34.5	29	50.0	8	13.8	1	1.7	3.17	0.729	4.5	Superior
2. Creates a system for organizing the information	19	32.8	31	53.4	7	12.1	1	1.7	3.17	0.704	4.5	Superior
3. Records all pertinent citation information for future reference	27	46.6	23	39.7	7	12.1	1	1.7	3.31	0.754	1	Superior
4. Uses various technologies to manage and organize the information selected	24	41.4	28	48.3	5	8.6	1	1.7	3.29	0.701	2	Superior
5. Recognizes interrelationships among concepts and combines them into potentially useful primary statements with supporting evidences	21	36.2	28	48.3	5	13.8	1	1.7	3.19	0.736	3	Superior
6. Extends initial synthesis, when possible, at a higher level of abstraction to construct new hypotheses that may require additional information	17	29.3	31	53.4	8	13.8	2	3.4	3.09	0.736	6	Superior
All Items	22	38.0	28	48.2	7	12.0	1	1.7	3.20	0.657	—	Superior

a. Interpretation of the Mean: 1.00 – 1.49 = Fair, 1.50 – 2.49 = Good 2.50 – 3.49 = Superior 3.50 – 4.00 = Excellent

Table 18 on page 131 summarizes the Information Literacy Skills of the School Administrators in terms of “Evaluation” wherein they rated themselves as superior in all skills. The table shows that item number one “Examines and compares information from various sources in order to evaluate their reliability, validity, accuracy, authority, timeliness, and point of view or bias” and item number six “Investigates differing viewpoints encountered in the literature” both got a mean of 3.29, and standard deviation 0.749, are rank 1.5, and interpreted as superior, while item number eight which is “Assesses the quantity, quality, and relevance of the search results to determine whether alternative information retrieval systems or investigative methods should be utilized”, with a mean of 3.19 and standard deviation 0.712, is rank 9, which is also interpreted as superior. According to Mandusic and Blaskovic (2013), as one of the principles of information-literacy, it is necessary to evaluate the information. It is best to read the text carefully and extract necessary information from it. An individual should be able to recognize if the information is the one that is needed.

This result is a reflection of the performance indicator of standard three of the Association of College and Research Libraries (2000), which states that the information-literate individual evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system. “Moreover, the performance indicator of standard three which also explains that an information-literate individual compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information”. Likewise, the information-literate individual determines whether the new knowledge has an impact on

his/her value system and takes steps to reconcile differences. It is necessary to evaluate the information. You have to read the text carefully and extract necessary information from it. We should be able to recognize if the information is the one that we need.

Table 18: Information Literacy Skills of the School Administrators on Evaluation

(N=58)

Item	<u>Always</u>		<u>Often</u>		<u>Rarely</u>		<u>Never</u>		Mean	SD	Rk	Remark ^a
	f	%	f	%	f	%	f	%				
1. Examines and compares information from various sources in order to evaluate their reliability, validity, accuracy, authority, timeliness, and point of view or bias	26	44.8	24	41.4	7	12.1	1	1.7	3.29	0.749	1.5	Superior
2. Analyzes the structure and logic of supporting arguments or methods	23	39.7	27	46.6	7	12.1	1	1.7	3.24	0.733	6.5	Superior
3. Determines whether information satisfies the research or other information needed	23	39.7	29	50.0	5	8.6	1	1.7	3.28	0.696	3.5	Superior
4. Uses consciously selected criteria to determine whether the information contradicts or verifies information taken from other sources	25	43.1	25	43.1	7	12.1	1	1.7	3.28	0.744	3.5	Superior
5. Determines probable accuracy by questioning the source of the data, the limitations of the information gathering tools or strategies, and the reasonableness of the conclusions	22	37.9	29	50.0	6	10.3	1	1.7	3.24	0.709	6.5	Superior
6. Investigates differing viewpoints encountered in the literature	26	44.8	24	41.4	7	12.1	1	1.7	3.29	0.749	1.5	Superior
7. Determines whether to incorporate or reject viewpoints encountered	23	39.7	28	48.3	6	10.3	1	1.7	3.26	0.715	5	Superior
8. Assesses the quantity, quality, and relevance of the search results to determine whether alternative information retrieval systems or investigative methods should be utilized	19	32.8	33	56.9	4	6.9	2	3.4	3.19	0.712	9	Superior
9. Identifies gaps in the information retrieved and determines if the search strategy should be revised	19	32.8	33	56.9	5	8.6	1	1.7	3.21	0.669	8	Superior
All Items	21	36.1	31	53.3	5	8.6	1	1.7	3.25	0.645	—	Superior

^a. Interpretation of the Mean: 1.00 – 1.49 = Fair, 1.50 – 2.49 = Good 2.50 – 3.49 = Superior 3.50 – 4.00 = Excellent

Table 19 below presents the summary of the information literacy skills of school administrators. It shows that the school administrators are “superior” in all the six domains. It can be gleaned from the results that “Task Definition” with the mean of 3.32, and standard deviation 0.595 is rank one (1), while the “Information Seeking Strategies” with a mean of 3.15, and standard deviation 0.599 is rank six (6). Both are interpreted as superior.

Table 19: Summary of the Information Literacy Skills of the School Administrators
(N=58)

Domain	<u>Always</u>		<u>Often</u>		<u>Rarely</u>		<u>Never</u>		Mean	SD	Rk	Remark ^a
	f	%	f	%	f	%	f	%				
I. Task Definition	25	43	30	51.7	2	3.4	1	1.7	3.32	0.595	1	Superior
II. Information Seeking Strategies	17	29.2	34	58.5	6	10.2	1	1.7	3.15	0.599	6	Superior
III. Location and Access of Information	16	27.5	35	60.4	6	10.2	1	1.7	3.20	0.605	4.5	Superior
IV. Use of Information	29	50.0	24	41.2	4	6.9	1	1.7	3.26	0.638	2	Superior
V. Synthesis	22	38.0	28	48.2	7	12.0	1	1.7	3.20	0.657	4.5	Superior
VI. Evaluation	21	36.1	31	53.3	5	8.6	1	1.7	3.25	0.645	3	Superior
All Domains	14	23.9	36	65.2	4	6.8	1	1.7	3.23	0.385	—	Superior

^a. Interpretation of the Mean, 1.00 – 1.49 = Fair, 1.50 – 2.49 = Good, 2.50 – 3.49 = Superior, 3.50 – 4.00 = Excellent

Objective 2: Determine the managerial competencies of school administrators in terms of planning, organizing, leading, and controlling

Table 20 on page 134 shows the managerial competencies of the school administrators in terms of planning, reveals that they are superior in all the planning competencies. The table indicates that item number three “Identify technologies to support effective communication and collaboration and model their use among colleagues, parents, students, and the community”, with the mean of 3.36, and standard deviation of 0.788, is rank 1 and interpreted as superior, while item number one “Continually seek, develop, evaluate, and deploy digital resources to support program goals, learning teams, and individual learners’ needs” with a mean of 3.02, and standard deviation of 0.827 is rank seven, also interpreted as superior.

These findings reflect the insights of Bates and Sangra (2011) that most institutions’ plans about technology integration recognize that technology is an essential component of a modern university, but within that broad rationale there are wide variations in the specificity and the scope of their goals. All institutions recognize the importance of technology in managing or improving administrative services, teaching, and learning.

Table 20: Managerial Competencies of the School Administrators on Planning

(N=58)

Item	<u>Always</u>		<u>Often</u>		<u>Rarely</u>		<u>Never</u>		Mean	SD	Rk	Remark ^a
	f	%	f	%	f	%	f	%				
1.Continually seek, develop, evaluate, and deploy digital resources to support program goals, learning teams, and individual learners needs	17	29.3	28	48.3	10	17.2	3	5.2	3.02	0.827	7	Superior
2.Identify, design, and provide professional growth opportunities supported by a dynamic learning object depository aligned with established standard frameworks for students, teachers, and administrators	20	34.5	29	50.0	7	12.1	2	3.4	3.16	0.768	4	Superior
3.Identify technologies to support effective communication and collaboration and model their use among colleagues, parents, students, and the community	29	50.0	24	41.4	2	3.4	3	5.2	3.36	0.788	1	Superior
4.Identify and apply research-based models of successful technology-infused programs and practices to support program goals	28	48.3	23	39.7	4	6.9	3	5.2	3.31	0.821	2	Superior
5.Ensure that program goals incorporate the use of appropriate technologies, including adaptive and assistive technologies, to support the diverse needs of learners	20	34.5	23	39.7	12	20.7	3	5.2	3.03	0.878	5.5	Superior
6.Develop, manage, and model strategies for implementing policies and responsibilities regarding filtering, acceptable use, legal and ethical issues, and guidelines for online sources	23	39.7	26	44.8	7	12.1	2	3.4	3.21	0.789	3	Superior
7.Identify opportunities for students to use contemporary technology to engage in cross-cultural collaborative projects addressing global issues in the context of curricular goals and objectives	16	27.6	33	56.9	4	6.9	5	8.6	3.03	0.837	5.5	Superior
All Items	20	34.5	31	53.5	5	8.5	2	3.4	3.16	0.653	—	Superior

a. Interpretation of the Mean: 1.00 – 1.49 = Fair, 1.50 – 2.49 = Good 2.50 – 3.49 = Superior 3.50 – 4.00 = Excellent

Table 21 on page 136, showing the managerial competencies of the school administrators in terms of organizing illustrates that item number eight “Acquire, manage, and equitably provide technology teaching and learning resources to meet the identified needs of all students” with the mean of 3.28, and standard deviation of 0.883, is rank one and interpreted as superior, while item number seven “Establish and maintain a robust infrastructure for technology including integrated, interoperable technology systems to support management, operations, teaching, and learning” with a mean of 3.00, and standard deviation of 0.858, is rank nine, and also interpreted as superior.

This result supports Bates and Sangra’s (2011) statement that the old style university is built around the delivery of programs through campus residence, the physical attendance of students at lectures, seminars, libraries, and labs. Information and communication technologies now, however, enable students to access information and services, including interaction with instructors and other students, at any time and place. Programs can now be delivered in a variety of ways to an increasingly wider variety of students, through face-to-face, blended, or fully online learning. We can use technology not only to improve the quality of services to students, but also to enable students to study in more effective ways. Furthermore, the Prague Declaration (2003) in Tuazon, (2011) point out that information literacy, in conjunction with access to essential information and effective use of information and communication technologies, plays a leading role in reducing the inequities within and among countries and peoples and in promoting tolerance and mutual understanding through information use in multicultural and multilingual contexts.

Table 21: Managerial Competencies of the School Administrators on Organizing

(N=58)

Items	<u>Always</u>		<u>Often</u>		<u>Rarely</u>		<u>Never</u>		Mean	SD	Rk	Remark ^a
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%				
1.Allocate time, resources, and access to ensure ongoing professional growth in technology fluency and integration	21	36.2	29	50.0	5	8.6	3	5.2	3.17	.798	5.5	Superior
2.Facilitate and participate in learning communities that stimulate, nurture and support administrators, faculty, and staff in the study and use of technology	23	39.7	24	41.4	9	15.5	2	3.4	3.17	.819	5.5	Superior
3.Promote and model effective communication and collaboration among stakeholders using digital age tools	22	37.9	31	53.4	3	5.2	2	3.4	3.26	.715	2.5	Superior
4.Stay abreast with educational research and emerging trends regarding effective use of technology and encourage evaluation of new technologies for their potential to improve student learning	18	31.0	27	46.6	9	15.5	4	6.9	3.02	.868	8	Superior
5.Recruit and retain highly competent personnel who use technology creatively and proficiently to advance academic and operational goals	24	41.4	22	37.9	10	17.2	2	3.4	3.17	.841	5.5	Superior
6.Establish and leverage strategic partnerships to support systemic improvement	23	39.7	29	50.0	4	6.9	2	3.4	3.26	.739	2.5	Superior
7.Establish and maintain a robust infrastructure for technology including integrated, interoperable technology systems to support management, operations, teaching, and learning	18	31.0	25	43.1	12	20.7	3	5.2	3.00	.858	9	Superior
8.Acquire, manage, and equitably provide technology teaching and learning resources to meet the identified needs of all students	27	46.6	23	39.7	5	8.6	3	5.2	3.28	.833	1	Superior
9.Establish procedures for acquiring, maintaining, evaluating, and leveraging technology resources to advance and sustain dynamic programs	23	39.7	26	44.8	5	8.6	4	6.9	3.17	.861	5.5	Superior
All Items	23	39.6	27	46.5	6	10.3	2	3.4	3.17	.687	—	Superior

^a. Interpretation of the Mean: 1.00 – 1.49 = Fair, 1.50 – 2.49 = Good 2.50 – 3.49 = Superior 3.50 – 4.00 = Excellent

Table 22 on page 139 presenting the managerial competencies of the school administrators in terms of leading shows that item number nine “Lead collaborative development, review, and revision of curricula and professional development designed to guide the safe, legal, and ethical use of digital information and technology resources among all students and stakeholders”, with the mean of 3.38 and standard deviation of 0.768 is rank one and interpreted as superior, while item number one “Inspire and facilitate among all stakeholders a shared vision of purposeful change that maximizes the use of digital-age resources to meet and exceed learning goals, support effective instructional practices, and maximize performance of district and school leaders”, with a mean of 3.05 and standard deviation of 0.826, is rank nine, also interpreted as superior.

This finding is a reflection of the collaborative model which facilitates the typical teacher librarian leadership style: leading from the middle. In her study on situating information literacy, Asselin (2005) asserts that “teacher librarians need to reposition themselves as leaders in the new literacies required for learning and solving problems with the Internet and ICT. There is a clear need for instructional leadership in existing critical-level new literacy learning outcomes and in assessment and evaluation of all aspects of the new literacies of the information age.”

This finding can also be associated with the move toward open educational resources which has important consequences in course design, intellectual property rights of faculty, the role of instructors, and assessment. It could possibly provide a means to improve the cost-effectiveness of higher education. More experimentation, research, and analysis will be

needed, however, before open content becomes a staple component of higher education teaching and learning.

Trilling and Fadel (2009) discussed that digital technologies are increasingly supporting many approaches on both sides of the balance. They are boosting basic skills such as the recall of math principles and procedures, vocabulary development in language, and internalization of science terms and principles. Learning technologies are also freeing up time focus on the 21st century skills that require more interaction among learners while providing tools to further their skill-building online-collaboration, communication, leadership, and social and cross-cultural skills. More so, in using different technologies in accessing information, the information- literate individual understands many of the economic, legal and social issues surrounding the access and use of information ethically and legally.

Furthermore, Sangra and Bates (2011) state that the biggest challenge in the successful integration of technology is the creation of a culture of innovation and change in teaching and learning. Technology allows for many different ways of teaching, and more innovation and experimentation are needed, together with careful evaluation of results. Better incentives for rewarding instructors for innovative teaching, better training in teaching, institutional strategic plans that emphasize innovation in teaching, the development of academic program plans that look for new ways to reach new target groups, and strong input from educational designers and technology specialists are all ways to encourage innovation and change.

Table 22: Managerial Competencies of the School Administrators on Leading

(N=58)

Item	<u>Always</u>		<u>Often</u>		<u>Rarely</u>		<u>Never</u>		Mean	SD	Rk	Remark ^a
	f	%	f	%	f	%	f	%				
1.Inspire and facilitate among all stakeholders a shared vision of purposeful change that maximizes the use of digital-age resources to meet and exceed learning goals, support effective instructional practices, and maximize performance of district and school leaders	18	31.0	28	48.3	9	15.5	3	5.2	3.05	0.826	9	Superior
2.Lead purposeful change to maximize the achievement of learning goals through the appropriate use of technology and media-rich resources	21	36.2	24	41.4	11	19.0	2	3.4	3.10	0.831	8	Superior
3.Collaborate to establish metrics, collect and analyze data, interpret results, and share findings to improve staff performance and student learning	23	39.7	27	46.6	5	8.6	3	5.2	3.14	0.847	7	Superior
4.Participate in the development of the shared vision and communicate that vision effectively across the areas of responsibility	23	39.7	27	46.6	5	8.6	3	5.2	3.21	0.811	5	Superior
5.Collaboratively align program goals with infused strategic plans and support their implementation	22	37.9	26	44.8	7	12.1	3	5.2	3.16	0.834	6	Superior
6.Identify and use exemplary classroom-based practices for policies, programs, and funding opportunities that support effective technology integration	24	41.4	29	50.0	3	5.2	2	3.4	3.29	0.726	4	Superior
7.Celebrate, share, and demonstrate effective use of technology for learning	27	46.6	26	44.8	3	5.2	2	3.4	3.34	0.739	3	Superior
8.Model and encourage participation in local and national, and global learning communities that promote innovation and creativity	27	46.6	25	43.1	3	5.2	2	3.4	3.35	0.744	2	Superior
9.Lead collaborative development, review, and revision of curricula and professional development designed to guide the safe, legal, and ethical use of digital information and technology resources among all students and stakeholders	30	51.7	22	37.9	4	6.9	2	3.4	3.38	0.768	1	Superior
All Items	21	36.1	31	53.3	3	5.1	3	5.1	3.22	0.677	—	Superior

a. Interpretation of the Mean, 1.00 – 1.49 = Fair, 1.50 – 2.49 = Good, 2.50 – 3.49 = Superior, 3.50 – 4.00 = Excellent

Table 23 on page 141 which presents the managerial competencies of the school administrators in terms of controlling, shows that item number two “Model and promote the frequent and effective use of technology for learning”, with the mean of 3.40 and standard deviation of 0.771, is rank one and interpreted as superior, while the item number three “Provide learner-centered environments equipped with technology and learning resources to meet the individual and diverse needs of all learners”, with a mean of 3.19 and standard deviation of 0.847, is rank eighth, also interpreted as superior.

The findings are consistent with the idea of Bates and Sangra (2011) that learning styles (done face-to-face or online) vary among different kinds of students. Technology should be given emphasis particularly on how it can be used in personalizing learning and increasing motivation among the students while at the same time controlling the workload of the teacher. Technology allows work to be shifted from the teacher to the learner. Learners can spend more time on their tasks, interacting both with digital content and with fellow students in online and face-to-face communities.

One of the goals sometimes claimed for e-learning is that it accommodates better the learning styles or needs of millennial students, which means that these students will learn better through e-learning because it fits their experiences and ways of behaving. Millennials are those born between the mid-1970 and early 1990s inclusive. Other terms used for those people born during these years are generation Y, the Net Generation, or Digital Natives. These learners have grown up with technology such as computers and the internet all through their life. They are technology-savvy who are able to multitask and they have developed specific skills such as video game playing.

Moreover, using technology as an integral part of teaching and learning activities prepare learners for such a society. Instructors no longer have to create all their teaching materials from scratch, and duplicate the process every year. They can increasingly select ready-made modules for free, open access online teaching materials, and organize teaching and learning around the vast resources now available over the Internet. Even better, they can give learners the freedom and responsibility to select the learning materials that they feel to be of interest and have relevance to them.

Table 23: Managerial Competencies of the School Administrators on Controlling
(N=58)

Item	<u>Always</u>		<u>Often</u>		<u>Rarely</u>		<u>Never</u>		Mean	SD	Rk	Remark ^a
	f	%	f	%	f	%	f	%				
1.Ensure instructional innovation focused on continuous improvement of digital-age learning	27	46.6	21	36.2	8	13.8	2	3.4	3.26	0.828	4.5	Superior
2.Model and promote the frequent and effective use of technology for learning	31	53.4	21	36.2	4	6.9	2	3.4	3.40	0.771	1	Superior
3.Provide learner-centered environments equipped with technology and learning resources to meet the individual and diverse needs of all learners	24	41.4	24	41.4	7	12.1	3	5.2	3.19	0.847	8	Superior
4.Ensure effective practice in the study of technology and its infusion across the curriculum	30	51.7	19	32.8	7	12.1	2	3.4	3.33	0.825	3	Superior
5.Promote and participate in local, national, and global learning communities that stimulate innovation, creativity, and digital age collaboration	21	36.2	31	53.4	3	5.2	3	5.2	3.21	0.767	7	Superior
6.Ensure equitable access to appropriate digital tools and resources to meet the needs of all learners	33	56.9	14	24.1	10	17.2	1	1.7	3.36	0.831	2	Superior
7.Promote, model and establish policies for safe, legal, and ethical use of digital information and technology	25	43.1	22	37.9	10	17.2	1	1.7	3.22	0.796	6	Superior
8.Promote and model responsible social interactions related to the use of technology and information	27	46.6	22	37.9	6	10.3	3	5.2	3.26	0.849	4.5	Superior
All Items	32	55.2	19	32.6	5	8.6	2	3.4	3.28	0.714	—	Superior

^a. Interpretation of the Mean, 1.00 – 1.49 = Fair, 1.50 – 2.49 = Good, 2.50 – 3.49 = Superior, 3.50 – 4.00 = Excellent

Table 24 below summarizes the competencies of the school administrators in terms of the different functions of management. The table shows that the four management functions of planning, organizing, controlling, and leading, got mean scores ranging from 3.16 to 3.28, which are all interpreted as superior. The average score is 3.21 with a standard deviation of 0.407. This signifies that the school administrators are all competent in the four functions of management. Controlling is rank one with the mean of 3.28 and standard deviation 0.714, followed by leading with the mean of 3.22 and standard deviation 0.677, then organizing with the mean of 3.17 and standard deviation 0.687 and last is planning with the mean of 3.16 and standard deviation 0.653.

Table 24: Summary of the Managerial Competencies of the School Administrators

(N=58)

Domain	Always		Often		Rarely		Never		Mean	SD	Rk	Remark ^a
	f	%	f	%	f	%	f	%				
I. Planning	20	34.5	31	53.5	5	8.5	2	3.4	3.16	0.653	4	Superior
II. Organizing	23	39.6	27	46.5	6	10.3	2	3.4	3.17	0.687	3	Superior
III. Leading	21	36.1	31	53.3	3	5.1	3	5.1	3.22	0.677	2	Superior
IV. Controlling	32	55.2	19	32.6	5	8.6	2	3.4	3.28	0.714	1	Superior
All Domains	15	25.6	41	63.3	2	3.4	—	—	3.21	0.407	—	Superior

Objective 3: Determine the relationship between the information literacy skills and managerial competencies of the school administrators.

Shown in Table 25 on page 145 are the correlation coefficients obtained between managerial competencies in terms of planning and the information literacy skills of the school administrators. It is shown in the table that there are two domains which have a marked substantial positive rectilinear correlation, with the planning competencies of the school administrators. They are “Task Definition”, with $r = 0.636$, and “Information Seeking Strategies”, with $r = 0.657$. However, there are also three domains which have a negligible negative rectilinear correlation with the school administrators’ planning competencies. They are: Use of Information with $r = -0.090$, Synthesis with $r = -0.008$, and Evaluation with $r = -0.032$. The average correlation coefficient r obtained between the six domains and the school administrators’ planning competencies is 0.443, which is interpreted as moderate positive rectilinear correlation.

These findings of the study can be associated with the idea of Richardson and Wilding (2009) who describe an information need and the information seeking strategies as always specific. The nature and quantity of the information required depend on the task that will be undertaken. In most cases the information that they are likely to need will be available in printed and electronic formats. Moreover, planning is essential for these skills because it provides the guiding direction on how to do the task. Schermerhorn, et al. (2014) state that in the planning process, an individual must first identify desired outcomes or results in very specific ways. You should know where you want to go and be specific enough that you will know you have arrived when you get there. It is best to list and

carefully evaluate the possible actions that may be taken. Choose the alternative(s) that would most likely help you to achieve the objectives, and describe step-by-step what must be done to follow the chosen course of action.

Planning is vital in task definition, most of all in deciding how best to acquire the information. Decision making, a part of the planning process, involves selecting a course of action from a set of alternatives. According to Schermerhorn et al. (2014), within organizations, people need vast amounts of information to make decisions and solve problems in their daily work. Higher level managers tend to emphasize information use in strategic planning, whereas middle and lower level managers focus more on operational considerations involving the implementation of these plans. The information needs of workers' center on accomplishing tasks. This involves gathering, storing, sharing, and using information to solve operation problems in order to best meet their needs.

In the "task definition and information seeking strategies", time is a valuable resource and it must be used wisely. The school administrators should become more information-efficient. This means that they should learn how to make the most of chosen information sources, rather than try to find out everything there is to know and become weighed down by the sheer volume of information that they have identified.

Similar advice is offered by the Chartered Institute of Library and Information Professionals (CILIP, 2007), who recommend that any decision about the use of an information source should be tempered by the ease and speed with which it can be located and accessed. This, in turn, requires an understanding of the merits of individual resource types (printed, electronic and oral) and when it is appropriate to use them. Moreover, Bundy

(2004) in Richardson and Wilding, (2009) state that it is sometimes necessary to re-evaluate the nature and extent of information needs in light of initial search results. In other words, we do not always find everything that we want the first time around, so that there is still an information gap to fill; some of what we do find provides us with new insights into the topic that we are investigating and makes us decide to change the focus of our search. Furthermore, Bell (2005) in Richardson and Wilding, (2009), points out that it often pays to reconsider your information needs as you examine some of the sources that you have selected and find out more about the topic.

Table 25: Correlation Between the Managerial Competency on Planning and the Information Literacy Skills of the School Administrators

(N = 58)

	Domain	Pearson r	Remark
I.	Task Definition	0.636**	marked substantial positive rectilinear correlation
II.	Information Seeking Strategies	0.657**	marked substantial positive rectilinear correlation
III.	Location and Access of Information	0.574	moderate positive rectilinear correlation
IV.	Use of Information	-0.090	negligible negative rectilinear correlation
V.	Synthesis	-0.008	negligible negative rectilinear correlation
VI.	Evaluation	-0.032	negligible negative rectilinear correlation
	All Domains	0.443**	moderate positive rectilinear correlation

Table 26 on page 148 shows the correlation coefficients between the school administrators' managerial competencies in terms of organizing and their information literacy skills. It is shown that both "Task Definition" with $r = 0.659^{**}$, and "Information Seeking Strategies" with $r = 0.629^{**}$ have marked substantial positive rectilinear correlation which are highly significant with the organizing competencies of the school administrators. "Location and Access" $r = 0.571^{**}$, has a moderate positive rectilinear correlation with the organizing competencies. However, the "Evaluation" with $r = -0.054$, "Synthesis" with $r = -0.082$, and "Use of Information" with $r = -0.122$ have negligible negative rectilinear correlation with the school administrators' organizing competencies. In general, there is a highly significant relationship between all the domains of information literacy and organizing having obtained an $r = 0.404^{**}$ which is interpreted as moderate positive rectilinear correlation.

The findings of the study is a reflection of the idea of Schermerhorn et al. (2014) who believe that once a manager has set goals and developed a work plan, the next management function is to organize people and resources necessary to carry out the plan or the information need. Organizing requires an understanding of how to manage information, innovation, processes, and organizational changes.

Organizing involves creating a division of labour in the performance of a task and coordinating results to achieve a common purpose. This can be achieved by designing appropriate search strategies in finding relevant materials that add to the quality of the research or assignment. The first step is to make a list of the types of information needed,

which will be necessary in deciding which tools to use to find it. Using a list to define the parameters of the search can set some boundaries to the research.

Drucker (in Schermerhorn et al. 2014) defines knowledge workers as professionals who are relatively well-educated, and can create, modify and synthesize knowledge. Today, this definition includes any worker who transforms information into a product or service. With globalization and the competitive edge that knowledge provides, the knowledge worker is valued within the organization. The use of information is focused on achieving organizational goals, and, as such, adds value to the outcome.

Bates and Sangra, (2011) mentioned that to develop the skills and competencies needed in the twenty-first century, the “Partnership for Twenty-First Century Skills (2009)” was set up. These skills can be classified as being “process-oriented” rather than “subject-oriented.” However, it would be a mistake to see these skills as being independent of the subject or topic domains in which they need to be used. Skills need to be embedded within a subject or knowledge domain. Thus, there are implications for setting learning goals (what is to be learned), curricula (what is to be taught), teaching methodologies (how it is taught or learned), and assessment (what is to be examined or assessed). Each of these areas must be adequately addressed, if the learning goals for a knowledge-based society are to be achieved.

The study of Wertz et al., (2013) suggests three overarching curricular needs: raising students’ awareness of their need for information gathering, helping students to develop appropriate strategies to access and evaluate information, and teaching students how to completely and accurately document information sources, especially from the web. These

curricular goals are important not only to improve student information literacy skills, but also to ensure that students can access appropriate and accurate information as they engage in lifelong learning.

This can also be gleaned in the Prague Declaration (2003) in Tuazon, (2011) which states that Information Literacy encompasses knowledge of one's information concerns and needs and the ability to identify, locate, evaluate, organize, and effectively create, use, and communicate information to address issues or problems at hand; it is a prerequisite to participating effectively in the information society and a part of the basic human rights for lifelong learning.

Table 26: Correlation Between the Managerial Competency on Organizing and the Information Literacy Skills of the School Administrators

(N = 58)

	Domain	Pearson r	Remark
I.	Task Definition	0.659**	marked substantial positive rectilinear correlation
II.	Information Seeking Strategies	0.629**	marked substantial positive rectilinear correlation
III.	Location and Access of Information	0.571**	moderate positive rectilinear correlation
IV.	Use of Information	-0.122	negligible negative rectilinear correlation
V.	Synthesis	-0.082	negligible negative rectilinear correlation
VI.	Evaluation	-0.054	negligible negative rectilinear correlation
	All Domains	0.404**	moderate positive rectilinear correlation

The Table 27 on page 150 shows that there is no significant correlation between the managerial competencies in terms of “leading” and each of the six domains of the information literacy of school administrators. All the six correlation coefficients obtained are interpreted as negligible negative rectilinear correlation. The leading competencies of the school administrators do not affect their information literacy.

Leading builds, the commitment and enthusiasm needed for people to apply their skills to help accomplish plans. Today’s leaders are being challenged in new and demanding ways. The time frames for getting things accomplished are becoming shorter; leaders are expected to get things right the first time, with second chances few and far between; the problems to be resolved through leadership are complex, ambiguous and multidimensional; leaders are expected to be long-term oriented, even while meeting the demands for short-term performance results.

Effective leaders empower others by providing them with the information, responsibility, authority, and trust to make decisions and act independently within their areas of expertise.

According to Richardson and Wilding (2009), information literate individuals critically evaluate the information that they find and the methods that they use to find it. Information searching is often an ongoing process rather than a single step on the way to task completion. Rumsey (2004) in Richardson and Wilding, (2009) suggests that websites should be assessed in terms of their ownership, authority, currency, quality of content, and intended audience; while for published sources she recommends the use of provenance, content, relation to the subject, and access.

Table 27: Correlation Between the Managerial Competency on Leading and the Information Literacy Skills of the School Administrators

(N = 58)

	Domain	Pearson r	Remark
I.	Task Definition	0.044	negligible positive rectilinear correlation
II.	Information Seeking Strategies	-0.007	negligible negative rectilinear correlation
III.	Location and Access of Information	-0.072	negligible negative rectilinear correlation
IV.	Use of Information	-0.025	negligible negative rectilinear correlation
V.	Synthesis	-0.040	negligible negative rectilinear correlation
VI.	Evaluation	-0.109	negligible negative rectilinear correlation
	All Domains	-0.062	negligible negative rectilinear correlation

Table 28 on page 152 presents the correlation coefficients between the managerial competencies in terms of controlling and the information literacy skills of the school administrators. It can be gleaned from the table that all the six domains of information literacy of the school managers have a negligible rectilinear correlation with their controlling managerial competencies. Five of these coefficients are negative. Only one is positive. This finding could mean that the controlling competencies of the school managers do not affect their information literacy. The overall mean of the six correlation coefficients is -0.062, which means negligible negative rectilinear correlation which is not significant.

This result of the study is in consonance with the statement of Schermerhorn et al. (2014) that the ability to gather and move information quickly, and from top to bottom, allows top level managers to stay in control while freeing lower levels to make speedy decisions and take the actions they need to best perform their task. This helps build a competitive and responsive organization. The entire problem-solving process depends on the right information available to the right people at the right time so that they can make good problem-solving decisions. Managers resolve problems by making different types of decisions in their day-to-day work. They must also deal with new or unexpected situations that present unstructured problems full of ambiguities and information deficiencies. When information is poor that managers are unable even to assign probabilities to the likely outcomes of alternatives that are known, there will be considerable room for error.

Control is aimed at ensuring that plans are fulfilled and that performance targets are met. Control can be important not only for guaranteeing that the performance level is met but also for ensuring that performance is consistent. Carefully controlling the performance levels of an organization requires accurate and timely flows of information on the key operational variables and outcomes. Controlling sees to it that the right things happen, in the right way, and at the right time. It helps ensure that the performance contributions of individuals and groups are consistent with organizational plans.

The use of information in the analysis of organizational performance is essential in managerial control. The school administrators should be able to understand and assess, for control purposes, the aspects of organizational performance, such as the ability to use resources efficiently and operate at minimum cost. Those who are problem solvers are

willing to make decisions and try to solve problems. They are reactive in gathering information and responding to problems after they occur.

Table 28: Correlation Between the Managerial Competency on Controlling and the Information Literacy Skills of the School Administrators

(N = 58)

	Domain	Pearson r	Remark
I.	Task Definition	-0.085	negligible negative rectilinear correlation
II.	Information Seeking Strategies	-0.022	negligible negative rectilinear correlation
III.	Location and Access of Information	-0.059	negligible negative rectilinear correlation
IV.	Use of Information	-0.050	negligible negative rectilinear correlation
V.	Synthesis	-0.057	negligible negative rectilinear correlation
VI.	Evaluation	-0.121	negligible negative rectilinear correlation
	All Domains	-0.109	negligible negative rectilinear correlation

It is clearly shown in the data presented in Table 29 below that there is a highly significant relationship between managerial competencies in terms of planning, organizing, controlling, and leading, and three of the six domains of information literacy of the school administrators. This is evidenced by the correlation coefficients of 0.499, 0.500, and 0.401 obtained for “Task Definition”, “Information Seeking Strategies”, and “Location and

Access”, respectively. All of the three correlation coefficients are interpreted as moderate positive rectilinear correlation. For the three other domains (Use of information, Synthesis and Evaluation) negligible negative rectilinear correlation coefficients were obtained. The “Use of Information, Synthesis and Evaluation have a minor significance in the managerial competencies. The average of the six correlation coefficients is 0.260, interpreted as low positive rectilinear coefficient.

Table 29: Summary of the Correlation Between the Managerial Competency and the Information Literacy Skills of the School Administrators

(N = 58)

	Domain	Pearson r	Remark
I.	Task Definition	0.499**	moderate positive rectilinear correlation
II.	Information Seeking Strategies	0.500**	moderate positive rectilinear correlation
III.	Location and Access of Information	0.401**	moderate positive rectilinear correlation
IV.	Use of Information	-0.121	negligible negative rectilinear correlation
V.	Synthesis	-0.084	negligible negative rectilinear correlation
VI.	Evaluation	-0.137	negligible negative rectilinear correlation
	All Domains	0.260*	low positive rectilinear correlation

Objective 4: Design, develop, and craft guidelines for the management and utilization of an Information Literacy Program

Table 30 on page 157 presents the Information Literacy skills of the tertiary students in terms of Task Definition with the mean of 4.13, standard deviation of 0.882, rank 1 and interpreted as superior, Information Seeking Strategies with the mean of 3.55, standard deviation 0.887, rank 3 and interpreted as above average, Location and Access of Information with the mean of 3.70, standard deviation 0.897, rank 2 and interpreted as above average, Use of Information with the mean of 3.52, standard deviation of 0.947, rank 4 and interpreted as above average, Synthesis with the mean of 3.48, standard deviation of 0.858, rank 5 and interpreted as above average, and Evaluation with the mean of 3.15, standard deviation of 0.844, rank 6 and interpreted as average. Overall, these six areas are interpreted as above average and they were considered as basis in the design of an information literacy program in higher education. Evaluation which obtained the lowest rank is given emphasis in the design because there is a need for improvement in this area. The information seeking strategies, location and access of information and use of information are also included in the design. Although these obtained a remark of “above average”, students use these skills often and it is very useful in their studies and learning process. Task definition is also part of the design, although they rated high in this aspect. It is because task definition skills are often used and this is the first step of the Big 6 skills. Task definition is important to all students and it is essential to include this in the program. All the skills in the six areas would be useful to the students and therefore, they should all be included in the information literacy program.

In the design of the information literacy program, the researcher was guided by the assessments of the American Library Association (1989) in Welsh and Wright (2012), which are the following: information-literacy is increasingly becoming important in the contemporary environment of rapid technological changes and proliferating information resources: information literacy is a set of abilities requiring individuals to recognize when information is needed and to have the abilities to locate, evaluate, and use effectively the needed information. They form the basis for lifelong learning and are common to all disciplines, to all learning environments, and to all levels of education. Information comprises the basic facts with context and perspective.

Likewise, information literacy is a set of individual competencies needed to identify, evaluate and use information in a most ethical, efficient and effective way across all domains, occupations, and professions. It enables people to make good use of information and communication technology (UNESCO, 2011).

The research of Bhatt (2011) concluded that the inclusion of information literacy programmes in universities is entirely the responsibility of library and information professionals. Universities recognize the need to train and provide the right skills not only to their library and information professionals, but also to the users of libraries. It is also suggested that all universities should unify and undertake a programme in information literacy and further make it compulsory for all students whether undergraduates, postgraduates or research scholars. Islam and Tsuji (2010) found out that students have limited skills in the area of information literacy, as it is not discussed extensively in their academic course curriculum. This study urges the incorporation of an information literacy

programme in the course curriculum, and more writing, discussion and other relevant issues that will make the students become more information-literate, should be included.

According to Juntunen et al. (2008) in *Information Literacy: international perspectives*; the development of information literacy is a major challenge to a university. Library personnel will have to allocate more resources for this area. At the same time, they have to collaborate with other personnel within the university. The use of new technological options provides a wealth of teaching and learning opportunities and innovations in the area of information literacy teaching. One of the major challenges will be how to support the network of library educators in the future without any allocated funding. More studies are also needed to improve the standards, methods, assessment and evaluation of our information literacy teaching.

Table 30: Results of the Survey on the Information Literacy Skills of the Tertiary Students: Basis for the Design of the Information Literacy Program

Areas	Skills	Mean	SD	Rk ^a	Remarks
I. Task Definition	Confers with instructors and participates in class discussions, peer workgroups, and electronic discussions to identify a research topic, or other information needed. Defines or modifies the information need to achieve a manageable focus. Identifies keywords, synonyms and related terms for the information needed. Differentiates between primary and secondary sources, recognizing how their use and importance vary with each discipline.	4.13	0.882	1	Superior
II. Information Seeking Strategies	Retrieves information online or using a variety of methods. Determines which information is most/least important. Selects the most appropriate investigative methods or information retrieval systems. Develops alternatives and seeks a variety of materials.	3.55	0.887	3	Above Average
III. Location and Access of Information	Accesses appropriate information systems, including online databases, online public access catalog and electronic multimedia. Uses various classification schemes and other systems (e.g., call number systems or indexes) to locate information resources within the library or identifies specific sites for physical exploration. Uses various search systems to retrieve information in a variety of formats. Uses specialized online or in person service available at the institution to retrieve information needed.	3.70	0.897	2	Above Average
IV. Use of Information	Reads the text and selects main ideas, Identifies the value and differences of potential resources in a variety of formats. Differentiates between primary and secondary sources, recognizing how their use and importance vary with each discipline. Organizes the content in a manner that supports the purposes and formats of the product or performance Uses a range of information technology applications in creating the product or performance. Analyses the structure and logic of supporting arguments or methods. Investigates differing viewpoints encountered in the literature. Accurately and completely summarizes/paraphrases the main ideas from written and oral sources. Selects among various technologies the most appropriate one for the task of extracting the needed information (e.g., copy/paste software functions, photocopier, scanner, audio/visual equipment, or exploratory instruments) Accurately cites sources. Integrates new and prior information, including quotations and paraphrasing, in a manner that supports the purposes of the product or performance. Integrates new information with previous information or knowledge.	3.52	0.947	4	Above Average
V. Synthesis	Manipulates digital text, images, and data, as needed, transferring them from their original locations and formats to a new context. Presents information in ways appropriate to the task. Organizes the content in a manner that supports the purposes and formats of the product or performance (e.g. outlines, drafts, storyboards). Records all pertinent citation information for future reference. Uses various technologies to manage and organize the information selected.	3.48	0.858	5	Above Average
VI. Evaluation	Uses consciously selected criteria to determine whether the information contradicts or verifies information used in other sources Examines and compares information from various sources in order to evaluate their reliability, validity, accuracy, authority, timeliness, and point of view or bias	3.15	0.844	6	Average
All Areas		3.59	0.933	—	Above Average

The Table 31 on page 159 presents the results of the survey on the managerial competencies of the school administrators. They served as basis in crafting guidelines for the management and utilization of the information literacy program for school managers. The table shows that the four management functions of planning, organizing, controlling, and leading, got mean scores ranging from 3.16 to 3.28, which are all interpreted as superior. The average score is 3.21 with a standard deviation of 0.407. This signifies that the school administrators are all competent in the four functions of management. Since planning rank the lowest with the mean of 3.16 and standard deviation 0.653, this was given emphasis in crafting the guidelines. Planning involves devising a systematic process for attaining the goals of the information literacy program. Controlling is rank one with the mean of 3.28 and standard deviation 0.714. This is important in the guidelines because it involves verifying that actual performance matches the plan. If the performance results do not match the plan, corrective action is taken. This is followed by leading with the mean of 3.22 and standard deviation 0.677. This involves the functions of guiding, leading, and overseeing if the information literacy program achieves its goals. The organizing skills rank third with the mean of 3.17 and standard deviation 0.687. Organizing involves arranging the necessary resources to carry out the plan. Organizing is the process of creating structure, establishing relationships and allocating resources to accomplish the goals of the program.

Table 31: Result of the Survey on the Managerial Competency of the School Administrators: Basis for crafting guidelines for the management and utilization of the Information Literacy Program

Domain	Skills	Mean	SD	Rk ^a	Remark
I. Planning	1. Identify technologies to support effective communication and collaboration and model their use among colleagues, parents, students, and the community 2. Identify and apply research-based models of successful technology-infused programs and practices to support program goals 3. Develop, manage, and model strategies for implementing policies and responsibilities regarding filtering, acceptable use, legal and ethical issues, and guidelines for online sources 4. Identify, design, and provide professional growth opportunities supported by a dynamic learning object depository aligned with established standards frameworks for students, teachers, and administrators 5. Ensure that program goals incorporate the use of appropriate technologies, including adaptive and assistive technologies, to support the diverse needs of learners 6. Identify opportunities for students to use contemporary technology to engage in cross-cultural collaborative projects addressing global issues in the context of curricular goals and objectives 7. Continually seek, develop, evaluate, and deploy digital resources to support program goals, learning teams, and individual learners need	3.16	0.653	4	Superior
II. Organizing	1. Acquire, manage, and equitably provide technology teaching and learning resources to meet the identified needs of all students 2. Promote and model effective communication and collaboration among stakeholders using digital age tools 3. Establish and leverage strategic partnerships to support systemic improvement 4. Allocate time, resources, and access to ensure ongoing professional growth in technology fluency and integration 5. Facilitate and participate in learning communities that stimulate, nurture and support administrators, faculty, and staff in the study and use of technology 6. Recruit and retain highly competent personnel who use technology creatively and proficiently to advance academic and operational goals 7. Establish procedures for acquiring, maintaining, evaluating, and leveraging technology resources to advance and sustain dynamic programs 8. Stay abreast with educational research and emerging trends regarding effective use of technology and encourage evaluation of new technologies for their potential to improve student learning 9. Establish and maintain a robust infrastructure for technology including integrated, interoperable technology systems to support management, operations, teaching, and learning	3.17	0.687	3	Superior
III. Leading	1. Lead collaborative development, review, and revision of curricula and professional development design to guide the safe, legal, and ethical use of digital information and technology resources among all students and stakeholders 2. Model and encourage participation in local and national, and global learning communities that promote innovation and creativity 3. Celebrate, share, and demonstrate effective use of technology for learning 4. Identify and use exemplary classroom-based practices for policies, programs, and funding opportunities that support effective technology integration 5. Participate in the development of the shared vision and communicate that vision effectively across the areas of responsibility 6. Collaboratively align program goals with infused strategic plans and support their implementation 7. Collaborate to establish metrics, collect and analyze data, interpret results, and share findings to improve staff performance and student learning 8. Lead purposeful change to maximize the achievement of learning goals through the appropriate use of technology and media-rich resources 9. Inspire and facilitate among all stakeholders a shared vision of purposeful change that maximizes the use of digital-age resources to meet and exceed learning goals, support effective instructional practice, and maximize performance of district and school leaders	3.22	0.677	2	Superior
IV. Controlling	1. Model and promote the frequent and effective use of technology for learning 2. Ensure equitable access to appropriate digital tools and resources to meet the needs of all learners 3. Ensure effective practice in the study of technology and its infusion across the curriculum 4. Ensure instructional innovation focused on continuous improvement of digital-age learning 5. Promote and model responsible social interactions related to the use of technology and information 6. Promote, model and establish policies for safe, legal, and ethical use of digital information and technology 7. Promote and participate in local, national, and global learning communities that stimulate innovation, creativity, and digital age collaboration 8. Provide learner-centered environments equipped with technology and learning resources to meet the individual and diverse needs of all learners	3.28	0.714	1	Superior
All Domains		3.21	0.407	-----	Superior

CHAPTER V

Summary, Conclusions and Recommendations

This chapter contains the summary of the whole study. It includes a brief description of the study's purpose and findings. The conclusions and the researcher's recommendations incorporated in this section might be helpful for future studies.

Summary

The study was conducted to determine the information literacy skills of the tertiary student in terms of task definition, information seeking strategies, location and access, use of information, synthesis, and evaluation. The competencies of the school administrators in terms of the management functions of planning, organizing, controlling, and leading were also assessed in this study. The results of the assessment were used in developing an information literacy program in higher education for lifelong learning, and in crafting the guidelines for school administrators in managing and utilizing the program.

The study intended to achieve the following purposes:

1. Determine the information literacy skills of the tertiary students and the school administrators in terms of Task Definition, Information Seeking Strategies, Location and Access of Information, Use of Information, Synthesis, and Evaluation
2. Determine the managerial competencies of school administrators in terms of planning, organizing, leading, and controlling

3. Determine the relationship between the information literacy skills and the managerial competencies of school administrators
4. Design, develop, and craft guidelines for the management and utilization of the Information Literacy Program

This study used the descriptive developmental research design. Developmental approach seeks to understand, examine key ideas, and develop skills to help solve problems (Parkash 2005). The research started with the assessment of the information literacy skills of the students. To obtain the needed data, three sets of questionnaire were used. The information literacy skills test measured the ability of the students to identify, locate, evaluate, and effectively use information. The managerial competencies assessment gauged the abilities of the school administrators in terms of their management functions: planning, organizing, controlling, and leading. Moreover, the information literacy assessment for the school administrators measured their ability to identify, locate, evaluate, and effectively use information. A total of 58 school administrators and 502 college students from thirteen (13) universities in the National Capital Region took part in the quantitative phase.

Findings of the study

The study brought forth the following findings:

1. **Determine the information literacy skills of the tertiary students and the school administrators in terms of task definition, information seeking strategies, location and access of information, use of information, synthesis, and evaluation**

The information literacy skills of the students and the school administrators are manifested in the six areas which are task definition, information seeking strategies, location and access of information, use of information, synthesis, and evaluation.

Information Literacy Skills of the Tertiary Students:

Task definition with the mean of 4.13, standard deviation of 0.882 and rank 1. The students showed superiority in this skill. Item number one with 95 %, mean of 0.95 and standard deviation of 0.226 is rank 1 and is interpreted as superior. While the item number five with 70%, mean of 0.70 and standard deviation of 0.461 is rank 5 and is interpreted as above average. The skills that they possess are “they confer with instructors and participate in the class discussions, peer workgroups, and electronic discussions to identify a research topic or other information need; they “define or modify the information need to achieve a manageable focus”; they “identify keywords, synonyms and related terms for the information needed”; they also “differentiate between primary and secondary sources, recognizing how their use and importance vary with each discipline”.

Information seeking strategies with the mean of 3.55, standard deviation of 0.887 and rank 3. Students possessed an above average skill in this area. Item number one with 86%, mean of 0.86 and standard deviation of 0.351 is rank 1 and it means that the students are superior in this skill. Item number five with 48%, mean of 0.48, standard deviation of 0.500 is rank 5 which means students are average in this skill. The students show that they are superior in “retrieving information online or in using a variety of methods”, and in “determining which information is most/least important”. They also showed average skill in

“selecting the most appropriate investigative methods or information retrieval systems”, and in “developing alternatives and seeking a variety of materials”.

Location and access of information with the mean of 3.70, standard deviation of 0.897 and rank 2. Students manifested that they have above average skills in locating and accessing information. Item number two with 81%, mean of 0.81 and standard deviation of 0.391, is rank 1, which means that the students are superior in this skill. Item number five with 52%, mean of 0.52 and standard deviation of 0.500 is rank 5 which is interpreted as average. They showed confidence in the skills of “accessing appropriate information systems, including online databases, online public access catalog and electronic multimedia”, “using various classification schemes and other systems (e.g., call number systems or indexes) to locate information resources within the library or to identify specific sites for physical exploration”, “using various search systems to retrieve information in a variety of formats” and “using specialized online or in person service available at the institution to retrieve information needed”.

Use of information with the mean of 3.52, standard deviation of 0.947 and rank 4. The students’ skills are above average in this area. Item number two with 80%, mean of 0.80 and standard deviation of 0.401 is rank 1 which means that the students are above average in this skill. Item number four with 54%, mean of 0.54 and standard deviation of 0.499 is rank 5 which is interpreted as average. They make sure to “read the text and select main ideas”. “Identify the value and differences of potential resources in a variety of formats”. “Differentiate between primary and secondary sources, recognizing how their use and importance vary with each discipline”. “Organize the content in a manner that supports

the purposes and formats of the product or performance and use a range of information technology applications in creating the product or performance”. “Analyze the structure and logic of supporting arguments or methods, investigate differing viewpoints encountered in the literature, accurately and completely summarize/paraphrase the main idea from written and oral sources”, “Select among various technologies the most appropriate one for the task of extracting the needed information (e.g., copy/paste software functions, photocopier, scanner, audio/visual equipment, or exploratory instruments) and accurately cite sources”; “Integrate new and prior information, including quotations and paraphrasing, in a manner that supports the purposes of the product or performance”, and “Integrate new information with previous information or knowledge”.

Synthesis with the mean of 3.48, standard deviation 0.858, and rank 5. It can be gleamed that the students have an above average skill in synthesizing the information.

Item number one with 86%, mean of 0.86 and standard deviation of 0.351, is rank 1, meaning that the students are superior in this skill. The students are knowledgeable on how to present the information in an innovative way. Item number three with 38%, mean of 0.38 and standard deviation of 0.485 is rank 5, meaning that the students are below average in this skill. They “manipulate digital text, images, and data, as needed, transferring them from their original locations and formats to a new context”. They also “organize the content in a manner that supports the purposes and format of the product or performance (e.g. outlines, drafts, storyboards)”.

Evaluation with the mean of 3.15, standard deviation of 0.844 and rank 6. The students possess an average skill in evaluating information. Item number two with 84%,

mean of 0.84 and standard deviation of 0.363, is rank 1 which means that the evaluation skills of the students are above average. Item number four with 32%, mean of 0.32 and standard deviation of 0.466, is rank 5, interpreted as average. The students seldom “use consciously selected criteria to determine whether the information contradicts or verifies information used in other sources” and “examine and compare information from various sources in order to evaluate their reliability, validity, accuracy, authority, timeliness, and point of view or bias”.

Thus, the information literacy of the tertiary students in terms of all the six domains is above average. “Task Definition” ranked first. The skills that they possess are they confer with instructors and participate in the class discussions, peer workgroups, and electronic discussions to identify a research topic or other information need. “Location and Access” ranked second, they showed confidence in the skills of accessing appropriate information systems, including online databases, online public access catalog and electronic multimedia. “Information Seeking Strategies” ranked third, the students show that they are superior in retrieving information online or in using a variety of methods and in determining which information is most/least important. “Use of Information”, ranked fourth, they make sure to read the text and select main ideas. “Synthesis” ranked fifth, they manipulate digital text, images, and data, as needed, transferring them from their original locations and formats to a new context and the “Evaluation” ranked last among their skills. The students seldom use consciously selected criteria to determine whether the information contradicts or verifies information used in other sources.

Information Literacy Skills of the School Administrators

It is evident that the school administrators are superior in the six skills of Task Definition with a mean of 3.32, standard deviation of 0.595, and rank 1. They give their full effort when they “Explore general information sources to increase familiarity with the topic”. Item number three is a skill with the mean of 3.48, standard deviation of 0.655, rank 1 and interpreted as superior. In item number six with the mean of 3.19, standard deviation 0.712, rank 6 and is interpreted as superior too, they “Reformulate a complete statement of the task”.

School administrators are also superior in Information Seeking Strategies which obtained the mean of 3.15, standard deviation of 0.599 and rank 6. It is shown that among the “Information Seeking Strategies” item number five which is “Selects efficient and effective approaches for accessing the information needed using the investigative method or information retrieval system” got a superior remark, rank one, with the mean of 3.34 and standard deviation of 0.715. On the other hand, item number six “Develops a research plan appropriate to the investigative method”, and item number eight “Constructs a search strategy using appropriate commands for the information retrieval system selected (e.g., Boolean operators, truncation, and proximity for search engines; internal organizers such as indexes for books)” with the mean of 2.98, standard deviation 0.662, are rank 8.5, and both interpreted as superior.

Location and Access of Information with the mean of 3.20, standard deviation of 0.605 and rank 4.5, the school administrators are also superior. The school administrators

are superior in “Determining what sources are available” with the mean 3.48 and standard deviation of 0.682, is rank one, with a remark of superior. Item number 2 “Uses various classification schemes and other systems (e.g., call number systems or indexes) to locate information resources within the library or to identify specific sites for physical exploration” with the mean of 3.00, and standard deviation .701, is rank five with a remark of superior.

Likewise, they are superior in the Use of Information which got the mean of 3.26, standard deviation of 0.638 and rank 2. Item number four “Uses approved passwords and other forms of ID to access information sources” with the mean of 3.33, and standard deviation 0.758, is rank one, and interpreted as superior. Item number five “Posts permission granted notices, as needed, for copyrighted material” with the mean of 3.16, and standard deviation 0.745, is rank five which is also interpreted as superior.

Furthermore, Synthesis with the mean of 3.20, standard deviation of 0.657 and rank 4.5, is interpreted that the school administrators are superior in this domain. Item number three “Records all pertinent citation information for future reference” with the mean of 3.31, and standard deviation 0.754, is rank one, interpreted as superior. Item number six which is “Extends initial synthesis, when possible, at a higher level of abstraction to construct new hypotheses that may require additional information” with a mean of 3.09, and standard deviation 0.736, is rank six, also interpreted as superior.

Evaluation of information, got the mean of 3.25, standard deviation of 0.645 and rank 3, and they are superior in all nine skills. Item number one “Examines and compares information from various sources in order to evaluate their reliability, validity, accuracy, authority, timeliness, and point of view or bias” and item number six “Investigates differing

viewpoints encountered in the literature” both got a mean of 3.29, and standard deviation 0.749, are rank 1.5. They are interpreted as superior. Item number eight which is “Assesses the quantity, quality, and relevance of the search results to determine whether alternative information retrieval systems or investigative methods should be utilized”, with a mean of 3.19 and standard deviation 0.712, is rank 9, which is also superior.

Thus, the information literacy of the school administrators in terms of all the six domains is superior. “Task Definition” ranked first, they give their full effort when they explore general information sources to increase familiarity with the topic. “Use of Information” ranked second, they use approved passwords and other forms of ID to access information sources. “Evaluation” ranked third, they examine and compare information from various sources in order to evaluate their reliability, validity, accuracy, authority, timeliness, and point of view or bias. “Location and Access, they determine what sources are available and Synthesis, they record all pertinent citation information for future reference” both ranked fourth, and the “Information Seeking Strategies”, they select efficient and effective approaches for accessing the information needed using the investigative method or information retrieval system” ranked last among their skills, but they are superior in all the skills.

2. Determine the managerial competencies of school administrators in terms of planning, organizing, leading, and controlling

The competencies of the school administrators in terms of planning with the mean of 3.16, standard deviation of 0.653 and rank 4 are superior in all the seven items from the first to the last in rank. Item number three “Identify technologies to support effective communication and collaboration and model their use among colleagues, parents, students, and the community”, with the mean of 3.36, and standard deviation of 0.788, is rank 1 and interpreted as superior. Item number one “Continually seek, develop, evaluate, and deploy digital resources to support program goals, learning teams, and individual learner’s needs” with a mean of 3.02, and standard deviation of 0.827 is rank 7, also interpreted as superior.

The managerial competencies of the school administrators in terms of organizing with a mean of 3.17, standard deviation 0.687 and rank 3 is interpreted as superior. This is illustrated in the item number eight “Acquire, manage, and equitably provide technology teaching and learning resources to meet the identified needs of all students” with the mean of 3.28, and standard deviation of 0.883, rank 1 and interpreted as superior. Item number seven “Establish and maintain a robust infrastructure for technology including integrated, interoperable technology systems to support management, operations, teaching, and learning” with a mean of 3.00, and standard deviation of 0.858, is rank 9, also interpreted as superior.

The competencies of the school administrators in terms of leading with the mean of 3.22, standard deviation of 0.677 is rank 2 among the four competencies. The school

administrators are superior in all nine skills in this management function. Item number nine “Lead collaborative development, review, and revision of curricula and professional development designed to guide the safe, legal, and ethical use of digital information and technology resources among all students and stakeholders”, with the mean of 3.38 and standard deviation of 0.768 is rank 1 and interpreted as superior. Item number one “Inspire and facilitate among all stakeholders a shared vision of purposeful change that maximizes the use of digital-age resources to meet and exceed learning goals, support effective instructional practices, and maximize performance of district and school leaders”, with a mean of 3.05 and standard deviation of 0.826, is rank 9, also interpreted as superior.

The competencies of the school administrators in all the four functions of management, which are planning, organizing, controlling, and leading, are superior. This signifies that the school administrators are all competent in their management functions. Among the four functions, controlling was ranked first followed by leading, then organizing and the last is planning.

In terms of controlling which obtained the mean of 3.28, standard deviation of 0.714, and rank 1 in the four competencies, the school administrators are superior in all eight skills. Item number two “Model and promote the frequent and effective use of technology for learning”, with the mean of 3.40 and standard deviation of 0.771, is rank 1 and interpreted as superior. Item number three “Provide learner-centered environment equipped with technology and learning resources to meet the individual and diverse needs of all learners”, with a mean of 3.19 and standard deviation of 0.847, is rank 8, also interpreted as superior.

3. Determine the relationship between the information literacy skills and the managerial competencies of the school administrators

The correlation coefficients obtained between managerial competencies in terms of planning and the information literacy of the school administrators reveals that the management function of planning has marked substantial positive rectilinear correlation with the two domains of information literacy. They are “Task Definition”, with $r = 0.636$, and “Information Seeking Strategies”, with $r = 0.657$. However, there are also three domains which have a negligible negative rectilinear correlation with the school administrators’ planning competencies. They are: Use of Information with $r = -0.090$, Synthesis with $r = -0.008$, and Evaluation with $r = -0.032$. *The average correlation coefficient r obtained between the six domains and the school administrators’ planning competencies is 0.443, which is interpreted as moderate positive rectilinear correlation.*

The correlation coefficients between the school administrators’ managerial competencies in terms of organizing and their information literacy show that both “Task Definition” with $r = 0.659^{**}$, and “Information Seeking Strategies” with $r = 0.629^{**}$ have a marked substantial positive rectilinear correlation which is highly significant with the organizing competencies of the school administrators, while “Location and Access” $r = 0.571^{**}$, has a moderate positive rectilinear correlation with the organizing competencies. However, “Evaluation” with $r = -0.054$, “Synthesis” with $r = -0.082$, and “Use of Information with $r = -0.122$ have a negligible negative rectilinear correlation with the school administrators’ organizing competencies. In general, there is a *highly significant*

relationship between all the domains of information literacy and organizing having obtained an $r = 0.404^{**}$ which is interpreted as moderate positive rectilinear correlation.

There is no significant correlation between the managerial competencies in terms of “leading” and each of the six domains of the information literacy of school administrators. All the six correlation coefficients obtained in Task Definition ($r = -0.085$), Information Seeking Strategies ($r = -0.022$), Location and Access of Information ($r = -0.059$), Use of Information ($r = -0.050$), (Synthesis $r = -0.057$) and Evaluation ($r = -0.121$) are interpreted as negligible negative rectilinear correlation. *The information literacy skills of the school administrators are not affected by their leading competencies.*

The correlation coefficients obtained between the managerial competencies in terms of controlling and the information literacy skills of the school administrators indicate negligible rectilinear correlation in all six domains. Five of these coefficients are negative: Information Seeking Strategies $r = -0.007$, Location and Access of Information $r = -0.072$, Use of Information $r = -0.025$, Synthesis $r = -0.040$ and Evaluation $r = -0.109$. Task Definition with $r = 0.044$ is the only one that is positive. This finding could mean that the controlling competencies of the school managers do not affect their information literacy. *The overall mean of the six correlation coefficients is -0.062 , which means negligible negative rectilinear correlation and is not significant.*

In general, there is a low but significant correlation between managerial competencies in terms of planning, organizing, leading, and controlling with the six domains of information literacy of the school administrators.

4. Design, develop, and craft guidelines for the management and utilization of the Information Literacy Program

The results of the survey in the information literacy skills of the tertiary students served the basis in designing and developing an information literacy program. The Information Literacy skills of the students with the overall mean of 3.59 and standard deviation of 0.933 in all areas are above average. Task Definition with the mean of 4.13 and standard deviation of 0.882, is rank 1 and interpreted as superior. Information Seeking Strategies with the mean of 3.55 and standard deviation 0.887 is rank 3 and interpreted as above average. Location and Access of Information with the mean of 3.70 and standard deviation 0.897 is rank 2 and interpreted as above average. Use of Information with the mean of 3.52 and standard deviation of 0.947 is rank 4 and interpreted as above average. Synthesis with the mean of 3.48 and standard deviation of 0.858 is rank 5 and interpreted as above average. Evaluation with the mean of 3.15 and standard deviation of 0.844 is rank 6 and interpreted as average. These six areas are all interpreted as above average and they were considered as basis in the design of an information literacy program in higher education. The evaluation which ranks last was given emphasis in the design because it was revealed that their skills in this domain are average and need improvement. The information seeking strategies, location and access of information and use of information are also included in the design. Although these domains obtained a remark of above average, students use these skills often and it is very useful in their studies and learning process. Task definition is also part of the design although the students considered themselves as superior in this domain, since the task definition skills are often used and this is the first step of the

Big 6 skills. This is beneficial to all students and it is essential to include this in the program. All the skills in the six areas were included in the information literacy program because they are all useful.

The results of the survey in the managerial competencies of the school administrators served as the basis in crafting the guidelines for the management and utilization of the information literacy program for school administrators. The four management functions of planning, organizing, leading, and controlling, got mean scores ranging from 3.16 to 3.28, which are all interpreted as superior. The average score is 3.21 with a standard deviation of 0.407. This signifies that the school administrators are competent in all the four functions of management. Since planning ranked the lowest with the mean of 3.16 and standard deviation 0.653, this was given emphasis in crafting the guidelines. Planning involves devising a systematic process for attaining the goals of the information literacy program. Controlling, rank one with the mean of 3.28 and standard deviation 0.714 was also included in the guidelines because it involves verifying that actual performance matches the plan. If the performance results do not match the plan, corrective action is taken. This followed by leading with the mean of 3.22 and standard deviation 0.677. This involves the guiding, leading, and overseeing if the information literacy program achieves its goals. Organizing which is rank third with the mean of 3.17 and standard deviation 0.687 involves arranging the necessary resources to carry out the plan. It is the process of creating structure, establishing relationships and allocating resources to accomplish the goals of the program. The crafted guidelines for the management and

utilization of the Information Literacy Program for school administrators will greatly contribute to its sustainability since the guidelines are in line with the school administrators' management functions. This will assure smooth operation.

Conclusions:

Based on the summary of findings, the following conclusions on information literacy were drawn:

The information literacy skills test and assessment for the students and the school administrators effectively measured their ability to recognize an information need, know where and how to find information, evaluate and select relevant information, organize their findings to suit their needs, and use this new information effectively and wisely. The managerial competencies assessment determined the ability of the school administrators to perform their functions in terms of planning, organizing, leading, and controlling.

1. The students in higher academic levels are information literate, technology savvy and considered millennials but despite these characteristics they displayed difficulties or weaknesses in the different skills. They have less critical approach to information evaluation. Students may know where and how to access information but still they encounter challenges in analyzing and evaluating the information.

The information literacy skills of the school administrators are well developed since they showed superiority in the six skills on task definition, information seeking strategies, location and access, use of information, synthesis,

and evaluation. They have more critical information analysis and evaluation. Though they are fairly dynamic and active in terms of their information seeking strategy but they can cope well with their information needs.

2. The school administrators are proficient in planning, organizing, leading, and controlling skills. They possessed the knowledge, judgement, strength or skill needed in designing, developing, and managing the Information Literacy Program (ILP). The successful implementation of the information literacy program is dependent on the role of the school administrators in advocating and promoting.
3. The information literacy skills of the school administrators are not greatly affected by their managerial competencies in terms of planning, organizing, leading, and controlling. The school administrators in higher education are in good position to be leaders in developing the information literacy skills of their students. Since they have well-developed information literacy skills, they can design, develop, and manage the program based on the students' needs.
4. The six domains of information literacy skills of the students: task definition, information seeking strategies, location and access, use of information, synthesis, and evaluation are all useful and essential part in designing and developing an Information Literacy Program. The program enhances the information literacy skills, engage students in learning and researching, encourage independent learning and

social responsibility through the ethical use of information and support them in their lifelong learning.

The school administrators in higher education are information literates and competent in the management functions. The management functions such as planning, organizing, leading, and controlling are useful and vital in crafting the guidelines on the management and utilization of the Information Literacy Program. These skills are factors in creating and sustaining an Information Literacy Program. An Information Literacy Program is developed through a systematic process.

Recommendations

In view of the findings and the conclusions of the study, the following recommendations are hereby presented for consideration:

1. Foster and sustain the information literacy program as an integral part of the student's learning and also for the faculty to see this as a vital part of the teaching of courses at the higher education level. With the abundance of information sources, information literacy will challenge the information seekers and information literacy instructors to come up with an information literacy program for lifelong learning. The students must be able to learn new ideas and skills independently and as members of a learning community, and use information to solve problems, to make decisions, and to lead happy and productive lives.

2. Exercise strong school leadership and collaboration. Information literacy programs require the planning leadership and support of the school administrators. The administrators play a fundamental role in creating a school culture of collaboration and learning. There is a need for meaningful collaboration among the school administrators, faculty members, and librarians for the achievement of the common goals of learning and a shared commitment to students. Collaboration among teachers, librarians, and school administrators is a vital component in sustaining the information literacy program. Teachers and librarians should collaborate closely with the administrators to facilitate active advocacy and support, thus aligning the library program's information literacy agenda to the school's vision and strategic plan. They can also support the administrators' efforts that incorporate information literacy. Teacher and librarians must stress the significance and application of information literacy skills that will make learning more meaningful for students.
3. The information literacy program must be embedded in the curriculum to improve student engagement and skill development. All subject areas should stress critical thinking and problem-solving abilities. Most importantly, research skills should be emphasized. The lessons should be enhanced by providing in-depth instructions in research skills which are the important step in honing the information seeking skills and their technological skills.

4. In developing the information literacy program for higher education, the students' weaknesses in the task definition, information seeking strategies, location and access, synthesis, use of information, and evaluation must be considered such as the following:
 - 4.1 Having a clear understanding of the information needed
 - 4.2 Determining which among the sources provide the needed information
 - 4.3 Using periodical articles
 - 4.4 Presenting or applying the information gathered
 - 4.5 Presenting or expressing their thoughts and views
 - 4.6 Examining and determining the possible criteria in evaluating the credibility of the websites
5. Give priority to the modernization of the library in state universities. Improve and provide technology infrastructure, especially connectivity. Ensure adequate Internet, wireless access, and technical support for all students, faculty, and staff. Support procurement of innovative materials for easy access to library resources.
6. The proposed Information Literacy Program is recommended for further validation. The tool can be subjected to evaluation vis-à-vis pre-test and post-test.

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Appendices

Appendix A
Information Literacy Program

User's Guide

INFORMATION LITERACY PROGRAM



Information Literacy Program for Lifelong Learning in Higher Education

Introduction

Information literacy is one of the key abilities which people in society should have for the 21st century. The rapid expansion of technology and the ever growing amount of complex information (in a range of formats), which students, school staff, and the general population need to review, select, evaluate and use effectively, information literacy is one of the fundamental aspects of education for today's student (Herring, 2011). The development of the information literacy program is a response to the findings of the study concerning the information literacy skills of students in higher education. There are several difficulties identified by the participants in the domains of task definition, information seeking strategies, location and access of information, use of information, synthesis, and evaluation of information. In consideration of the aforementioned and the fact that not all problems can be addressed immediately, seven (7) essential domains are recommended for improvement by the researcher to address the problems of major concern.

The first domain is information literacy. This provides background information about information literacy.

The second domain is task definition or recognizing the information need. This focuses on defining the information need when a student has set a task. This will enhance the students' confidence in their ability to interpret the assignment in order to decide what information they will need and where to look for it. Usually, they will have to choose from a variety of printed and electronic sources, depending on the type of assignment. This will

also help the students to familiarize themselves with various information sources that their institution offers and to find out how to access them.

The third domain is information seeking strategies. This concentrates on the methods or techniques to be used in finding the right information. This will also teach them to use the help available on a database or search engine to avoid problems and save time. The students will select appropriate search methods to solve their information problem. This will help the students in practicing planning and executing searches as often as possible even when they are looking for information for a personal need.

The fourth domain is the location and access of information. This help the students on how to find and locate information within sources. Students are encouraged to use online catalogs, searchable periodical indexes, electronic encyclopedias, web search engines, and other online searching tools to locate useful information.

The fifth domain is the synthesis which focus on how to organize information from different sources and present the results information or output. The students can organize and communicate their output using word processing, database management system, spreadsheet and graphics software, and present their output via-email, web publishing, or other forms of media.

The sixth domain is the use of information. This focuses on the how students will engage in information search through reading, viewing, and listening to determine its relevance and then extract the relevant information. The students will learn to select an appropriate documentation style and uses it consistently to cite sources. This will also help them to have a better understanding of what constitutes plagiarism.

The seventh domain is the evaluation of information. This puts emphasis on assessing the usefulness and significance of the information. Using the criteria for evaluation, the students will determine the accuracy, relevance, and comprehensiveness of the different information sources. This will also allow students to be critical thinkers and effective users of information.

Since information literacy is a basic human right in the digital world, it enables people to make good use of information and communication technology (The Alexandria Proclamation, 2005). The researcher developed a program with an online or website format. The program aims to support the information needs and the improvement of the students' information literacy skills. This is the key to the social, cultural, and economic development of nations and communities, institutions, and individuals in the 21st century and beyond and in creating an information society (The Prague Declaration, 2003).

The information literacy program can now be delivered in a variety of ways to an increasingly wider variety of students, through face-to-face, blended, or fully online learning. Technology is used not only to improve the quality of services to students but also to enable students to study in more effective ways. The essential components of an effective information literacy program include instruction and practice in the research process, a resource-based curriculum, and opportunities to engage in critical thinking and problem solving. All these components are connected through an interdisciplinary unit approach to teaching and learning

Information literacy should be the foundation of knowledge in higher education institutions, to remove barriers toward creativity caused by a misunderstanding of the

research process. The students should be familiar with skills that enable them to succeed in their future study and life. Information literacy is not only a necessity for students, but for all of us as professionals in our workplaces and personal lives. Information literacy should be “functional”, to young people and adults as a new tool of expression, communication, and learning. It should be developed in all levels of education, and one goal of our educational institutions should be the education of IT literate professionals prepared for lifelong learning. (Mandusic and Blaskovic, 2013)

Information literacy programs should not focus only on teaching information skills, but also on designing learning experiences that necessitate the use of information skills (Bruce (2004) in Cakmak, 2010). Governments are strongly encouraged to develop strong interdisciplinary programs to promote information literacy nationwide as a necessary step in closing the digital divide through the creation of an information literate citizenry, an effective civil society, and a competitive workforce (Tuazon, 2011).

Appendix B
Guidelines for the Management and Utilization of an Information Literacy Program
for Lifelong Learning in Higher Education

**GUIDELINES FOR THE
MANAGEMENT AND UTILIZATION
OF AN
INFORMATION LITERACY
PROGRAM FOR
LIFELONG LEARNING
IN HIGHER EDUCATION**



Guidelines for the Management and Utilization of an Information Literacy Program for Lifelong Learning in Higher Education



Rationale

Today college students are armed with superior technical skills as they are considered millennial babies, but teachers and librarians have observed that they often lack the ability to find, evaluate, and use information in an academic setting. Students are keen users of web sources but few of them cite these as their references. They don't find the time to visit the libraries and they don't often ask reference questions or consult the librarians. This resulted to the increase in plagiarism cases. Students have developed dependency on using electronic information because of the ease of copy and paste method of information retrieval.

The impact of technology has changed the face of education. Students access, manipulate and use many tools to get information and communicate knowledge. The challenge now is to discern and select relevant and useful information. Since there is an overload of information, librarians, teachers, and school managers should help or teach the students to be more critical and wise in using the right information.

An information literacy program will help students to develop or enhance their information literacy skills. Since information literacy demands skills that are more multifaceted than the traditional library skills, it entails a deeper understanding rather than just searching for a source and not having a second look of the information obtained for an assignment. Information literacy skills include recognizing when information is needed,

choosing suitable sources from the many available information resources, evaluating or assessing the information for accuracy and relevance, organizing or synthesizing the information obtained, creating knowledge by associating the new information with previous knowledge and experiences, and using information effectively and wisely. Other skills that are enhanced are problem solving, critical thinking, creative thinking, and transferring knowledge.

“Information Literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations.” (Garner, 2005)

It has been an advocacy of the librarians to help and assist the students and other information users to be information literate but their efforts have not yet been rewarded and given importance in the educational community, and this is due to the lack of exposure and involvement of the teachers and school managers in this program. The responsibility of utilizing and managing the information literacy program does not lie solely on the librarians and the teachers. As part of lifelong learning, information literacy instruction and learning should be integrated throughout the curriculum and supported by the school managers and the entire school community.

Purpose



The purpose of the program is to help students learn new ideas and skills both independently and as a learning community, use information to solve problems, and to make decisions.

Guidelines:



The Guidelines for the Management and Utilization of Information Literacy Program was developed to aid the school administrators in sustaining and keeping up with the trends in managing the program for lifelong learning in higher education.



PLANNING

One of the important components of an information literacy program is planning among the school managers, teachers, and librarians. They need to plan and identify the topics to be included in the curriculum, to evaluate teaching strategies, to assess student progress in information literacy development, and to share new information and ideas. The planning stage involves the following:

1. Determine the Information Literacy Program (ILP) that works best for the institution.
2. Adapt or adopt international information literacy standards and practices that are appropriate for your institution.
3. Identify what are the requirements or factors to be considered in implementing the ILP.
4. Include expected long-term outcomes of the ILP.
5. Formulate policies or guidelines for the implementation of the ILP.
6. Gather ideas, suggestions, and draft proposal within the present structure.

7. Identify and apply research-based models of successful technology and practices to support the program goals.
8. Involve all concerned parties in the planning process: library team, faculty members, administrators, and middle-level managers.
9. Develop an active support and collaboration among librarians, teaching faculty, and middle-level managers.
10. Conduct a needs assessment.
11. Estimate the budget of the resources that will be needed in the ILP.
12. Keep lines of communication open on both ends.



ORGANIZING

Managers must establish the formal structure of authority through which work subdivisions are arranged. The organization structure should facilitate the achievement of goals so it is important that the organization structure is designed to facilitate work flow (whether via function, specialization or process), define the chain of command (whether hierarchical, flat, etc.), define the span of control (the wider the less effective) and clarify issues such as centralization versus decentralization. The library management would have to structure the organization in such a way as to ensure that the organization structure facilitates rather than hinder the achievement of goals. In this stage, the following steps are undertaken:

1. Organize a group that will participate in the planning process for strategic direction and orchestrate support for the Information Literacy Program (ILP) among the staff.
2. Create a collaborative academic scheme with the teachers/faculty, librarians, technology specialists, administrators, curriculum planners, and learning facilitators.

3. Select the possible topics to be included in the ILP.
4. Prepare and present different modes of conducting the ILP.
5. Select from among the information literacy standards those that will help in achieving the goals and objectives of the ILP in your institution.
6. Organize and distribute information literacy handouts to the faculty members and administrators for them to become aware of the objectives and benefits of the ILP.
7. Prepare a schedule for the sessions on ILP orientation.
8. Prepare a schedule for the faculty members/teachers to attend information literacy training sessions.
9. Acquire and provide technology teaching and learning resources to meet the identified needs of the students.
10. Integrate the ILP in the curriculum to achieve the goals and objectives, and assure the successful implementation of the program.
11. Organize a flexible access scheduling to integrate information literacy skills instruction that extends student learning or supports the students' research activities.
12. Select appropriate courses for library skills instruction.
13. Provide information literacy trainings that cannot be undertaken in the library, classroom, or in other venues.
14. Design and utilize assessment tools focused on the learners' needs.



LEADING

The basic managerial function is leading. It is the set of processes used to get members of the organization to work together to further the interest of the organization. To

effectively engage in the leading function, managers must possess an understanding of individual and interpersonal processes. They also must have an appreciation for employee motivation, interpersonal relations and communication, the dynamics of managing work groups and teams, and leadership itself. Interpersonal and communication skills may be especially important in carrying out the leading function. Under this management function the following are undertaken:

1. Conduct workshops for faculty members/teachers, librarians, administrators, and middle-level managers where Information Literacy concepts and the importance of implementing them are discussed.
2. Show positive outlook and be persuasive when requesting concerned personnel to do what needs to be done in sustaining the Information Literacy program.
3. Acknowledge and give due recognition to those who attend the course on information literacy, by awarding them, for example, with certificates of attendance.
4. Create a school culture of collaboration and learning.
5. Recognize and reward academic personnel who offer library information literacy opportunities and exert efforts in helping the ILP become a success.
6. Recognize teachers, librarians, and administrators as professional partners in the ILP.
7. Delegate responsibilities, such as budgeting and program management, to the teachers and the librarians.
8. Seek outside support and funding to facilitate the implementation of the ILP.
9. Set time for collaboration, planning and assessment.
10. Strengthen and sustain institutional support by convincing authorities to get adequate financial support for hiring librarians, library staff, building/adapting facilities, training personnel, and developing procedures.

11. Encourage, assign, and share top leadership with the rest of the library team.
12. Make sure that the information literacy philosophy is included in the core institutional documents, such as the mission, strategic plan, and relevant topics for instruction.
13. Encourage teamwork – any activity can be done faster when more than one information professionals are involved.
14. Appoint a coordinator for all library information literacy activities.
15. Make the library the information laboratory.



CONTROLLING

Controlling sees to it that the right things happen, in the right way, and at the right time. It helps ensure that the performance contributions of individuals and groups are consistent with organizational plans. It helps ensure that performance accomplishments throughout an organization are consistent with one another in a means to end fashion. And it helps ensure that people comply with organizational policies and procedures. The following are to be undertaken:

1. Find ways to sustain the Information Literacy Program in case there will be obstacles, such as limited facilities and scarce or no economic or human resources.
2. Ask for support from the teachers'/faculty members, students, administrators of the institution, and from other institutions.
3. Utilize technology to strengthen institutional learning collaboration.
4. Identify alternative strategies and promote the ILP actively to sustain interest among the faculty members/teachers and students.

5. Make it an objective to ensure that information literacy is embedded in the curriculum.
6. Promote and ensure that the library is the center of the ILP.
7. Emphasize results rather than how to achieve them, and why achieve them.
8. Monitor and make sure that library resources and services have positive effects to ensure the program's success.
9. Evaluate the strengths and weaknesses of the ILP in terms of human, economic, and physical resources available in the library.
10. Analyze the internal and external factors that contribute to the success of the ILP. Likewise, identify those factors that hinder its success.
11. Ensure that information literacy instruction embedded in the different courses is interesting and appealing to the students.
12. Adjust course length according to available time.
13. Assessment should be done to measure student performance based on the tasks that are relevant and useful in real life.
14. Create and present a progress report on the ILP.



Figure 5: Cycle in sustaining the Information Literacy Program



Needs assessment

The planning team should conduct a needs assessment to verify and establish the need for the information literacy program. The goal of doing a needs assessment is to provide a clear rationale for the information literacy program. Gather a complete and accurate set of data. Administrators may become very supportive of your idea to create a plan for information literacy in your institution if you are armed with assessment results as backup. It will be easier for them to grant your requests for funding and staffing for the program. Needs assessment can be done through surveys and interviews.



Curriculum Integration

Information literacy should be embedded in the curriculum for the information literacy program to succeed. The need for information literacy can be more explicitly addressed through direct instruction and meaningful learning activities, and when it is integrated in the general school program. Its assessment should be an essential aspect of the whole-school planning and program implementation.



Collaboration

Collaboration among school managers, teachers, and librarians is accomplished through a combination of scheduled planning sessions where they will brainstorm, discuss and lay out the activities needed to guide the students in their research and how these will be evaluated. They need to collaborate in designing lessons that meet curriculum standards and information literacy objectives and that engage all students in hands-on, challenging, and

real-life problem-solving activities. They also delegate some responsibilities to those involved in the program.



Progress Reports

To sustain any program, it must have a means of reinventing the program. Prepare a progress report or an annual report, including what you have accomplished during the past year and how many people were served. The annual report is a good way to document what has been accomplished and what still needs to be done. It will provide a mechanism for affirming the accuracy of your time table and finding out if there is a need to revise some of the feasibility plans.

Quantify the results of the work done or measure what you have accomplished in terms of the number of people affected by the implementation of the program. By compiling or comparing these numbers over a period of time you will have an idea of how the program has been growing and changing. Statistics can serve as benchmarks over a period of time and provide the data when it is necessary to report about the results of the implementation of the program.

It is helpful to review the old documents or plans on a regular basis, both to consider where you are and to determine the next step. This will give time for the implementation and planning to reflect on the implementation of new parts of the program or to review the strengths and weaknesses of the program in the past year.

Review and assess the program's goals to set directions for the program. Gather the planning committee to address the concerns and issues. Hold more open-space meetings, or create focus groups to react to specific parts of the programs. If there are some changes to be made, try to compare the program's goals with the outcomes.

Burkhardt, MacDonald, and Rathemacher (2005) identified helpful ways to evaluate what has been done and the needs to be done in the future.

- **Market the program**

The information literacy program should have an impact on the school community and this is achieved by promoting it regularly. People should be aware of the purpose and benefits of the program. Think outside the box and use creative measures to market the program.

- **Report the success of the program widely and share with others**

In achieving success, it is best to prepare and present official reports. They could be posted on the school website or bulletin boards. Brochures can also be given to parents to inform them how the students are benefitting from the program and also to the students to keep them updated of their progress in the program.

Sharing with colleagues is the best way to help others to move forward to success. New points of view or new ways and shared insights on accomplishing a task will be profitable to the program. Sharing the success and challenges encountered is also inspiring and beneficial to others.

- **Welcome opportunities for growth**

Opportunities support the sustainability of the information literacy program. Make better use of the opportunities given in upgrading equipment, technology or additional staff. Donations, grants, and gifts do not always arrive when you need them most, but this does not mean that they should be rejected if they are offered.

Appendix C

Indicators of Information Literacy, Independent Learning and Social Responsibility for Lifelong learning

Information Literacy	Independent Learning	Social Responsibility
<i>Accessing information efficiently and effectively</i>	<i>Pursuing information related to personal interest</i>	<i>Recognizing the importance of information to a democratic society</i>
1. Recognize the need for information. • Problem Solving • Class/small-group discussions • Brainstorming sessions	1. Seek information related to various dimensions of personal well-being, such as career interests, community involvement, health matters, and recreational pursuits. • Visit other libraries • Conduct Silent Sustained Reading (SSR), and Drop Everything And Read (DEAR). • Join accelerated reader program, book clubs, mentor/intern program, career search and career shadowing. • Participate in community service.	1. Seek information from diverse sources, contexts, disciplines, and cultures. • Utilize print, non-print and online resources in different subject areas.
2. Recognize that accurate and comprehensive information is basis for intelligent decision-making. • Discuss book reviews, and book reviews. • Evaluate print, non-print and Internet resources. • Compare and contrast resources.	2. Designs, develops, and evaluates information products and solutions related to personal interests. • Work on independent projects. • Develops Web page • Publish newspaper • Write articles, editorials • Evaluates media information (media literacy).	2. Respect the principle of equitable access to information. • Access all resources of information. • Handicap individual can access information at any time. • There is an open or flexible scheduling of library use and access to information.
3. Formulate questions based on information needs. • Create guiding questions • Keyword development • Evaluation rubric for process.		
4. Identify a variety of potential sources of information. • Use print, non-print and computer-related sources of information.		
5. Develop and use successful strategies for locating information. • Use different search strategies. • Develop keyword search. • Use your call number knowledge • Utilize the table of contents, indexes, bibliographies, online catalog, internet, search engines, Boolean operators and links. • Using your computer navigation knowledge.		

Information Literacy <i>Evaluating information critically and competently</i>	Independent Learning <i>Appreciating and enjoying literature and other creative expressions of information</i>	Social Responsibility <i>Practicing ethical behavior in regard to information and information technology</i>
1. Determine accurate, relevant, and comprehensive information. • Conduct book reviews. • Compare and contrast sources of information. • Use an evaluation rubric for relevance	1. Be a competent and self-motivated reader. • Adapt a flexible scheduling of reading activities. • Engaged in Sustained Silent Reading • Participate in book talk and book club.	1. Respect the principles of intellectual freedom. • Select own books and resources • Identify information concerns and Join in feedback discussions. • Consult print and non-print selection policies.
2. Distinguish among facts, point of view, and opinion. • Differentiate between primary and secondary sources. • Compare and contrast of sources of information.	2. Derive meaning from information presented creatively in a variety of formats. • Utilize print, non-print and online resources.	2. Respect intellectual property rights. • Avoid plagiarism by citing the source. • Paraphrase the information gathered. • Use quotation marks in adopting a statement by an author. • Prepare bibliography of all the sources of information.
3. Identify inaccurate and misleading information. • Evaluate the different internet sources and determine the copyright date.	3. Develop creative products in a variety of formats. • Publish a book or newspaper article. • Write magazine article or poems. • Produce video, plays and skit. • Develop power point presentation, audio-visual presentation and web page.	3. Use information technology responsibly. • Internet use agreement • E-mail etiquette • Apply the copyright laws. • Prepare a bibliography. • Use computer properly and with care.
4. Select information appropriate to the problem or question at hand. • Create rough drafts and edit. • Use evaluation rubric for process. • Use graphic organizers.		

Information Literacy	Independent Learning	Social Responsibility
<i>Using information effectively and creatively</i>	<i>Striving for excellence in information seeking and knowledge generation</i>	<i>Participating effectively in groups to pursue and generate information</i>
1. Organize information for practical application. • Create note cards • Use graphic organizers and time lines • Use evaluation rubric for product	1. Assess the quality of the process and products of one's own information seeking. • Evaluate a process and product using a rubric. • Seek feedback. • Make revisions	1. Share knowledge and information with others. • Participate in cooperative groups. • Share information using email and web pages. • Create cooperative comprehensive searches. • Participate in interschool collaborative projects.
2. Integrate new information into one's own knowledge. • Generate original reports • Create portfolios, plays, stories and news reports.	2. Devise strategies for revising, improving, and updating self-generated knowledge. • Create a rough draft for the output. • Use current events and research journals. • Integrate controversial subjects. • Compare outdated versus current information.	2. Respect others' ideas and backgrounds and acknowledge their contributions. • Join cooperative groups. • Participate in class or small-group discussions.
3. Apply information in critical thinking and problem solving. • Use knowledge across subject areas • Answer real-world assignments and problem solving. • Conduct data collections and observations. • Develop conclusions. • Analyze data		3. Collaborate with others, both in person and through technologies, to identify information problems and to seek their solutions. • Participate in problem-solving activities. • Join in cooperative groups.
4. Produce and communicate information and ideas in appropriate formats. • Create portfolios, videos, multimedia presentations, posters, collages, overheads, skits, musical presentations, visual art displays and speeches. • Use computer software to present them.		4. Collaborate with others, both in person and through technologies, to design, develop, and evaluate information products and solutions. • Design, develop and evaluate creative products. • Join in cooperative groups. • Participate in problem-solving activities. • Use evaluation rubrics. • Involvement the community

Appendix D

Table of Specifications for the Student's Information Literacy Skills Test

Area	Item	Skills	Number of Items	%	Item Placement
Task Definition	You were absent from your classes for three days due to fever. Your professor has given you several requirements for you to cope with the lessons you missed. With so many requirements given, you were confused with the format, procedure, and date of submission. What would be the best thing for you to do to be able to work on your requirements properly? A. Use online database for easy access of information B. Search the format of the requirements on the Internet C. Ask the librarian about the sources of information needed D. Communicate with your teacher and clarify the requirements given	Confers with instructors and participates in class discussions, peer workgroups, and electronic discussions to identify a research topic, or other information needed. Defines or modifies the information needed to achieve a manageable focus.	1	3.34	1
	One of your assignments in Educational Technology is to think and develop a research topic. You also need to search for strategies in retrieving information relevant to the topic. What then will be your first step for this assignment? A. Develop a search strategy B. Examine a set of web pages C. Select an article from a scholarly journal D. Identify a topic in Educational Technology that is of great interest to you	Identifies key concepts and terms that describe the information needed.	1	3.34	3
	Your group was assigned to report on the "Decrease of Enrollees in the Private Schools". As the leader of the group what will be your first step so that every member will have a clear understanding of the report during your first meeting? A. List down the possible sources of information B. Ask your members to search for information about the topic C. Set a schedule for a library visit for the group D. Define and brainstorm with the members about the topic assigned to the group	Confers with instructors and participates in class discussions, peer workgroups, and electronic discussions to identify a research topic, or other information needed. Defines or modifies the information needed to achieve a manageable focus.	1	3.34	11
	Your professor asked you to read a ten-page report on "Bullying". You have to discuss it briefly to the class because you only have limited time to read it. What is the first step that you should do to tackle all the important details? A. Discuss about the topic using a video presentation B. Check the Internet for background information C. Explain the topic based on your understanding D. Highlight some keywords from the report and focus on the important details	Identifies keywords, synonyms and related terms for the information needed.	1	3.34	16
	You are to submit a bibliography in your Science research in which you have already made a listing of all your sources. Also, you have to write three or four paragraphs explaining how these sources will help you write your paper. To be able to work on this easily, what should you do first? A. Create a research proposal B. Locate substantial sources of information C. Craft an outline or introduction for your paper D. Analyze and categorize your sources of information as primary and secondary	Differentiates between primary and secondary sources, recognizing how their use and importance vary with each discipline.	1	3.34	18
			5	16.7	

Area	Item	Skills	Number of Items	%	Item Placement
Information Seeking Strategies	You were searching for a book written by Severino Reyes. However, you forgot the title of his book. If you are using the On-line Public Access Catalog (OPAC), what should you do? A. Ask the librarian for assistance B. Encode Filipino author on the keyword entry C. Encode Filipiniana books on the search entry D. Encode Severino Reyes on the author entry and browse the list of his works	Retrieves information online or in person using a variety of methods.	1	3.34	6
	You went to the National Library to conduct a research about Ferdinand Marcos' contributions to the Philippines. The library is an open shelf system wherein an individual should be the one to locate and get the book from the shelf. Before you proceed to Ferdinand Marcos' section, what should you do first to maximize your time? A. Ask your friend for help B. Visit the Filipiniana section C. Check the online journals for the articles D. Use the online catalog and list the titles and call numbers of relevant books	Retrieves information online or in person using a variety of methods.	1	3.34	8
	Your group is assigned to report on the regions of the Philippines including the cultural, social, geographic, and historic aspects of each region. You already have a list of all possible sources of information. How can you determine which among the sources suit the group's needed information? A. Check the online catalog B. Reserve the books needed in the library C. Gather information from diverse sources D. Brainstorm about the possible sources of information and decide which among them will be useful	Determines which information is most/least important.	1	3.34	14
	What is the best way to identify current and authoritative information for your Science research paper? A. Consult a book B. Check the encyclopaedia C. Check a scientific journal D. Search on the Internet	Selects the most appropriate investigative methods or information retrieval systems.	1	3.34	24
	Your teacher assigned you to discuss about "the Hazing Law". She provided you with some books as your references. What will you do to easily determine if the books contain the information you need? A. Check the periodical indexes B. Scan the table of contents C. Ask the librarian for assistance D. Find out if the titles of the books include the words in your topic	Develops alternatives and seeks a variety of materials.	1	3.34	26
			5	16.7	

Area	Item	Skills	Number of Items	%	Item Placement
Location and Access of Information	If you are going to locate a book written by Nicholas Sparks and Rick Riordan for your book report, in what area or section of the library can you find it easily? A. Fiction Area B. Filipiniana Area C. Social Science Area D. General Reference Section	Uses various classification schemes and other systems (e.g., call number systems or indexes) to locate information resources within the library or to identify specific sites for physical exploration.	1	3.34	2
	If you are going to search for the most current information about "Priority Development Appropriation Fund" (PDAF) for your class debate, what sources are you going to consult? A. E-Books A. Bibliographies B. Encyclopedia articles C. Online Periodical articles	Accesses appropriate information systems, including online databases, online public access catalog and electronic multimedia.	1	3.34	5
	You are required to compile several periodical articles about teaching strategies. What should you consult to find these articles easily? A. Directories B. Newspaper C. Paper Indexes D. Periodical Indexes and Abstracts	Uses various search systems to retrieve information in a variety of formats.	1	3.34	9
	In one of your assignments you are required to look for current peer-reviewed articles on a topic about "children's misbehavior in school". Where are you going to locate the information? A. Websites B. Dictionary C. Newspaper D. Online journals	Accesses appropriate information systems, including online databases, online public access catalog and electronic multimedia.	1	3.34	21
	You are assigned to report in your Social Studies class on a speech given by President Benigno Aquino III during his visit to Harvard University. What research tool would be the most helpful in finding information about the speech? A. Encyclopedia B. Online database C. Bibliographic standard D. Yahoo news directory (online)	Uses specialized online or in person service available at the institution to retrieve the information needed.	1	3.34	27
			5	16.7	

Area	Item	Skills	Number of Items	Percentage	Item Placement
Use of Information	After gathering and preparing all the information that you will use in your report about “Principles in Teaching”, how are you going to present this to the class? A. Cite the different sources B. Interpret information through the use of various graphs C. Locate and collect information for a specific purpose D. Extract the essential information and create a Power Point presentation	Organizes the content in a manner that supports the purposes and formats of the product or performance. Uses a range of information technology applications in creating the product or performance.	1	3.34	7
	Suppose you have to write an essay about the “Importance of the Filipino Language” and you already have gathered both primary and secondary sources that will provide you with related information. How will you maximize the use of these sources in your assignment? A. Jot down notes B. Define the major terms C. Record the information sources D. Read, compare, and contrast the sources of information	Reads the text and selects main ideas. Identifies the value and differences of potential resources in a variety of formats. Differentiates between primary and secondary sources, recognizing how their use and importance vary with each discipline.	1	3.34	13
	You were asked to give your view or stand on whether or not former President Ferdinand Marcos should be buried at the “Libingan ng mga Bayani” (Heroes’ Cemetery) or not. You’ve done searching for different information that will support your answer. How are you going to include all the information gathered? A. Compile all the information A. Explain factual information presented B. Use details from texts to analyze them for accuracy of information C. Read and analyze the relevance of information that will support the topic and summarize it	Reads the text and selects main ideas. Analyzes the structure and logic of supporting arguments or methods. Investigates differing viewpoints encountered in the literature.	1	3.34	15
	You would like to include in your related literature some of the statements, results, and conclusions from a scholarly journal and unpublished materials that you searched. To avoid plagiarism, what can you do about all the information? A. Paraphrase the main ideas B. Distinguish facts from opinions C. Analyze the information from the statement D. Compile the information and create an outline	Integrates the new and prior information, including quotations and paraphrasing, in a manner that supports the purposes of the product or performance. Integrates new information with previous information or knowledge.	1	3.34	17
	Your teacher asked you to get a copy of the State of the Nation Address of President Benigno Aquino III this 2014 and to distribute to the whole class. Due to limited time given, you decided to search or use the Internet. What will you do next if you already got the information from the internet? A. Review information retrieval sources used B. Use a range of information technology applications C. Select efficient and effective approaches for accessing the information needed D. Browse, copy and paste the information from the Internet with proper citations	Selects among various technologies the most appropriate one for the task of extracting the needed information (e.g., copy/paste software functions, photocopier, scanner, audio/visual equipment, or exploratory instruments) Accurately cite sources.	1	3.34	29
			5	16.7	

Area	Item	Skills	Number of Items	Percentage	Item Placement
Synthesis	You will submit two research proposals for your History subject and for each, you will present your research idea and its development to the class. How will you be able to present this to the class? A. Send your research proposal through email B. Write down your research proposals on the whiteboard C. Provide a hardcopy of your research proposal to the class D. Organize your research proposal and present it using power point	Manipulates digital texts, images, and data, as needed, transferring them from their original locations and formats to a new context. Organizes the content in a manner that supports the purposes and format of the product or performance (e.g. outlines, drafts, storyboards).	1	3.34	4
	Your organization was chosen to create and discuss a reminder for emergency preparedness in your university. How can you make your presentation more interesting? A. Organize the content B. Select potential information C. Communicate clearly with style D. Create an outline and use a slide show for the presentation	Organizes information in clear, coherent presentation. Organizes the content in a manner that supports the purposes and format of the product or performance (e.g. outlines, drafts, storyboards).	1	3.34	22
	Your group in your Mathematics subject is assigned to report on the history and importance of Mathematics in everyday life. How can you innovatively present your report to the class? A. Create a poster to show the history B. Conduct an interview with a mathematician C. Show a diagram of the history and importance of mathematics D. Deliver the report in the form of a YouTube video	Uses various technologies to manage and organize the information selected. Manipulates digital texts, images, and data, as needed, transferring them from their original locations and formats to a new context.	1	3.34	25
	After using all the articles and other related information for your related literature in your research subject, what should you do with the references or sources of information and articles you used? A. Compile the information used B. Consider and select information sources C. Create a bibliography of the sources of information D. Determine the authority and reliability of the information	Records all pertinent citation information for future reference.	1	3.34	28
	After giving you ample time to work on your Science research, your professor asked you to present the results of your work. How will you present this to the class? A. Create an outline for presentation B. Draw inferences based on information gathered C. Explain factual information through graphical presentation D. Present the research findings through power point and short video clips	Present information in ways appropriate to the task.	1	3.34	30
			5	16.7	

Area	Item	Skills	Number of Items	Percentage	Item Placement
Evaluation	You are going to submit in your English class a term paper about 21st century skills and one of your references is a website. You want to find out if the website you are using is a credible one. Which criteria are the most important to consider when evaluating a website? A. Bias, integrity, and cost of website B. Authority, purpose, and currency of the website C. Navigation, structure, and format of the website D. Layout, graphics, and publisher of the website	Uses consciously selected criteria to determine whether the information contradicts or verifies information used from other sources.	1	3.34	10
	You were asked to find articles about student's study skills in popular magazines. How would you determine if these articles in popular magazines are credible sources of information? A. Visit the library B. Consult the professor C. Seek the help of your classmates D. Evaluate the information based on criteria	Uses consciously selected criteria to determine whether the information contradicts or verifies information used in other sources.	1	3.34	12
	Your instructor recommends certain websites that can be useful to your topic about leadership. You were also asked to examine and explain the value of each web page to academic research. What are the possible criteria in evaluating the credibility of the websites? A. Title, publisher, text, and copyright B. Layout, text, illustrations, and design C. Design, usefulness, and relevance of information D. Accuracy, Authority, Objectivity, Currency, and Coverage	Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias.	1	3.34	19
	One of your activities is to read an editorial article about the Reproductive Health Bill. You also need to find facts which either support or refute the views expressed in the article. How would you determine if the facts used to support the views are appropriate and credible? A. Scan the online clippings B. Verify the author's credentials C. Read the editorial page in the newspaper D. Examine and assess the editorial using a rubric	Uses consciously selected criteria to determine whether the information contradicts or verifies information used in other sources.	1	3.34	20
	Suppose you have reference materials such as newspapers and magazines that indicate statistics for your report on population. How will you assess the statistics? A. Do your own census B. Check the statistics from a government source C. Use the data and make sure to cite your source D. Check the accuracy of the figures by comparing them with the previous year's newspapers or magazines	Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias.	1	3.34	23
			5	16.7	

Table of Specifications: Information Literacy Skills Test

Area	Number of Items	Percentage	Item Placement
I. Task Definition	5	16.7	1, 3, 11, 16, 18
II. Information Seeking Strategies	5	16.7	6, 8, 14, 24, 26
III. Location and Access of Information	5	16.7	2, 5, 9, 21, 27
IV. Use of Information	5	16.7	7, 13, 15, 17, 29
V. Synthesis	5	16.7	4, 22, 25, 28, 30,
VI. Evaluation	5	16.7	10, 12, 19, 20, 23
All Areas	30	100.0	_____

Appendix E
Table of Specifications for the
Managerial Competencies Assessment

Area	Skills	Number of Items	Percentage	Item Placement
Planning	Develop technologies to support effective communication and collaboration and model their use among colleagues, parents, students, and the community	1	3.13	1
	Identify and apply research-based models of successful technology-infused programs and practices to support program goals	1	3.13	2
	Ensure that program goals incorporate the use of appropriate technologies, including adaptive and assistive technologies, to support the diverse needs of learners	1	3.13	3
	Create opportunities for students to use contemporary technology to engage in cross- cultural collaborative projects addressing global issues in the context of curricular goals and objectives	1	3.13	4
	Develop strategies for implementing policies and responsibilities regarding filtering, acceptable use, legal and ethical issues, and guidelines for use of online sources	1	3.13	5
	Continually seek, develop, use, evaluate, and deploy digital resources to support program goals, learning teams, and individual learners' needs	1	3.13	6
	Identify, design, and provide professional growth opportunities supported by a dynamic learning object depository aligned with established standards frameworks for students, teachers, and administrators	1	3.13	7
		7	21.9	

Area	Skills	Number of Items	Percentage	Item Placement
Organizing	Allocate time, resources, and access to technology to ensure ongoing professional growth in fluency and integration	1	3.12	8
	Facilitate and participate in learning communities that stimulate, nurture and support administrators, faculty, and staff in the study and use of technology	1	3.12	9
	Recruit and retain highly competent personnel who use technology creatively and proficiently to advance academic and operational goals	1	3.12	10
	Establish procedures for acquiring, maintaining, evaluating, and leveraging technology resources to advance and sustain dynamic programs	1	3.12	11
	Promote effective communication and collaboration among stakeholders using digital age tools	1	3.12	12
	Acquire and equitably provide technology teaching and learning resources to meet the identified needs of students	1	3.12	13
	Establish and maintain a strong infrastructure for technology including integrated, sharing and exchanging of technology systems to support management, operations, teaching, and learning	1	3.12	14
	Keep up-to-date of developments in educational research and emerging trends regarding effective use of technology and encourage evaluation of new technologies for their potential to improve student learning	1	3.12	15
	Establish and support strategic partnerships to support improvement of system	1	3.12	16
		9	28.1	

Area	Skills	Number of Items	Percentage	Item Placement
Controlling	Establish and support strategic partnerships to support improvement of system	1	3.12	17
	Participate and promote in local, national, and global learning communities that stimulate innovation, creativity, and digital age collaboration	1	3.12	18
	Promote responsible social interactions related to the use of technology and information	1	3.12	19
	Ensure equitable access to appropriate digital tools and resources to meet the needs of learners	1	3.12	20
	Ensure instructional innovations are focused on continuous improvement of digital-age learning	1	3.12	21
	Model and promote consistent and effective use of technology for learning	1	3.12	22
	Provide learner-centered environment equipped with technology and learning resources to meet the diverse needs of individual learners	1	3.12	23
	Create, establish and implement policies for safe, legal, and ethical use of digital information and technology	1	3.12	24
		8	24.96	

Area	Skills	Number of Items	Percentage	Item Placement
Leading	Ensure effective practice in the study of technology and its infusion or application across the curriculum	1	3.12	25
	Collaborate to establish metrics / measurement, collect and analyze data, interpret results, and share findings to improve staff performance and student learning	1	3.12	26
	Lead collaborative development, review, and revision of curricula and development design to guide the safe, legal, and ethical use of digital information and technology resources among students and stakeholders	1	3.12	27
	Develop and use exemplary classroom-based practices for policies, programs, and funding opportunities that support effective technology integration	1	3.12	28
	Lead purposeful change to maximize the achievement of learning goals through the appropriate and effective use of technology and media-rich resources	1	3.12	29
	Inspire and facilitate among all stakeholders a shared vision of purposeful change that maximizes use of digital-age resources to meet and exceed learning goals, support effective instructional practice, and maximize performance of school leaders	1	3.12	30
	Participate in the development of a shared vision and communicate that vision effectively across their areas of responsibility	1	3.12	31
	Encourage participation in local, national, and global learning communities that promote innovation and creativity	1	3.12	32
	Collaboratively align program goals with strategic plans and support their implementation	1	3.12	33
	Celebrate, share, and demonstrate effective use of technology for learning	1	3.12	34
		9	28.1	

Table of Specifications
Managerial Competencies Assessment (Summary)

	Area	Number of Items	Percentage	Item Placement
I.	Planning	7	21.9	1, 2, 3, 4, 5, 6, 7,
II.	Organizing	9	28.1	8, 9, 10, 11, 12, 13, 14, 15, 16
III.	Controlling	8	25.0	17, 18, 19, 20, 21, 22, 23, 24,
IV.	Leading	9	28.1	25, 26, 27, 28, 29, 30, 31, 32, 33
	All Areas	32	100.0	_____

Appendix F
Expert's Validation: Information Literacy Skills Test and Managerial Competencies Assessment

A.

Appendix G

Item Analysis: Information Literacy Skills Test

Item	p	SD	D	Remark
1. You were asked to find articles about student's study skills in popular magazines. How would you determine if these articles in popular magazines are credible sources of information? A. Visit the library B. Consult the professor C. Seek the help of your classmates D. Evaluate the information based on criteria	0.66	0.474	0.363	Acceptable without revision
2. Your instructor recommends certain websites that can be useful to your topic about leadership. You were also asked to examine and explain the value of each web page to academic research. What are the possible criteria in evaluating the credibility of the websites? A. Title, publisher, text, and copyright B. Layout, text, illustrations, and design C. Design, usefulness, and relevance of information D. Accuracy, Authority, Objectivity, Currency, and Coverage	0.51	0.502	0.233	Acceptable without revision
3. One of your activities is to read an editorial article about the Reproductive Health Bill. You also need to find facts which either support or refute the views expressed in the article. How would you determine if the facts used to support the views are appropriate and credible? A. Scan the online clippings B. Verify the author's credentials C. Read the editorial page on the newspaper D. Examine and assess the editorial using a rubric	0.45	0.499	0.301	Acceptable without revision
4. Suppose you have reference materials such as newspapers and magazines that indicate statistics for your report on population. How will you assess the statistics? A. Do your own census B. Check the statistics from a government source C. Use the data and make sure to cite your source D. Check the accuracy of the figures by comparing them with the previous year's newspaper or magazines	0.37	0.483	0.268	Acceptable without revision
5. You are going to submit in your English class a term paper about 21st century skills and one of your references is a website. You want to find out if the website you are using is a credible one. Which criteria are the most important to consider when evaluating a website? A. Bias, integrity, and cost of website B. Authority, purpose, and currency of the website C. Navigation, structure, and format of the website D. Layout, graphics, and publisher of the website	0.68	0.469	0.461	Acceptable without revision

6. It's your first time to do a research in a special library like the Department of Health Library. Thus, you are not familiar with the different locations of the information sources. What is the best way to seek help in finding the information sources? A. Visit another library B. Consult your teacher C. Ask the librarian for help D. Seek the help of your classmate	0.93	0.251	0.313	Acceptable with revision
7. You went to the National Library to conduct a research about Ferdinand Marcos' contributions to the Philippines. The library is an open shelf system wherein an individual should be the one to locate and get the book from the shelf. Before you proceed to Ferdinand Marcos' section, what should you do first to maximize your time? A. Ask your friend for help B. Visit the Filipiniana section C. Check the online journals for the articles D. Use the online catalog and list the title and call number of the books	0.70	0.459	0.418	Acceptable without revision
8. What is the best way to identify current and authoritative information for your Science research paper? A. Consult a book B. Check the encyclopedia C. Check a scientific journal D. Search on the Internet	0.36	0.481	0.323	Acceptable without revision
9. You were searching for a book written by Severino Reyes. However, you forgot the title of his book. If you are using the On-line Public Access Catalog (OPAC), what should you do? A. Ask the librarian for assistance B. Encode Filipino author on the keyword entry C. Encode Filipiniana books on the search entry D. Encode Severino Reyes on the author entry and browse the list of his works	0.74	.441	0.609	Acceptable without revision
10. Your group is assigned to work on the regions of the Philippines including cultural, social, geographic, and historic aspects. You already have a list of all possible sources of information. How can you determine which among the sources suit the group's needed information? A. Check the online catalog B. Reserve the books needed in the library C. Gather information from diverse sources D. Brainstorm about the possible sources of information and decide which among them will be useful	0.63	0.483	0.391	Acceptable without revision
11. If you are going to search for the most current information about "Priority Development Appropriation Fund" (PDAF) for your class debate, what sources are you going to consult? A. E-Books B. Bibliographies C. Encyclopedia articles D. Online Periodical articles	0.75	0.437	0.129	Acceptable without revision

12. In one of your assignments you are required to look for current peer-reviewed articles on a topic about “children’s misbehavior in school”. Where are you going to locate the information? A. Websites B. Dictionary C. Newspaper D. Online journals	0.43	0.497	0.329	Acceptable without revision
13. You are writing a speech for your requirements in Communication Arts and there are some words that you would like to include in your speech. However, you are not sure of their meanings and their synonyms. What reference book should you consult? A. Atlas B. Almanac C. Dictionary D. Encyclopedia	0.86	0.350	0.536	Acceptable with revision
14. You are required to compile several periodical articles about teaching strategies. What should you consult to find these articles easily? A. Directories B. Newspaper C. Paper Indexes D. Periodical Indexes and Abstracts	0.69	0.466	0.434	Acceptable without revision
15. If you are going to locate a book written by Nicholas Sparks and Rick Riordan for your book report, in what area or section of the library can you find it easily? A. Fiction Area B. Filipiniana Area C. Social Science Area D. General Reference Section	0.78	0.418	0.467	Acceptable without revision
16. One of your requirements in English Literature is to present one of the works of Edgar Allan Poe in a different style. How are you going to do this in an innovative way? A. Present in a play B. Communicate clearly and with style C. Organize the content and create a comic strip D. Create an outline and showcase the best part	0.28	0.452	-0.096	Acceptable with revision
17. Your teacher in Philippine Literature asked you to choose and read a novel written by Nick Joaquin and to give your own thoughts and personal views about the book. How are you going to present your thoughts and views? A. Integrate new and prior information B. Identify keywords for the information need C. Select information that provides evidence about the topic D. Create a book review using a word processing tool	0.16	0.365	0.166	Acceptable with revision
18. Your group in your Mathematics subject is assigned to report on the history and importance of Mathematics in everyday life. How can you innovatively present your report to the class? A. Create a poster to show the history B. Conduct an interview with a mathematician C. Show a diagram of the history and importance of mathematics D. Deliver the report in the form of a You Tube video	0.33	0.471	0.328	Acceptable without revision

19. Your organization was chosen to create and discuss a reminder for emergency preparedness in your university. How can you make your presentation more interesting? A. Organize the content B. Select potential information C. Communicate clearly with style D. Create an outline and use a slide show for the presentation	0.42	0.495	0.360	Acceptable without revision
20. You will submit two research proposals for your History subject and for each you will present your research idea and its development to the class. How will you be able to present this to the class? A. Send your research proposal through email B. Write down your research proposals on the whiteboard C. Provide a hardcopy of your research proposal to the class D. Organize your research proposal and present it using power point presentation	0.78	0.418	0.589	Acceptable without revision
21. One of your assignments in Educational Technology is to think of and develop a research topic. You also need to search strategies in retrieving information relevant to the topic. What then will be your first step in this assignment? A. Develop a search strategy B. Examine a set of web pages C. Select an article from a scholarly journal D. Identify a topic in Educational Technology that is of great interest to you	0.78	0.418	0.316	Acceptable without revision
22. You are to submit a bibliography in your Science research and you are required to make a listing of all your sources. Also, you have to write three or four paragraphs explaining how these sources will help you write your paper. To be able to work on this easily, what should you do first? A. Create a research proposal B. Locate substantial sources of information C. Craft an outline or introduction for your paper D. Analyze and categorize your sources of information as primary and secondary	0.57	0.497	0.273	Acceptable without revision
23. You were absent from your classes for three days due to fever. Your professor has given you several requirements for you to cope with the lessons you missed. With so many requirements given, you were confused with the format, procedure, and date of submission. What would be the best thing for you to do to be able to work on your requirements properly? A. Use online database for easy access of information B. Search the format of the requirements on the Internet C. Ask the librarian about the sources of information needed D. Communicate with your teacher and clarify the requirements given	0.80	0.403	0.515	Acceptable without revision
24. Your professor asked you to read a ten-page report on "Bullying". You have to discuss it briefly to the class because you only have a limited time to read it. What is the first step that you should do to tackle all the important details? A. Discuss about the topic using a video presentation B. Check the Internet for background information C. Explain the topic based on your understanding D. Highlight some keywords from the report and focus on the important details	0.62	0.487	0.458	Acceptable without revision

25. Your group was assigned to report on the “Decrease of Enrollees in the Private Schools”. As the leader of the group, what will be your first step so that every member will have a clear understanding of the report during your first meeting? A. List down the possible sources of information B. Ask your members to search for information about the topic C. Set a schedule for a library visit for the group D. Define and brainstorm with the members’ ideas and information about the topic assigned to the group	0.67	0.471	0.574	Acceptable without revision
26. In your Computer subject, you are required to find suitable information, collect images from the World Wide Web, and compile them into a website, paper, or display for a class project. To avoid plagiarism what should you consider first? A. Cite the references B. Email the author C. Search the author’s credentials D. Check the copyright date and its patent	0.82	0.385	0.304	Acceptable with revision
27. Suppose you have to write an essay about the “Importance of the Filipino Language” and you already have gathered both primary and secondary sources that will provide you with related information. How will you maximize the use of these sources in your assignment? A. Jot down notes B. Define the major terms C. Record the information sources D. Read, compare, and contrast the sources of information	0.66	0.474	0.299	Acceptable without revision
28. You were asked to give your view or stand on whether or not former President Ferdinand Marcos showed be buried at the “Libingan ng mga Bayani” (Heroes’ Cemetery). You’ve done searching for different information that will support your answer. How are you going to include all the information gathered? A. Compile all the information B. Explain factual information presented C. Use details from the texts to analyze them for accuracy of information D. Read and analyze the relevance of information that will support the topic and make a summary	0.63	0.483	0.460	Acceptable without revision
29. After gathering and preparing all the information that you will use in your report about “Principles in Teaching”, how are you going to present your report to the class? A. Cite the different sources B. Interpret information through the use of various graphs C. Locate and collect information for a specific purpose D. Extract the essential information and create a Power Point presentation	0.74	0.441	0.507	Acceptable without revision
30. You would like to include in your related literature some of the statements, results, and conclusions from a scholarly journal and unpublished material that you searched. To avoid plagiarism, how are you going to include the information? A. Paraphrase the main ideas B. Distinguish facts from opinions C. Analyze the information from the statement D. Compile the information and create an outline	0.57	0.496	0.523	Acceptable without revision

Appendix H

Sample Letter of Permission to Conduct the Study

Philippine Normal University
National Center for Teacher Education
College of Graduate Studies and Teacher Education Research

February 17, 2015

DR. _____
Dean
College of Education

Dear Dr. _____:

Greetings!

I am Ms. Ana Mae Kristine U. Hubilla a graduate student of the Philippine Normal University and now writing a dissertation on "Information Literacy for Lifelong Learning in Higher Education" in partial fulfillment of the requirements for the degree in Doctor of Philosophy in Educational Management.

The study aims to develop an information literacy program for higher education. This program will greatly enhance the students' information literacy skills that are essential for lifelong learning. It will be a solution to the problem of library users in dealing with information and library resources.

In as much as the _____ (Name of the University) is acclaimed as one of the top ranking university in the country, may I have the honor of including your education students as my respondents. May I request permission to distribute my questionnaires to fifty (50) students and to your middle level managers which may include the department chair or department heads, and coordinators of the College of Education?

The student's questionnaires will determine students' ability to find, evaluate, and use information efficiently, effectively, and ethically. The questionnaires for the middle level managers will determine the competence of school administrators in implementing and sustaining the Information Literacy Program. Rest assured that all the data will be used solely in this study and not for any other purposes.

May I retrieve the questionnaires on or before February 28, 2015? Your answers will be treated with utmost confidentiality.

I hope this will merit your kind consideration and favorable approval.
Thank you very much.

Very truly yours,

Ana Mae Kristine U. Hubilla
Researcher

Noted by:

Leticia V. Catris, Ph.D.
Adviser
College of Teacher Development

Mel Greg O. Concepcion, Ed.D.
Adviser
College of Graduate Studies and
Teacher Education Research

Conforme: _____, Ph.D.

Appendix I

Student's Activity Sheet

Date	Topic	Activity/ Assignment	Skills	Actions taken using the information Literacy Program	Comments/ Remarks
October 26, 2015	Natural resources	Search a literature about a natural resource in the Philippines	• Task Definition • Information Seeking Strategies • Use of Information • Evaluation	1. Search by keywords or all fields 2. Use Boolean Operators "OR". 3. Read the text and select carefully the main idea. 4. Evaluate the information based on criteria and if it answers the information need	"It is easier to find the meaning and definition of the word".
October 29, 2015	Environmental Science	1. Find the meaning and computation of birth rate, fertility rate, mortality rate 2. Differentiate between immigration and emigration.	• Task Definition • Use of Information • Evaluation	1. Search by keywords or all fields 2. Use Boolean Operators "OR". 3. Read the text and select carefully the main idea. 4. Evaluate the information based on criteria and if it answers the information need.	"I've learned many ways in answering my assignment".
October 29, 2015	Environmental Science	1. Define population size, composition, structure, distribution. 2. What are the sources of demographic data, effects of overpopulation?	• Task Definition • Information Seeking Strategies • Use of Information • Evaluation	1. Search by keywords or all fields 2. Use Boolean Operators "OR". 3. Read the text and select carefully the main idea. 4. Evaluate the information based on criteria and if it answers the information needs.	"My research skills are improving with the help of the strategies given".

November 3, 2015	Understanding the Self – Spiritual Dimension	1. Research on Philosophers behind spiritual dimension. 2. Prepare a lesson about spiritual dimension	• Task Definition • Information Seeking Strategies • Location and Access of information • Use of Information • Synthesis • Evaluation	1. Pick out keywords in a question. 2. Use Boolean Operators such as OR, AND, NOT 3. Visit the library and borrow books and search the internet. 4. Read and paraphrase the main idea 5. Write an outline and create a lesson plan. 6. Examine and compare the information from different sources.	“I finished my research on time. I’m confident I’ve done something good”.
November 5, 2016	Environmental Science	1. Study about the human circulatory system. 2. Define some terms about the circulatory system.	• Task Definition • Information Seeking Strategies • Location and Access of information • Use of Information • Synthesis • Evaluation	1. Understand and follow the instructions given. 2. Identify the information need. 3. Search the information using the Boolean Operators (And, Or, Not). 4. Use books and online resources. 5. Read the text and select the main idea. 6. Organize the information and participate in the class discussion. 7. Examine and compare the information gathered.	“The ILP was very helpful in conducting a research task. I was able to answer my information need easily”.

November 6, 2015	Environmental Science	1. What is biodiversity? What is its importance? 2. Search for five endangered species. 3. Define endemism. 4. Find out the threats to biodiversity.	• Task Definition • Information Seeking Strategies • Location and Access of information • Use of Information • Synthesis • Evaluation	1. Determine the information problem to be solved 2. Determine the possible sources of information for the assignment. 3. Locate the sources using books and websites. 4. Read the text and select carefully the main idea. 5. Organize the information gathered and create a power point presentation for reporting. 6. Evaluate the information based on criteria and if it answers the information needs.	The program makes the research task easier because of the techniques were given.
November 9, 2015	Philippine Constitution	Search for the territorial claims of the Philippines: a. Sabah Island b. Spratly Island c. Scarborough Shoal	• Task Definition • Information Seeking Strategies • Location and Access of information • Use of Information • Synthesis • Evaluation	1. Define the information problem. 2. Use various search systems to retrieve the information. 3. Access the information in books and different websites. 4. Organize the information and integrate the new information with the prior information. 5. Create a summary and cite the sources. 6. Examine and compare the information for its reliability.	The program is effective I'm glad I got the appropriate answer to my information need.

November 10, 2015	Environmental Science	Answer the following questions: 1. What is air pollution? 2. What are the causes of air pollution?	• Task Definition • Information Seeking Strategies • Location and Access of information • Use of Information • Synthesis • Evaluation	1. Pick out keywords in a question. 2. Use Boolean operators (And, Or, Not) 3. Access the information using books, journals, and online resources. 4. Read the text and select main idea. 5. Organize the information and participate in classroom discussion. 6. Assess the quality and relevance of the information.	“It is effective and it provides more and useful information”.
November 11, 2015	Six year agenda of the president (History)	Create your own six-year agenda from the laws and programs implemented by the president from the third to the fourth republic.	• Task Definition • Information Seeking Strategies • Location and Access of information • Use of Information • Synthesis • Evaluation	1. Identify key concepts and terms that describe the information need. 2. Compare the information and select the relevant information. 3. Access the information in books and different websites. 4. Read and select main idea. 5. Create an outline of the six-year agenda. 6. Assess the information gathered if it provides the needed information.	“Getting various information from different sources helped me answer the activity”.

November 13, 2016	Contemporary World Literature	Answer the following questions: 1. Is it different from Narnia in this way? 2. Can children tell the difference between fantasy and reality?	• Task Definition • Use of Information • Synthesis • Evaluation	1. Reformulate a complete statement of the task. 2. Read the text or the story to acquire information. 3. Organize the information and create a summary of the answer. 4. Assess the information obtained if it answered the questions.	“It helped me to select questions and provide answers easily with techniques showed in the ILP”.
November 18, 2015	History (Programs implemented by PNOY – SONA)	1. Write 5-7 achieved programs of PNOY’s administration and evaluate if it passed or failed. 2. Include the reasons.	• Task Definition • Information Seeking Strategies • Location and Access of information • Use of Information • Synthesis • Evaluation	1. Determine the information problem. 2. Identify keywords, synonyms and related terms. 3. Use primary and secondary sources to access and locate information. 4. Create a summary and cite the sources. 5. Present the information using power point presentation. 6. Assess the output for its strengths and weaknesses.	“I was able to get the right information in a convenient way using the ILP program”.

November 20, 2015	Contemporary World Literature (Core and Periphery)	Research about core and periphery and regionalization.	• Task Definition • Information Seeking Strategies • Location and Access of information • Use of Information • Synthesis • Evaluation	1. Determine the information problem. 2. Identify keywords, synonyms and related terms. 3. Use primary and secondary sources to access and locate information. 4. Read the text or the story to acquire information. 5. Organize the information and create a summary of the answer. 6. Assess the information gathered if it provides the needed information.	"I'm happy and proud of my output. I learned new strategies in doing a research".
December 1, 2015	Understanding Self	Post your wackiest picture and your favorite pick-up line.	• Task Definition • Information Seeking Strategies • Location and Access of information • Use of Information • Synthesis • Evaluation	1. Determine the information needed. 2. Follow the instruction given. 3. Produce a wacky picture. 4. Write a pick-up line that describes the picture. 5. Present and discuss it to the class. 6. Show confidence in the quality of the product produced.	"I'm happy and satisfied with how I came up with my output through the help of the ILP".

December 7, 2015	The Philippine Constitution	Read the “Bill of Rights” and write a reaction paper.	• Task Definition • Information Seeking Strategies • Location and Access of information • Use of Information • Synthesis • Evaluation	1. Pick out keywords embedded in a question. 2. Use various systems to retrieve the ‘Bill of Rights’. 3. Locate the information using books and the internet. 4. Distinguish facts from opinions. 5. Integrate new information with previous information. 6. Paraphrase the main idea and cite sources. 7. Organize the information gathered. 8. Assess the reaction paper on its strengths and weaknesses.	“I enjoy doing this assignment because of the guidelines provided by the ILP”.

Appendix J

Narrative Report of the Students

Narrative Report from Outcome Based Teachers' Education Curriculum (OBTEC) Students

Conducting a Research	Participants
Search the internet, look at the choices which are the most relevant.	Andrea
Just quite a bit because of the demands of the OBTEC curriculum and the tasks given to us by our teachers.	Nicole
I write first the topic which is needed for the assignment. Then search the internet but sometimes if I'm familiar with topic I just search at home because my mother has a collection of various books.	Aira
I search on the internet first. I only search for the exact topic given in our assignment.	Marinel
I try to reflect first on the topic given and review the task given by the professor. Then I will search on the internet to find information based on the topic given.	Rhenz
I think first and determine where I can find the topic.	Angie
I use the internet and I encode the word. When I got the right article I try to evaluate the sources.	Jeanne
I read again the assignment given. Then I search on the net and scan the information and its source.	Daisy
I identify what is being asked in the assignment. I try to consider my options in accessing the information. I searched first the keyword from the topic.	John
I read first the task given from the assignment. Then I start with the easiest questions from the assignment.	Carissa
I searched it as soon as possible but I think of other sources in looking for information that will answer my assignment.	Karen
I identify the task I should do and what information to search.	Maria Fae
I usually search the information needed for my assignment on Google or at the library.	Analuisa
I read several times the question given on the assignment and search it on Google.	Mary Joy
I often search for information using the internet.	Karen
I do my search of information using the internet for my assignment.	Peach
Usefulness of the Information Literacy Program	Participants
It is useful specifically in our assignment, projects, and other requirements. It provides us guidelines to be a better and wiser user of information. It explains an easy access to information.	Andrea
It is helpful because it makes my research easier especially in my assignment or FLA given by the professors.	Nicole
No, because I don't have any companion with me to go there but at home, I can easily do research. Aside from books I used also the internet.	Aira
It is useful because I can maximize my time. The Big 6 skills made my search easily.	Marinel
It useful because tried it out in my assignment. I was surprised that there are many ways to find information easily. The information literacy program enlightened me to different strategies.	Rhenz
It is very useful specifically in searching for a topic. It is easier and not time-consuming.	Angie
It is very useful, the program helps me identify the best information that will answer my assignment.	Jeanne
It is very useful in our assignment. It gives many ways on how to deal with information.	Daisy
It is very useful because when there are many information it is confusing but when I read the Big6 skills everything is clear. I learned a few ways to manage my information need.	John
The program was effective because of its details and guidelines.	Carissa
When I used the program it was a big help. It gives you instructions on how to use information.	Karen
The program is useful because it provides steps on how to obtain information.	Maria Fae
The program is useful because it taught me how to use different information seeking strategies. I learned how to use the Boolean operator and it helps me to get the exact information that I need.	Analuisa
The program is useful because it made the search for information easier.	Mary Joy
The program is useful because it provides techniques on how I can find information for my assignment.	Karen
The program is useful because it teaches different guidelines in accessing and locating information.	Peach

Selecting the Best Search Results	Participants
It depends on which among are helpful and relevant.	Andrea
What I do first is I look at everything in the search results and I evaluate which contain the best information and I use it in my assignment.	Nicole
I click each of them first and check if there are the author and a source.	Aira
I scan it and choose the most relevant.	Marinel
I read first and checked if the information is related to my topic.	Rhenz
I browse each article and compare it. Then I select which is related to my topic.	Angie
If the information that I got answer all my queries I consider it the best one.	Jeanne
I browse it one at a time and select which is related to the articles.	Daisy
I try to view the search results and I select the one near to my topic. I evaluate which among them is credible.	John
I scan first every search results and then I select which is reliable and will provide the right information.	Carissa
I checked the grammar and the details of the information in the article.	Karen
I usually scan the search results and I rely on the highest ranked information which is often efficient to use.	Maria Fae
I usually scan the search results and analyzed which among is the best and could provide me related information.	Analuisa
I read the search results and I choose the relevant one that will answer my information need.	Mary Joy
I usually browse each search results and I compare the information. I make sure to choose the most relevant one before I apply it in my assignment.	Karen
I click all the search results and identify which information answers my assignment. I choose the most relevant information.	Peach

Search Strategies Often Used	Participants
Keywords are helpful, then the author and surname. I often use the quotation marks and the Boolean operators (and, or, not).	Andrea
I often use keywords, it's automatic you can find the needed information in one question through keywords. I also evaluate it and then compare each information.	Nicole
I used the Boolean operator which guides me to get the exact information. Unlike before I just click and open anything but now I can search easily.	Aira
I often use the keywords because sometimes I did not take note of the assignment. So I rely mostly on the keywords because of it easier to recall and search.	Marinel
I used the Boolean operator and I tried to search the word "perfect" for example "perfect not imperfect", surprisingly it showed the exact word "perfect" in every article.	Rhenz
Using keywords it is easier.	Angie
Using task definition, I try to determine what is being asked for the assignment.	Jeanne
I visit the library to find information from books if I'm not satisfied I search on the website.	Daisy
I used keywords only.	John
I often used the Boolean operator to avoid confusion.	Carissa
I make sure to evaluate the information and its content. I review the paragraph and the sentences if it's formal and sensible.	Karen
I often use the keywords because it is easier to search.	Maria Fae
I often use the keywords because it is easier to search and it could provide me the variety of information that is related to my topic.	Analuisa
I often use the keywords because it gives the exact information that I need.	Mary Joy
I often use the keywords and the Boolean operators because it gives the specific information.	Karen
I often use the keywords because it provides the specific answer to my search.	Peach

Commonly Performed Information Literacy Skills	Participants
Yes, I apply it and there are moments we are given a research that is not specific so I think of keywords or relevant topic.	Andrea
Yes, the number one step task definition wherein I identify what should I do first to be able to answer my assignment.	Nicole
Yes, somehow, I use the task definition before gathering the information. As I search for the information needed I make sure to evaluate the information I obtained.	Aira
Yes, the task definition I make sure to identify what is being asked for the assignment and evaluation of information with the overload of information many are irrelevant. I try to cite different sources.	Marinel
Yes, I often evaluate the information before I used to copy and paste information from the net. My mother always reminds me not to that again to avoid plagiarism.	Rhenz
Yes, I do often the task definition and location and access of information. I make sure to identify what is being asked and I find ways to locate information.	Angie
Yes but I always make sure to evaluate the information that I gathered.	Jeanne
I often do some of the steps of the Big 6 skills but the most is access and location of information. I make sure that I have various options in terms of accessing the right information.	Daisy
I do not follow every step of the Big 6 but I am familiar with evaluation of information. When I gather information from the internet I make sure to assess the source specifically the author, the year, and other important details.	John
Not everything but I would say I give importance in the evaluation of information which is the last step on the Big 6 skills.	Carissa
Not all, there is one step that I have been using which is information seeking strategies. When I use the internet I don't encode the word I searched as it is. I try to add some words to have the exact information that I want.	Karen
Not all, there is one step that I often use which is the use of information. I make sure to carefully apply the information.	Maria Fae
Not all, but I often use task definition and information seeking strategies. I always determine what is needed in my assignment and I try to choose the best information seeking strategies in which I can get the information easily.	Analuisa
I almost do some of the steps except for the evaluation.	Mary Joy
Not all, I just use the task definition and information seeking strategies. I start doing my assignment by determining first what to do to make it easy for me and I try to think of different ways in acquiring the information.	Karen
Not all, mainly the task definition, access and location of information and use of information. I try to analyze my information need based on the assignment given. Then I think of ways on how I could obtain and locate these information sources. I make sure that when I use the information I would always cite them in my references.	Peach

Databases Used for Scholarly Sources	Participants
I haven't checked it, right now I don't often go to the library. I just apply for the library ID. I do my research on the internet.	Andrea
No, I haven't tried using the Online Public Access Catalog (OPAC) because I'm not using online that much. I prefer to use books.	Nicole
I use the Online Public Access Catalog (OPAC) to search the author, title, and subject. This was discussed in our library orientation.	Aira
I think it's the OPAC, I tried to use it one time but I don't know how.	Marinel
I'm not aware if the library offers databases because I don't often visit the library. I don't have any library ID and there are lots of ghost stories about the library which I'm scared of.	Rhenz
I tried to use an e-journal once for my report.	Angie
I haven't tried using the library databases because I don't know where to access it.	Jeanne
I haven't tried using the library databases because I don't know where it is located.	Daisy
I tried to use an Online Public Access Catalog (OPAC) to search for the author, Title, and subject. I learned this from the library orientation.	John
They mentioned it during the library orientation and I know they offer it. I haven't tried it.	Carissa
The only database that I know is the Online Public Access Catalog (OPAC) I can see all the list of titles that I need.	Karen
The database that I know is the Online Public Access Catalog (OPAC) this was mentioned on the library orientation. I don't often use this but I think you can see all the list of titles, authors, and subject.	Maria Fae
The database that I know is the Online Public Access Catalog (OPAC) this was mentioned on the library orientation. I used this when we have a report in Psychology when I was searching for a book. The OPAC has given me the call number, title and author of the book.	Analuisa
The database that was introduced to us is the Online Public Access Catalog (OPAC) and the electronic journal. This was mentioned on the library orientation. I don't often use this but I think this provides a list of titles, authors, and subject.	Mary Joy
When I attended the library orientation the database that was discussed was the Online Public Access Catalog (OPAC). I don't often use this but I think you can see all the list of books and thesis.	Karen
I was late in the library orientation but I recall the database that was discussed to us is the Online Public Access Catalog (OPAC). I don't often use this instead I use the internet.	Peach

Creating a Bibliography or Citing the Sources of Information	Participants
We create a bibliography for the report to be submitted to our professor.	Andrea
If we are asked to submit a written report I make sure to cite the references or create a bibliography as required by the professor.	Nicole
Yes, if the professor asked us to create a bibliography or references. All the information I obtained I make sure to summarize it. I also read it carefully before using it.	Aira
Yes, I created a bibliography in high school for the investigatory project we have to include the citation at the end of the paper.	Marinel
I already forgot about the bibliography. It's only now that I'm in my first year that we are required to include a bibliography or cite some references. Now I tried to be more careful in using the information. I'm not also aware of the different format of the bibliography.	Rhenz
Yes, in our science subject we were asked to include a bibliography but I'm not aware that it has a format to follow.	Angie
Yes, way back in high school we are asked to write a bibliography. Now there are a few professors who required us to include it. I know it has format but I'm not familiar with it.	Jeanne
Yes, I prepared a bibliography in History subject. I am not aware of the format of the bibliography.	Daisy
It depends on the professor; some would like to include the bibliography. I'm not that familiar with the format.	John
Yes, in some subject we are asked to prepare a bibliography. I am not aware of the format of the bibliography.	Carissa
Yes, but it depends on the professor if they required us to create a bibliography or references.	Karen
Yes, whenever there are an assignment and our professor required us to create a bibliography or references. When I got information from the net I always include the reference or links.	Maria Fae
Yes, we are required to include a bibliography or references in our assignment and report. I'm not familiar with the format but I would like to learn more through the program.	Analuisa
Yes, whenever there is an assignment we are required to create a bibliography or references. I'm not aware of the format but I think the program offers this.	Mary Joy
Yes, I cite the references for my assignment because some of our professors required us to create a bibliography. As I recalled our high school teacher in English has taught us about the format but I don't know which of the format I used is right. It includes the author, title, copyright date, publisher and place of publication.	Karen
Yes, whenever there is research, assignment, and when we did our module we were required to create a bibliography or references. I'm not aware of the format of the bibliography.	Peach

Effects of the Information Literacy Program in Searching Information	Participants
Yes, with the bulk of information the Information Literacy Program guides me to use information properly.	Andrea
No, when the Information Literacy Program was not yet introduced to me I was slow and passive in doing my research. The Boolean operators (and, or, not) is worth knowing because of so many unrelated information. It filters the words and made it easier in accessing the information.	Nicole
When I search for information it's always bulk and even if I'm not finished I just click another search results that is why its chaos and I'm slow in searching. Through the Information Literacy Program, it changes my way of searching for information.	Aira
No, I am not good in searching before with so much information it is confusing. Now I guess I improved a little with the help of the Information Literacy Program.	Marinel
When the program was introduced and I tried to use it gives an improvement in my research. I was used to my old ways of seeking information which is not easy and it bores me.	Rhenz
When I used the program my research skills were developed gradually. I remember how to use the Boolean operator and I try to apply it in my assignment.	Angie
When I used the program I can work on my research properly and easily. I learned different techniques in accessing information.	Jeanne
I know that my skills are not enough and I still struggle in searching for information.	Daisy
When I used the program there's a big difference in my output and I realized that are a lot of things to be learned in accessing information. You don't simply get information but you should always recognize the source of it.	John
When I used the program I was certain that I got the right information because I was properly guided by the information literacy program.	Carissa
Before I was not that confident in my research skills, but when I used the program this give me the opportunity to learn some strategies in information searching. I gain knowledge on how I can access information easily and use it wisely.	Karen
The Information Literacy Program helps me improved my research skills because of the techniques it teaches. This helps an individual to search related information easily.	Maria Fae
If the Information Literacy Program was not introduced there will be no guide and the searching will be confusing because of information overload. When I tried to use it this became my guide in searching information easily.	Analuisa
When I used the Information Literacy Program I was given an idea and techniques to become a good information user.	Mary Joy
The Information Literacy Program was a brilliant idea it gives instruction on how to access and locate information. The program encourages us to use information appropriately to avoid plagiarism.	Karen
When the Information Literacy Program was introduced I became confident in my research skills. I obtain information that is more accurate and I know that when I use it I will be proud of my output.	Peach
When the Information Literacy Program was introduced to us it became a guide for searching information. It lessens my difficulty and confusion in accessing information.	

Skills to be Improved in Information Searching	Participants
On the internet, you don't get everything that you need, so I guess I need to try to use the library. To explore and use the call numbers and other strategies. I would like to improve my skills in locating and accessing of information because of the information bulk, the search results takes too long and the information sources should be evaluated.	Andrea
I want to get better at locating and accessing information because I'm easily destructed and frustrated in searching.	Nicole
I would like to enhance my information seeking strategies so I can work fast on my school requirements.	Aira
I think it's more on accessing and locating information because of the bulk of the information I tend to be slow in searching.	Marinel
I want to get better at "accessing and locating information" so I can have different options in obtaining information.	Rhenz
I would like to get better in evaluating information and I want to find out the criteria or rubric in assessing information.	Angie
I think it would be on synthesis. I would like to enhance how I will come up with a good output based on the information gathered.	Jeanne
I would like to enhance my skills in the process of synthesis. There are many ways that I could make my out more creative and innovative.	Daisy
I think it would be more of evaluation of information. I need to learn more about the criteria that I can apply in assessing the information.	John
I want to get better at accessing and evaluating facts because sometimes not all information is right. That is why I have to be selective and careful.	Carissa
I want to get better in the process of synthesis because I want to include all my ideas and the information I got in creating a good output.	Karen
I want to get better in the evaluating information due to many information sometimes I'm having difficulty in selecting the right one or the most relevant one. I want to acquire information that is properly evaluated before I use it.	Maria Fae
I want to get better in the evaluating information due to many information sometimes I'm having difficulty in selecting the right one or the most relevant one. I want to acquire information that is properly evaluated before I use it.	Analuisa
I want to get better in using online sources to protect me from plagiarism. I'm interested in visiting the library and maximize its usage.	Mary Joy
I want to get better in evaluating the information because sometimes I'm not sure if the information I got is accurate. I want to learn more about the criteria in evaluating the information so I could come up with good output.	Karen
I want to get better in accessing and locating information because I want to acquire the appropriate information easily. With the bulk of information, it is hard to filter which is the reliable one.	Peach

Improvement in the Research Activity	Participants
Yes, I can use it well, it is easier and not time-consuming. I learned different ways how to access information easier.	Andrea
When I was given a chance to use the "Information Literacy Program" my skills were enhanced. I can apply it in my assignment and project.	Nicole
Yes, because it gives guidelines in searching to perform a research task properly.	Aira
Yes, it made my searching easier and now I am aware of the different steps in seeking information.	Marinel
Yes, it did change my old ways of accessing information. Every time we were given an assignment it is easier and specific with the help of the program.	Rhenz
Yes, it is a great tool. Before it took me so long to find information now I have learned different strategies that will help me easily.	Angie
Yes, the program provides guidelines that help me to be a better user of information.	Jeanne
Yes, I was properly guided on how to go about with my research. The strategies are easy to understand and I can get an information at the right time.	Daisy
I realized that information should be treated with respect especially the author or owner. We should be very careful in accessing and using information. It's better to think before you click.	John
Yes, I learned to be more careful and make sure to review all the details of the information before I use it.	Carissa
It changed the way I do my search for information by using the program and helps me to evaluate all the information that I use all the time.	Karen
It changed the way I use information by using the program and helps me to be organized in all the information that I use all the time.	Maria Fae
It helps and changed the way I use information by using the program. I learned to be more selective and cautious of the information I acquire and apply.	Analuisa
It changed the way I use information by using the program and I really appreciate what I have learned such as the step by step process and the different ways in accessing the information. The Big6 was a fresh start for beginners who thirst for information.	Mary Joy
It changed the way I use information by using the program and it made me realize the value of evaluating the information. I can organize and distinguish the right information that will support my assignment or information need.	Karen
It changed the way I use information by using the program and helps me to be organized in all the information that I use with my assignment, project, and report. This is a great tool in improving students' study skills.	Peach

Application of Information Literacy Skills in Lifelong Learning	Participants
It is applicable for example in making lesson plan. There will be incidents that you need to search for another topic which you are not familiar with or if you need to look for other information for the lessons I can use these strategies to obtain the right information.	Andrea
As a future educator, one of my tasks is to prepare lesson plans and it should be efficient and effective. That is why I should access and use information wisely for my lessons and to produce globally competitive students.	Nicole
Yes, because the guidelines given is specific and helpful for the assignment. It is also applicable for work if for example I graduated in college and I became a teacher. I will continue to apply my information literacy skills not just for work but for my daily activities. I will also ask my students to conduct a research I will make sure that they will learn a lot from the program and this will be the guide.	Aira
Information is part of our daily life and it is best to use it properly. For a college student like me, there is a high demand for information that I will need in my study so I should master my information literacy skills.	Marinel
Yes, because we are surrounded with various information and every day we use it not just in studying, workplace and in our homes that is why we must develop our information literacy skills.	Rhenz
Yes, because information literacy skills are applicable in our daily life. It is best that we know how to use information in the right way.	Angie
Information is considered one of the basic needs and our information literacy skills should master how to use information wisely. This skill is applicable in any activities, person, age, and others.	Jeanne
The information literacy skills play a major role in developing our self, career and family life. Every day we can use this to make our activities simple and easy.	Daisy
Information literacy skills are always applied in our daily activities. Students should not take this for granted instead they must develop this skill for them to be productive.	John
Information literacy skills should be cultivated in every individual. We may be a college student now but as soon as we graduated and be in the workforce we are still using information. So it is best that we know how to use it appropriately.	Carissa
Information literacy skills are necessary for our daily life. It helps us to acquire the right information at the right time.	Karen
We are information creator and user and it is best that we should always develop it because this is essential not just for studying but in our workplace.	Maria Fae
We are in the modern era and with information overload, it is best that we enhanced our skills to protect us and be careful in applying it.	Analuisa
As information consumers, we use it every day that is why it is best that we also enhance it so that we can have the right information that will give a solution to our information problems.	Mary Joy
As we are in the digital age and there are lots of opportunities that we can access information. There is still a need for us to improve our information skills for us to be equipped and confident.	Karen
Information literacy skills help an individual to be organized in using information. This can be applicable when we are working already as an educator because we are still using different information for teaching and we should teach them the right information to our students. Information is part of our daily activities and we should use it wisely.	Peach
Suggestions for the Improvement of the Information Literacy Program	Participants
None, the Information Literacy Program is user-friendly.	Andrea
It is very helpful most of all for students. I hope someday students will use this often for easy searching.	Nicole
None, it is simple and user-friendly.	Aira
None, it is simple and easy to understand.	Marinel
None, it is easy to use. Perhaps a deeper awareness and understanding of the program should be given to students.	Rhenz
It should be part of the curriculum.	Angie
Perhaps more promotion on its purpose and importance.	Jeanne
It should be done every semester for students' mastery of the information literacy skills.	Daisy
There should be an awareness campaign for this program.	John
To have an orientation on how to use each strategy and as well as the guidelines.	Carissa
Just enhance the layout of the program to encourage more students to use it.	Karen
None, I find the Information Literacy Program convenient and easy to use.	Maria Fae
None, I find the Information Literacy Program very detail and there are examples that are very helpful.	Analuisa
None, I find the Information Literacy Program simple and easy to utilize.	Mary Joy
I think it is best to have a one-on-one session in learning how to use the Information Literacy Program. So that students could learn it comprehensively and in detailed.	Karen
The Information Literacy Program should have a one-on-one session or a scheduled instruction class. Some of the techniques or strategies should be demonstrated or taught to the students for them to master its use. It should be also included in a lesson or the curriculum so that every student will learn how to use it.	Peach

Appendix K

Narrative Report of the School Administrators

Implementation of the Information Literacy Program	Participants
Yes, because it will be of great help to my co-teachers and students as well since they always do research.	Weng
Yes of course. It will help you/us to be aware and be responsible for using information from the internet and use them for the right purpose.	Jeni
Yes, it helps you to access the information easily using strategies mentioned in the program.	Grace
Yes, if it's one way of improving the present condition or status of the education populace.	Len
Yes, because I think our students need to be information literate so that they will not waste their time and effort when doing researches or ever just a simple information retrieval.	Cheri
Importance of the Information Literacy Program	Participants
They will be aware of different strategies on searching information and what should be done or how to work on the information gathered.	Weng
Uses of the internet will be guided.	Jeni
In using the Information Literacy Program in an institution it will cope up the 21 st -century learning strategies and to uplift the student-centered and concept based learning of each learner.	Grace
It could provide more meaningful experiences which could help uplift the information literacy rate and could eventually lead to a more informed society.	Len
The program will be a tool that will guide the students to develop their information literacy skills. This will help them to be responsible information users.	Cheri
Ways to implement the Information Literacy Program	Participants
Whenever I give them an assignment where they are to search information, I may give them some of the basic concepts I have learned and remind them on how they should work on the information they gathered.	Weng
Information dissemination comes from the top, down to the student level. Everyone must be aware of the responsible usage of information.	Jeni
Therefore, I will implement the foregoing program in our institution through orienting the teacher on how does the program is used and how does it change the lives of each learner to achieve a quality education. Training and workshop must be done to enhance the teachers' strategies to meet the requirement of the program and observe how the teacher experiment it and advises them of their strategies needs improvement.	Grace
By means of introducing it to the stakeholders of the schools and doing some networking with the principals and other superiors to gain some support.	Len
I think it can be best integrated into research courses.	Cheri

Appendix L

Analysis of the Narrative Reports

Conducting a Research	<i>f</i>	Percentage
a. Search the net on the topic given.	10	62.5
b. Determine the information needed.	6	37.5
	16	100.0
Usefulness of the Information literacy Program	<i>f</i>	Percentage
a. Provide guidelines and strategies.	12	75.0
b. It is easier and saves time.	3	18.75
c. It helps to identify the best information.	1	6.25
	16	100.0
Selecting the Best Search Results	<i>f</i>	Percentage
a. Choose the most relevant information on the topic.	10	62.5
b. Evaluate the reliability of the information.	5	31.25
c. The information answer all the queries and information need.	1	6.25
	16	100.0
Search Strategies Often Used	<i>f</i>	Percentage
a. Using keywords.	10	62.5
b. Using Boolean Operator (And, Or, Not).	3	18.75
c. Determine the information needed.	1	6.25
d. Visit the library.	1	6.25
e. Evaluate the information and its content.	1	6.25
	16	100.0
Commonly Performed Information Literacy Skills	<i>f</i>	Percentage
a. Task Definition	8	50.0
b. Information Seeking Strategies	2	12.5
c. Location and Access of Information	1	6.25
d. Use of Information	1	6.25
e. Synthesis	0	0
d. Evaluation	4	25.0
	16	100.0
Databases Used for Scholarly Sources	<i>f</i>	Percentage
a. Online Public Access Catalog	10	62.5
b. e-journal	1	6.25
c. Not aware of the different databases	5	31.25
	16	100.0

Creating a Bibliography or Citing the Sources of Information	<i>f</i>	Percentage
a. Yes, I create a bibliography or cite sources.	14	87.5
b. No, I don't know how.	2	12.5
	16	100.0
Effects of the Information Literacy Program in Searching Information	<i>f</i>	Percentage
a. Guides in using information properly.	8	50.0
b. Improve my research skills.	5	31.25
c. Develop my research skills.	3	18.75
	16	100.0
Skills to be Improved in Information Searching	<i>f</i>	Percentage
a. Locating and accessing information	5	31.25
b. Information seeking strategies	3	18.75
c. Evaluating information	5	31.25
d. Synthesis	3	18.75
	16	100.0
Improvement in the Research Activity	<i>f</i>	Percentage
a. It is easier and not time-consuming.	4	25.0
b. Enhance the research skills.	3	18.75
c. Provides strategies and techniques.	4	25.0
d. Evaluate the information before using.	4	25.0
e. Acknowledge or cite the sources of information	1	6.25
	16	100.0
Application of Information Literacy Skills in Lifelong Learning	<i>f</i>	Percentage
a. Useful in the preparation of lessons.	2	12.5
b. Applicable in professional work.	4	25.0
c. Improve study skills.	1	6.25
d. Useful in daily activities.	9	56.25
	16	100.0
Suggestions for the Improvement of the Information Literacy Program	<i>f</i>	Percentage
a. It should part of the curriculum.	1	6.25
b. It should be promoted well.	2	12.5
c. There should be orientation.	1	6.25
d. It should have a one-on-one session.	2	12.5
e. It should be done every semester.	2	12.5
f. Enhance the layout of the ILP.	1	6.25
g. None	7	43.75
	16	100.0

Appendix M

Interview Guide

1. When you do a research assignment, where do you start?
2. How useful is the Information Literacy Program for you?
 - 2.1 When you look at search results, how do you decide which are the best ones?
 - 2.2 Among the different search strategies what do you use often?
 - 2.3 Do you follow the step by step process of the Big 6 skills in doing a research?
 - 2.4 For scholarly sources, what library databases do you use? How did you learn about it [state the database name(s)]?
 - 2.5 Have you had an assignment that required you to write a bibliography? Which among the citation format such as MLA or APA do you use often to cite your references?
3. Do you think you do better in researching now that you would have done without the Information Literacy program? Why or why not?
4. Is there any aspect of research you would like to get better at?
5. Looking back, did the Information Literacy program change the way you search for information? How has it changed?

Appendix N

Evaluators' Educational Qualifications

Evaluator 1	Director, University Library Librarian IV Member of South Manila inter-institutional Consortium (SMI-IC) Doctor of Education (EdD) in Industrial Education Management
Evaluator 2	Instructional Media Center - Coordinator (Catholic Parochial School) Assistant Treasure – Philippine Association of School Librarians, Inc. (PASLI) PH. D. in Educational Leadership
Evaluator 3	Learning Resource Center Coordinator from Private Catholic School Ph.D. Educational Management
Evaluator 4	Department Head at Philippine Normal University Professor at Philippine Normal University Ph.D. Educational Management
Evaluator 5	Professor at Philippine Normal University Program Coordinator Ph.D. Educational Management
Evaluator 6	Professor at Philippine Normal University Program Coordinator Ph.D. Educational Management

Appendix O

The Researcher's Curriculum Vitae



Name: ANA MAE KRISTINE HUBILLA LOZANTA

City Address: 1573 3rd St. Main Fabie Subd. Paco Manila

Cellphone No.: 09175307910

Landline No.: (02) 561-3587

Email Address: kristinehubilla@yahoo.com

Date of Birth: May 3, 1981

Place of Birth: Manila

Civil Status: Married

Citizenship: Filipino

Height: 5'1

Weight: 94 lbs.

Religion: Roman Catholic

Sex: Female

Spouse's Name: **Alfredo Alim Lozanta, Jr.**

Father's Name: **Jose Fulay Hubilla**

Mother's Name: **Estelita Urcia Hubilla**

EDUCTIONAL BACKGROUND

Post Graduate Studies: **Philippine Normal University**
Ph.D. in Educational Management
(March 2017)

Dissertation: Information Literacy Program
for Lifelong Learning in Higher Education

Graduate Studies: **Philippine Normal University**
Master of Arts in Education with
specialization in Library Science
(May 2008)

Thesis: Information Seeking Behavior (ISB)
of Technical Secondary Students: A Basis for
a Model on Information Search Process

College: **Philippine Normal University**
Bachelor of Secondary Education
Major in Library Science (Cumlaude)
(1998 – 2002)

Reading Specialization
(1998 – 2002)

Secondary: **St. Anthony School**
(1994 – 1998)

Intermediate: **Fernando Maria Guerrero Elementary School**
(1989 – 1994)

Primary: **Calatagan Elementary School**
(1987 – 1988)

WORK EXPERIENCE **Head, Library and Learning Resource Center (LLRC)**
2015 – up to present
Don Bosco Technical Institute

Part-Time College Instructor – Specialization Library and Information Science (Second Semester)
(January 11, 2015 – March 22, 2015)
Philippine Normal University

Reading Teacher
2006 – 2007
Don Bosco Technical Institute

Grade School Librarian
2004 – 2015
Don Bosco Technical Institute

High School Librarian
2003 – 2004
Santa Isabel College

Audio Visual In-Charge
2002 - 2003
St. Mary's Academy, Santa Ana

SCHOLARSHIPS:

International Federation of Library Association - Action for Development through Libraries Programme (IFLA-ALP) Scholarship 2008

November 17 – December 13, 2008

Victoria University of Wellington, New Zealand

Philippine Normal University Full Academic Scholarship

June – October 2000

Philippine Association of Teachers of Library Science Inc. Scholarship (PATLS)

S.Y. 2000 - 2001 and 2001- 2002

ACHIEVEMENT:

Third Place – 2013 International Research Paper Contest

Association for Information Science and Technology (ASIS &T) Special Interest Group on International Information Issues (SIG III)

“Information Seeking Behavior (ISB) of Technical Secondary Students:

A Basis for a Model on Information Search Process.”

SEMINARS ATTENDED:

Envisioning School Librarians with Enhanced Marketing Approaches for the Millennials

Philippine Association of School Librarians, Inc. (PASLI)

N Hotel, Kauswagan Highway, Cagayan de Oro City

April 19-21, 2017

CEAP NCR @75: “Promoting the Culture of Mercy with Renewed Spirit and Fervour”

Community Engagement for Libraries

La Consolacion College Mendiola, Manila

July 22-23, 2016

Library Analytics: Data-Driven Library Management

Philippine Association of Academic Research Librarians, Inc., (PAARL)

2016 National Summer Conference

Pearl Manila Hotel, United Nations Ave., Manila

April 20-22, 2016

Beyond Library Orientation: The Media and Information Literacy Program

Katigbak Library, Ateneo De Manila University Quezon City.

November 14, 2015

Scholastic Chairperson’s Workshop 2015: Run your best book fair ever!

Astoria Plaza, Pasig City.

May 14, 2015

1st International Conference on Children’s Librarianship: Connecting and Linking of Information through Transformed Children’s Libraries to the Digital Era.

Tagaytay International Convention Center, Tagaytay City

October 13-15, 2014

Regional Conference on School Librarianship “DIRECTIONS FOR THE FUTURE OF SCHOOL LIBRARIES”

Bacolod Pavillon Hotel, Bacolod City, Negros Occidental

April 26 & 27, 2012

“Library Tourism & Hospitality: The Business of Endearing Philippine Libraries and information Services to Publics”

San Antonio Resort Baybay Beach, Roxas City, Capiz

April 27-29, 2011

4th Rizal International Conference dubbed as “Library Spaces: Building Effective and Sustainable Physical and Virtual Libraries” Rizal Library

Ateneo De Manila University, Quezon City

October 21 & 22, 2010

National Seminar-Workshop: “Current Trends and Global Preparedness for School Administrators and Librarians”

Bohol Plaza Hotel, Panglao, Tagbilaran, Bohol

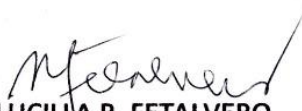
April 21-23, 2010

Philippine Normal University
THE NATIONAL CENTER FOR TEACHER EDUCATION
Taft Ave., Manila

January 23, 2015

CERTIFICATION

This is to certify that I did the language editing of the dissertation entitled "Information Literacy for Lifelong Learning" of Ms. Ana Mae Kristine Urcia Hubilla, Ph.D. student with specialization in Educational Management.


LUCILLA R. FETALVERO
Retired Professor

Philippine Normal University
THE NATIONAL CENTER FOR TEACHER EDUCATION
Taft Ave., Manila

September 24, 2016

CERTIFICATION

This is to certify that I did the final language editing of the dissertation entitled "Information Literacy Program for Lifelong Learning in Higher Education" of Ms. Ana Mae Kristine Urcia Hubilla, Ph.D. student with specialization in Educational Management.


LUCILLA R. FETALVERO
Retired Professor



Philippine Normal University
College of Graduate Studies and Teacher Education Research
PUBLICATION OFFICE



AUTHENTICITY RESULT

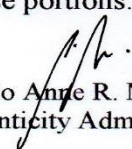
Date of Release: February 9, 2016
 Result Code: 2016-059
 Submission ID: 629530376
 Title Of Output: Information Literacy For Lifelong Learning In Higher Education
 Author(s): Ana Mae Kristine Urcia Hubilla

Authenticity Report:

- **Similarity Report: 21%**
- **Interpretation:** A similarity report of 21% means that 21% of the whole paper is similar to sources in Turnitin's (authenticity software) online repository. The colored bibliographical references denote the sources of similarity to previously published work which maybe from internet sources (18%), publications (11%) and student papers (9%) for the remaining similarity percentage.
- **Highlighted text in the Manuscript:**
 - Red marks and highlights are set of texts directly or exactly copied from online sources
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Recommendations:

- Use of quotations for exactly copied text is suggested.
- For assumed to be cited parts of the manuscript but highlighted, it is recommended that authors rephrase these portions.

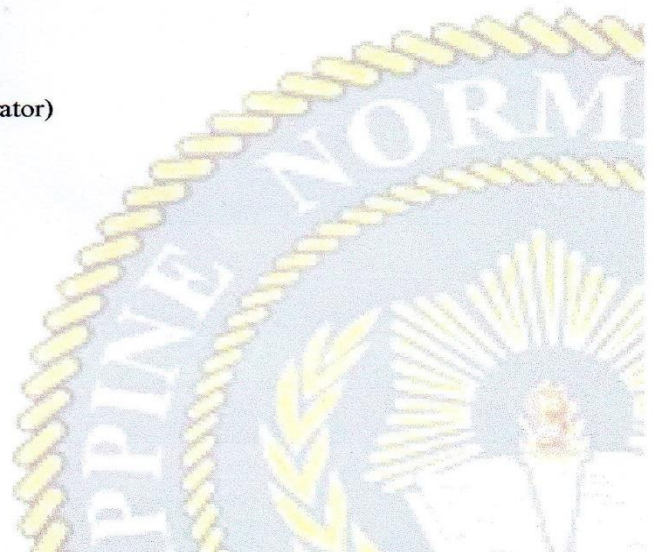

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 Dr. Marie Paz E. Morales
 Director, Publications Office



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 Tel. No. 3171768, Loc. 530



Experts' Validation: Information Literacy Skills Test

Domain	Facet	Acceptability								Inter-Rater Agreement			
		<u>Content</u>		<u>Language</u>		<u>Structure</u>		<u>Composite</u>		<u>Content</u>	<u>Language</u>	<u>Structure</u>	<u>Composite</u>
		M	SD	M	SD	M	SD	M	SD	%	%	%	%
I. Task Definition	1. One of your assignments in Educational Technology is to think of and develop a research topic. You also need to search strategies in retrieving information relevant to the topic. What then will be your first step in this assignment? A. Develop a search strategy B. Examine a set of web pages C. Select an article from a scholarly journal D. Identify a topic in Educational Technology that is of great interest to you	3.00	0.000	2.50	0.500	2.83	0.373	2.78	0.416	100.0	40.0	66.7	68.9
	2. You are to submit a bibliography in your Science research in which you made a listing of all your sources. Also, you have to write three or four paragraphs explaining how these sources will help you write your paper. To be able to work on this easily, what should you do first? A. Create a research proposal B. Locate substantial sources of information C. Craft an outline or introduction for your paper D. Analyze and categorize your sources of information into primary and secondary	3.00	0.000	3.00	0.000	2.83	0.373	2.94	0.229	100.0	100.0	66.7	88.9
	3. You were absent from your classes for three days due to fever. Your professor has given you several requirements for you to cope with the lesson you missed. With so many requirements given, you were confused with the format, procedure, and date of submission. What would be the best thing for you to do in order to work on your requirements properly? A. Use online database for easy access of information B. Search the format of the requirements on the Internet C. Ask the librarian about the sources of information needed D. Communicate with your teacher and clarify the requirements given	3.00	0.000	2.83	0.373	2.67	0.471	2.83	0.373	100.0	66.7	46.7	71.1
	4. Your professor asked you to read a ten-page report on "Bullying". You have to discuss it briefly to the class but you only have limited time to read it. What is the first step that you should do to tackle all the important details? A. Discuss it using a video presentation B. Check the Internet for background information C. Explain the topic based on your understanding D. Highlight some keywords from the report and focus on the important details	3.00	0.000	3.00	0.000	3.00	0.000	3.00	0.000	100.0	100.0	100.0	100.0
	5. Your group was assigned to report on the "Decrease of Enrollees in the Private Schools". As the leader of the group what will be your first step so that every member will have a clear understanding of the report during your first meeting? A. List down the possible sources of information B. Ask your member to search on the topic C. Set a schedule for a library visit for the group D. Define and brainstorm with the members about the topic assigned to the group	3.00	0.000	2.67	0.471	3.00	0.000	2.89	0.314	100.0	46.7	100.0	82.2

Domain	Facet	Acceptability								Inter-Rater Agreement			
		<u>Content</u>		<u>Language</u>		<u>Structure</u>		<u>Composite</u>		<u>Content</u>	<u>Language</u>	<u>Structure</u>	<u>Composite</u>
		M	SD	M	SD	M	SD	M	SD	%	%	%	%
II. Information Seeking Strategies	6. It's your first time to do a research in a special library like the Department of Health Library. Thus, you are not familiar with the different locations of the information sources. What is the best way to seek help in finding the information sources? A. Visit another library B. Consult your teacher C. Ask the librarian for help D. Seek the help of your classmate	3.00	0.000	3.00	0.000	2.83	0.373	2.94	0.229	100.0	100.0	66.7	88.9
	7. You went to the National Library to conduct a research about Ferdinand Marcos' contributions to the Philippines. The library is an open shelf system wherein an individual should be the one to locate and get the book from the shelf. Before you proceed to Ferdinand Marcos' section, what should you do first to maximize your time? A. Ask your friend for help B. Visit the Filipiniana section C. Check the online journals for the articles D. Use the online catalog and list the title and call number of the books	2.83	0.373	2.50	0.500	2.67	0.471	2.67	0.471	66.7	40.0	46.7	51.1
	8. What is the best way to identify current and authoritative information for your Science research paper? A. Consult a book B. Check the encyclopedia C. Check a scientific journal D. Search on the Internet	3.00	0.000	3.00	0.000	3.00	0.000	3.00	0.000	100.0	100.0	100.0	100.0
	9. You were searching for a book written by Severino Reyes. However, you forgot the title of his book. If you are using the On-line Public Access Catalog (OPAC), what should you do? A. Ask the librarian for assistance B. Encode Filipino author on the keyword entry C. Encode Filipiniana books on the search entry D. Encode Severino Reyes on the author entry and browse the list of his works	3.00	0.000	2.67	0.471	3.00	0.000	2.89	0.314	100.0	46.7	100.0	82.2
	10. Your group is assigned to work on the regions of the Philippines including cultural, social, geographic, and historic aspects. You already have a list of all possible sources of information. How can you determine which among the sources suit the group's needed information? A. Check the online catalog B. Reserve the books needed in the library C. Gather information from diverse sources D. Brainstorm about the possible sources of information and decide which among them will be useful	3.00	0.000	3.00	0.000	3.00	0.000	3.00	0.000	100.0	100.0	100.0	100.0

Domain	Facet	Acceptability								Inter-Rater Agreement			
		<u>Content</u>		<u>Language</u>		<u>Structure</u>		<u>Composite</u>		<u>Content</u>	<u>Language</u>	<u>Structure</u>	<u>Composite</u>
		M	SD	M	SD	M	SD	M	SD	%	%	%	%
III. Location and Access of Information	11. If you are going to search for the most current information about "Priority Development Appropriation Fund" (PDAF) for your class debate, what sources are you going to consult? A. E-Books B. Bibliographies C. Encyclopedia articles D. Online Periodical articles	3.00	0.000	2.83	0.373	3.00	0.000	2.94	0.229	100.0	66.7	100.0	88.9
	12. In one of your assignments you are required to look for current peer-reviewed articles on a topic about "children's misbehavior in school". Where are you going to locate the information? A. Websites B. Dictionary C. Newspaper D. Online journals	3.00	0.000	3.00	0.000	2.83	0.373	2.94	0.229	100.0	100.0	66.7	88.9
	13. You are writing a speech for your requirements in Communication Arts and there are some words that you would like to include in your speech. However, you are not sure of their meanings and their synonyms. What reference book should you consult? A. Atlas B. Almanac C. Dictionary D. Encyclopedia	2.83	0.373	2.83	0.373	2.83	0.373	2.83	0.373	66.7	66.7	66.7	66.7
	14. You are required to compile several periodical articles about teaching strategies. What should you consult to find these articles easily? A. Directories B. Newspaper C. Paper Indexes D. Periodical Indexes and Abstracts	3.00	0.000	3.00	0.000	3.00	0.000	3.00	0.000	100.0	100.0	100.0	100.0
	15. If you are going to locate a book written by Nicholas Sparks and Rick Riordan for your book report, in what area or section of the library can you find it easily? A. Fiction Area B. Filipiniana Area C. Social Science Area D. General Reference Section	2.83	0.373	2.83	0.373	2.83	0.373	2.83	0.373	66.7	66.7	66.7	66.7

Domain	Facet	Acceptability								Inter-Rater Agreement			
		<u>Content</u>		<u>Language</u>		<u>Structure</u>		<u>Composite</u>		<u>Content</u>	<u>Language</u>	<u>Structure</u>	<u>Composite</u>
		M	SD	M	SD	M	SD	M	SD	%	%	%	%
IV. Use of Information	16. In your Computer subject, you are required to find suitable information, collect images from the World Wide Web, and compile them into a website, paper, or display for a class project. To avoid plagiarism what should you consider first? A. Cite the references B. Email the author C. Search the author's credentials D. Check the copyright date and its patent	3.00	0.000	2.83	0.373	2.83	0.373	2.89	0.314	100.0	66.7	66.7	77.8
	17. Suppose you have to write an essay about the "Importance of the Filipino Language" and you already have gathered both primary and secondary sources that will provide you with related information. How will you maximize the use of these sources in your assignment? A. Jot down notes B. Define the major terms C. Record the information sources D. Read, compare, and contrast the sources of information	3.00	0.000	2.50	0.500	2.50	0.500	2.67	0.471	100.0	40.0	40.0	60.0
	18. You were asked to give your view or stand whether former President Ferdinand Marcos be buried at the "Libingan ng mga Bayani" (Heroes' Cemetery) or not. You've done searching for different information that will support your answer. How are you going to include all the information gathered? A. Compile all the information B. Explain factual information presented C. Use details from text to analyze the text for accuracy of information D. Read and analyze the relevance of information that will support the topic and summarize it	3.00	0.000	2.83	0.373	3.00	0.000	2.94	0.229	100.0	66.7	100.0	88.9
	19. After gathering and preparing all the information that you will use in your report about "Principles in Teaching", how are you going to present this to the class? A. Cite the different sources B. Interpret information through the use of various graphs C. Locate and collect information for a specific purpose D. Extract the essential information and create a Power Point presentation	2.83	0.373	2.50	0.500	2.83	0.373	2.72	0.448	66.7	40.0	66.7	57.8
	20. You would like to include in your related literature some of the statements, results, and conclusions from a scholarly journal and unpublished material that you searched. To avoid plagiarism, how are you going to include the information? A. Paraphrase the main ideas B. Distinguish facts from opinions C. Analyze the information from the statement D. Compile the information and create an outline	2.83	0.373	2.83	0.373	2.67	0.471	2.78	0.416	66.7	66.7	46.7	60.0

Domain	Facet	Acceptability								Inter-Rater Agreement			
		<u>Content</u>		<u>Language</u>		<u>Structure</u>		<u>Composite</u>		<u>Content</u> %	<u>Language</u> %	<u>Structure</u> %	<u>Composite</u> %
		M	SD	M	SD	M	SD	M	SD				
V. Synthesis	21. One of your requirements in English Literature is to present one of the works of Edgar Allan Poe in a different style. How are you going to do this in an innovative way? A. Present in a play B. Communicate clearly and with a style C. Organize the content and create a comic strip D. Create an outline and showcase the best part	2.83	0.373	2.83	0.373	2.83	0.373	2.83	0.373	66.7	66.7	66.7	66.7
	22 Your teacher in Philippine Literature asked you to choose and read a novel written by Nick Joaquin and give your own thoughts and personal views about the book. How are you going to present your thoughts and views? A. Integrate the new and prior information B. Identify keywords for the information need C. Select information that provides evidence about the topic D. Create a book review using word processing tool	3.00	0.000	2.67	0.471	3.00	0.000	2.89	0.314	100.0	46.7	100.0	82.2
	23. Your group in your Mathematics subject is assigned to report on the history and importance of Mathematics in everyday life. How can you innovatively present your report to the class? A. Create a poster to show the history B. Conduct an interview with a mathematician C. Show a diagram of the history and importance of mathematics D. Deliver the report in the form of a You Tube video	3.00	0.000	2.83	0.373	2.83	0.373	2.89	0.314	100.0	66.7	66.7	77.8
	24. Your organization was chosen to create and discuss a reminder for emergency preparedness in your university. How can you make your presentation more interesting? A. Organize the content B. Select potential information C. Communicate clearly with a style D. Create an outline and use a slide show for the presentation	3.00	0.000	2.67	0.471	3.00	0.000	2.89	0.314	100.0	46.7	100.0	82.2
	25. You will submit two research proposals for your History subject and for each you will present your research idea and its development to the class. How will you be able to present this to the class? A. Send your research proposal through email B. Write down your research proposals on the whiteboard C. Provide a hardcopy of your research proposal to the class D. Organize your research proposal and present it using power point	3.00	0.000	2.67	0.471	3.00	0.000	2.89	0.314	100.0	46.7	100.0	82.2

Domain	Facet	Acceptability								Inter-Rater Agreement			
		<u>Content</u>		<u>Language</u>		<u>Structure</u>		<u>Composite</u>		<u>Content</u>	<u>Language</u>	<u>Structure</u>	<u>Composite</u>
		M	SD	M	SD	M	SD	M	SD	%	%	%	%
VI. Evaluation	26. You were asked to find articles about student's study skills in popular magazines. How would you determine if these articles in popular magazines are credible sources of information? A. Visit the library B. Consult the professor C. Seek the help of your classmates D. Evaluate the information based on criteria	2.33	0.943	2.33	0.943	2.67	0.471	2.44	0.831	46.7	46.7	46.7	46.7
	27. Your instructor recommends certain websites that can be useful to your topic about leadership. You were also asked to examine and explain the value of each web page to academic research. What are the possible criteria in evaluating the credibility of the websites? A. Title, publisher, text, and copyright B. Layout, text, illustrations, and design C. Design, usefulness, and relevance of information D. Accuracy, Authority, Objectivity, Currency, and Coverage	3.00	0.000	2.83	0.373	2.83	0.373	2.89	0.314	100.0	60.0	66.7	75.6
	28. One of your activities is to read an editorial article about the Reproductive Health Bill. You also need to find facts which either support or refute the views expressed in the article. How would you determine if the facts used to support the views are appropriate and credible? A. Scan the online clippings B. Verify the author's credentials C. Read the editorial page on the newspaper D. Examine and assess the editorial using a rubric	3.00	0.000	2.67	0.471	2.83	0.373	2.83	0.373	100.0	46.7	60.0	68.9
	29. Suppose you have reference materials such as newspapers and magazines that indicate statistics for your report on population. How will you assess the statistics? A. Do your own census B. Check the statistics from a government source C. Use the data and make sure to cite your source D. Check the accuracy of the figures by comparing them with the previous year's newspaper or magazines	2.83	0.373	2.50	0.500	2.67	0.471	2.67	0.577	100.0	33.3	66.7	66.7
	30. You are going to submit in your English class a term paper about 21st century skills and one of your references is a website. You want to find out if the website you are using is a credible one. Which criteria are the most important to consider when evaluating a website? A. Bias, integrity, and cost of website B. Authority, purpose, and currency of the website C. Navigation, structure, and format of the website D. Layout, graphics, and publisher of the website	3.00	0.000	2.67	0.471	2.83	0.373	2.83	0.373	100.0	46.7	66.7	71.1

Table 6
Experts' Validation - Information Literacy Skills Test: Summary

Domain	Acceptability								Inter-Rater Agreement			
	<u>Content</u>		<u>Language</u>		<u>Structure</u>		<u>Composite</u>		<u>Content</u>	<u>Language</u>	<u>Structure</u>	<u>Composite</u>
	M	SD	M	SD	M	SD	M	SD	%	%	%	%
I. Task Definition	3.00	0.000	2.80	0.400	2.87	0.340	2.89	0.314	100.0	70.7	76.0	82.2
II. Information Seeking Strategies	2.97	0.180	2.83	0.373	2.90	0.300	2.90	0.300	93.3	77.3	80.0	83.6
III. Location and Access	2.93	0.249	2.90	0.300	2.90	0.300	2.91	0.285	86.7	80.0	80.0	82.2
IV. Use of Information	2.93	0.249	2.70	0.458	2.77	0.423	2.80	0.400	86.7	56.0	64.0	68.9
V. Synthesis	2.97	0.180	2.73	0.442	2.93	0.249	2.88	0.328	93.3	54.7	86.7	78.2
VI. Evaluation	2.83	0.522	2.60	0.611	2.77	0.496	2.73	0.554	89.3	46.7	61.3	65.8
Overall	2.94	0.282	2.76	0.452	2.86	0.367	2.85	0.380	91.6	64.2	74.7	76.8

- a. Based on Mean, 1.00 to 1.49 = Not Accepted, 1.50 to 2.49 = Accepted but with revision, 2.50 to 3.00 = Accepted without revision
- b. Percent Agreement, unweighted analysis, at least 40.1 to be considered reliable (Gwet, 2011), 0.0 to 20.0 = negligible, 20.1 to 40.0 = low, 40.1 to 60.0 = moderate, 60.1 to 80.0 = marked substantial, 80.1 to 90.0 = high, 90.1 to 99.9 = very high, 100.0 = perfect.

Experts' Validation: Managerial Competencies Assessment

Domain	Facet	Acceptability								Inter-Rater Agreement			
		<u>Content</u>		<u>Language</u>		<u>Structure</u>		<u>Composite</u>		<u>Content</u>	<u>Language</u>	<u>Structure</u>	<u>Composite</u>
		M	SD	M	SD	M	SD	M	SD	%	%	%	%
I. Planning	1.Continually seek, develop, evaluate, and deploy digital resources to support program goals, learning teams, and individual learners' needs	3.00	0.000	2.67	0.471	2.67	0.471	2.78	0.416	100.0	46.7	46.7	64.4
	2.Identify, design, and provide professional growth dynamic learning object depository aligned with established standard frameworks for students, teachers, and administrators	3.00	0.000	2.67	0.471	2.67	0.471	2.78	0.416	100.0	46.7	46.7	64.4
	3.Identify technologies to support effective communication and collaboration and model their use among colleagues, parents, students, and the community	3.00	0.000	3.00	0.000	3.00	0.000	3.00	0.000	100.0	100.0	100.0	100.0
	4.Identify and apply research-based models of successful technology-infused programs and practices to support program goals	3.00	0.000	3.00	0.000	3.00	0.000	3.00	0.000	100.0	100.0	100.0	100.0
	5.Ensure that program goals incorporate the use of appropriate technologies, including adaptive and assistive technologies, to support the diverse needs of learners	3.00	0.000	3.00	0.000	3.00	0.000	3.00	0.000	100.0	100.0	10.0	100.0
	6.Develop, manage, and model strategies for implementing policies and responsibilities regarding filtering, acceptable use, legal and ethical issues, and guidelines for online sources	3.00	0.000	2.50	0.500	3.00	0.000	2.83	0.373	100.0	40.0	100.0	80.0
	7.Identify opportunities for students to use contemporary technology to engage in cross-cultural collaborative projects addressing global issues in the context of curricular goals and objectives	3.00	0.000	3.00	0.000	3.00	0.000	3.00	0.000	100.0	100.0	100.0	100.0

Domain	Facet	Acceptability								Inter-Rater Agreement			
		<u>Content</u>		<u>Language</u>		<u>Structure</u>		<u>Composite</u>		<u>Content</u>	<u>Language</u>	<u>Structure</u>	<u>Composite</u>
		M	SD	M	SD	M	SD	M	SD	%	%	%	%
II. Organizing	8. Allocate time, resources, and access to ensure ongoing professional growth in technology fluency and integration	3.00	0.000	3.00	0.000	3.00	0.000	3.00	0.000	100.0	100.0	100.0	100.0
	9.Facilitate and participate in learning communities that stimulate, nurture and support administrators, faculty, and staff in the study and use of technology	3.00	0.000	3.00	0.000	3.00	0.000	3.00	0.000	100.0	100.0	100.0	100.0
	10.Promote and model effective communication and collaboration among stakeholders Using digital age tools	3.00	0.000	3.00	0.000	2.83	0.373	2.94	0.229	100.0	100.0	66.7	88.8
	11.Keep up-to-date of developments in educational research and emerging trends regarding the effective use of technology and encourage evaluation of new technologies for their potential to improve student learning	2.67	0.471	2.50	0.500	3.00	0.000	2.72	0.448	46.7	40.0	100.0	62.2
	12.Recruit and retain highly competent personnel who use technology creatively and proficiently to advance academic and operational goals	3.00	0.000	3.00	0.000	3.00	0.000	3.00	0.000	100.0	100.0	100.0	100.0
	13.Establish and leverage strategic partnerships to support systemic improvement	2.50	0.500	2.67	0.471	2.17	0.373	2.44	0.497	40.0	46.7	66.7	51.1
	14.Establish and maintain a robust infrastructure for technology including integrated, interoperable technology systems to support management, operations, teaching, and learning	2.67	0.471	3.00	0.000	2.67	0.471	2.78	0.416	46.7	100.0	46.7	64.4
	15.Acquire, manage, and equitably provide technology teaching and learning resources to meet the identified needs of all students	3.00	0.000	2.67	0.471	3.00	0.000	2.89	0.314	100.0	46.7	100.0	82.2
	16.Establish procedures for acquiring, maintaining, evaluating, and leveraging technology resources to advance and sustain dynamic programs	3.00	0.000	3.00	0.000	3.00	0.000	3.00	0.000	100.0	100.0	100.0	100.0

Domain	Facet	Acceptability								Inter-Rater Agreement			
		<u>Content</u>		<u>Language</u>		<u>Structure</u>		<u>Composite</u>		<u>Content</u>	<u>Language</u>	<u>Structure</u>	<u>Composite</u>
		M	SD	M	SD	M	SD	M	SD	%	%	%	%
III. Controlling	17. Ensure instructional innovation focused on continuous improvement of digital-age learning	3.00	0.000	2.67	0.471	2.33	0.471	2.67	0.471	100.0	46.7	46.7	64.4
	18. Model and promote the frequent and effective use of technology for learning	2.67	0.471	2.67	0.471	2.67	0.471	2.67	0.471	46.7	46.7	46.7	46.7
	19. Provide learner-centered environments equipped with technology and learning resources to meet the individual, diverse needs of all learners	2.67	0.471	2.67	0.471	2.67	0.471	2.67	0.471	46.7	46.7	46.7	46.7
	20. Ensure effective practice in the study of technology and its infusion across the curriculum	2.33	0.471	2.67	0.471	2.67	0.471	2.56	0.497	46.7	46.7	46.7	46.7
	21. Promote and participate in local, national, and global learning communities that stimulate innovation, creativity, and digital age collaboration	3.00	0.000	3.00	0.000	2.67	0.471	2.89	0.314	100.0	100.0	46.7	82.2
	22. Ensure equitable access to appropriate digital tools and resources to meet the needs of all learners	2.67	4.71	2.67	0.471	3.00	0.000	2.78	0.416	46.7	46.7	100.0	64.4
	23. Promote, model and establish policies for safe, legal, and ethical use of digital information and technology	2.67	4.71	2.67	0.471	2.67	0.471	2.67	0.471	46.7	53.3	46.7	48.9
	24. Promote and model responsible social interactions related to the use of technology and information	3.00	0.000	3.00	0.000	2.67	0.471	2.89	0.314	100.0	100.0	46.7	82.2

Domain	Facet	Acceptability								Inter-Rater Agreement			
		<u>Content</u>		<u>Language</u>		<u>Structure</u>		<u>Composite</u>		<u>Content</u>	<u>Language</u>	<u>Structure</u>	<u>Composite</u>
		M	SD	M	SD	M	SD	M	SD	%	%	%	%
IV. Leading	25.Inspire and facilitate among all stakeholders a shared vision of purposeful change that maximizes use of digital-age resources to meet and exceed learning goals, support effective instructional practices, and maximize performance of district and school leaders	2.67	0.471	2.50	0.500	2.83	0.373	2.67	0.471	46.7	40.0	66.7	51.1
	26.Lead purposeful change to maximize the achievement of learning goals through the appropriate use of technology and media-rich resources	2.67	0.471	2.33	0.471	3.00	0.000	2.67	0.471	46.7	46.7	100.0	64.4
	27.Collaborate to establish metrics, collect and analyze data, interpret results, and share findings to improve staff performance and student learning	3.00	0.000	2.50	0.500	3.00	0.000	2.67	0.471	100.0	40.0	100.0	80.0
	28.Participate in development of the shared vision and communicate that vision effectively across their areas of responsibility	2.67	0.471	2.67	0.471	2.67	0.471	2.67	0.471	46.7	46.7	46.7	46.7
	29.Collaboratively align program goals with infused strategic plans and support their implementation	2.67	0.471	2.67	0.471	2.50	0.500	2.61	0.487	46.7	46.7	40.0	44.4
	30.Identify and use exemplary classroom-based practices for policies, programs, and funding opportunities that support effective technology integration	3.00	0.000	2.67	0.471	2.67	0.467	2.78	0.416	100.0	46.7	40.0	62.2
	31.Celebrate, share, and demonstrate effective use of technology for learning	2.33	0.943	2.00	0.816	2.00	0.816	2.11	0.875	46.7	20.0	20.0	28.9
	32.Model and encourage participation in local and national, and global learning communities that promote innovation and creativity	2.67	0.471	2.67	0.471	2.67	0.471	2.67	0.471	46.7	46.7	46.7	46.7
	33.Lead collaborative development, review, and revision of curricula and professional development design to guide the safe, legal, and ethical use of digital information and technology resources among all students and stakeholders	3.00	0.000	2.67	0.471	2.67	0.471	2.78	0.416	100.0	46.7	46.7	64.4

- Based on Mean, 1.00 to 1.49 = Not Accepted, 1.50 to 2.49 = Accepted but with revision, 2.50 to 3.00 = Accepted without revision
- Percent Agreement, unweighted analysis, at least 40.1 to be considered reliable (Gwet, 2011), 0.0 to 20.0 = negligible, 20.1 to 40.0 = low, 40.1 to 60.0 = moderate, 60.1 to 80.0 = marked substantial, 80.1 to 90.0 = high, 90.1 to 99.9 = very high, 100.0 = perfect.

Experts' Validation – Managerial Competencies Assessment: Summary

Item	Acceptability								Inter-Rater Agreement			
	<u>Content</u>		<u>Language</u>		<u>Structure</u>		<u>Composite</u>		<u>Content</u>	<u>Language</u>	<u>Structure</u>	<u>Composite</u>
	M	SD	M	SD	M	SD	M	SD	%	%	%	%
1. Planning	3.00	0.000	2.83	0.373	2.90	0.294	2.91	0.282	100.0	76.2	84.8	87.0
2. Organizing	2.87	0.336	2.87	0.336	2.85	0.335	2.86	0.343	81.5	81.5	86.7	83.2
3. Controlling	2.75	0.433	2.75	0.433	2.67	0.471	2.72	0.448	66.7	60.8	53.3	60.3
4. Leading	2.74	0.516	2.52	0.569	2.67	0.544	2.64	0.551	65.9	42.2	56.3	54.3
Overall	2.83	0.399	2.74	0.462	2.77	0.446	2.78	0.438	77.2	64.6	69.9	70.6

- Based on Mean, 1.00 to 1.49 = Not Accepted, 1.50 to 2.49 = Accepted but with revision, 2.50 to 3.00 = Accepted without revision
- Percent Agreement, unweighted analysis, at least 40.1 to be considered reliable (Gwet, 2011), 0.0 to 20.0 = negligible, 20.1 to 40.0 = low, 40.1 to 60.0 = moderate, 60.1 to 80.0 = marked substantial, 80.1 to 90.0 = high, 90.1 to 99.9 = very high, 100.0 = perfect.