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Research Competency Enhancement Plan in an Academic Library for Undergraduate Students

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**RESEARCH COMPETENCY ENHANCEMENT PLAN IN AN ACADEMIC LIBRARY
FOR UNDERGRADUATE STUDENTS**

A Thesis Presented to
The Faculty of Graduate and Teacher Education
College of Graduate Studies and Teacher Education Research
Philippine Normal University
Manila

In partial Fulfillment of the Requirements for the Degree
MASTER OF ARTS IN EDUCATION with Specialization in Library and
Information Science

by

GLORIA P. LUMBERA
May 2019



Philippine Normal University
National Center for Teacher Education

APPROVAL SHEET

This research entitled **“RESEARCH COMPETENCY ENHANCEMENT PLAN IN AN ACADEMIC LIBRARY FOR UNDERGRADUATE STUDENTS”** prepared and submitted by **GLORIA P. LUMBERA** in partial fulfillment of the requirements for the degree of **Master of Arts in Education with Specialization in Library and Information Science**, is hereby recommended for approval and acceptance


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DEDICATION

This piece of hard work I dedicated to my husband, Romeo G. Lumbera and children,
Ronnell, Bryan and Ma, Veronica who are the light shine on me.

ACKNOWLEDGEMENT

The researcher would like to thank the following for helping her in the completion of this scholastic endeavour:

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Above all, to the Almighty God, for without His blessings and grace, not a single page of this research paper would have been conceptualized,

To these exceptional people, the researcher is deeply indebted.

G.P.L. 19

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ABSTRACT

Researcher	:	GLORIA P. LUMBERA
Title	:	Research Competency Plan in an Academic Library for Undergraduate Students
Key Concepts	:	Research Writing, Undergraduate Research, Research Competency Enhancement Plan, Research Skills
Degree	:	Master of Arts in Education
Specialization	:	Library and Information Science
Adviser	:	Roaima Lynn B. Antonio, MA

Producing quality research studies has been given importance by universities, not only those written by its faculty members, but by students as well. As such, this study was conducted to determine the level of research competencies of undergraduate students in terms of knowledge, skills, and attitudes. It is also aimed to find out if there is a significant difference in the research competency of the students when group according to profile. Furthermore, this study tried to identify the challenges encountered by the students in using library resources and services while writing their research paper. The descriptive method of research was utilized and the researcher developed a survey questionnaire for collecting data which was validated by expert, pilot tested and undergone a reliability test. Gathered data were interpreted and analyzed using mean computation, percentage and ranking and one-

way analysis of variance. Results revealed that respondents are competent in conducting research study, they good research skills and they possess positive attitudes towards research writing. Further analysis showed that there is a significant difference in students' research capability when group according to profile. Respondents also identified poor internet connection, difficulty in locating resources and that the limited number of library materials were their main problems during research writing. With these gathered data, a research competency enhancement plan was developed and proposed which hopes to respond to the needs of the students and to lessen, if not eliminate, the challenges they face in conducting research studies.

CHAPTER I

THE PROBLEM AND LITERATURE REVIEW

Background of the Study

Research is a careful or meticulous search, inquiry, investigation, discovery, and analysis of gathered information on a subject or issues. According to Formeloza and Pateña (2013), it is a serious and diligent quest for knowledge that must be promoted because it provides far-reaching benefits. Research enlarges or develops the students' knowledge in generating and discovering new ideas or concepts which will benefit a community or institutions. Research writing provides opportunities for students to develop their research skills and facilitates contribution in their field of study.

Research is important to students because it helps them to have a detailed analysis of everything (Reddy, 2016). Students are given the opportunity to explore their knowledge and expose themselves to a different perspective of learning. According to Saiiari (1994), as cited by Mizany, et al. (2012), writing thesis is also important to students because it is the first experience in scholarly researches that gives an opportunity for them to be familiar with research and the comprehensiveness which is needed to it. Also writing in a special field makes them an expert in the area and this could be a basis for their future works. With that, universities are now giving great attention to research, thus, faculty members are

encouraged to do research work, while it becomes a requirement for students before they graduate from college and earn a degree (Rasul & Singh, 2010).

Undergraduate research courses allow students to develop professionally and personally. Research experience gives students an opportunity to gain deeper knowledge or research techniques and process and explore academic literature. Writing a research paper is not an easy task. Most students find it one of the most difficult requirements they have in college before they graduate. It is time-consuming and stressful, but still, it is considered as one of the major accomplishments during their college life. With that, students should be capable enough to write and complete a research project.

Research writing is being introduced to the undergraduate students of De La Salle Lipa during their research subjects, wherein they are taught the basic knowledge on how to write a research paper. Having all the knowledge on how to write the different parts of the research paper, students need to have research skills to complete their academic papers. This can be attained by providing an effective way of assisting students to fully understand the research process and enhance their research skills so that they may gain confidence in writing their paper. This can also be done through classroom lectures in research subjects and regular training and workshops facilitated by teachers and librarians.

Research is important to everyone. It plays an important role in one's lives, especially to students. It helps them accomplish their assignment and projects because those are some of the major requirements in a class. Research helps students to investigate the body of knowledge and be exposed to the different perspectives of learning. It helps them to understand and clarify questions, understand the subject and know how to identify and use reliable resources.

In writing a research paper, the student should have the necessary knowledge and skills in order to make it easier for them to perform well. Undergraduate students of De La Salle Lipa are fully exposed in doing research and it helps them to develop professionally and personally. Research experience gives students opportunities to gain deeper knowledge or research techniques and process and explore academic literature.

According to the State Library of Victoria (2018), a student can be regarded as a good researcher if he/she possesses the following research skills: define the task which helps to understand exactly what the question is asking, so you know how to answer it really well, locate information which helps to find great resources quickly and easily with some simple search techniques, select resources which helps to learn how to choose the best and most reliable information to use in assignments, organize notes which turn information into a good set of notes that will make the writing process quicker and easier, present the ideas which help to plan the points that wanted to make, and decide how you want to make them, and evaluate the work and

check over everything before handed it in to make sure that work is the best it can be.

In acquiring research skills and knowledge, information literacy should be given to students through library orientation in coordination with the curriculum department.

Information literacy is "a set of abilities requiring to recognize when information is needed and to have the ability to locate, retrieve, evaluate, and use effectively the needed information" (ALA, 1989 as cited by Gutierrez, 2014, p. 1). Information literacy is considered a vital part of the higher or academic institution. The information literacy program is usually led by the librarians by which develop by the academic institution to help students to become information literate.

Aside from the knowledge and skills that student's needs, it is also noted that attitude of the students towards research is also important in an undergraduate academic endeavor. An attitude is considered as one of the most important aspects in student's preparation for an academic career. Positive attitude towards research is a key to success and progress in knowledge-based societies. (Hussain, et al. 2016) Attitudes can be concerned with an effective feeling and reply toward research.

The library, being part of the academic institution, plays a significant role in supporting research and takes part in providing assistance to students. Guidelines are provided on how students can properly access and use the library resources and the

services it provides, through library orientation given during their freshmen year. Access to the internet and online databases through Wi-Fi connection are in place so that they may gain easy access to electronic resources. With this, demands on the use of online database increases, because students conveniently have remote access at anytime, anywhere.

Since there has been no initial assessment of undergraduate students' research knowledge, skills and attitude in the researchers' locale, the researcher found interest to conduct one. This study aimed to find out the challenges experienced by the students in using library resources and services in the conduct of their research. This paper also sought to find out if there is a significant difference between the respondents' profile with their research capabilities. Results of this study served as a guide for Librarians in the development of research competency enhancement plan for undergraduate students of De La Salle Lipa.

Literature Review

The following literature contained background readings undertaken by the researcher on the variables focused on this study. It starts with the literature on research competencies, knowledge, skills, and attitudes of students towards research, related literature on challenges experienced in the utilization of library resources and services in the conduct of research.

Research Competency

Research, learning, and teaching are among the important processes and skills for students, especially those in higher education. One of the most significant factors that affect in conducting research of students is their beliefs concerning their abilities. (Ashrafi-Rizi, Najari, Kazempour & Taheri, 2015)

“Research activity by its nature provides opportunities for innovation that develop higher cognitive capabilities and foster creativity”, which Warwick Learning and Development Center (2006) refer as Research capabilities. It is also a cognitive skill which can be gained through the learning process, and by course or curriculum design.

In the study conducted by Formoleza and Pateña (2013), they aimed to determine the level of capabilities of students in writing the research paper. This included the technical aspect, major and other parts of the research paper. Results revealed that undergraduate students were moderately competent in grammar, sentence construction and communication skills. While they need improvement on the method particularly on the construction of questions, developing research designs and determining statistical tools and treatment, it also noted that students need to be more familiar on the research format and need to develop their research skills. This study is somewhat related to the present study because the competency of some of the stated aspects of the research paper will be assessed. Based on the

results of this paper, teachers can plan for the enhancement of their lessons in their research writing subject. The research knowledge and skills that will be shared by the faculty members with their students will help to address their needs in writing a research paper.

It is also said that assessing undergraduate research competency is important. Arellano, et.al. (2001) conducted a study on determining the level of graduating students' proficiency in basic research skills. Majority of the students were able to identify factors in choosing research problem, connect findings with conclusions, apply sampling techniques, choose an instrument for data gathering and identify variable. While more respondents have difficulty in stating hypothesis, choose appropriate scales for qualitative variables, identify statistical test to be used, identify research design, and introduction for a research proposal. Generally, students are also having difficulty in outlining the general steps and procedures in doing a research project. Majority of students were not proficient in basic research competencies. It also said that those who will soon join the labor market are not fully equipped with research skills which they need to be competent in doing research in a research-oriented job. With that, it is indicated that students needed more research training, thus the university should look into research activities for students that will be incorporated into the curriculum.

Aborro and Mariño (2016), studied the research capabilities of Public Secondary and Elementary School teachers in the Division of Antipolo, it reveals that

they are moderately capable in writing the different parts of a research proposal, while in applying American Psychological Association (APA) format they are less capable. With that, it was recommended that teachers should be provided training on applying APA format in writing a research paper.

Also in the case of Ilocos Sur Polytechnic State College, by Dela Cruz (2016), the research capability of faculty members were assessed to have a basis for a capability enhancement program. Results showed that the research administrators are capable researchers and competent in conceptual skills, and moderately competent on computational and technical skills. It was recommended that the college should provide ways and means to further improve the research capability of its faculty. Also, faculty members should be provided with training in communication both oral and written as it is needed in writing a research paper, use of APA style using prescribed research format, provide training workshops in writing all parts of the research paper, specifically, appropriate research method, the statistical tool, and treatment. This will help strengthen their research capability and uplift their present standing in the field of research.

While in the study conducted by Narag, Gannaban and Agustin (2016) factors affecting the research capabilities of faculty members of College of Business Entrepreneurship and Accountancy in four dimensions such as; knowledge, financial, time and technical were determined. It showed that mentioned dimensions affect the

respondents' research capabilities and that the school should provide training in research writing.

Bay and Clerigo (2013) investigated in their study the possible relationship of writing research confidence and organizational support towards research activities of the faculty members of the College of Dentistry at Lyceum of the Philippines University-Batangas. Findings showed that most of the respondents were confident with the technical part in research writing, same with other parts of the research process like writing the abstract and references with developing research findings. However, they have low research productivity. With that it was recommended to provide reinforcement training on research methodology in a regular basis with workshop and evaluation in writing the instrument and determining appropriate statistical treatment, it was also recommended to provide research mentoring among faculty members.

Salom (2013) states that faculty members have gained adequate knowledge and have developed skills in the research process by putting its rules and principles into practice, but need to improve their writing skills, to present, to analyze, and to interpret effectively their research findings. The level of competency in using statistical measures should be strengthened.

In the study of Abarquez and Palbacal (2012) on the research capabilities of International Tourism and Hospitality Management Faculty members, results

revealed that the respondents were moderately competent in conducting the technical aspects of research but still they need more skills and background knowledge in terms of organization of research writing. It also reveals that they still need to have competency in analysing the methods to be used concerning data gathering as well as the formulation of research objectives and creating an introduction. It was also recommended to provide appropriate training and workshops concerning research organization and methodology in order to enhance their research capability of the faculty.

The above literature shows the importance of ones' competencies in doing a research paper for students and teachers. Those literature are related to the present study since one of the aims of this study is to know the level of research capability of undergraduate students of De La Salle Lipa.

Knowledge, Skills, and Attitudes

To become a capable or competent researcher, students acquired knowledge through their different subject courses that let them experienced doing research. In performing research, students should also possess needed skills and techniques, and this can be attained through received training from librarians and concerned teachers. Research output can be affected by the students' attitudes towards research; it can be positive or negative.

In the study conducted by Vairamani and Akoijam (2018) it was found out that the majority of medical students had inadequate knowledge of research, but have a positive attitude towards research. Students also believed that engaging in research will develop research skills and help boost their careers, but still few participated in research during medical curriculum. With this, it was recommended that a well-planned competency-based curriculum for research be done to help students boost their participation in research.

Kyaw Soe et al. (2017) conducted a study on the assessment of the research knowledge of undergraduate medical and dental students. Results show that students have extensive confidence in conducting research activities such as creating clinical questions and searching and appraising literature, but many of them expressed limited confidence in accessing clinical expertise from the instructor and utilizing evidence-based processes.

Ibrahim et al. (2013) conducted a study to determine the knowledge, attitude, and practice regarding research of students. Results show that knowledge about research was generally low among medical students and interns due to lack of training. For those who received research training and conducted researches had significantly higher knowledge score. Findings also revealed that respondents agreed that they should participate in researches, and that research is useful for their future career, and that, it will give them a better chance for the postgraduate program, with that the respondents' shows positive attitude towards research. It was recommended

that research methodology training workshops be done, and integration of research methodology mandatory courses into the undergraduate curriculum.

In order to fulfil the student's research activity, students should have the skills to do so. Research skills encompass both problems solving and information skills; one online article by Badke (2012) characterizes research skills as the capability to recognize a problem, identify the right source of information required to respond to the problem, search those sources efficiently, assess the quality and relevance of the collected information, and use the information effectively to tackle the problem.

In the study conducted by Meerah et al. (2012) results showed that graduates students were well-equipped in the research skill and they were able to conduct research on their own. However further improvement is needed particularly in the methodology and quantitative analysis skills.

Murtonen et al. (2008) observed that students who considered research skills significant for their future work were more task-oriented and used a deeper approach to learning and experienced fewer difficulties in the learning of research skills than other students. It was argued that if the students were given better research experiences and orientation, the students might be better prepared for their future work.

An attitude is considered as one of the most important aspects in student's preparation for an academic career. Positive attitude towards research is a key to success and progress in knowledge-based societies. (Hussain, et al. 2016)

Based on the study of Viaramini and Akoijam (2018), most of the students felt that participation to research is beneficial to their education, but only a few of them were confident in interpreting and writing a research paper and some agreed that conducting research increases the burden on overworked students.

In the study conducted by Gredig and Bartelsen-Raemy (2018) on the attitudes of social work students' on research courses, they found out that students are reluctant to engage in research, they have also negative beliefs and high level of anxiety towards research. The study recommended that research orientation and research anxiety should be considered and addressed by teachers when conceptualizing research courses.

In the study conducted by Althubaita and Alaa (2017) wherein the assessment of medical students' attitude towards research was done, it was found out that students look research as important for identifying and investigating problems in a subject matter but not all students have positive attitudes towards research, and it shows that female students have a more positive attitude towards research. It was recommended that strategies to strengthen research program as part of the curriculum and ensure that these programs will effectively meet their goals and

continue to be improved in providing suitable infrastructural facilities necessary to conduct research at the undergraduate level.

In the study conducted by Siamian, et al. (2016), which tries to investigate the attitude of students towards research, results show that students feel the usefulness of research in searching for jobs and careers, it contributes to stress and anxiety, it can relate with daily lives and see research problem in a positive way. With that, it can be said that students are interested in doing research and see it as a necessary requirement and that they can do it efficiently. The study also reveals that gender, age, and education level have no effect on the attitude of students to research.

In the study of Pamatmat (2016), wherein he surveys the research attitudes of teaching personnel of Laguna State Polytechnic University, results show that respondents perceived research as significant to everyday life, and research ability is useful to their job, and that research involvement provides better career opportunities leading to meaningful contributions to the fund of knowledge. It also shows that respondents have an interest in research activities that lead to proficiency in doing research. With that, it is recommended that the teaching personnel of LSPU be provided with research capability building and advances training so that they can be equipped with necessary research competency.

In the study conducted by AlGhandi, et al. (2013) on the attitudes of senior medical students towards research shows that they are motivated to conduct

research with the following reasons; research is mandatory in their curriculum, it will give positive achievement on their resume, full filling research interest, it will improve their research skills and attaining a research publication. With that, it shows that students believed that conducting research reinforced teamwork spirit.

The above literature shows the importance of acquiring knowledge in doing research, leaning the necessary research skills needed in writing a research paper, and the importance of having a positive attitude or perspective in research to be able to produce a good paper. Although there is no single literature which assessed the knowledge, skills, and attitude of a student about research writing, the above literature gives supports to the present study because they provide similar information.

Challenges in the utilization of library resources and services

An academic library is considered as "heart" of any educational institutions (Kassim, 2009 as cited by Venna & Kotari, 2016) and its main purpose is to acquire a variety of information sources and provide a multiplicity of services to accomplish the user's information needs (Jacintha & Uzoigwe, 2013). The effectiveness of the library service can be evaluated by the level to which its services and resources are utilized (Bawden et al., 2009).

In accomplishing their research paper, students need to look into different information sources, and the University library takes a big role in providing research

support. Doing research is not an easy task. It takes time and patience to complete or finished one's work. In writing a research paper, students or researchers encounters problems or experience some obstacles in using library resources and services to complete their academic works.

In the study conducted by Singh (2018) shows that researchers of Sri Guru Granth Sahib World University experienced problems in doing their academic activities, and those are; searching right information, having less time, and having less knowledge of searching techniques. But it was also shown that the majority of users are taking benefits from various types of library resources for different purposes. Training to address the need was recommended.

In the study conducted by Ugwu and Orsu (2017) results revealed that few online resources were widely used by the students and that the participants preferred accessing these resources from Internet Cafes. The greatest factors underlying students' challenges with the use of online information are lack of browsing skills, low internet bandwidth and insufficient ICT infrastructure, whereas indirect factors include lack of internet access at home, the absence of online assignments, lack of motivation to use online information and majority of the students not having personal laptops. With that, undergraduate students should be given orientation or more education on how to identify, use and evaluation online information resources. This education should target specific skills set such as browsing skills, basic online searching skills, and advanced search strategy.

In the study conducted by Madriaga (2015), which determined the problems encountered by the students in the services provided by the library of Tarlac State University, results shows that, librarians are cranky and strict, non-availability of library service during lunch time when most of the students are available for library work, and lack of updated books. Consultations and planning sessions were recommended to address these concerns.

Same with the study conducted by Van Kampen-Breit and Cooke (2015), it shows that some students reported not being able to find the items they needed and perhaps leaving disappointed with the library's resources. Students are hesitant to ask help; most students visited the library for scholastic pursuits but very few responded that they were visiting the library specifically to get help from a librarian. It was recommended that in order that students can become more confident and capable in finding the information need, they should coach and mentored by a friendly librarian. The solution is to foster stronger relationships with library users, including teaching faculty.

In the study conducted by Onifade et al. (2013), results show the problems encountered by the postgraduate students in using library resources and services of Babcock University Library, respondents claimed that they are hindered from using the library due to lack of time, insufficient Internet access points, lack of library orientation which did not enable them to have knowledge and library opening hours. However, further data revealed that by the time they are ready to use the library, the

library would have been closed for the day. Therefore, it is necessary for the university library to consider the best way of reaching out to these students through strategic planning.

The library as part of academic institution plays a vital role in students' academic endeavor specially on research. Library take a big role to support students in accomplishing their research paper. It includes trainings on how to use the library resources and avail its services. Library informs students on information seeking like, use of electronic journals or online databases, access to up-to-date collections of both print and electronic resources; and efficient ICT infrastructure.

In the study conducted by Rasul and Singh (2010), their paper examined the students' perception on the role of academic libraries in facilitating research in Malaysian public universities. Results shows that the students acknowledge the important role of library in facilitating research. It also shows that the electronic resources provide greater value in accomplishing their research, with that students are satisfied with role being played by the libraries in conducting their research. This implied that academic libraries need to continually improve their electronic resources in this electronic age to further help in the information needs of researchers.

In the study conducted by Du and Evans (2011), they investigated the use of a university library academic service to assist in research information seeking, and the

role and value of the academic services in support of research from the viewpoints of both academic users and librarians. Findings shows that online databases and interlibrary loans services are the most familiar, and utilized by academic users. Assistance in searching for resources in and out of the library, subscribing to the databases and maintaining access, as well as providing training on research skills were major roles and values of the university library as perceived by academic users in research support. Academic librarians should spend time thinking about the future and work towards a vision where valuable services are provided to its users.

With limited studies on difficulties of undergraduate students in writing research, the above studies were considered to contribute to the completion of the present study. Literature shows that research training is recommended to help students lessen their problems in performing their research activities and to further support students in their research activities.

Synthesis

Gathered literatures show that most of the undergraduate students were able to write a research paper, but still, they need to be provided with a research training and workshops to better enhance their competencies and research skills. They also see research as one of the most important components in undergraduate studies, and to be capable of doing research, skills and competencies are needed for this endeavor. Literature reviewed were related to the present study since the level of research

competency of undergraduate students of De La Salle Lipa will be determined.

Other literature gathered were about knowledge, skills, and attitudes of students towards research. Studies implied that research is mandatory in undergraduate courses and part of the core curriculum, and knowledge in research is attained through classroom lectures and engagement in research activities. It shows that research experience enhances the necessary skills students need and research skills can also be gained through library orientation and training. To better success in doing research, a positive attitude towards research writing is desired, such as; having interest in doing research help them to increase their motivation to pursue research activities which they feel that it can help in their future career. Some literature shows that students have also a negative attitude towards research. The related studies provided a deeper understanding of one of the problems at hand. It also provided enlighten on the researcher to better understand the study.

However, limited literature gathered on challenges encountered by the students in using library resources and services in doing their research projects. Literatures reviewed shows that, in performing research, the library plays an important role in undergraduate student's academic career. Literature shows that the common concerns they have in using library were; lack of knowledge in searching skills, lack of motivation to use online resources, less hours of service, librarians are cranky and strict, students are hesitant to ask help, and lack of library orientation. With that consultation and planning sessions should be conducted, a strong

relationship with the user should be build up together with mentoring activities by librarians to address the students' concerns.

Literature also shows the research support that the academic library can provide to students. Training on information seeking and strategies on accessing resources is needed to help students lessen their problems in performing their research activities.

Based on the literature gathered, the present study will try to bridge the gap by studying and collecting data from the senior undergraduate students of De La Salle Lipa, assessing the respondents' level of research competencies in terms of knowledge, skill, and attitudes. The present study gives emphasis also in finding what challenges they encountered in using library resources and services while writing a research paper, with the hope that recommendations will be provided on how to address those problems. Results of this study will serve as a guide for Librarians in the development of research competency enhancement plan for undergraduate students of De La Salle Lipa.

Conceptual Framework

According to Boyatzis (1982) as cited by Tripathi (2014) competency is an underlying characteristic of an individual, which are, casually (change in one variable cause change in another) related to effective performance. The KSA framework of competency is very popular in defining the competency concept. A competency is a

set of skills, related knowledge and attributes that allow an individual to successfully perform a task or an activity within a specific function or job. (UNIDO, 2002)

The KSA framework of competency was adapted as the concept of the study. Competency in this study is the possession of the knowledge, skills and attitudes to fulfil current needs. Knowledge focuses on the understanding of concepts on how to write research. Skills focuses on the practical application of earned knowledge and the ability to perform research using their research skills. Attitudes focus on how the students perceived research in their academic studies. Having all the three components student will be able to have competency in research writing which will lead them to have a good performance and be able to complete their research paper.

Challenges usually occurs in every endeavor and this has to be addressed to lessen if not eliminate the challenges. In this study the challenges experienced by students in using library resources and services were identified and the library and librarian are in a better position to address the challenges it is important to understand which elements can lead to students' successful use of the library. Similarly, finding out what helps students to use the library will assist staff to maximize the positive aspects for students. This will assure students that the library is responsive to their needs, and helps them to become more self-sufficient in their learning, while making better use of library resources and services.

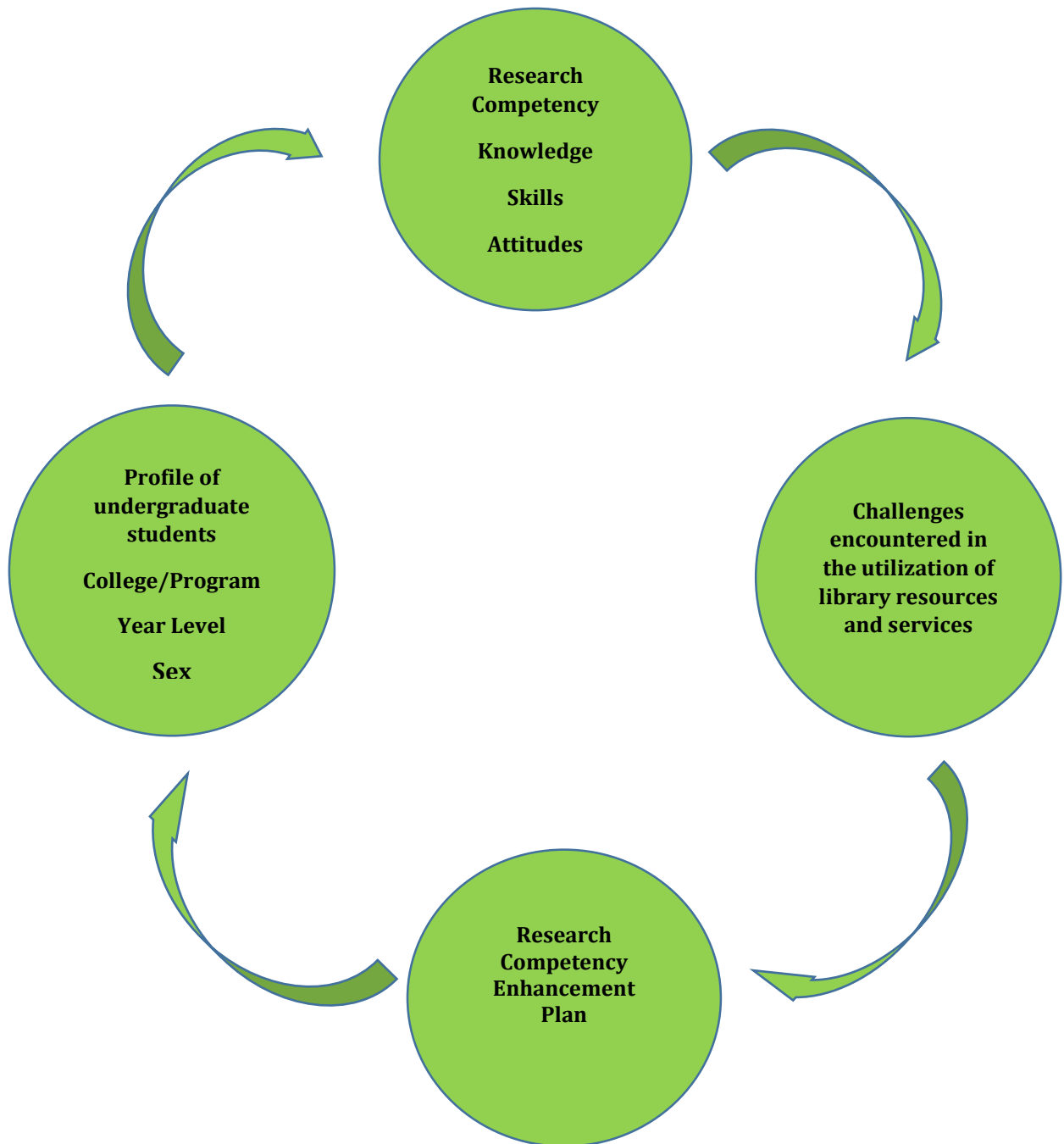


Figure 1. Conceptual Framework

Figure 1 shows how the concepts of this study relate to each other. To achieve the objective of the study which is to develop a research competency enhancement plan, the respondents were determined by getting their profile in terms of college, year level and sex. The research competency of the students was assessed in terms of knowledge, skills and attitudes in which according to Warier (2014), research competencies shows the relationships of knowledge, skills and attitudes required by an individual to fulfil his or obligations. Competency in this study is the possession of the knowledge, skills and attitudes to fulfil current needs. Knowledge focuses on the understanding of concepts on how to write research. Skills focuses on the practical application of earned knowledge and the ability to perform research using their skills. Attitudes focus on how the students perceived research in their academic studies. Having all the three components student will be able to have competency in research writing which will lead them to have a good performance and be able to complete their research paper.

The library as part of academic institution has a role in promoting and developing research competency of the students by designing a research competency enhancement plan, in such plan the challenges encountered by students in utilizing library resources and services in writing their research paper will also be addressed. In the proposed research competency enhancement plan the library and librarian shows evidence the direct support to student's research activities by providing access to up-to-date collections of both print and electronic resources, advice on

bibliographic referencing, advice on research topic, advice on research proposal writing, a training workshop on databases, evaluation of resources.

Research Problems

The main objective of this study was to develop a research competency plan for the undergraduate students of De La Salle-Lipa. Specifically, it sought to answer the following questions:

1. What is the level of research competency of undergraduate students in terms of?
 - 1.1 Knowledge
 - 1.2 Skills
 - 1.3 Attitudes
2. Is there a significant difference in the level of research competency of the undergraduate students when group according to:
 - 2.1 Program/College
 - 2.2 Year Level
 - 2.3 Sex
3. What are the challenges encountered by the undergraduate students of De La Salle Lipa in utilizing library resources and services during research writing?

4. What research competency plan can be developed to support undergraduate students in research writing?

Significance of the Study

The study will be significant to the professors of the university who are handling research writing subjects. Results will serve as a reference to identify the research capability needs of the students in terms of knowledge, skills, and attitudes.

The study will also help the Research Office of the university to identify the possible training programs that they may conduct to the undergraduate students of the institution.

This paper will also be significant to library administrators because this will help them to identify the challenges encountered by the students in writing research paper. Results also will help librarians to develop a research competency enhancement plan to provide research support needed by undergraduate students who will undergo research writing.

Moreover, this will benefit undergraduate students since they are the target beneficiaries of the proposed research competency enhancement plan.

Definition of terms

To facilitate better understanding of this study, the following terms are defined as they used in the study:

Attitude

It is a combination of beliefs, feelings, and behaviors directed toward a person, object or category. (Kalat & Shiota 2007)

In this study, attitude refers as to how the students feel about writing a research paper and how research will be significant in their lives.

Knowledge

It is the awareness or familiarity gained by experience; theoretical or practical understanding of a subject. (The Concise Oxford Dictionary, 1995)

In this study, knowledge refers to students beliefs in their capacity to write a research paper.

Library collection

It is a total accumulation of books and other materials owned by a library, cataloged and arranged for ease of access, which often consists of several smaller collections (reference, circulating books, serials, government documents, rare books, special collections, etc.) (Reitz, 2002.)

In this study, it refers to library resources that students use in their research, it can be print or non- print format.

Research

It is a systematic inquiry that uses disciplined methods to answer questions or solved problems (Polit & Beck, 2004 as cited by Cristobal, 2013).

In this study, it refers research writing and the gathering of information to be used accomplishing their research paper.

Research Capability

It is a research activity by its nature that provides opportunities for innovation that develop higher cognitive capabilities and foster creativity. (Warwick Learning and Development Center, 2006.).

In this study, it refers to students' competency in writing and conducting research paper, research skills in finding and accessing information.

Research writing

It is a particular way of expression that learners use to show the intellectual boundaries of their disciplines and their areas of experience at large (essaybestwritingservice.com).

In this study, it refers to gathering of information needed to construct answer to research problems.

Skills

Is the ability to use one's knowledge effectively and readily in execution or performance (Merriam Webster's Collegiate Dictionary, 1997)

In this study, it refers to research skills required for research writing, like searching an answer to specified questions and increase understating in a particular field of inquiry using library resources.

CHAPTER 2

RESEARCH METHODS

This chapter presents the methods and procedures followed in the conduct of the study including the discussion of the sample population, development of the research tool and ethical considerations.

Research Design

This study used the descriptive survey method as a research design. According to Garcia (2010), the descriptive survey method is appropriate for data derived from simple observational situations, whether these are physically observed or observed through the use of a questionnaire or poll techniques.

The above-mentioned research design was appropriate in this study because the researchers' main thrust was to gather information about the research capabilities of undergraduate students in terms of knowledge, skills, and attitudes, and identify the challenges experienced by students in using library resources and services while writing research.

Sampling and Participants

The respondents of the study were the 4th and 5th-year undergraduate students of the five (5) different colleges of De La Salle Lipa. This includes the students from the College of Business, Economics, Accountancy and Management (CBEAM),

College of Education, Arts, and Sciences (CEAS), College of International Hospitality and Tourism Management (CIHTM), College of Information Technology and Engineering (CITE); and College of Nursing (CON).

The stratified random sampling method was used in determining the respondents of the study since it involves the division of a population into a smaller sub group known as strata. A random sample is a subset of a statistical population in which each member of the subset has an equal probability of being chosen. A simple random sample is meant to be an unbiased representation of a group (Bermudez 2011). Respondents were the 4th and 5th-year undergraduate students of De La Salle Lipa who enrolled in research subjects and already conducted a research study.

With the population of 2167 using Slovin's formula with a 5% margin of error and a 95% level of confidence, the researcher computed a total sample size of 338 respondents. After applying the stratified random sampling, the following strata were derived:

Table 1. Number of population per college/program

COLLEGE	POPULATION	SAMPLE
CBEAM	665	104
CEAS	334	52
CIHTM	225	35
CITE	914	142
CON	29	5
TOTAL	2167	338

Profile of the Respondents

Respondents were clustered according to college/program, year level and sex as shown in percentage and by the total number of students.

Table 2. Profile of the Respondents in terms of College

	Frequency	Percentage
College of Education, Arts, and Sciences	52	15%
College of Business, Economics, Accountancy, and Management	104	31%
College of International Hospitality and Tourism Management	35	10%
College of Information Technology and Engineering	142	42%
College of Nursing	5	2%
Total	338	100%

As shown in Table 2, 52 or 15% of the total respondents were from CEAS, 104 or 31% of the total respondents came from CBEAM, 35 or 10% of the respondents from CIHTM, while majority of the respondents were from CITE with 142 or 42% of the total respondents. CoN represents the least number of respondents with 5 or 2% for a total of 338 respondents who answered the survey. Identifying the number of respondents per college/program is important in gathering the data for the study.

Table 3. Profile of the Respondent in Terms of Year Level

	Frequency	Percentage
Fourth Year Level	278	82%
Fifth Year Level	60	18%
Total	338	100%

Table 3 shows that majority of the respondents were fourth year undergraduate students with 278 or 82%, while 60 or 18% of the respondents were 5th year level. This data coincides with the total population since only the College of Information Technology and Engineering (CITE) has fifth year students, specifically, the engineering courses. However, it can be noted that CITE has the greatest number of population (42%). The results imply that although the college population is predominantly CITE, most of the visitors of the library coming from higher year level are fourth year students because only the Engineering programs belongs to 5th year level.

Table 4. Profile of the Respondent in terms of Sex

	Frequency	Percentage
Male	128	38%
Female	210	62%
Total	338	100%

As shown in Table 4, there are 128 or 38% respondents who are male, while 210 or 62% are female. This data coincides with the total college population wherein there are more female students than male students.

Research Instrument

A survey questionnaire was used to gather data using a four (4) point Likert Scale. The survey questionnaire was developed by the researcher which includes the following components: respondents' profile, level of respondents' research competency in terms of knowledge, skills, and attitudes, the challenges that respondents experienced using library resources and services in doing research.

The instrument was validated by experts and pilot testing was conducted. Changes were made on the instrument base on the results of validation and pilot testing. The questionnaire also undergone reliability test which resulted to Knowledge Cronbach's Alpha = .860; Skills Cronbach's Alpha = .888; Attitude Cronbach's Alpha = .886; Challenges Cronbach's Alpha = .739 which was interpreted as ready to proceed to the actual survey.

Data Gathering Procedure

A validated questionnaire was administered to the target numbers of respondents of the study after the researcher secured an approval from the Vice Chancellor for Academics and Research of De La Salle Lipa.

The researcher together with the help of the library staff asked the respondents' consent to participate in the study by answering the survey questionnaire. The objectives of the study were discussed with the respondents. The researcher also assured the respondents that all gathered data will only be used for

this study and be treated with outmost confidentiality. The researcher ensured that the questionnaire is free from any biases (gender, class, ethnic, etc.)

The data gathering lasted for two weeks wherein the respondents answered the survey within 5-10 minutes. Upon completion, the researcher tallied the results of the survey and sought the help of a statistician in analysing and interpreting the data.

Data Analysis

Frequency and percentage distribution were used to get the number of times the respondents choose an option. The weighted mean was used in the assessment of the participants' level of research capabilities in terms of knowledge, skills, and attitudes.

ANOVA test was used to determine the significant difference between the levels of research capability of students with the college/program they belong, while T-Test was used to determine the significant difference between the levels of research capability of the respondent's when group according to profile. This study analysed the data collected from the survey questionnaire used the Statistical Package for the Social Sciences (SPSS).

Determining the challenges encountered by the students in using library resources and services was also included to support the data needed in the development of research capability plan of the library.

Level of research capability in terms of knowledge, skills, and attitudes was interpreted using the scale below adopted from the study of Bay & Clerigo, (2013).

Table 5. Scale for questionnaire

Mean	Interpretation		
	Knowledge	Skills	Attitudes
3.50 - 4.00	Very Competent	Excellent	Highly Positive
2.50 - 3.49	Competent	Good	Positive
1.50 - 2.49	Less Competent	Fair	Less Positive
1.00-1.49	Not Competent	Poor	Negative

The scale use in questionnaire for the research competency of students in terms of attitudes were interpreted as were strongly agree, agree, disagree and strongly agree.

Ethical Considerations

Since this study required a collection of data from human participants, the researcher sought the approval of the Research Committee (REC) of the Philippine Normal University to make sure that this study was carried out according to the set policies as stated in the Code of Research Ethics and Guidelines for Review.

The researcher assured the respondents that all information obtained from them were treated confidentially and will not in any way harm them professionally or personally. The respondents in this study are not minors and do not require

additional clearances except for the approval of Research Director of De La Salle Lipa. However, consent was still secured by the researcher from the respondents before data gathering. The consent form explains the detailed of the study to make sure that the respondent joined voluntarily and that they were not forced to participate in the survey.

The results of the study were shared to teachers handling research subjects for them to understand the level of research capability of their undergraduate students in terms of knowledge, skills, and attitudes, as well as the challenges they experienced in using library resources and services in the conduct of their research. These will hopefully help the teachers in enhancing their lessons in research writing. The results were presented to the Library administrator to serve as a guide to helped them identified the training needs of the student and also served as a guide in the development of training plan for undergraduate students who will undergo research writing.

CHAPTER 3

FINDINGS AND DISCUSSION

This chapter presents the data gathered which were discussed and analyzed to answer the research problems.

Research Competency

The study investigated the research competency of undergraduate student in terms of knowledge, skills, and attitudes, which contributed to the success of students in writing their research paper.

Table 6. Research Competency in terms of Knowledge

	Mean	Verbal Equivalent
Planning the research project.	3.26	Competent
Developing the research question.	3.20	Competent
Formulating research problems.	3.17	Competent
Writing literature reviews.	3.11	Competent
Developing a research instrument.	3.09	Competent
Collecting raw data using survey questionnaires.	3.30	Competent
Writing an abstract.	3.18	Competent
Formulating research framework/design.	3.05	Competent
Determining statistical tools to be used.	3.09	Competent
Identifying sample size and sampling techniques.	3.14	Competent
Listing references using appropriate format (APA style).	3.33	Competent
Interpreting survey results.	3.26	Competent
Formulating conclusions and recommendations that address research problems and concerns.	3.37	Competent
Composite Mean	3.20	Competent

As can be gleaned in Table 6, respondents were competent in terms of knowledge in research capability with a composite mean of 3.20. This means that the undergraduate students possess enough knowledge to write the different parts of the research paper.

Among the items enumerated, the respondents are most competent in *formulating conclusions and recommendations that address research problems and concerns* with the highest mean of 3.37. This means that most of the undergraduate students believed that they are competent in drawing inferences and constructing solutions to answer research problems. Their competence in such manner may possibly be associated from enrolling in their research class.

Listing references using the APA format with a mean of 3.33 which also verbally interpreted as competent received the next highest mean. This may be attributed to the information literacy program of the college library where citing references using APA is one of the topics discussed in the said activity.

Other items received different means with the same verbal interpretation of being competent. This includes *collecting raw data* with a mean of 3.30, followed by *planning the research project and interpreting survey results* which both have a mean of 3.26, next is *developing the research question* with a mean of 3.2, then followed by *writing an abstract* with mean of 3.18, *formulating research problems* with a mean of 3.17, *identifying sample size and sampling techniques* with a mean of 3.14, *writing literature* with mean of 3.11, and *developing research instrument and determining*

statistical tools both have a mean of 3.09. Although still verbally interpreted as competent, *formulating research framework/design* received the lowest mean of 3.05.

This may imply the although students are competent in writing research paper, they still need to be provided training on how to undergo the research process by providing trainings and additional activity to enhance their competency in writing research paper.

Table 7. Research Competency in terms of Skills

	Mean	Verbal Equivalent
Identifying a research topic.	3.23	Good
Narrowing the research topic.	3.13	Good
Selecting research terms and variables.	3.20	Good
Finding related articles using online databases (EBSCO, PROQUEST, CENGAGE, etc.).	3.16	Good
Finding related literature using web sources (Google, etc.).	3.40	Good
Identifying credible sources online.	3.32	Good
Locating relevant printed resource (books, journals, etc.)	3.16	Good
Citing sources of different formats.	3.19	Good
Familiar with copyright, fair use, and plagiarism.	3.50	Good
Taking notes and organizing collected data and information.	3.39	Good
Composite Mean	3.26	Good

As presented in Table 7, the research capability of the respondents' in terms of skills have a composite mean of 3.26 which is verbally interpreted as good. This is despite the fact they have already completed their research paper and that they have undergone the information literacy program offered by the college library which primarily focuses on research skills.

The highest mean among all the skills stated was being *familiar with copyright, fair use, and plagiarism* which was evident with the weighted mean of 3.50. This shows that the students are aware of the different laws and practices in terms of citing works written by others. This is followed by *knowing how to find literature using web sources like Google and other search engines* with a mean of 3.40. This may imply that students are more at ease in using internet sources because they can access it even at home or anywhere as long as they have an internet connection. Next is *taking notes and organizing collected data and information* with a mean of 3.39, followed by *identifying credible sources online* with a mean of 3.32. Other items include *identifying a research topic* with a mean of 3.23 which is also verbally interpreted as good, followed by *selecting research terms and variables* with a mean of 3.20. This may imply that library should provide additional training to enhance the research skills of the students.

Although in terms of research knowledge as shown in Table 6, respondents claimed that they are competent in using APA style format of citation, it was found out that *citing references in different format* received one of the lowest mean of 3.19. This may imply that respondents are capable of citing commonly used reference materials such as books, but not in citing references such as journals, internet sources and other sources of information.

The second lowest mean with 3.16 are *finding related articles using online databases (EBSCO, PROQUEST, CENGAGE, etc.)* and *locating relevant printed resources*

(books, journals, etc). This implies that respondents find it hard to look materials in the library using both print and non-print resources. While the lowest item with a mean of 3.13 is *narrowing their research topic*, is still verbally interpreted as good.

These results agreed with the findings of Gilmore and Feldon (2010) as stated by Meerah (2011), that students are having difficulty in information seeking skills. This may include searching online resources and using different format of references. It is important for undergraduate students to develop their research skills early.

Table 8. Research Competency in terms of Attitude

	Mean	Verbal equivalent
I feel confident in determining the topic that I need to search.	3.23	Agree
I know how to use different types of media (print, videos, etc.)	3.43	Agree
I am confident that the information I get is accurate.	3.25	Agree
I know when the information is complete and reliable.	3.28	Agree
I am sure that the information I get addresses my topic.	3.32	Agree
A lot of information I find is relevant.	3.18	Agree
I know my audience and the information I present meets their needs.	3.22	Agree
I know how to record or cite all my resources.	3.36	Agree
I can tell when information is not biased.	3.21	Agree
I know when the material is confidential.	3.38	Agree
While preparing the project, I am certain that it will be received well by others.	3.29	Agree
I am motivated to do research.	3.21	Agree
I feel that research will play a significant role in my future career.	3.33	Agree
I know research is important to earn a degree in college.	3.50	Strongly Agree
I know that writing a research paper will greatly improve my research skills.	3.52	Strongly Agree
Composite Mean	3.32	Agree

As seen in Table 8, respondents agreed with the different items which shows positive attitude towards research writing with a composite mean of 3.32. Among the items enumerated includes, *knowing that writing a research paper greatly improved their research skills*, got the highest mean of 3.52 and is verbally interpreted as strongly agree. This means that the respondents appreciate the usefulness of writing research paper in their academic endeavor, with that the library can facilitate activity that will help students to improve more their research skills.

The next highest mean among the stated item is *that students felt that research was important to earn a degree in college* with a mean of 3.50 which also interpreted as strongly agree. This is followed by the item stating that *respondents know how to use different types of media* with a mean of 3.43 which is verbally interpreted as good, next item stated that respondents *knows when the material is confidential* with a mean of 3.38. This may imply that students need to be more familiarized in the confidentiality of the materials. This coincides with the next item which states that *students know how to record or cite all resources used* in their study with a mean of 3.36. This may imply that students are aware on how to choose resources to be used in their study.

The next item stated in the study is that respondents *feel that research will play a significant role in their future career* which received a mean of 3.33. This may mean that students are aware that research will help them in their future career. This result of the study is the same with the findings of Saiiari (1994), as cited by Mizany, et al.,

(2012), which stated that writing research paper is important to students because writing in a special field makes student an expert in their area and this could be a basis for their future works.

The item, *students knows that the information they got addresses their topic* got a mean of 3.32, followed by the item which stated that *respondent are certain that their research project can be well received by others*, with a mean of 3.29. This is followed by the item which stated that respondents *know when the information is complete and reliable* with a mean of 3.28, then followed by item stating that *the information they get is accurate* with a mean of 3.25. The results imply that respondents agree that they have a positive attitude towards research and that training on how to search reliable resources can be given through information literacy program of the library.

The following items got the three lowest mean which states that, respondents *know that the information they presented meet the needs of their audience* with a mean of 3.22 followed by the items; *respondents were motivated to do research*, and *that they can tell when the information is not biased* both have a mean of 3.21 and *lot of information they find is relevant*, which can be interpreted that respondents agreed that they have a positive attitude towards research.

Research Competency in terms of Profile

This research also aimed to find out if there is a significant difference on the level of research competency of undergraduate students in terms of knowledge, skills and attitudes when grouped according to profile.

Tablet 9. Program and Knowledge

Program	Mean	F	Sig.	Decision	Interpretation
CEAS	3.38	4.292	.002	Reject Ho	Significant
CBEAM	3.15				
CIHTM	3.30				
CITE	3.13				
CoN	3.35				

Table 9 shows that there is a significant difference between the profile of the respondents and knowledge as evidenced by the p-value equal to 0.002 (p-value < 0.05).

Tablet 10. Program and Knowledge- Post Hoc Analysis

Program	Post Hoc Analysis				
	CEAS	CBEAM	CIHTM	CITE	CoN
CEAS		.01	.91	.00	1.00
CBEAM	.01		.38	1.00	.84
CIHTM	.91	.38		.21	1.00
CITE	.00	1.00	.21		.79
CoN	1.00	.84	1.00	.79	

Table 10 revealed by post hoc analysis (Tukey HSD), there was a significant difference in the research capabilities between CEAS and CBEAM, CEAS and CITE undergraduate students having a p-value of 0.01 and 0.00 *respectively* ($p\text{-value} < 0.05$). Although there is a significant difference, it can also be seen that they are all competent in writing research paper and it may also be due to different perspective in acquiring knowledge in the process of writing the paper.

Tablet 11. Program and Skills

Program	Mean	F	Sig.	Decision	Interpretation
CEAS	3.50	5.172	.000	Reject Ho	Significant
CBEAM	3.23				
CIHTM	3.38				
CITE	3.21				
CoN	3.47				

Table 11 shows that there is a significant difference between the profile of the respondents and skills as evidenced by the p-value equal to 0.000 ($p\text{-value} < 0.05$).

Tablet 12. Program and Skills-Post Hoc Analysis

Program	Post Hoc Analysis				
	CEAS	CBEAM	CIHTM	CITE	CoN
CEAS		.00	.73	.00	1.00
CBEAM	.00		.43	.99	.75
CIHTM	.73	.43		.23	.99
CITE	.00	.99	.23		.67
CoN	1.00	.75	.99	.67	

Table 12 revealed by post hoc analysis (Tukey HSD), there is a significant difference in the research capabilities between CEAS and CEAM, CEAS and CITE having a p-value of 0.00 (p-value < 0.05).

It can be seen that there is significant difference in the research capability of the respondents in terms of skills when grouped according to program. It can be due to the experiences they have in accessing and using library resources and services.

Tablet 13. Program and Attitudes

Program	Mean	F	Sig.	Decision	Interpretation
CEAS	3.48	3.445	.009	Reject Ho	Significant
CBEAM	3.26		.43483		
CIHTM	3.39		.44820		
CITE	3.26		.40811		
CoN	3.41		.48166		

Table 13 shows that there is a significant difference between the profile of the respondents and attitudes as evidenced by the p-value equal to 0.009 (p-value < 0.05).

Tablet 14. Program and Attitudes-Post hoc Analysis

Program	Post Hoc Analysis				
	CEAS	CBEAM	CIHTM	CITE	CoN
CEAS		.0170	.8625	.0110	.9963
CBEAM	.0170		.4947	1.0000	.9347
CIHTM	.8625	.4947		.4640	1.0000
CITE	.0110	1.0000	.4640		.9343
CoN	.9963	.9347	1.0000	.9343	

Table 14 revealed by post hoc analysis (Tukey HSD), there was a significant difference between CEAS having a p-value of .01704 and CBEAM having a p-value of 0.0170, CEAS having a p-value of .01704 and CITE having a p-value of 0.01 (p-value < 0.05).

Although there is a significant difference in the research capability of the respondents in terms of attitudes when grouped according to program it can be said that they have a positive attitude towards research.

Tablet 15. Year Level and Knowledge

Year Level	Mean	Sig. (2-tailed)	Decision	Interpretation
Fourth Year Level	3.21	.362	Failed to	Not Significant
Fifth Year Level	3.15		Reject Ho	

As presented in table 15, it can be seen that there is no significant difference in the knowledge of the respondents when grouped according to year level. This was evidenced having p-value equal to 0.362 (p-value > 0.05). This implies that in terms of year level, the research capability of the respondents in the knowledge aspects was the same between the Fourth Year and Fifth Year students. The year level did not influence the research capabilities of students in terms of knowledge.

Table 16. Year Level and Skills

Year Level	Mean	Sig. (2-tailed)	Decision	Interpretation
Fourth Year Level	3.30	.192	Failed to	Not Significant
Fifth Year Level	3.21		Reject Ho	

As presented in Table 16, it can be seen that there is no significant difference in the skills of the respondents when grouped according to year level. This was evidenced having p-value equal to 0.192 ($p\text{-value} > 0.05$).

This implies that in terms of year level, research skills and capabilities of the respondents was the same between the Fourth Year and Fifth Year students. The year level did not influence the research capabilities of students in terms of skills. This may implies that most of the senior undergraduate students were able to attend the information literacy program that the library provides and it may also implies that students were able to use the library resources and practice their research skills.

Table 17. Year Level and Attitudes

Year Level	Mean	Sig. (2-tailed)	Decision	Interpretation
Fourth Year Level	3.32	.662	Failed to Reject Ho	Not Significant
Fifth Year Level	3.29			

As presented in table 17, it can be seen that there is no significant difference in the skills of the respondents when grouped according to year level. This was evidenced having p-value equal to 0.662 ($p\text{-value} > 0.05$). This implies that in terms of year level, attitudes and research capability of the respondents was the same between the Fourth Year and Fifth Year students. It also implies that year level did not in any way influence the research capabilities of students in terms of attitudes.

Table 18. Sex and Knowledge

Sex	Mean	Sig. (2-tailed)	Decision	Interpretation
Male	3.19	.891	Failed to Reject Ho	Not Significant
Female	3.20			

As can be gleaned in the Table 18, it shows that there is no significant difference in the knowledge of the respondents when grouped according to sex. This was evidenced by having p-value equal to 0.891 (p-value > 0.05). This implies that in terms of sex, the research capability of the respondents is the same between male and female students. It also implies that sex did not in any way influence the research capabilities of students in terms of knowledge. This may also due to the fact that in acquiring knowledge both male and female has the same competency.

Table 19. Sex and Skills

Sex	Mean	Sig. (2-tailed)	Decision	Interpretation
Male	3.26	.509	Failed to Reject Ho	Not Significant
Female	3.29			

Table 19 shows that there is no significant difference in the skills of the respondents when grouped according to sex. This was evidenced having p-value equal to 0.509 (p-value > 0.05). This implies that the research capability of the respondents is the same between male and female students. It also implies that sex did not in any way influence the research capabilities of students in terms of skills.

This may also due to the fact the both male and female has the same competency of acquiring skills in terms of doing research.

Table 20. Sex and Attitudes

Sex	Mean	Sig. (2-tailed)	Decision	Interpretation
Male	3.31	.895	Failed to Reject Ho	Not Significant
Female	3.31			

Table 20 shows that there is no significant difference in the attitudes of the respondents when grouped according to sex. This was evidenced by having p-value equal to 0.895 (p-value > 0.05). This implies that in terms of sex, the research capability of the respondents is the same between male and female students. It also implies that sex did not in any way influence the research capabilities of students in terms of attitude. This may also due to the fact that both male and female has a positive attitude towards research writing and it helps them to accomplish their academic research requirements.

Siamian, et.al. (2016) conducted a similar study which also explored the possible effect of gender on the research capability of students. His study found out that there was no significant difference between gender and attitudes of students towards research. The results of the present study now support the paper of Siamian, which also concludes that sex and year level of students does not in any way affect that research capability of undergraduate students in terms of knowledge, skills and attitudes.

However, there was a gap in the literatures which was explored by this study. That is, the variable college/program was included to test if there is a significant difference on the research capability of the respondents. And as discussed in tables 7, 8 and 9, this study rejects the null hypothesis and states that there is a significant difference on the research capability of the undergraduate students in terms of knowledge, skills and attitudes when grouped according to college/program.

Challenges in Research Writing

This study also explored the different challenges experienced by students in writing their research paper.

Table 21. Challenges Encountered Utilizing the Library Resources and Services during Research Writing

Question Item	Frequency	Percent	Rank
Difficulties in accessing Wi-Fi connection.	171	51	1
I was not able to find resources for my topic.	170	50	2
Limited numbers of books to borrow.	159	47	3
Updated books are not available.	153	45	4
I cannot find related printed journals in my study.	126	37	5
I cannot find a related thesis in my study.	112	33	6
I don't know how to use (OPAC) Online Public Access Catalog.	93	28	7
Difficulties in accessing online databases thru institutions Web page.	76	22	8
I am not fond of going to the library.	73	22	9
I am not aware of the referral services of the library.	73	22	9
Hours of library service is not enough.	68	20	10
I don't know how to access online databases.		19	11
I am not aware of the online databases available.	61	18	12
I am not satisfied with the hands-on training using online databases.	57	17	13
I am not comfortable in borrowing and returning procedures of the library.	49	14	14
Lack of assistance from the librarian.	45	13	15
I don't know how to cite resources used.	37	11	16

As reflected in the Table 21, the top most answered item was that undergraduate students have *difficulties in accessing Wi-Fi connection* with 171 or 51% of the total respondents. This implies that the low Wi-Fi connection in the library or in the institution hindered students to access internet resources they needed.

Second in rank is that students *were not able to find resources for their topic* with 170 or 50% of the total respondents. Since the college library has a comprehensive collection on research writing and methodologies, this finding may suggest that students do not know how to use the Online Public Access Catalog (OPAC) to find and locate needed resources in the library. Although training on the use of OPAC and online databases are provided by the library, this particular result shows that students still find it hard to use the library OPAC. Thus, more intensive training on use of OPAC should be given to students.

The third item in the rank states that students are having problems when it comes to the *limited number of books they can borrow* with 159 or 47% of the total respondents. This results suggest that students need to borrow more number of books from the library, at least more than they are currently allowed. Librarians may consider this item in reviewing library guidelines.

145 or 45% of the total respondents stated that there is a need to update the library collection. This finding is related to the second problem which state that students *find it hard to locate need resources*. This may imply that the student were

not familiar with the resources available in the library and having a hard time locating them. The library can provide activity on how students can easily locate resources.

The following items also received high percentage such as students *cannot find related printed journals to their study* with 126 or 37% of the total respondents, they also *cannot find related thesis with their study* with 112 or 33% of the total respondents and then respondents *don't know how to use OPAC* with 93 or 28% of a total respondent. These results may suggest that students have a hard time in searching printed literature for their study and results shows that students still find it hard to familiarize themselves in using library OPAC.

Another item presented is that students *have difficulty in accessing online databases thru institutions Web page* which is 76 or 22% of the total respondents, this may be due to not having a user-friendly library web page or separate library web page. It can be inferred from the results that students find the current website of the library difficult to navigate which hinders them from accessing the online databases of the library.

The results of the study support the previous study of Urgu and Orsu (2017), which states that the factors underlying students' challenges with the used of library online resources were due to lack of browsing skills in finding information and low internet bandwidth. As such, these difficulties can be easily solved by providing a strong Wi-Fi access and additional training in the proper use of library resources, specifically, online resources.

Development of Research Competency Enhancement Plan

The research competency enhancement plan was develop based on the results of the study, which will include the difficulties of the students in accomplishing their research paper using their knowledge, skills and attitudes towards research.

The development of research competency enhancement plan (Appendix A) aimed to support the undergraduate students in writing their research paper. It will provide activities such as lecture, trainings, and face to face encounter with students to help students gain knowledge on how to develop a research paper. It will also facilitate lectures on the different resources and services that the library offers that will aid students in completing their research. It will also help enhance the skills of students in searching and identifying needed information in different formats such as: books, journals, published materials, internet sources and subscribed online databases, and be able to organize the information and use them effectively in research paper. Finally, students will able to appreciate the research support that the library provides by developing promotional materials in digital format, flyer and even through social media.

The research competency enhancement plan contains the objectives of each topic, the strategies that need to be done to attain the objectives, and it also includes the expected output or the success indicator that will shows that the student were able to gained and learned from the activities. It also includes the target participants with corresponding schedule by college/program.

It is proposed that this plan be implemented by the university library to the 3rd year students of the institution in the specified date based on the proposed schedule that can be agreed upon between the library administrators and research professor. This is to prepare them in research writing by the time they reach their last year in college.

CHAPTER 4

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter discusses the summary of findings, conclusions, and recommendations based on the results of the study.

Summary of the Study

The study was conducted to determine the level of research capabilities of undergraduate students of De La Salle Lipa in terms of knowledge, skills, and attitudes. It also aimed to find out if there is a significant difference in the research capabilities of students when group according to profile. This study also tried to identify the challenges encountered by students in using library resources and services during research writing. Based on the results, a proposed research capability plan for undergraduate students of De La Salle Lipa was developed to help students in their research requirements. This will serve as a guide in preparing training modules for undergraduate students who will undergo research writing. The descriptive method of research was utilized and the survey technique was used in gathering data. A self-made questionnaire served as an instrument for collecting data which was validated by expert, pilot tested and undergone a reliability test.

Summary of Findings

Based on the gathered data, the following are the results of the study. The study found out that the undergraduate students were competent in research in terms of knowledge, as to the skills, results showed that undergraduate students have good research skills in performing their research activities or accomplishing their research paper. The study also revealed that undergraduate students agree that they have a positive attitude towards research writing.

The study found out that there is a significant difference in the research capabilities of the respondents as regard to their knowledge, skills, and attitudes when group according to program. The study also shows that there is no significant difference in the research capabilities of the respondents as regard to their knowledge, skills, and attitudes when group according to year level and sex.

As to the challenges, students claimed that they are having difficulties accessing Wi-Fi connection, finding resources for their topic and that they were able to borrow limited number of books from the library. These are the top three obstacles that the respondents experienced while writing their research paper.

Based on the results of the study, the researcher developed a proposed Research Competency Enhancement Plan which addressed the difficulty of the students in research writing. The plan includes different topics such as, formulating research frameworks/design, locating relevant sources and information, and others.

Limitations of the Study

The study aimed to determine the research competencies of the undergraduate students of De La Salle Lipa in terms of knowledge, skills and attitudes. This includes also identifying the challenges encountered by students in using library resources and services during research writing. The satisfaction of students with the research support provided by the university library in terms of resources and services was not included in the study, in which it might help in the study if it was included.

The study did not cover the lower year level because they still do not have research subject. The respondents of the study were limited to 4th and 5th-year undergraduate students of De La Salle Lipa from five colleges who are currently enrolled SY 2018-2019. They were chosen as respondents because this are the year level where students are expected to produce a research paper.

Conclusion

The study looks into the level of research competencies of the students in terms of knowledge, skills and attitudes. Results revealed that students were competent in terms of knowledge, good in terms of and have positive attitude towards research.

The study revealed that students were competent in writing research paper, thus on the assessed competencies, like; formulating research framework, developing research instrument, and determining statistical tool were items that needs further attention.

The study provide evidence that students have a good research skill, despite of this, assessed skills like; narrowing the topic, finding related articles using online databases, and locating relevant printed source were items that needs enhancement. The study also showed students have a positive attitude towards research, it shows that; they believed that lot if information they find is relevant, that they can tell when the information is biased, and that they are motivated to do research, these are students beliefs that needs to be given focus to assist students in writing research paper.

The results of the research were based on the self-perception and also showed there was a significant difference between the colleges specifically the CEAS and CBEAM, CEAS and CITE in terms of knowledge, skills and attitudes towards research. However, the difference was not fully interpreted in the study thus, further research is needed to shed light on other aspects of research competency not covered in this research. In terms of sex and year level do not affect the students' level of research competencies.

The study revealed that students experienced challenges in using library resources and services in finishing their research paper. Students claimed that they are having difficulties in accessing W-Fi connection, finding resources for their topic and that they were able to borrow limited number of books from the library. Academic research support from the library is needed.

Another implication of the study is that there is still room for improvement to enhance the research competencies of undergraduate students' perhaps through the involvement of doing research and specialized training workshops through the proposed research competency enhancement plan that was developed by the researcher.

Recommendations

Based on the results of the study, the following recommendations were drawn:

1. Implement the proposed research competency enhancement plan for undergraduate students.
2. Continuous assessment of the undergraduate students' research competency after the implementation of the plan to further identify areas needs improvement.
3. A Study on the library research support that can be given to the undergraduate students by academic library can be further explored by other researchers.
4. Improve the accessibility of the library by developing a user-friendly website that is separate from the school website.

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APPENDIX A: Proposed Research Competency Enhancement Plan

De La Salle Lipa Research Competency Enhancement Plan for

Undergraduate Students

Rationale

Universities are now giving great attention to research. At De La Salle Lipa research writing is considered as the culminating activity of the graduating students before they earn their degree. Research experience gives students an opportunity to gain a deeper knowledge of research techniques and process and explore academic literature. Research is one of the most important components in attaining educational knowledge, opportunity to explore their knowledge and expose themselves to a different perspective of learning. Writing in a special field makes them an expert in the area, and this could be a basis for their future works. With that, students should be competent enough to write and complete a research project.

This can be attained by providing an effective way of assisting students to understand fully the research process and enhance their research skills so that they may gain confidence in writing their paper. This can be done through classroom lectures in research subjects and by providing regular training and workshops that can be facilitated by professors and librarians.

Objectives

The research competency enhancement plan aims to support the undergraduate students specifically the 3rd year students of the institution in terms of writing their research paper. Specifically, it aims to:

1. Provide the needed research training for undergraduate students that will help them to gain knowledge on how to make a research paper.
2. Facilitates lectures on the different resources of the library has to offer which will aid students in writing their research.
3. Enhance the skills of the students in searching for needed information.
4. Promote a positive attitude towards research writing.

Schedule

This research competency enhancement plan is proposed to be implemented on the first and second semester of the school year. Target participants are 3rd-year undergraduate students of all colleges/program. Every college will have its own schedule in coordination with their research professor.

Objective	Topic	Strategies	Success Indicator	Time Frame	Target Participants
To understand Information Literacy and role of research in education	1.Understand the topic 2.Choose a topic 3.Prepare to research 4.Understand the variety of information 5.Decide which information to use 6. recognizing the need for information	Lecture or forum explaining; what is information literacy, identify type of Information need, explain the role of research in education, identify the reasons to research, understanding the assignment, selecting the topic, research preparation, understand the different information sources and finally to decide upon which information to use.	The students will be able to recognize when information is needed, locate, evaluate, and use effectively the needed information. The students were able to understand the role of research in education and were able to identify the reasons for research.	September 1 st week 2 nd week 3 rd week 4 th week	3 rd year undergraduate students CEAS CBEAM CIHTM & CoN CITE
To recognize the information sources and types of	1.Books-Reference and General 2.Periodicals 3. Internet or Websites	Lecture on different types of information sources available in the library which covers	Students will be able to identify and locate different sources in the library.	October 1st week 2nd week 3rd week	CEAS CBEAM

information		the sources and types of information like books, periodicals, journals, and internet and websites.		4th week	CIHTM & CoN CITE
To identify basic search strategies which will help the users to locate accurate information from available resources	1.Searching for books 2.Searching for periodical articles and published report 3.Searching for Information on the Internet and online databases such as EBSCO, PROQUEST, CENGAGE and to other subscribed databases	Lectures and hands-on training on searching strategies in different format, print, non-print, internet resources and and to subscribed online databases. It also includes searching strategies using the Online public access catalog (OPAC)	Students will be able to demonstrate their skills in searching different kinds and format of library resources. Students will be able to learn how to find exactly what they need to different databases.	November 2 nd week 3 rd week 4 th week December 1 st week	CEAS CBEAM CIHTM & CoN CITE
Provides general guidance on how to evaluate the resources	1. Trusting Your Sources	Lectures on how to evaluate resources and properly use the relevant	Students will able to evaluate sources and information they	February 1 st week 2 nd week 4 th week	CEAS CBEAM

		format such as APA. Lectures on how to use information effectively by providing guidance on identifying sources that are worth using, how to read effectively the collected information. This also includes guidance on how to write summary, use quotations and paraphrasing.	research paper that they were able to gather right information, organize notes and makes outline of the main idea on their topic.		
To market the library by Promoting the library resources and services it provides.	Marketing the library resources and services other research support that be provided to users.	Effective digital presentation of library resources, services, facilities and spaces, by developing a promotional video that can be strategically	Students will be able to appreciate the efforts of the library and librarians in promoting its resources	All year round	All students

		located on areas which can be easily seen by users. Social media can also be used for this purpose and some flyers. Provide a Pathfinder which serve as a guide to the literature and resources in a particular subject area. It is a subject-oriented research guide designed to encourage researchers to a self-directed use of the library. Provide a Webliograph y-making, which provides electronic bibliographie s of web sites, web pages and web documents. It attempts to supplement	and services. Students will be motivated to use the library and its resources and services to do their research paper.		
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		the resources available in the library on a particular topic.			
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APPENDIX B: Consent Form

CONSENT FORM

I, (name of participant) being over the age of 18 years old (legally independent) hereby consent to participate/be a respondent in this research project titled:

RESEARCH COMPETENCY ENHANCEMENT PLAN IN AN ACADEMIC LIBRARY FOR UNDERGRADUATE STUDENTS

I confirm and understand that:

- I voluntarily participate in this research project, and that I was not forced/coerced in any way;
- The researcher explained to me clearly the details/topic of the research;
- That this research project is a requirement for academic advancement of the researcher, and that I may not directly benefit from taking part in this research;
- I am free to refuse to answer particular questions and I am free to withdraw from the participation in this research at any time;
- While the information gained in this study may be published as explained, I will not be identified, and individual information will remain confidential;
- Though the results of the study will be present to me, I am not compelled to follow them or apply them in our library.

Signature of Participant over Printed Name / Date

I certify that I have explained the purpose of research project to the participant/respondent and consider that he/she understands what is involved and liberally consents to participate in this study.

GLORIA P. LUMBERA

Researcher

Date

APPENDIX C: Sample Questionnaire

SURVEY QUESTIONNAIRE

This questionnaire aims to know the Research Capability of undergraduate students of De La Salle Lipa. For this purpose, kindly answer the questions below. Rest assured that all information provided will only be used for research purposes and will be treated with outmost confidentiality.

Part I. Personal Data

College: CBEAM () CEAS () CIHTM () CITE () CON ()
Year level: 4th year () 5th year ()
Sex: Male () Female ()

Part II. Research Competency

Direction: In this part of the questionnaire you will be asked to rate your level of research capability based on your knowledge, skills and attitude. There is no right or wrong answer. Kindly check your answer.

A. Knowledge in Research Writing

Legend: 4 – Very Competent 3 - Competent 2 – Less Competent
1 – Not Competent

Knowledge	4	3	2	1
Planning the research project.				
Developing the research questions.				
Formulating research problems.				
Writing literature reviews.				
Developing a research instrument.				
Collecting a raw data using survey questionnaires.				
Writing an abstract.				
Formulating research framework/design.				
Determining statistical tools to be use.				
Identifying sample size and sampling techniques.				
Listing references using appropriate format (APA style).				
Interpreting survey results.				
Formulating conclusions and recommendations that address research problems and concerns.				

B. Research Skills

This will show your research skills in doing different aspects of research paper.

Legend: 4-Excellent 3- Good 2- Fair 1-Poor

Research Skills	4	3	2	1
Identifying a research topic.				
Narrowing the research topic.				
Selecting research terms and variables.				
Finding related articles using online databases (EBSCO, PROQUEST, CENGAGE, etc.).				
Finding related literature using web sources (Google, etc.).				
Identifying credible sources online.				
Locating relevant printed resource (books, journals, etc.)				
Citing sources of different formats.				
Familiar with copyright, fair use and plagiarism.				
Taking notes and organizing collected data and information.				

C. Attitudes towards research

These will show your agreement with the statement regarding your feelings and beliefs about research paper.

Legend: 4- Strongly agree 3-Agree 2-Disagree 1-Strongly Disagree

Attitudes	4	3	2	1
I feel confident in determining the topic that I need to search.				
I know how to use different types of media (print, videos, etc.				
I am confident that the information I get is accurate.				
I know when the information is complete and reliable.				
I am sure that the information I get addresses my topic.				
A lot of information I find is relevant.				
I know my audience and the information I present meets their needs.				
I know how to record or cite all my resources.				
I can tell when information is not biased.				
I know when the material is confidential.				
While preparing project, I am certain that it will be received well by others.				

I am motivated to do research.				
I feel that research will play a significant role in my future career.				
I know research is important to earn a degree in college.				
I know that writing a research paper will greatly improve my research skills.				

Part III. Challenges while writing Research Paper

Direction: In this part of the questionnaire you will be ask to choose from the statements in which you have encountered challenges with regards to the utilization of library resources and services in doing research. There is no right or wrong answer. Kindly check all that applies to you.

	Not fond of going to library.
	Hours of library service is not enough.
	Limited numbers of books to borrow in the library.
	Was not able to find resources for my topic.
	Don't know how to cite resources used.
	Updated books are not available.
	Not aware of the online databases available.
	Don't know how to access online databases.
	Cannot find related printed journals in my study.
	Cannot find related thesis in my study.
	Not comfortable in borrowing and returning procedures of the library.
	Not satisfied with the hands-on training using online databases.
	Not aware of the referral services of the library.
	Don't know how to use (OPAC) Online Public Access Catalog.
	Difficulties in accessing Wi-Fi connection.
	Difficulties in accessing online databases thru institutions Web page.
	Lack of assistance from librarian.

APPENDIX D: Certification of Text Editing

March 1, 2019

CERTIFICATION

This is to certify that the thesis of Gloria P. Lumbera entitled “RESEARCH COMPETENCY ENHANCEMENT PLAN IN AN ACADEMIC LIBRARY FOR UNDERGRADUATE STUDENTS” has undergone text editing in language structure, grammar and coherence and is hereby ready as a partial requirement for a Master of Arts in Education with Specialization in Library and Information Science.



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Institution: St. Bridget College
Address: Batangas City

Employment History

Position: Law Librarian
Institution: De La Salle Lipa
Years: 2019-present

Position: Periodical Librarian
Institution: De La Salle Lipa
Years: 2010-2018

Position: Audio Visual Librarian
Institution: De La Salle Lipa
Years: 2007-2012

Position: Technical Librarian
Institution: De La Salle Lipa
Years: 2003-2007

Position: Head Librarian
College Library
Institution: De La Salle Lipa
Years: 1999-2003

Position: College Librarian
Institution: De La Salle Lipa
Years: 1987-1999

Professional Membership

Philippine Librarians Association of the Philippines
Philippine Association of Academic and Research Libraries
Librarians Association of Batangas

References Available upon request

