SELF-EFFICACY IN THE ADOPTION AND USE OF ONLINE COMMERCIAL DATABASES: A CASE STUDY OF 4TH YEAR LEVEL BACHELOR OF INFORMATION STUDIES DEGREE STUDENTS, UNIVERSITY OF LIMPOPO, SOUTH AFRICA.

by

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DISSERTATION

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DECLARATION

I, Thereza Moraka, declare that the "SELF-EFFICACY IN THE ADOPTION AND USE OF ONLINE COMMERCIAL DATABASES: A CASE STUDY OF 4TH YEAR LEVEL BACHELOR OF INFORMATION STUDIES DEGREE STUDENTS, UNIVERSITY OF LIMPOPO, SOUTH AFRICA" (Dissertation) hereby submitted to the University of Limpopo, for the degree of Master of Information Studies, has not been submitted by me for a degree at this or any other university; that it is my work in design and execution, and that all material contained herein has been duly acknowledged.

…… ……13 April 2020……..

Moraka T (Ms.) Date

DEDICATION

This work is dedicated to the following important people in my life:

1. My father: John Serongoane Moraka
2. My mother: Malesele Aletta Moraka
3. My siblings: Shirley, Hlompho, Knowledge and Boitumelo Moraka
4. My son: Jason Lethabo Moraka

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ABSTRACT

OCD training outcomes were meant to produce students with high self-efficacy levels in using search tools and techniques and ultimately adopting and use of OCDs in their academic work.

The researcher distributed a questionnaire to sixty-six (66) 4th year level BIS degree students at the University of Limpopo. The study employed mixed-method to collect data and analysed data using Social Statistical Package Software and content analysis.

Findings from content analysis show that post OCD training majority of the respondents indicated enhanced self-efficacy, but content analysis show continued use of free online databases among those with high and low self-efficacy levels. The adoption and use of OCDs among those who failed to grasp the use of certain search tools and strategies could be reliance on gross searching strategies. Overall OCD training was beneficial to the majority of respondents.

KEY CONCEPTS

Self-efficacy; online commercial databases; free online databases; online commercial database training.

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LIST OF ABBREVIATIONS AND ACRONYMS

BI: Bibliographic Instruction

BIS: Bachelor of Information Studies

EIRSs: Electronic Information Resources

HINA041: Information Systems and Networks Module

IL: Information Literacy

ILE: Information Literacy Education

ILS: Information Literacy Skills

ILSE: Information Literacy Self-Efficacy

IT: Information Technology

LIS: Library and Information Services

OCDs: Online Commercial Databases

UL: University of Limpopo

UL-Library: University of Limpopo Library

CHAPTER ONE: INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 BACKGROUND AND MOTIVATION

University students are expected to show high self-efficacy levels for them to adopt and use library online commercial databases (OCDs) in their academic work. University libraries are part of an educational process, and therefore, have a mission to support students in their research and education by obtaining and making available electronic (e)-resources such as e-journals (Okello-Obura & Okello-Obura, 2011:433). University libraries spend millions of rands subscribing to various OCDs annually and their responsibility is to ensure that their resources are maximally utilised to equate with resources spent in acquiring them. Omeluzor, Akiby, Dika & Ukangwa (2017) assert that "failure of academic libraries to teach their users necessary information skills to adequately utilise their resources amount to failure and wastage of library resources, efforts and financial resources".

Students' failure to exploit library resources can be addressed through library instruction. The coverage of the library instruction varies and has to address the needs of the students. Library instruction has continued from the era when libraries were depending on print indexes and abstracts as well as during use of Compact Disk-Read Only Memory (CD-ROM) databases (Lee & Taylor, 2017:1) and it is more advanced now that the Internet has allowed more sophisticated ways of searching information from various databases. Considering the benefits of the Internet, an expected prerequisite for postgraduate students is to be computer literate by the time they learn about advanced searches of OCDs as they are required to produce work of high standard and quality.

John (2013:78) stipulates that "basic computer knowledge and previous computer experience can positively influence an individual's computer self-efficacy as well as their intention to use networking programmes". One can assume that if students have knowledge of operating computers, it makes it easy for the academic librarian

to focus directly on how to use OCDs during the training rather than to start by teaching them how to operate the computer. Wang (2010:583) acknowledges that "belief in one's efficacy to master computers, predicts enrolment in computer courses independently of beliefs about the instrumental benefits of knowing how to use them". Waldman (2003:12), when making an inference from Bandura (1999)'s study, asserts that "students with high self-efficacy levels regarding computers would also be more likely to explore new technologies, software or databases. Additionally, they would be more likely, for example, to explore a library's website and find that the library has specialised resources, and they might even try some searches on those resources without, or with less, prompting from professors and/or librarians and without necessary taking library workshops" (Waldman, 2003:12). Computer literacy is a good foundation before students carry on with OCD searches. Such students start OCD training with certain self-efficacy level and it influences behaviour and emotions in particular ways that help students to better manage challenges adopt, and use OCDs for academic work.

The next step over being computer literate is for academic librarians to direct students to exploit library resources including those available via the Internet. Through the Internet, it has become easier for academic libraries to subscribe to various multidisciplinary OCDs such as EBSCOhost, Emerald and JSTOR and subject-specific ones such as LexisNexis, Physical Reviews and Science Access. At the same time, the Internet has made it possible to access free online databases which are found through various search engines such as Wikipedia, Google, Google Scholar and Bing. Mbabu, Bertram and Varnun (2013:1) cite Waldman (2003) who observed that "as more students use online resources for their research, many were confused between the resources that were freely available on the World Wide Web (WWW) and those that were licensed through the library and accessible through the Internet".

Research studies show that students rely on free online databases despite efforts by academic librarians and academic staff encouraging use of OCDs (Mawere, 2018; Akuffo & Budu, 2019). Over the years, a particular focus of inquiry has been on those factors that play a role when deciding to use online library resources as opposed to just surfing the Internet. These inquiries assume an era of greater importance in light of the fact that more people are using the Internet to find the information they need, information that is unmediated by the library (Hirsh, 2018). At the University of Nigeria, many students showed that they often rely on Google, Wikipedia, and YouTube, instead of libraries' research databases (OCDs as in this study) (Ugwu & Orsu, 2017:13). According to Agyen-Gyasi (2008), search engines such as Google received the highest patronage with 95% as a source of information consulted by Kwame Nkrumah University of Science and Technology (KNUST) students. A survey of students in Great Zimbabwe University found that the adoption rate of online databases is still very limited because of a myriad of facts, inter alia, poor marketing strategies and the inability of students to properly cite sources (Mawere, 2018). In terms of establishing their choice of free online databases, it is because the search engine sources students find from free online databases such as Google Scholar are easy to access as compared to those found through the library's OCDs. Students prefer to use free online databases because they do not require controlled vocabulary and formulation of keywords like OCDs (Connaway, 2015).

Free online databases are criticised for lack of controlled vocabulary, lack of authority control, incomplete or uneven coverage depending on discipline, and time lags between publication and appearance in the database. Another criticism of the search engine is that its definition of "scholarly" includes materials that have not undergone peer review, so it may lead users to this unvetted material (Arendt, 2013:26). Nevertheless, when university students conduct the searches using free online databases, the advantages for the OCDs evaporate (Bould, Hladkowicz, Ashlee-Ann, Ufholz, Postonogova, Shin, & Boet, 2014). To enhance the usability or

accessibility of OCDs, many university library websites have tabulated advantages of OCDs over search engines.

The issue is discouraging preference of free online databases over OCDs. Ghavifekr and Rosdy (2015) state that students encountering online learning systems for the first time or applying these systems to new learning tasks will likely generate and process efficacy information relative to this technology. Earlier exposure of students to Google, Yahoo and Bing can result in them depending more on their use even when they are not most suitable information sources for academic work (Ghavifekr & Rosdy, 2015).

An undesirable result with students choosing free online databases ends up with many failing to use relevant search tools and techniques. Instead, they use gross or unrefined search strategies (Purcell, 2012:2). The gross or unrefined strategies referred to by Civilcharran and Maharaj (2016:1) identify and discuss the most commonly used Web search tactics used by the postgraduate students in South African higher education sector. Civilcharran and Maharaj (2016) carried out a study and their findings revealed that even though a large portion of respondents reported themselves as intermediate or expert users in retrieving information via the Web, the most frequently used tactics were those that require little cognitive effort and were presumably self-trained, through the process of trial and error. These Web search tactics are frequently related to non-academic Internet usage instead of academic usage. This turns out to be problematic, as academics' demand high-quality information sources from their students.

Other approaches to searching are more non-linear berry picking and serendipity (Ford, 2015 as cited in Daland & Walmann-Hidle, 2016:70). Berry picking is a more intuitive, random way of searching for information, in which the searching process is less planned, and one allows the results to decide the next step, instead of planning a route and sticking to it. Serendipity is finding information by "accident" (Ford, 2015

as cited in Daland & Walmann-Hidle, 2016:70). In order to use relevant search tools and techniques, students must attend library instruction to be able to search for information using OCDs. With free online databases, there is no training required as one can access information independently even if using it for the first time (Arendt, 2013:28).

Murphy (2012:17) concludes that when one is faced by not knowing helpful searches by applying Boolean operators, using keywords, or specifying a particular domain in the Uniform Resource Locator (URL) it leads to frustration and anxiety over using OCDs. Therefore, in such situations, the library would arrange library instruction. Wang and Latham (2013:4) describe library instruction as "a programme that consists of instructional programmes designed to teach library users how to locate the information they need quickly and effectively. It usually covers the library's system of organising materials, the structure of the literature of the field, research methodologies appropriate to the academic discipline, and specific resources and finding tools (library catalogue, indexes and abstracting services and bibliographic databases".

Related terms to library instruction are: bibliographic instruction[1], library use instruction, user education and information literacy, which all describe the same basic concepts, and these terms have been in use in various academic libraries for quite some time. Though the scope of each term may be slightly different (some terms denote wider coverage), these terms are, generally speaking, interchangeable in an academic environment. Librarians in American libraries often prefer to use the term library instruction since it seems to be easier for users to understand. In China, the terms user education and information literacy are more common (Liu, Allard, Lo, Zhou, Jiang & Itsumura, 2019). This research study will prefer to use OCD training as it is a specific library resource (OCDs) currently in use by academic libraries. However, other related terms will be used as and when they appear in a citation.

[1] At the University of Limpopo library, the term Bibliographic Instruction (BI) is used.

Adeyinka (2016:247) remarks that “the skills required to maximise the potential of e-resources (e.g. OCDs as per this study) are much greater than those required for searching printed sources”. Arendt (2013:26) advises that the most complete full-text online databases are useless unless students know how to find and retrieve the information they have. Along with technological evolution, library instruction itself has become more complex and has to be tailored to impact self-efficacy levels of students pursuing independent searches (Dumond, 2017; Tang & Tseng, 2017).

From the beginning of the OCD training, students can self-judge by rating their self-efficacy levels at various stages of learning using search tools and techniques. Self-efficacy ratings may be high, medium or low requiring those who are challenged in their use to engage in practices that will enhance their self-efficacy levels (Bruning, Dempsey, Kauffman, McKim & Zumbrunn, 2013). For example, if there are those who believe that they have the necessary skills to search well before, during and post-training, and believe they can use those skills to excel, then they have high self-efficacy levels. When the librarian demonstrates the OCD searches, students with low self-efficacy can fail to retrieve similar journal articles. This may be due to some factors, which vary from one student to another as highlighted in Bandura‘s Social Learning Theory (Bandura, 1995) mentioned under theoretical framework (C.f 2.3).

There are situations where students do not often appreciate the skills required to search library sources, stating that they are deceptively easy to use (Yevelson-Shorsher & Bronstein, 2018). This can result in students having low self-efficacy levels resulting in poor performance. Not doing well can challenge some students to improve on their self-efficacy levels. As Davids (2015:22) explains,

Performance successes, particularly in the face of adversity, reinforce efficacy beliefs but failures create doubt and undermine self-beliefs of capability. In general,

therefore, past success with online learning technology would be expected to lead to higher self-efficacy whereas poor past performance would tend to lower self-efficacy.

For example, students with no basic computer literacy skills are likely to fail to conduct searches due to poor computer skills compared to those who had computers at schools and had attended computer literacy classes before (Ilogho & Nkiko, 2014:3). As a result, students who never used computers before will have low self-efficacy levels (Santoso, Lawanto, Becker, Fang & Reeve, 2014).

During OCD training, students observe and follow the demonstration by the librarian. Bandura (1997) urges that the trainer (librarian) need to support students in establishing attainable goals for their progress. A sense of mastery begins by having the students set clear, specific and realistic goals to serve as motivation and guide them in developing mastery of new skills. He emphasises simple adopting of a goal without knowing how one is doing or knowing as defeating the goals of the training.
Students can assist each other by imitating the librarian. In the literature, some universities are exploring the idea of students helping each other. O'Kelly, Garrison, Merry and Torreano (2015:163) posit that "what many academic libraries lack, however, is a middle ground, a routine way for students to help one another using best practices in peer-to-peer learning theory". According to Wang, Latham and Vann (2013), the use of peers in library instruction programmes is a viable addition to traditional library instruction services. Peer assistance can enhance formal library instruction services by providing trained tutors to help students gain fundamental library research skills. Although never a replacement for instruction services, peer assistance can effectively supplement the work of instruction librarians. Omeluzor, Akiby, Dika and Ukangwa (2017) state that library instruction should provide an avenue for the learners to develop themselves rather than depending on others for assistance in utilising the library resources.

Self-efficacy is not an end in itself, but should also translate into students adopting and using OCDs in their academic work. Lecturers need to work together with librarians by encouraging students to improve self-efficacy levels and cite academic and scholarly works in OCDs for academic work. However, this requires students to have a set of skills that enable them to search and retrieve quality information for their academic work. Knight (2013) and Ilogho and Nkiko (2014:2) conclude that training offered by academic librarians in university libraries need to be compulsory for students to develop their self-efficacy levels and skills of searching for information independently. Encouragement of adoption and use of OCDs is one source of influence on self-efficacy level and outcome expectations (Johnson, 2017:10).

UL-Library offers BI for students completing research projects with the focus being on OCDs as there is a paradigm shift from print to online resources. However, the library still collects print sources. For this study, academic librarians were training 4th year level students pursuing BIS at UL who have basic knowledge of computers and have attended OCD training before. At UL, BIS degree, comprise the following Information and Communications Technology (ICT) related modules from first to the fourth level (UL, 2019):

(i) *Introduction to Information Technologies (HINF011)*

The Programme of Information Studies offers an Introduction to Information Technologies (HINF011) module at the first level. However, over a period of four weeks practising librarians teach a theme, which covers four to five multidisciplinary OCDs (UL, 2019). Even though it is not sufficient, the trainin does give students hands-on practice on OCDs use and students have an opportunity to learn more on their own (self-training) outside formal lectures. They also write an online test that contributes towards their semester marks.

(ii) Information systems (SINF011)

Information Systems is a compulsory elective module at first year level that teaches the fundamentals of computers with a focus on personal computers, software and the www. Students are given an opportunity to type, save and send documents as part of module requirements. This module is offered by the School of Mathematical and Computer Science under the Faculty of Sciences and Agriculture (UL, 2019).

(ii) BI

BI is “an instructional programme designed to teach library users how to search and retrieve the information they need quickly and effectively” (UL, 2019). BI programme runs throughout the year targeting all registered students. It is important to note that this is not part of students’ curriculum as there are no marks allocated for this instruction.

The training covers specific resources and finding tools such as Library catalogue, RefWorks (Reference Management tool), Turnitin (plagiarism detection software) and online commercial databases such as ScienceDirect, SABINET, and EBSCOhost. The training is very essential for the production of high-quality research and therefore, amongst others, the training aims to achieve the following objectives:

- To train library users to be independent in searching for information.
- To learn new skills and strategies to make effective use of online information.

This training was compulsory for all 4th year level students pursuing BIS at UL. Attendance of OCD training in many academic libraries is not compulsory and this results in poor attendance of BI by students. For instance, Agyen-Gyasi (2008) assessed user education at the Kwame Nkrumah University of Science and Technology (KNUST) and found out that students’ low turnout in user education programme was a challenge.

From the aforementioned modules and BI, it might be safe to conclude that all 4th year level students pursuing BIS at UL who form subjects of this study had various opportunities to enhance their self-efficacy levels and adopt and use OCDs from first-year level.

This study was therefore set to evaluate if 4th year level students pursuing BIS at UL after attending OCD training demonstrate high self-efficacy levels to adopt and use OCDs in their academic work.

1.2 RESEARCH PROBLEM

With university libraries providing Internet and OCDs, students have to choose between OCDs and free online databases. To deal with such situation libraries continue with OCD training with an emphasis on search skills. With many students lagging behind in terms of OCDs searching skills (Ilogho & Nkiko, 2014:3), academic librarians offer OCD training with the intention of enhancing their self-efficacy levels. However, despite OCD training, it appears that some students complete the training with enhanced self-efficacy levels while others remain with low self-efficacy levels. Roth, Westrheim, Jones and Manger (2017) point out that even when students have attended the same training, the teacher (librarian in this case) should not make generalisations about students‘ self-efficacy levels as it is likely to differ from one student to another, even when their situations seem similar in some regard. A remarkable contribution of enhancing self-efficacy levels of students to be able to search OCDs is tailoring the training according to the students’ needs (Haunter, 2016).

When self-efficacy levels are low, interest in completing a certain task is low because one knows that the activity‘s outcome will be poor. When self-efficacy is moderate, the person‘s success on the task seems likely, but not inevitable. However, as self-efficacy levels become very high, success seems completely certain, and the task is thus uninteresting (Silvia, 2003:237).

The post OCD training led the researcher to pose the following questions: Did students with enhanced self-efficacy adopt and use free online databases? If no, why not? What about those with low- self-efficacy levels as no matter the levels of their self- efficacy level, they still were expected to adopt and use OCDs? Can the problem of not adopting and using OCDS be attributed to the training or students?

To the best knowledge of the researcher, no documented study or survey about 4th year level BIS students at UL had been evaluated on students' self-efficacy levels resulting in the adoption and use of OCD in their academic work. As such, the researcher was prompted to conduct this study.

1.3 PURPOSE OF THE STUDY

1.3.1 Aim of the study

The aim of this study is to evaluate self-efficacy levels in adoption and use of OCDs by 4th year level students pursuing BIS at UL.

1.3.2 Objectives of the study

a. To solicit from students how OCD training was delivered.
b. To determine if the self-efficacy levels of 4th year level students pursuing BIS at UL changed during the OCD training.
c. To determine the extent to which self-efficacy levels (post-training) has translated into students citing sources from OCDs in their academic work.
d. To establish the common measurement used by students to gauge their self-efficacy levels in adopting and using OCDs for their academic work.
e. To identify how 4th year level students pursuing BIS at UL dealt with the challenges they encountered during and after the OCD training.

1.4 SIGNIFICANCE OF THE STUDY

According to Marshall and Ross man (2016), the significance of study offers the researcher an opportunity to discuss the contribution of the study. Many challenges that face students are OCDs search skills related. Therefore, the study identifies factors inhibiting students from enhancing their self-efficacy levels in order to adopt and use OCDs for academic work and suggests solutions to OCDs search skills related problems. With the identified factors at their disposal, UL-Library and other academic libraries will improve their BI and offer the OCD training to students according to their needs. Generally speaking, the study has the potential to make new contributions to the already existing body of knowledge in LIS and would also be beneficial to academics, students and professionals who are interested in this area of study.

1.5 SCOPE OF THE STUDY

In this study, the focus is on self-efficacy levels based on the compulsory OCD training that students attended at the beginning of the year in preparation of assignments and research essays they had to complete during the academic year. In addressing the study, it is important to cover how important it is for students to differentiate OCDs and free online databases as well as for them to be computer literate. Although both computer literacy and differentiation of which online database to use are discussed in this study, they do not directly fall within the scope of this study, the focus is on adoption and use of OCDs. Nevertheless, they will be referred to as they do influence OCD training and students' skills.

This study also covers students' pre-instruction training knowledge, use of free online databases available on search engines such as Google and Yahoo. However, as part of document analysis, the researcher checked if the information sources referenced by students are from OCDs such as EBSCOhost, SABINET, and JSTOR.

1.6 DEFINITION OF KEY CONCEPTS

Various terms are used differently in different sectors and contexts. Therefore, it is vital for the researcher to define the concepts used in the study. According to Dangelo (2016), the functions of concepts used in research are to facilitate communication, aid in the classification of elements and serve as building blocks of theory. Below are the key concepts used in the study and their meanings:

1.6.1 Free online databases

Free online databases are defined as databases hosted on websites and are made available as software as a service product accessible via a web browser (Christopher & Suzanne, 2015).

1.6.2 Online commercial databases

Online commercial databases are also known as “subscription” or “research” databases and are licensed through the library and accessible through the Internet. These are online resources that libraries have long advocated for their use (Mbabu, Bertram & Varnun, 2013:1).

1.6.3 Search tools and techniques

Search tools and techniques are utilities available on the Internet to help one find information among the millions of documents on the Web. In this study, search tools and techniques are used to search for information on OCDs to access relevant information. Search tools and techniques are categorised into four types: keywords formulation, Boolean operators, truncations and wildcards. Students are trained on how to search for information using search tools and techniques during OCD training as they are expected to use them when completing their academic work (Adler, 2017).

1.6.4 Self-efficacy

Self-efficacy refers to ‑the extent or strength of one‘s belief in one‘s own ability to complete tasks and reach goals‖ (Bong & Skaalvik, 2003:5).

1.6.5 OCD training

OCD training is an online bibliographic instruction training designed to teach library users how to search and retrieve the information they need quickly and effectively at UL. It is tailored for postgraduate students and 4th year levels as they are at SAQA level 8 and over completing assignments and they also have a research project to write (UL, 2019).

1.7 ORGANISATION OF THE STUDY

Chapter one: Introduction and background of the study

This chapter covers the introduction and background of the study, research problem, and purpose of the study, research objectives, significance of the study, the scope of the study and definition of key concepts.

Chapter two: Literature review and theoretical framework

This chapter presents the theoretical framework underpinning and focuses on exploring both classical and current research works related to this study.

Chapter three: Research methodology

This chapter presents the methodology that was used in this study. It covers the research paradigm, research approach, research design, population and sampling,

sampling techniques, validity and reliability, study area, data collection instruments, data collection procedure, data analysis and ethical considerations.

Chapter four: Presentation of findings

This chapter covers the presentation of findings. Quantitative data collected from the questionnaires were analysed using Statistical Package for Social Science (SPSS) and presented in a form of tables and figures. On the other hand, qualitative data collected from observations, document analysis and open-ended questions were analysed using content analysis and categorised according to themes.

Chapter five: Discussion of the findings

This chapter discussed the findings. Findings are discussed and linked to existing literature and objectives of the study.

Chapter six: Summary of the main findings, conclusions and recommendations

This chapter summarises the key findings of the study. The summary covers findings with regards to the five research objectives. Furthermore, this chapter makes conclusions and recommendations based on the findings of the study. Again, this chapter offered areas for further research and discussed the limitations of the study.

1.8 CHAPTER SUMMARY

This chapter presented the background information of the study, research problem, the purpose of conducting this study and the objectives. It highlighted the significance of this study and the scope thereof. It also went on to define the key concepts that are used in this study. Lastly, this chapter presented how this report is organised. The next chapter discusses the literature review.

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

The preceding chapter has given the introduction of the study. This chapter provides a review of the literature as well as a theoretical framework for the study. In this chapter, the researcher reviews the literature relating to self-efficacy in the adoption and use of OCDs.

2.2 THEORETICAL FRAMEWORK

Bryan and Bell (2011) view theory as “observed realities, or what we see and accept around us” suggesting it can be practical or abstract. The theory does much more than simply abstracting and organising knowledge. Academy of Management Review Organisation (2015:1) reports that theory also signals the values upon which knowledge is built. In this study, theory assisted the researcher to assess scientific findings in relation to the theoretical perspective from which it derives and to which it may contribute (Silverman, 2000). Self-efficacy theory was adopted for this study. This theory emanates from various academic disciplines, such as information systems and social psychology.

The study on self-efficacy is based on Social Cognitive Theory of Albert Bandura (1995). From the literature reviewed, self-efficacy in the information and technological era is of interest to university management, academics and librarians. Therefore, there is a need to continue with present investigations to affirm or negate the findings of other inquiries about the same research problem or topic so that generalisations or principles can be formulated.

2.2.1 Self-efficacy theory

Self-efficacy, since its introduction by Bandura has become one of the most studied topics in various fields of study. The self-efficacy theory used in this study puts emphasis on judgements of self-efficacy (1995) and self-efficacy beliefs (1997) as developed by Bandura. Self-efficacy theory has its roots in the Social Cognitive Theory, which suggests that individuals who have high self-efficacy levels in their skills and abilities exert more effort in performing a task, and persist longer in overcoming difficulties than those who have low self-efficacy levels in their skills and abilities (John, 2013:1). Within the context of e-resources, examples of few studies which applied self-efficacy theory focused on self-efficacy levels in computers (John, 2013:1), computer literacy (Hatlevik, Throndsen, Loi & Gudmundsdottir, 2018), and information technology (IT) (Al-Haderi, 2013:188). This self-efficacy theory has also been applied to evaluate students' self-efficacy levels before and after taking library instruction in electronic resources (Goodluck & George, 2014).

2.2.1.1 Judgements of self-efficacy theory

In 1995, Bandura advanced judgements of self-efficacy theory, and in 1997 he developed four ways of developing self-efficacy beliefs. These judgements of self-efficacy theory are relevant for individuals to form an opinion about their learning. In case of 4th year level students pursuing BIS at UL, they judge their own performance when they learn about search tools and techniques (as a task) in order to adopt and use OCDs for academic work.

Judgements of self-efficacy theory are generally measured in terms of three basic scales: magnitude, strength, and generality (Bandura, 1995).

- **Self-efficacy magnitude** measures the difficulty level (e.g. easy, moderate, and hard) that an individual feel is required to perform a certain task (Van der Bijl & Shortridge-Baggett, 2002).

- **Self-efficacy strength** refers to the amount of conviction an individual has about performing successfully at diverse levels of difficulty (Van der Bijl & Shortridge-Baggett, 2002).

- **The generality of self-efficacy** refers to the "degree to which the expectation is generalised across situations" (Lunenburg, 2011:3).

2.2.1.2 Self-efficacy beliefs

According to Bandura (1997), four major sources contribute to the development of self-efficacy beliefs. The relevance of self-efficacy in students' learning process is thus undeniable. Students' efficacy beliefs can be altered and promoted in the following ways:

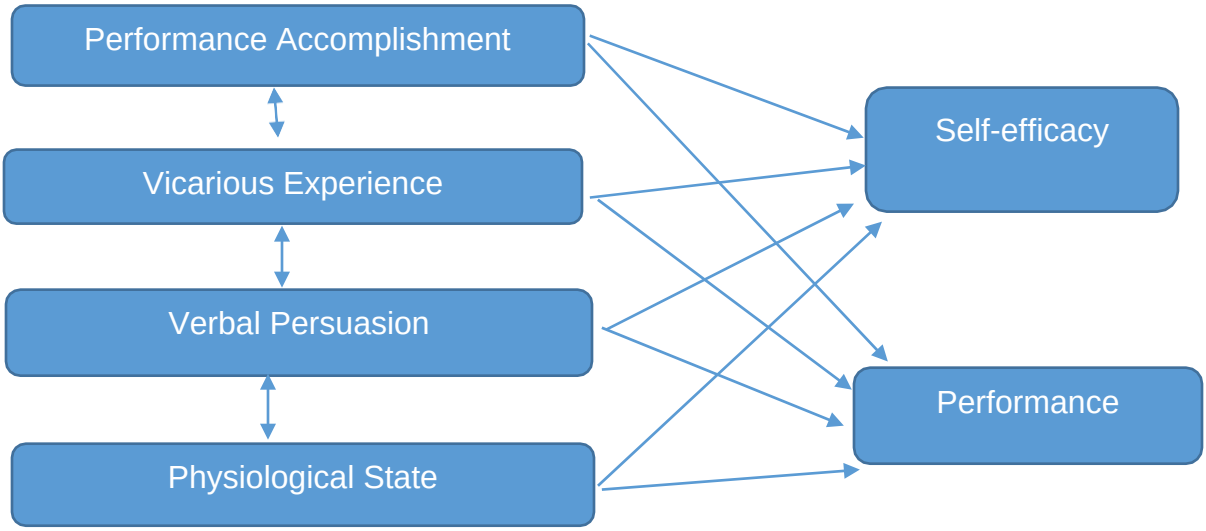

Figure 1.1: Self-efficacy beliefs

Source: Bandura (1997)

Performance accomplishment: The experience of mastery influences perspectives on abilities. Successful experiences lead to greater feelings of self-efficacy. However, failing to deal with a task or a challenge can also undermine and weaken self-efficacy. Bandura (1994) states that students form beliefs about what they can

do or cannot do and then anticipate probable outcomes of prospective actions. They set goals for themselves and plan courses of action designed to realise desired futures. The basic principle behind self-efficacy theory is that individuals are more likely to engage in activities for which they have high self-efficacy and less likely to engage in those they do not (Van der Bijl & Shortridge-Baggett, 2002).

- **Vicarious experience**: Observing someone else performing a task or handle a situation can help you to perform the task by imitation, and if you succeed in performing the task, you are likely to think that you will succeed as well if the task is not too difficult. Observing people who are similar to your success will increase your beliefs that you can master a similar activity (Bandura, 1997).

- **Verbal persuasion**: When other people encourage and convince you to perform a task, you tend to believe that you are more capable of performing the task. Constructive feedback is important in maintaining a sense of efficacy as it may help overcome self-doubt. In this context, it is important to get the opinion of how the librarian encouraged students, especially those who were struggling to get similar results. When they were failing, was alternative immediate assistance by other students encouraged? Were they encouraged to remain motivated enough to continue? If feedback is destructive, those with low self-efficacy levels will lose interests (Bandura, 1997).

- **Physiological states:** According to Bandura (1997), moods, emotions, physical reactions and stress levels may influence how you feel about your personal abilities. If you are extremely nervous, you may begin to doubt and develop a weak sense of self-efficacy. If you are confident and feel no anxiety or nervousness at all, you may experience a sense of excitement that fosters a great sense of self-efficacy.

This self-efficacy theory has been and still is, very influential in the modern technological era as it was applied with the use of print resources. Therefore, with the advent of IT, it continues to be crucial for students to have self-efficacy to adopt

and use OCDs. In addition, for that to happen, students first need to be computer literate.

2.2.2 Measurement of self-efficacy levels to adopt and use OCDs

It is important to measure students' (4th year level students pursuing BIS at UL) self-efficacy levels because it informs the librarian, lecturers and students about the efficiency of effort and time spent on OCD training. OCD training is meant to equip students with the search tools and techniques or skills required for adopting and using OCDs by means of using librarians who will offer step-by-step demonstration on how to search information using search tools and techniques on OCDs. At this stage of the OCD training, the librarian does not train students on computer literacy skills as the fourth level of study they are expected to be computer literate. Considering the subjects of this study, there are two stages where students measure their self-efficacy levels.

i) Firstly, it is when the librarian demonstrates different OCDs, formulating keywords based on the topic typed into the database search box.

ii) Secondly, it is post OCD training when students are completing academic work independently where they continue judging self-efficacy levels in adopting and using OCDs. But at this stage, the librarian was not involved, as when 4th level students complete assignments it will be the lecturer who notices whether they were able to adopt and use OCDs. This part formed part of the data collection method for this study in order to verify if indeed subjects of the study have referenced sources from OCDs (Artino, 2012).

It is important for 4th year level students pursuing BIS at UL to reflect on their magnitude and strength, which measures the difficulty level (e.g. easy, moderate, and hard) of the tasks they have to complete during OCD training. According to Van der Bijl and Shortridge-Baggett (2002), this is where students ask the following questions: How difficult is my academic work? Are the searches easy, moderate or hard? Continuing with OCD training when students are busy with tasks, Van der Bijl

and Shortridge-Baggett (2002:18) formulate questions that individual students can ask. For example, “How confident am I that I can excel at my work tasks? How sure am I that I can climb the ladder of success by producing quality work?” Quality work in this context centres on citing scholarly materials from various OCDs. Those who have performed well, it will be because of their high self-efficacy levels.

Furthermore, individual students as per Lunenburg (2011) ask themselves how sure am I that what I have learned will apply to my new task? The relevant result will be students independently using various OCDs and topics different from the ones used for demonstration by the librarian. The lecturer will be able to check the list of references and note which among students have enhanced self-efficacy levels in the adoption and use of OCDs in their academic work.

2.2.3 Sources contributing to self-efficacy beliefs

With the four sources (performance accomplishment, vicarious experience, verbal persuasion contributing to self-efficacy beliefs and physiological state), the librarian can influence the first three directly.

One of the most important factors in self-efficacy is **performance accomplishments**. If one performed a similar task well in the past, then they are more likely to do well with a new task they are working on. Mastery experienced students need to handle various situations as they provide them with the most efficient self-efficacy levels. However, failing to deal with a task or a challenge can also undermine and weaken one‘s sense of self-efficacy levels. Bandura (1994:72) states that “students form beliefs about what they can do or cannot do and then anticipate probable outcomes of prospective actions. They set goals for themselves and plan courses of action designed to realise desired futures”. The basic principle behind self-efficacy theory is that “individuals are more likely to engage in activities for which they have high self-efficacy and less likely to engage in those they do not” (Van der Bijl & Shortridge-Baggett, 2002:10). This performance accomplishment can

be related to how 4th year level students pursuing BIS at UL felt during and after OCD training. Were they able to successfully tap on the experiences of the compulsory modules they studied from first to third-year level?

From the beginning of OCD training 4th year level, UL-BIS students have to learn through **vicarious experience**. This is when they observe the academic librarian performing a task (using different search tools and techniques) as it can help them to perform the task by imitation, and if they succeed in performing the task, they are likely to think that they will succeed as well if the task is not too difficult. With vicarious experience, students gain knowledge other than through their own direct experience (French, 2015). Again, with vicarious experience, the academic librarian had to influence 4th year level students pursuing BIS at UL to have enhanced self-efficacy levels. However, in general, watching other people does not affect self-efficacy as much as personal experience with the task (Feldman & Kubota, 2015). The important thing is that vicarious experience allows one to do the corrections when one has failed the first task (Conner, 2015). If one is struggling at the beginning, he or she does not stay wrong the whole time. What is needed under the circumstances is guidance and feedback. Students can try to correct themselves until they get it right. If they make a mistake at first, they can correct their beliefs by listening to clues and then changing the direction based on the obtained knowledge (Chowdhurry, 2019).

In order to increase self-efficacy, it is important to give **verbal persuasion.** This refers to a situation when the librarian tells students to perform tasks to achieve an objective, which during OCD training is to succeed in learning to apply search tools and techniques. This verbal factor describes the positive impact that words can have on students' self-efficacy level. Studies by Kampkuiper (2015) and Soderlund and Sterling (2016) report how verbal persuasion is an important positive predictor of self-efficacy. Verbal persuasion would be encouraging and convincing students to do a task and that they are able to do. In this case, students have to achieve the goal of completing tasks at various levels and it is important to give specific feedback, which

is best related to previous performance so as to convince students of their ability to do better.

i) Purpose of feedback

A very important source of feedback is the librarian, as recognised by students to enhance their self-efficacy levels during the OCD training. Positive feedback makes students to increase their self-efficacy levels while negative feedback makes students lower their self-set goals (Torkzadeh, Chang & Demirhan, 2006:542). According to Locke and Latham (2002), positive feedback implies that a task is done right and is experienced as more supportive than negative feedback. For example, by giving simplified information and more time on training enhances self-efficacy levels. Positive feedback is more often experienced as constructively intended (Kampkuiper, 2015:2). As a way of encouraging feedback, it is for librarians offering OCD training to display students' testimonials about how research databases have helped them with their research projects (Blummer & Kenton, 2014). This can show how the students estimate the librarian's intentions during the OCD training (Torkzadeh, Chang & Demirhan, 2006:542).

To highlight the relationship between performance and self-efficacy, a study by Baron (1988) measured self-efficacy levels of 106 undergraduate students where they completed both proofreading and clerical tasks. After the first completion of these tasks, respondents were asked to self-report how efficacious they felt about performing them. They were subsequently given either constructive feedback, destructive feedback, or no feedback on their performances. After this, they were asked to self-report how efficacious they felt about the prospect of performing the two tasks again. It was found that the group that had been provided destructive or negative feedback reported significantly lower levels of self-efficacy than those in the other two groups (Dupret, 2015:5). According to Schwarzer (2014), negative feedback lowers self-efficacy and positive feedback raises self-efficacy. When feedback is perceived as honest and constructive, it enhances self-efficacy levels

and this variably helps one to handle negative feedback and perform better (Bandura, 1999:47). Negative feedback is not given to destroy the student but for them to correct their OCD searches.

However, there are unexpected cases such as with the positive feedback on self-efficacy being diluted, for people with low self-efficacy levels believe they will receive negative feedback, and even positive feedback is often received as negative for people with low self-efficacy level (Kim & Lee, 2019). In order for students to do well, the academic librarian in a way can in subtle ways convince students to do well. In this case, positive feedback can be intended or perceived in a manipulative way (Hattie & Timperley, 2007) by singling out one student who is doing well and it will affect the entire group positively, but care should be taken not to evoke low self-efficacy levels in others in front of a group (Rapee & Heimberg, 1997). From a librarian‘s perspective, negative feedback shows the performance gap among students and lowers self-efficacy levels.

Bandura (1995) states that self-efficacy beliefs refer to verbal persuasion and in the case of 4th year level students pursuing BIS at UL, it will come from their lecturers. Even though Bandura (1999) focused on the verbal situation this study refers to lecturers' written persuasion as comments on the assignments that serve the same purpose as verbal persuasion. Students can refer to them as a form of feedback that also could be positive or negative. As indicated, feedback is a significant tool on students' performance (Schwarzer, 2014). Bandura (1999:169) claims that "the development of efficacy beliefs requires that individuals get clear information about their mastery and acquisition of knowledge or skills being pursued". In terms of written persuasion, lecturers can include adoption and use of OCDs in course objectives (Dugan & Fulton, 2012) and assessment rubrics (Crusan, 2015). Students are influenced by lecturers‘ recommendations and grading requirements with respect to using acceptable information sources for coursework (Colon-Aguirre & Fleming-May, 2012).

Current books and articles on classroom assessment are rife, and they make claims about the potential for student-involved assessment in general and rubrics, in particular, to increase students' self-efficacy and, as a result, lead to an improvement in learning and achievement (Quinlan, 2006). According to Andrade, Wang and Akawi (2009), some researchers suggest that rubrics use can promote academic achievement, but they found that there are no available studies that directly investigate the mechanism behind any rubric advantage yet they have become popular with teachers. A writing rubric contains a list of criteria that are relevant to producing effective writing (Brookhart, 2019). Instructional rubrics "help students understand what is wanted in an assignment, to understand what a quality product looks like and enable them to self-assess" (Arter & Chappuis, 2007:31). Marks allocated to rubrics covering referencing of OCDs sources can lead to students being encouraged to enhance their self-efficacy levels in OCD use. Zulkosky (2009:93) hypothesises that "in order to gain a sense of self-efficacy, a person can complete a skill successfully, observe someone else do a task successfully and acquire positive feedback about completing a task".

ii) Posing questions to solicit feedback

As much as Bandura (1997) mentions feedback, he did not touch on how to probe for feedback. Students are expected to ask questions during the training and answer the questions asked by librarians. A lesson could be learnt from Ha and Longnecker (2010) who posit that patients who ask more questions are more likely to elicit useful information from their physician, which consequently leads to an increase in self-efficacy and a greater sense of control over their care. A related study on questions-asking self-efficacy among engineering students in the United States of America (USA) engineering schools shows that students with high question asking self-efficacy and outcome expectations were more likely to have engaged in four extracurricular experiences, participating in an internship or contract post in the

workplace (Marra, Rodgers, Shen & Bogue, 2013). This was the expected results for 4th year level students pursuing BIS at UL as they had been through similar training before the compulsory one. Students with low self-efficacy levels have reduced motivation to continue with the training and to ask questions during the training as they worry that other students will notice that they do not have knowledge (Ilogho & Nkiko, 2014:3) based on past training on either computers and or OCDs.

iii) Motivation to enhance self-efficacy levels during training

Students bring a wide variety of experiences with them when they start OCD training. Some of those experiences have been positive; others have not (Torkzadeh, Chang & Demirhan, 2006). On this case, for training to be successful, motivation is important. According to Bandura (2001:1), "'self-efficacy plays a key role in the self-regulation of motivation". When 4th year level students pursuing BIS at UL are highly motivated to learn and succeed, they are more likely to achieve their goals, giving them an experience that contributes to the overall self-efficacy in adoption and use of OCDs. Redmond (2010) posits that people behave in the way that executes their initial beliefs; thus, self-efficacy functions as a self-fulfilling prophecy. When Lunenburg (2011:4) explain the motivation for employees tasked with creating graphs, he wrote:

> "Employee A has high ability and a great deal of experience in creating graphs but does not have confidence that he can create a high-quality graph for an important conference. Employee B has the only average ability and only a small amount of experience in creating graphs yet has great confidence that she can work hard to create a high-quality graph for the same conference. Because of Employee A's low self-efficacy for graph creation, he lacks the motivation to create one for the conference and tells his supervisor he cannot complete the task. Employee B, due to her high self-efficacy, is highly motivated, works overtime to learn how to create a high-quality graph, presents it during the conference, and earns a promotion. Self-efficacy has influence over people's ability to learn their motivation and their performance,

> as people will often attempt to learn and perform only those tasks for which they believe they will be successful" (Lunenburg, 2011:4).

The above quotation is a fitting description of what is envisaged with 4th year level students pursuing BIS at UL during the OCD training.

Motivation could be internal whereby students motivate themselves, and externally by librarians and lecturers. Internal motivation is when students can be intrinsically motivated during the training when they are able to follow the demonstration by being able to formulate keywords and to use Boolean operators, truncations and wildcards. Students motivate themselves, guide their actions, or as anticipated by the exercise of forethought (Bandura, 1994). Mayer (2010) states that when an individual gain or maintains self-efficacy through the experience of success- however small- they continue learning and making progress. This is where some 4th year level students pursuing BIS at UL master Boolean operators or other search tools and techniques one step at a time.

Manipulating students' perceptions with respect to motivation will have an impact on their performance (DeDonno & Demaree, 2008:637). Research indicates that lecturers' effectiveness is an important factor in a student's achievement (Rockoff, 2004:251). It is because it can find out students who are able to achieve certain tasks because of high self-efficacy levels and those who cannot complete certain tasks because they have low self-efficacy levels (Axtell & Parker, 2003:114) and it is for them to motivate the latter to enhance their self-efficacy levels in using OCDs. However, praise for success at tasks that a student has not really done well does not improve self-efficacy (Seifert & Sutton, 2014:119). Students who have not done well, but believe that all they must do to succeed is work harder may still be very confident about their skills (Tuncer, 2013). It could be that they need motivation in the right direction.

2.2.4 Physiological state contribution to self-efficacy beliefs

The physiological state is the least important determinant of the four sources of self-efficacy (Chowdhury, Endres & Lanis, 2002). When 4th year level students pursuing BIS at UL start with their OCD training and are confronted with tasks based on search tools and techniques, some can experience emotional feelings such as fear, stress and anxiety (Muretta, 2004:28) that can undermine students' feeling of self-efficacy levels (Bandura, 1997). Usher and Pajares (2008:754) define physiological states as "emotional arousal state that result from stress, fear, anxiety and depression of not being able to complete a certain task and can be noted at any stage of the training". It can affect even those students with high self-efficacy levels, if they fear or are nervous that they will not do well during and after OCD training, making their self-efficacy levels to decrease. If 4th year level students pursuing BIS at UL interpret their feelings as being eager to learn, this will increase their self- efficacy levels. Those who experience anxiety will decrease their self-efficacy level for this and similar tasks (Pintrich & Schunk, 2002).

By the same token, when reactions such as fear and stress are no longer present in students, they could have enhanced self-efficacy levels (Schunk & Pajares, 2009). Bandura (2001) states that self-efficacy to exercise control over stressors plays a central role in anxiety arousal. According to Cooper and Leiter (2017:142), people who believe they can exercise control over threats do not conjure up disturbing thought patterns. However, those who believe they cannot manage threats experience high anxiety arousal. They dwell on their coping deficiencies. This means that students who believe that they can use search tools and techniques and recall the same results as those of the academic librarian enhance their self-efficacy levels as they do not stress themselves. However, students who believe that they cannot use search tools and techniques to recall the same results as those of the academic librarians will show low self-efficacy levels as they are nervous. People who cannot manage threats view many aspects of their environment as fraught with danger.

They magnify the severity of possible threats and worry about things that rarely happen. Through such inefficacious thinking, they distress themselves and impair their level of functioning. Students, who are afraid that they will not be able to search for information independently after the OCD training, become nervous and stressed and leave the training with low self-efficacy levels. Perceived coping self-efficacy regulates avoidance behaviour as well as anxiety arousal. Academic librarians need to make sure that the OCD training is offered in a manner that will make it easy for students to understand what is demonstrated, adopt and use OCDs rather than to avoid them.

2.2.5 Scales used to measure self-efficacy levels

Literature shows that self-efficacy can be measured and the existence of a reliable and valid measure of self-efficacy makes assessment credible and should have implications for academic librarians, lecturers and students. Within any given domain, there are different task demands. With university students, their tasks vary but the ultimate task is adoption and use of OCDs for academic work. Bandura (1997) proposed that personal efficacy be measured by a self-efficacy scale which some use and others criticise. One example of the rating scale question used by Bandura (1999) is stated below as follows:

Rate your degree of confidence by recording a number from 10-100 using the scale given below:

10	20	30	40	50	60	70	80	90	100
quite uncertain				moderately certain			certain		

This scale was criticised for two main reasons. The first is that the scale is not clear and a 10 can be interpreted at varying levels. While one may consider a 10 to be very uncertain, another may interpret it as virtually impossible. A second criticism was the use of a 100-point probability scale with the ability to only select between 10

possible numbers. While there is no zero on the scale, the scale also does not allow for numbers between the numbers listed on the scale that can account for a large difference on a 100-point probability scale.

The scale used in Bandura‘s experiment studies was subject to criticism by Eachus and Cassidy (2006:3) and their assertion is that self-efficacy demands to be measured by the use of self-report scales (Cassidy & Eachus, 2002). Another criticism was by Torkzadeh and Van Dyke (2001) where students were quantifying their strength and developed 17-items for measuring the Internet self- efficacy. A 17-item instrument measures the Internet self-efficacy in terms of browsing, encryption or decryption and system manipulation. Examples of the Internet self-efficacy items include “I feel confident finding information on the World Wide Web (WWW)”. In this way, the efficacy assessment provides multiple specific items of varying difficulty that collectively assess the domain. Torkzadeh and Van Dyke (2002:481) also suggest that “self-efficacy could be reliably measured and that such measures might be used to assess performance”.

It is, therefore, the reason for this study to measure the self-efficacy level of 4th year level students pursuing BIS at UL using the tasks performed during and post OCD training and the assignments the students completed using three scale measure whereby scales adopted were as follows: high=3, medium=2 and low=1. In addition, a five-point Likert scale without a midpoint was used. What emerged from the study is that in most cases when students measure their self-efficacy levels, they always indicate that they have high self-efficacy levels.

As students are learning, they have to measure their progress in terms of self-efficacy levels on tasks they were performing during and post OCD training. How students interpret their experiences can have a dramatic impact on their self-efficacy levels (Bandura, 1997). Not surprisingly, past successes at a task can increase students’ beliefs that they will succeed again in the future. If students have beliefs

that they are able to search for information using OCDs on their own, they will show high self-efficacy levels.

2.2.6 Self-efficacy outcomes and academic work

Notable in the reviewed literature is that higher self-efficacy in a field of interest is associated with good outcomes, ranging from greater training satisfaction and performance (Judge & Bono, 2001:81; Chen, 2012:153), to better academic performance (Bandura, 1997; Powell & Arriola, 2003:175; Robbins, Lauver, Le, Davis, Langley & Carlstrom, 2004). Schunk (2012:121) agrees that self-efficacy influences the academic work of students. Good outcomes are realised when students with higher academic self-efficacy show better academic performance (Robbins et al., 2004:263). For instance, at the start of an activity such as assignment, students hold different beliefs about their capabilities to acquire knowledge, perform skills and master the material. Students with high self-efficacy levels are expected to perform better in their academic work. However, students with low self-efficacy levels can either fail to adopt and use OCDs resulting in poor academic performance. In the same vein, students who rarely experience success in the classroom and perceive themselves as academic failures often develop a syndrome that includes a variety of self-defeating motives. For example, such students are far more apt not to develop an external locus of control, they are low in self-regulated learning strategies, and they have low levels of self-efficacy and low motivation (Davids, 2015:22). Students with low self-efficacy levels have a tendency of avoiding challenging tasks and give up easily (Schunk & Pajares, 2009).

Honicke and Broadbent (2016:64) state that learner judgements about one’s ability to successfully attain educational goals. The study integrated 12 years of research on the relationship between academic self-efficacy and university student's academic performance and known cognitive and motivational variables that explain this relationship. The study adopted a quantitative methodology and used content

analysis where 59 papers were eligible. The findings revealed that there is a correlation between students' academic performance and self-efficacy.

2.3 LITERATURE REVIEW

According to Kumar (2011), literature review includes the following: displaying awareness with a body of knowledge and establishing credibility; informs the reader that the researcher is familiar with the research in an area and is familiar with the major issues and it further includes learning from others and encourages new ideas. The review shows what other researchers have established so that a researcher can benefit from the efforts of others.

The researcher relied on OCDs such as EBSCOhost, SABINET and Science Direct as well as other multidisciplinary OCDs. From the literature reviewed, many studies were broad as they mention computers, whereby this would include word-processing and searching for free online databases. Such studies were not specifically on preference on OCDs and free online databases resulting in the adoption and use of OCDs for academic work.

2.3.1 Prerequisite skills in technology and computers use

In reviewing the literature, it is important to be able to use relevant technologies and computers in order to search for OCDs. Technology has become an integral part of the world in which we live in (McCoy, 2010:1614). Chen (2014:40) cites Organisation for Economic Co-operation and Development (2008) which states that there is a growing diversity in the student populations in many universities around the globe. Chen (2014:34) concurs that globalisation and computer technology have increasingly transformed higher education institutions all over the world.

Another study emphasising the importance of technology is by Li (2007) that published the results of a survey, which examined both student, and teacher views about technology. The survey was conducted in two urban and two rural schools in Canada. Students recognised that the world has become technologically oriented; and in order to be prepared for their future, they need to understand technology to be able to function in the workplace. However, the study did not focus on adoption and use of OCDs for academic purposes.

A different study by McCoy (2010:1614) states that today's undergraduate college students have extensive exposure to technology in all aspects of their lives, so educators would expect all students to be technologically proficient. However, many people do not easily gain proficiency with computer technologies. The ability to master a skill can be examined as self-efficacy. Self-efficacy provides a mechanism to explain individual behaviour and may be defined as a person's perceived capability to perform behaviour. While McCoy (2010) was on self-efficacy in computer technologies, his study did not specify OCDs at all.

What is of interest to the researcher is an assertion by Aesaert and van Braak (2014) of how increased use of technologies (e.g. internet and web-based services) by organisations has led Information Science researchers to focus on human interaction factors associated with these technologies. Self-efficacy has been widely acknowledged as an important human factor that influences individuals' perceptions toward technologies.

2.3.2 Self-efficacy linked to adoption and use of OCDs

The reviewed literature shows how almost around thirty-four years since Bandura (1995) introduced self-efficacy, the term has become one of the most widely studied variables in various information technology fields. There are a limited number of publications linking self-efficacy with adoption and use of OCDs. For instance, Kim and Crowston (2011) define adoption as the user‘s initial acceptance of an object. In

his study, the object refers to OCDs which students are expected to use for academic work.

Another study by Aldhaban (2016) is an exploratory study of the adoption and use of Smartphone Technology in emerging regions. In this study, he details other studies which are not on the adoption and use of OCDs.

2.3.3 Past exposure to technology, computers and online databases

Some authors (Ilogho & Nkiko, 2014; Khorrammi-Arani, 2001; Chen, 2014) gave an account of how past exposure to technologies, computers and online databases (OCDs and free online databases) is important. This past exposure leads the researcher to question whether students who were exposed to technology or computers before were able to follow OCD training better. McCoy (2010:1614) clarifies that even though the technology is embedded in everyday life, there are students who are more proficient in technology use than others. In addition, if it so with 4th year levels students of BIS at UL, this will be problematic and calls for OCD training.

Even though McCoy (2010) earlier referred to undergraduate college students as having extensive exposure to technology in all aspects of their lives, Doğru (2017:17) cited research by Torkzadeh and Van Dyke (2002) which established how students who took computer lessons during their high school and university education had enhanced self-efficacy perceptions. Contradictorily, McCoy‘s (2010) findings were that there was no significant difference in self-efficacy scores among people with access to a computer in the home. Yet, there were significant differences found when looking at individual questions with respondents with computer access having overall higher self-efficacy scores. These differences support the idea that people with expanded technology skills have higher levels of self-efficacy. Chen (2014:34) states that besides these differences, it is also said that a person‘s self-efficacy and technological acceptance are also related to their online learning performances. This

leads to the conclusion that increased exposure and access to technology increases proficiency.

Looking at how frequent use of OCDs is likely to enhance students' self-efficacy levels in the use of OCDs, Fančovičová and Prokop (2008) state that first participants with higher levels of technology self-efficacy reported more frequent technology use for some technology items. The frequency for BIS 4th year levels students at UL may encompass continuing with OCD self-training and further reliance on librarians and other students until their self-efficacy levels are high to work independently.

2.3.4 Librarians and students during OCD training

Two important stakeholders during OCD training are students and the academic librarian who offers OCD training. The librarian has final responsibility for the performance of students so that their goals are reached (Kampkuiper, 2015). During OCD training the academic librarian demonstrates selected OCDs while students observe and imitate the demonstrations. According to Hardavella, Aamli-Gaagnat, Saad, Rousalova, and Sreter (2017), librarians are expected to have shared interest with students, thus feedback is then trusted more because giving constructive feedback is consistent with the role held. In addition, Boakye (2015:1) reports a strong significant correlation between individual self-efficacy and performance through the feedback they get from librarians.

In order to justify what students benefit from OCD training, Odede (2018) explains how training can help students learn online databases search tools and techniques and enhance their self-efficacy levels. Moreover, having good search skills allows students to adopt and use the OCDs independently (Harle (2010:16) which is what is expected from 4th year level BIS students at UL. Wirawan and Bandu (2016:118) later shared the same sentiments as they concurred that students need to be trained

so that they can have high self-efficacy levels and be able to search for information on their own. With skills to search and retrieve relevant sources and how to cite the journal articles, students will be able to search from OCDs. This means that OCDs adoption and use comprise the ability to reference accurately (Cordell, 2013:179).

2.3.5 The benefits of OCD training during and after

In reviewing the literature related to the OCD training, more is needed on the benefits to be realised by students in order for them to have self-efficacy levels in OCD training. In the first place, Toteng, Hoskins and Bell (2013) show how training is important to stop having challenges such as not being exposed to computers, not being able to use search tools and techniques. Another study by Odede (2018) agrees that OCD training helps students in terms of improving computer self-efficacy. In addition, Khorrammi-Arani (2001:18) suggests that training programmes aimed at improving computer user self-efficacy may be more effective in increasing OCDs use. Use of OCDs is important for students to complete their academic work, hence being computer literate is a prerequisite as it helps students with computer skills and searching skills to search information for academic work using OCDs (Ilogho & Nkiko, 2014:3). However, Fančovičová and Prokop (2018:255) say, students should not only have computer knowledge. Alongside this, different disciplines (Science, Social knowledge and Mathematics) should be taught using sources of information technology. Thus, students will acquire new knowledge about computers and other technology sources as well when studying a discipline. This resonates with OCD training of BIS 4th year levels students at UL as it allowed them to learn about computers, various online commercial databases and Library and Information Science as their field of study.

In their extensive review of the literature, O'Malley and Kelleher (2002) and Tsai, Chuang, Liang and Tsai (2011:222) illustrate the significance of OCD training programmes on performance and computer self-efficacy. However, Zulkosky (2009)

adds that “self-efficacy is not concerned with specific skills one has but rather with the judgements of what a person can do with those specific skills”. But Laver, George, Ratcliffe and Crotty (2012) warn how people need training on using technologies and teaching them to use technologies requires an investment of time and resources and it is useful to identify those people that are more likely to be successful and adopt technologies into their lives. This is when the academic librarian is confronted with a situation where some students fail to use computers, fail to follow the demonstration by the librarian and require more assistance.

Another benefit of OCD training is also encouraging the use of OCDs because they are regarded as having reliable information and discouraging use of free online databases. Zhang, Duke and Jiménez (2011) supported OCD training as a way to make library users be able to evaluate the reliability of the information. This reliable information according to Makori (2015:18) is found when users use information sources, which have references unlike the information which is found on the free online database.

Surprisingly, a study by Tanacković (2018:93) refutes the importance of training as respondents believed that the students who did not receive any IL training do not think that such training should be introduced because, based on their own experience, students can manage to learn how to search information resources on their own. They admitted that they are, in most cases, successful in finding good enough information only with the help of Google (which is regarded as providing free online databases).

2.3.6 Gauging self-efficacy levels in adopting and using OCDs

Since statistics are used by many libraries to justify the use, the researcher needed more accurate information that emanated from reference sources listed by 4th year levels BIS students at UL in a selected assignment. The reference sources were from either OCDs or free online databases. The relevant task was for students to

measure their self-efficacy levels in adopting and use of OCDs using a questionnaire. A related study by McCoy (2010) examined the relationship between self-efficacy and technological proficiency used a small sample of undergraduate college students to determine if the use of a computer at home, age, and levels of self-efficacy influenced technological proficiency. This was a descriptive survey using the general self-efficacy scale and a technology proficiency tool developed by the researcher.

Tanacković (2018:93) in his study of academic databases in humanities and social sciences setting: the case of students at University of Osijek asked students to self-assess their skills in searching online information (Google vs. academic databases) on a scale from one (very poor) through five (very good). As can be seen at Table 2, more respondents are proficient in searching Google (Mean 4.31) than databases (Mean 3.69). While 87.4% believe that their Google searching skills are good or very good, a smaller proportion of respondents (60.8%) think their skills in searching academic databases are good or very good. Besides, it is interesting to note that 32.3% of respondents believe that their database searching skills are neither poor nor good, and only 11.8% of respondents state this level of proficiency for their Google searching skills. This could imply that the infrequent use of academic databases resulted in such a large number of neutral answers to this question. Upon examination of the responses to this question, a statistically significant difference was established only for academic database searching skills, in relation to students at different study levels (P=0.016). Undergraduate students reported a lower level of proficiency of database searching skills (Mean 3.61) than graduate students (Mean 3.82).

2.3.7 Challenges that students encountered during and after OCD training

According to the Research Information Network (2011), universities invest significantly in providing access to digital literature for scholarly work, with the idea

that improved access would directly enhance research productivity. Hence, academic institutions across the world are providing students with access to electronic information resources (EIRs) to further enhance learning and research. Similarly, Ukachi (2015:486) noted that “Nigerian universities as institutions of higher learning presently use considerable portions of their budgets to provide ICTs with accompanying EIRs for their academic communities to assist in enhancing teaching and learning processes and outcomes”.

EIRs have been proven to be pivotal for effective learning, research and general academic outcomes. In developed countries, students adequately use EIRs, especially for academic purposes and are faced with fewer barriers. For instance, the Society of College, National and University Libraries (SCONUL) created a task force to address the library and information needs especially the issue of access to EIRs of distance learners registered in higher education institutions (Oladokun, 2014). The task force ensures that distance students get timely access to information in a manner that matches their needs. However, the scenario in developing nations of Africa is different from other nations as many African students have yet to commence effective utilisation of EIRs or any other resources accessed via the use of computers. Observations by librarians working in Nigerian university libraries reveal that EIRs are grossly underutilised by students (Ukachi, 2015:487).

Despite the benefits associated with the use of EIRs and its availability in most libraries, their effective utilisation by students appeared to be hampered by different factors. These factors could be categorised into physical and personal barriers. The first category comprises physical barriers to the use of electronic resources (Selwyn, 2008; MacMillan, 2009) which include inadequate infrastructures, inconsistent electricity supply and others. Various studies have identified physical barriers as major factors hindering students’ use of EIRs. Goodluck and George (2014:64) while acknowledging that EIRs are necessary for improving the quality of education in academic institutions of higher learning, they, however, noted that the usage of the

said resources by lecturers and students in higher learning institutions in Tanzania, and in particular, at Mzumbe University is low. This is due to several barriers that affect its usages such as internet delays, computer viruses that limit access to e-resources and inadequate computers. Similar studies conducted in Uganda by Okello-Obura (2010) and in Malawi by Chaputula (2011) identified physical barriers such as slow internet connectivity, inadequate computers and opening hours, inadequate information infrastructure, energy or electricity power supply problem, and the cost of printing as barriers encountered by postgraduate students while accessing EIRs. In the Nigerian context, studies were conducted by Ndubuisi and Udo, (2013) and Edem and Egbe (2016). Both studies revealed that inadequate computers, poor internet facilities, inconsistent electricity supply, insufficient ICT facilities and the complexity in the discovery of pertinent information are the major barriers hindering students' use of EIRs.

The second category comprises personal barriers in using electronic resources (Musakali & Mutula, 2007). The second category has to do with mainly the lack of information literacy skills. One major user personal barrier to the productive utilisation of information resources most importantly digital or electronic resources in developing countries is the comparatively low information literacy skills (Tilvawala, Myers & Andrade, 2009). This view was supported by Baro, Eze and Nkanu (2013) stating that lack of skills and knowledge remains the major problem in the use of electronic resources in Nigeria. Students and other academic scholars who lack these basic skills and knowledge depend on library staff and other experts for assistance. Okiki and Asiru (2011) in a study, identified lack of skilled librarians in the libraries as one of the factors hindering usage of internet resources because the library sometimes lacks the capacity to train its users to use OCDs. The lack of librarians to train library users has an adverse effect on their competence and confidence to use electronic resources. This is because the effective and efficient use of OCDs requires information searching skills as well as enhanced self-efficacy levels. Bingimlas (2009) that identified low self-efficacy levels and competence

among others as major barriers to the successful integration of ICT into education supported this view. The huge investments in electronic-based resources may be a waste if the intended users are deficient in information searching skills.

The use of OCDs has been adversely affected by information searching skills related barriers which include lack of computer skills, language proficiency, lack of technical skills and others. A study by Singh, Ogbonnaya and Ohakwe (2011) on factors affecting the use of electronic information services by international students in Malaysia, observed a shift in focus of the inquiry, more recently, to factors affecting access to, retrieval, evaluation and use of OCDs, especially through library mediation. They indicated that factors like linguistic proficiency, computer literacy and information literacy affect the use of OCDs. Similarly, Sahin, Balta and Ercan (2010) in a study on internet resources usage by university students in course projects elicitation at the Izmir University of Economics in Turkey, using the questionnaire, reported that browsing information on the Internet, students usually depend on the assistance of the library staff to effectively use OCDs. This is because they lack information searching skills required to use internet resources. Similarly, a study by Zhang, Yhe and Liu (2011) in China revealed that students, who are deficient in information searching skills, cannot effectively and efficiently use OCDs. Therefore, the development of information searching skills among library users, especially 4th year level students, becomes a vital requirement to overcome the personal barriers encountered by 4th year level students while using OCDs.

2.4 CHAPTER SUMMARY

This chapter paid attention to the review of literature related to the adoption and use of OCDs. It started with the theoretical framework underpinning the study. What has been discussed is measurement of self-efficacy levels to adopt and use OCD, sources contributing to self-efficacy beliefs, physiological state contribution to self-efficacy beliefs, scales used to measure self-efficacy levels, self-efficacy outcomes and academic work, prerequisite skill in technology and computers use, adoption

and use of OCDs, past exposure to technology, computers and online databases, librarians and students during OCD training, the benefits of OCD training during and after, gauging self-efficacy levels in adopting and using OCDs and challenges that students encountered during and after OCD training. The next chapter discusses the research methodology that guided this study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 INTRODUCTION

The previous chapter discussed the literature review and theoretical framework. This chapter discusses the research methodology used to conduct this study. It covers methods of research followed when conducting this study. A brief discussion of research paradigm, research approach and design, population and sampling, sampling techniques, pre-test, validity and reliability, study area, data collection instruments, data collection procedure, data analysis and ethical consideration are discussed.

3.2 RESEARCH PARADIGM

A research paradigm is “a comprehensive belief system, worldview, or framework that guides research and practice in a field of study” (Willis, 2007:8). A research paradigm is a significant part of research methodology to collect data in an effective and suitable manner. According to Johnson and Christensen (2004), ‑research paradigm is a perspective that is based on the set of shared assumptions, values, concepts and practices‖. A research paradigm is a mixture of two ideas that are related to the nature of the world and the purpose of the researcher. Johnson and Christensen (2004), explain the purpose of the research paradigm as to help the researcher to conduct the study in an effective manner. The research paradigms that surround research are positivism, interpretivism, the critical paradigm and the pragmatic paradigm (Bertram & Christensen, 2014:22). The researcher used the positivism paradigm to quantify the results obtained from the questionnaires and interpretivism paradigm, for content analysis and the case study to analyse and present qualitative data.

According to Phillips and Burbules (2000), positivism deals with real observations, objectives and a measurable phenomenon. Positivists presume that the reality is

objectively given and is measurable using properties which are independent of the researcher and instruments; in other words, knowledge is objective and quantifiable (Antwi & Hamza, 2015:218). Therefore, positivists are encouraged to use valid and reliable methods in describing and explaining events. Reeves and Hedberg (2003:32) note that “the interpretive paradigm is concerned with understanding the world as it is from subjective experiences of individuals”. Interpretivists believe that human nature is distinct from natural events and requires different methods of investigation. It uses meaning (versus measurement) oriented methodologies, such as interviewing or participant observation, that rely on a subjective relationship between the researcher and subjects (Creswell, 2009:6).

3.2.1 Pragmatism

This study makes use of empirical data yielded arise from a questionnaire. Thus aspects of the positivist views are present. The research problem, accompanying research objectives and related research aims are of a multifaceted. For this reason, both qualitative and quantitative approaches were selected for this research. The combination of research approaches has led to the adoption of a pragmatic position in this research (Creswell & Plano Clarke, 2011:26). The reason for choosing a pragmatic research paradigm is because this particular position is regarded as “the philosophic partner of mixed methods researc that provides a workable solution to multifaceted research problems and offers a practical, middle groundǁ orientation in relation to positivism and interpretivism (Johnson & Onwuegbuzie, 2004:17). According to Antwi and Hamza (2015), no single research methodology is better than any other methodology. This is the reason why Leedy and Ormrod (2005) calls for a combination of research approaches in order to enhance the quality of research. The researcher has tried to avoid the insistence on using a single research method because the researcher believes that all methods are valuable if used appropriately. The researcher used both interpretivist and positivist to avoid using a single research approach. Harrison, Birks, Franklin and Mills (2017) concur that

research can include elements of both the positivist and interpretivist approaches if managed carefully.

Positivism is “an epistemological position which asserts that knowledge of a social phenomenon is based on what can be observed and recorded rather than subjective understandings” (Mathews & Ross, 2010:478). Positivists see the world as having one reality of which we are all a part (Quinlan, 2011:13). Positivists believe that the world exists “out there” and thus the relationship between things can be measured. Evidence is collected through observations or experiments. Positivist researchers aim to avoid being biased by not allowing their own values and beliefs to interfere with the research (Bertram & Christensen, 2014:23). Generally, its focus is on the objectivity of the research process. Positivists follow the quantitative methodology (Neville, 2007). Strength of positivism is that quantitative data paves a way to further scientific research. The researcher used the positivism paradigm because of its economical collection of a large amount of data within a short time. According to Kivunja (2017), research situated within the positivist paradigm has the following characteristics:

- A belief that theory is universal and law-like generalisations can be made across contexts.
- The assumption that context is not important.
- The belief that cause and effect are distinguishable and analytically separable.
- The belief that theory can be used to predict and to control outcomes.
- Positivism paradigm pursues an objective search for facts.

Moreover, an interpretivist paradigm was also used as it is required for this purpose, i.e. evaluating the self-efficacy in adoption and use of OCDs by 4th year level students pursuing BIS at UL. The researcher used interpretivist paradigm as it is used in qualitative research and helps the researcher to explain data relying as much as possible on the respondents’ view of the situation (Creswell & Poth, 2018:24).

The interpretive paradigm is also called the phenomenological approach. According to Babbie and Mouton (2008:28), “interpretivist paradigm aims to understand people”. Mathews and Ross (2010:476) posit that “interpretivism is an epistemological position that prioritises respondents’ subjective interpretations and understandings of social phenomena and their own actions”. The interpretivists claim that reality is unique to each individual. They state that the purpose of social research is to understand the meaning, which informs human behaviour. In interpretivist paradigm, “individuals seek understanding of the world in which they live and work” (Creswell & Poth, 2018:24). The researcher was able to understand the phenomenon of the study deeply by adopting this paradigm.

The interpretivists hold the beliefs that there is no single reality or truth about the social world but rather a set of realities or truths which are historical, local, specific and non-generalisable (Walsh, 2019). Interpretivist researchers follow the qualitative methodology. Within the interpretivist paradigm, any method would be considered acceptable, even quantitative procedures (Willis, 2007). Walsh (2019) theorises that the difference between them and the positivists is essentially in the way they analyse findings from the research; whatever method has been used, they start from the assumption that the findings are always subjective and cannot be used to describe a uniform and standard reality. According to Creswell and Poth (2018:24), research that is located within the interpretivist paradigm has the following characteristics:

- The admission that the social world cannot be understood from the standpoint of an individual.
- The research relies as much as possible on the respondents’ view of the situation.
- The acceptance that there is an inevitable interaction between the researcher and his or her research respondents.
- The belief that knowledge is created by the findings can be value-laden and the values need to be made explicit.

- The need to understand the individual rather than universal laws.
- The belief that contextual factors need to be taken into consideration in any systematic pursuit of understanding.

3.3 RESEARCH APPROACH

There are several research methods or approaches that are applied in conducting scientific research. A research method is a technique for gathering data and uses instruments such as a questionnaire, interview and observation and can be used with any research design (Creswell & Creswell, 2018). Hammond and Wellington (2013:108) state that, “there are three types of research approaches, namely, qualitative, quantitative and mixed-method research approaches. All these approaches are essential to the research process however Leavy (2017) points out that they require some common and some different skills. Each approach has its own rules of practice. The differences between the methods lie in the nature of the data collected and the method of analysis (Remler & Van Ryzin, 2014). Each method has its own strengths and weaknesses and should be seen as an option not competing with the other (Terre Blanche, Durrheim & Painter, 2014). The choice between these methods depends on the nature of the study and the type of data required. For this study, mixed-method approach was used. Below is the discussion of the research approaches:

3.3.1. Qualitative research approach

The qualitative research approach is a method designed to scientifically explain events by using words and phrases; it does not depend on numerical data to draw conclusions (Maree, 2012:14). This approach was used because it helped in analysing, interpreting and better understanding the complex reality of a given situation. The strength of qualitative method in this study lies in answering questions such as: After the training, what do you regard as your strengths in relation to your

self-efficacy in using OCDs?

3.3.2 Quantitative research approach

Stangor (2011:15) states that “quantitative research is descriptive in that it uses more formal measures of beliefs, attitudes, intentions, behaviour, including questionnaires and systematic observation of behaviour that is subjected to statistical analysis”. This approach enabled the researcher to summarise quantities of data by using charts and numbers such as values and percentages. The strength of the quantitative approach lies in answering questions such as: How frequently do you access the OCDs since the training?

3.3.3 Mixed method approach

The researcher used a mixed method approach comprising both quantitative and qualitative data collection methods because they support each other. Mixed methods research, is usually seen as a “third methodological movement” (Venkatesh, Brown & Bala, 2013:22), and is progressively accepted by scholars and researchers. The term mixed-method approach refers to the use of two or more methods in a research project yielding both qualitative and quantitative data (Teddlie & Tashakkori, 2009). It employs combining quantitative and qualitative approaches in a sole research study to advance the limitations of using either a quantitative or qualitative approach individually. The combination of both methods provided a superior understanding of the research problems and objectives than either method used independently. The use of both methods in the study was to improve the reliability and validity of the data collected and this culminated in the collection of a rich set of data (triangulation). However, a quantitative paradigm was the dominant data collection strategy with a small component of the overall study being drawn from the qualitative paradigm.

Venkatesh, Brown, and Bala (2013:26) profile seven purposes of mixed-method approach. The seven purposes involve:

- Complementarity: to obtain mutual viewpoints about similar experiences or associations.
- Completeness: to ensure a total representation of experiences or associations is attained.
- Developmental: to build questions from one method that materialise from the implications of a prior method or one method presents hypotheses to be tested in a subsequent method.
- Expansion: to clarify or elaborate on the knowledge gained from a prior method.
- Corroboration/Confirmation: to evaluate the trustworthiness of inferences gained from one method.
- Compensation: to counter the weaknesses of one method by employing the other.
- Diversity: to obtain opposing viewpoints of the same experiences or associations.

The rationale underpinning mixed-method approach in this study was primarily based upon the following advantages stated by (Kumar, 2014:28):

- Enhancement of research possibilities in situations that a researcher has multiple objectives to achieve in a research study and if not all the objectives lend themselves to be explored with one method, the use of this method offered a way to find answers to all research objectives. For instance, the first and third objectives of this study have two dimensions “nature” and “extent” of OCD training. Nature can be explored well through qualitative methods, whereas extent may be explored through quantitative methods.
- The use of mixed method enriched data for this study. The researcher collected quantitative data through questionnaires and supplemented it with another set of data, i.e. qualitative data which was collected through observations and document analysis. The aim was to primarily look at the

issues from a different perspective. In this study, the weaknesses of the quantitative paradigm were found in the strengths of the qualitative paradigm and vice versa (Stangor, 2011).

It is thought that the ‑combination of quantitative and qualitative methods present a more enhanced insight into the research problem(s) and objective(s) than using one of the methods independently‖ (Frels & Onwuegbuzie, 2013). Similarly, Flick (2009:189) point out for overcoming the problems between qualitative and quantitative research and to obtain knowledge about the issue of the study which is broader than the single approach provided, the two methodologies can be combined.

Mixed method approach permits the “opportunity to compensate for inherent method weaknesses, capitalise on inherent method strengths, and offset inevitable method biases” (Greene, 2007: xiii). Creswell (2003: 20) outlined six overlapping mixed methods approach designs, known as strategies of inquiry, that guide the construction of specific features of a mixed-methods study. It includes:

- Sequential explanatory design
- Concurrent exploratory design
- Sequential transformative design
- Concurrent triangulation design
- Concurrent nested design
- Concurrent transformative design

The designs differ if the qualitative and quantitative data are collected sequentially or concurrently, the weight is given to one kind of data or another, when the mixing is done, and the extent to which a theoretical perspective (e.g., post-positivism, constructivism) is present and guides the research design (Creswell, 2003).

This present study adopted the mixed method approach design to have viewpoints that would complement each other for better research outcomes. In mixed-method

approach, data are collected simultaneously in order to strengthen each other. Frick (2011:187) notes that the combination of multiple approaches refers to a triangulation method. Kalof, Dan and Dietz (2008:25) maintain that triangulation is seen as the best technique to understand the social world. Bryman and Bell (2011:630) further mention other motives for using triangulation and these include: to obtain a variety of information on the same issues; to employ the strengths of each technique in order to conquer the deficiencies of the other, and to achieve a higher degree of validity and reliability. McNeill and Chapman (2005:23) state that triangulation helps to verify the reliability of a particular research tool and the validity of the data collected.

Creswell (2009) states that both quantitative and qualitative methods can be used developmentally because the first helps to inform the second, while the second can provide additional information to support the first. Therefore, the present study employed the use of observation, document analysis and questionnaires as data collection instruments. The nature of the study demanded a combination of approaches to soliciting and analysing data from the students to enhance the validity of the study findings and to strengthen the dependability of information solicited from the respondents, and to enable the researcher to have a better understanding of the subject‘s point of view.

3.4 RESEARCH DESIGN

According to Bordens and Abbott (2017), the research design is -a broad plan that states objectives of research project and provides the guidelines on what is to be done to realise those objectives. In other words, it is a plan for executing a research projectll. Welman, Kruger and Mitchell (2009:46), explain that research design consists of ways in which information regarding the research problem will be collected, how objectives will be answered and how respondents will be obtained. In

this study, a case study was used since it enables the researcher to get to know the respondents and their efficacy levels (Babbie & Mouton, 2001).

The researcher conducted an evaluation in order to acquire information from 66 4th year level students pursuing BIS at UL about their self-efficacy levels in the adoption and use of OCDs for academic work. This was done through the case study method. The case study method is defined as “qualitative approach in which the investigator explores real-life, contemporary multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information” (Creswell & Poth, 2018:96). There were various reasons for the choice of case study:

- A case study was particularly suitable for the individual researcher because it gave an opportunity for a problem to be studied in some deepness within a limited time scale (Zainal, 2017:1).
- Case study allowed a lot of detail such as challenges that students experience during and after OCD training to be collected in limited time through the use of a questionnaire. The questionnaire comprised of fifteen questions.
- Case study enabled the researcher to save money because no costs were incurred for travelling to the library and to lecture halls to collect data.
- It allowed a better understanding of practice (McMillan & Schumacher, 2006:333) which was the evaluation of self-efficacy level of students.

3.5 POPULATION AND SAMPLING OF THE STUDY

The following subheading gives a brief discussion of population and sampling and sampling techniques of the study.

3.5.1 Population

According to Stangor (2011:110), the population is “the entire group of people that the researcher desires to learn about”. The population represents a group that the researcher wishes to generalise the research findings to (McDonald, 2016). The total population of this research comprised of 66, 4th year level students pursuing BIS at UL. This group was selected because all students have attended OCD training and they are expected to use OCDs to complete their academic work.

3.5.2 Sampling and sampling techniques

Leavy (2017) explains that sampling is often one of the most crucial steps in survey research. Martínez-Mesa, González-Chica, Duquia, Bonamigo and Bastos (2016) define sampling is a process used for selecting a group of people or representatives of the target population with which a proposed study will be conducted. This means that sampling is a procedure used by the researcher to select who will participate in the study from the total population.

A sample is “‘a selection of individuals drawn from the target population which is intended to reflect this population‘s characteristics in all significant respects” (Garg, 2016:644) Sixty-six 4th year level students pursuing BIS at UL were sampled through the non-probability sampling method known as total population sampling, which is purposive sampling method to select the entire population (Etikan, Musa & Alkassim, 2016:3). According to Laerd (2012), total population sampling is a type of purposive sampling technique where the researcher chooses to examine the entire population (i.e., the total population) that have a particular set of characteristics. It is also defined as a technique where the entire population that meet the criteria (e.g. specific skill and experience) is included in the research being conducted (Etikan, Musa & Alkassim, 2016:3). Total population sampling was used because the population that was evaluated is relatively small and has the same characteristics

(pursue the same degree, have studied at UL for a minimum of three years and have attended a compulsory OCD training offered by librarians) (Laerd, 2012).

3.6 PRETESTING THE QUESTIONNAIRES

The quality of data from a survey depends on the questions that are asked. Phellas, Bloch and Seale (2011) point out that in constructing a questionnaire, there is always a possibility of an error, therefore, pre-testing the questionnaire is necessary in order to uncover any defects in questions. Hurst, Arulogun, Owolabi, Akinyemi, Uvere, Warth, and Ovbiagele (2015) emphasise the fact that the pre-test is an element of the survey process that is essential. Accordingly, no questionnaire should be considered ready for use until it has been pretested (Peterson, 2000:119). In fact, without a pre-test, even experienced researchers can administer a faulty survey, putting into question any results.

Questionnaires need to be pretested or evaluated in order to improve the standard of questioning before they are used in a survey (Phellas, Bloch & Seale, 2011:197). According to Taherdoost (2016), pretesting gives the researcher the opportunity to "fine-tune the instrument in much the same way that a bench check allows a technician to evaluate apart before installing it". The purpose of the evaluation is to maximise the reliability and validity of the instrument (Hurst, Arulogun, Owolabi, Akinyemi, Uvere, Warth & Ovbiagele, 2015).

The pre-tests of the eighteen questionnaires were administered to eighteen 4th year level students pursuing BIS at UL because they attended compulsory OCD training and they are expected to adopt and use OCDs for their academic work after the OCD training. The data that was collected showed that it was likely to obtain the information needed to conduct the intended analysis. The patterns of answers from the pre-test were sensible and easy to interpret. The estimates of time and costs were considered to be reasonable as questionnaires were completed within 15 minutes. As a result, it was estimated that the survey would be completed within the

proposed time scale. Evaluation of data collection instrument identified questionnaire items that are either not completed or misunderstood, and those that do not obtain the needed information.

The changes that had to be made in the questionnaire are as follows:

- Some of the unclear questions were identified by the pre-test. The unclear question was “Did you at one stage improve your efficacy levels”? The question was then changed to “Did you at one stage practice to improve your efficacy levels in terms of accessing OCDs on your own after the OCD training?”
- The questionnaire did not give an instruction on whether the respondents have to mark or tick in the space provided. Therefore, the questionnaire was refined and the respondents were given the instruction that they should indicate their suitable answer with an X.
- It was also established that space for additional comments (other) was not provided. As such, enough space for additional comments was provided for open-ended questions.
- In the same vein, the spelling errors such as Sbinet and percentag were then corrected to SABINET and percentage.

The final questionnaires were prepared and administered to targeted respondents. The data collected during the pre-test did not form part of the study. In other words, pre-testing of questionnaires was done to determine its validity and reliability.

3.7 VALIDITY AND RELIABILITY

Owing to the fact that questionnaire and interview instruments are supposed to provide accurate and repeatable measures of the research hypotheses, validity and reliability tests were used to establish the quality of any empirical social research (Yin,2009).

3.7.1 Validity

The concept of validity is explained in terms of measurements procedures, which is the ability of an instrument to measure what it is designed to measure (Kumar, 2014:213). Validity refers to “the potential of a design or an instrument to achieve or measure what it is supposed to achieve or measure” (Brynard, Hanekom & Brynard, 2014:50). This was maintained by designing a questionnaire pleasant to an eye and constructing only questions relevant to the study. During the construction of the questionnaire, the researcher, together with the supervisor closely examined the questions on the instruments to ensure that they measured the desired variables. The correctness and relevance of the questions were tested in a preliminary investigation. The researcher ensured that questions in the questionnaire were specifically constructed to largely acquire both quantitative and qualitative data.

3.7.2 Reliability

According to Ramanujam and Roberts (2018), reliability refers to the degree to which the indicator or test is a consistent measure over time or simply, will the respondent give the same response if asked to give an answer at a different time. The researcher ensured reliability in this study by pre-testing the questionnaire to ensure that the same results will be obtained in the study. The test appeared to be reliable because the respondents gave consistent answers with those in the actual study.

3.8 STUDY AREA

The research study was on self-efficacy in the adoption and use of OCDs: a case study of 4th year level students pursuing BIS at UL. UL is located in South Africa, Limpopo Province, east to the city of Polokwane in Mankweng Township. UL constitutes four faculties, namely: Faculty of Humanities, Faculty of Health Sciences, Faculty of Management and Law, Faculty of Sciences and Agriculture.

This university was relevant for the study because its library offers OCD training to students. Moreover, the researcher decided to conduct the study at UL because of accessibility of respondents and immediacy in terms of responding to the questionnaire. As advised by Taylor, Bogdan and DeVault (2015), the researcher should decide to conduct research where he or she has access to, is able to get hold of the respondents and can gather data that is directly related to the research interest. Fourth-year level students pursuing BIS at UL were considered as respondents who could provide relevant information for this research because they have been trained about the importance of using OCDs as opposed to free online databases, and are expected to adopt and use OCDs for their academic work.

3.9 DATA COLLECTION INSTRUMENTS

The process of data collection is of critical importance to the success of a study. According to Cai and Zhu (2015), without high-quality data collection instruments, the accuracy of the research conclusions is easily challenged. There are various data collection methods, which are usually used in research such as observation, questionnaires, interviews, and document analysis (Fouche, 2015). In this study document analysis, observation and questionnaires were used.

3.9.1 Document analysis

Document analysis was the first method used to collect data. Thrassou, Vrontis, Weber, Shams, Tsoukatos (2019:224) state that document analysis is “a systematic procedure for reviewing or evaluating documents, both printed and electronic (computer-based and Internet-transmitted) material”. Like other analytical methods in qualitative research, “document analysis requires that data be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge” (Corbin & Strauss, 2008; Philipp, 2014:104). As a method of Social Science research, document analysis is “a documentary method that aims at a

quantitative and/or qualitative analysis of the content of the text, pictures, films and other forms of verbal, visual or written communication" (Sarantakos, 2005:314). According to Bauer (2000), content analysis is one of the classical procedures for analysing textual materials no matter where this material comes from; ranging from media products to interview data. In terms of document analysis, the researcher checked third assignments of the 4th year level students and the findings confirmed poor use of OCDs. With the first assignment, students re-wrote it as a way to encourage them to use OCDs. Surprisingly, this is despite the checklist (See Annexure H) accompanying the assignment posted on blackboard by the lecturer to guide students on what to include in their assignments.

Document analysis was used because it was less time-consuming and therefore more efficient than other research methods. It required data selection, instead of data collection (Bowen, 2009). The HINA041 assignments of 4th year level students pursuing BIS at UL were used because of their cost-effectiveness as only reference list pages were photocopied. Document analysis was less costly than other research methods (Bowen, 2009).

3.9.2 Observation

Observation method refers to "a purposeful, systematic and selective way of watching and listening to an interaction or phenomenon as it takes place" (Kumar, 2014:173). To have a deeper understanding of library processes towards enhancing students' self-efficacy levels during OCD training, the researcher attended the OCD training. In line with the theoretical framework, the researcher observed the facilitation of the OCD training. The observation took place at UL-Library e-room using the observation guide whereby the following factors considered to be necessary to enhance self-efficacy were observed:

- That all the computers were functional and not offline.
- How OCD training was offered.

- To observe the librarian‘s demonstration and which OCDs were demonstrated.
- To check students‘ participation in terms of asking questions, comments made and feedback by the training librarian.
- The length of the OCD training.

At UL-Library, there is an e-classroom specifically used for OCD training. Martin (2019) recommends that for instruction to take place, libraries need computer laboratories with instructors and student workstations, projector and access to the Internet as basic instructional tools.

3.9.3 Questionnaire

The questionnaire (see Annexure F) was chosen to be the main tool for data collection for this study. Kumar (2014:178) defines the questionnaire as “a written list of questions, the answers to which are recorded by respondents”. Thus, the respondents read the questions, interpret what is expected and then write down the answers. According to Kumar (2014:178), the great advantage of the questionnaire is that the responses are gathered in a standardised way, so questionnaires were more objective, certainly more so than face-to-face interviews. The major attraction of the questionnaire, when compared with other data collection tools, was that it was relatively inexpensive and it allowed a large number of respondents to be surveyed in a relatively short period (Burns, 2000:581). In this study, the cost involved was for the printing of the questionnaires only.

3.9.3.1 Questionnaire design and layout

According to Terre Blanche, Durrheim and Painter (2014), the compilation of questions is a crucial aspect of developing any assessment instrument. The layout of the questionnaires was clear and presentable which allowed the respondents to be able to fill in the questionnaire by indicating the suitable with an X and to write down

answers in the spaces provide where the questions were open. The designed questionnaire of this study used a combination of open-ended and close-ended questions. By mixing close-ended and open-ended questions, the researcher was able to get quantitative and qualitative data.

3.9.3.2 Open-ended questions

In the case of open-ended questions, the respondent is asked to provide his or her own answer to the question (Babbie & Mouton, 2001:233). Open-ended questions are advantageous in that they allow respondents to answer in their own choice of words and they provide the most beneficial and surprising suggestions. Open-ended questions were time-consuming to analyse and group into themes. It was essential that the researcher interpreted the meaning of the responses before they were transferred onto the computer format. The drawback was that some respondents gave irrelevant answers to the researcher‘s intent. The questionnaire entailed eight open-ended questions.

The questionnaire covered the following aspects using open-ended questions:

- Common measurement students use to gauge their self-efficacy levels in adopting and using OCDs for their academic work.
- How 4th year level students pursuing BIS at UL dealt with challenges they encounter during and after the training on OCDs.

3.9.3.3 Closed-ended questions

Closed-ended question is defined as question types that ask the respondents to choose from a distinct set of pre-defined responses (Farrell, 2016). With open-ended questions, the respondents were provided with answers to mark from, for example, yes or no. The questionnaire consisted of scaled questions and a rating Likert scale in which the respondents indicated the degree to which they agreed or disagreed with the item followed statements. Terre Blanche, Durrheim and Painter (2014)

explain, the scaled questions are useful for measuring attitudes and they can capture opinions and perceptions.

Since Bandura (1999)'s scale was questioned (C.f 2.2.5), the researcher opted for a 3 to 5 Likert scale. Crossman (2011:20) cited Ray (1980) that increasing the number of Likert items from 3 to 5 contribute higher internal reliability. The respondents were asked to rate the degree of agreement or disagreement with a particular statement, for example, how frequent they used OCDs and rated how poor or good they were with the use of OCDs. Likert scale usually gives respondents the option to tick unsure answer such as undecided, neutral and not sure. However, in this study, respondents were not given such options because they were familiar with the topic.

Closed-ended questions were easier and faster for respondents to complete than the open-ended questions. These questions are extremely popular, they have a great advantage of being simple to record, and score and they allow for easy comparison and quantification of the findings (Neuman, 2006).

The questionnaire covered the following aspects using closed-ended questions:

- How the students' OCD training was delivered?
- The extent to which self-efficacy levels (post-training) has translated into students citing sources from OCDs in their academic work.
- The self-efficacy levels of 4th year level students pursuing BIS at UL during the OCD training.

3.10 DATA COLLECTION PROCEDURE

There are standard data collection procedures that researchers follow to carry out evaluations. The researcher followed the following procedures. First, the researcher applied for an ethical clearance certificate from UL. After receiving the certificate, the

researcher requested permission from the HoD of the Department of Communication, Media and Information Studies to collect data. After getting a letter of authorisation (see Annexure C), the researcher approached lecturers in the Programme of Information Studies to offer her permission to collect data from students during their research consultations. In order to protect students' names, the lecturer for HINA041 assignments photocopied the reference lists.

During the process of data collection, the following two general points as raised by Punch (2014:242) were borne in the researcher's mind: approaching respondents professionally and informing them about the purpose of the study. The assurance made respondents cooperative and since 4th year level students pursuing BIS at UL were also busy with their research projects all were willing to complete the questionnaires. Some questionnaires were collected two days after distribution as the respondents requested for more time. The researcher granted an extension because it was important to have a 100% response rate. The researcher collected outstanding questionnaires from their respective research supervisors (lecturers). This resulted in a high return rate of the questionnaires.

After getting the OCD training date, the researcher attended the OCD training. In addition, the researcher made a copy of the assignment guideline checklist (see Annexure H) given to them to refer to every time they completed their assignments. This assignment guideline checklist was posted on blackboard and served as proof that it indicated the importance of using OCDs.

3.11 DATA ANALYSIS

Data analysis is considered as the body of the research. According to Xia and Gong (2015), data analysis refers to the process of inspecting, rearranging, modifying and transforming data to extract useful information from it.

The information collected during the study is called raw data. Watling and James (2012:385) advice that the researcher needs to follow the following four stages of data processing and analysis:

- Checking through the questionnaires and correcting errors.
- Coding after correcting errors.
- Preparing data tables, graphs and pie charts.
- Making sense of the data. This includes preparing summaries, measures, and using them to test ideas about the target population.

There are various ways of analysing data depending on the type of data collected. In this study, the researcher collected both qualitative and quantitative data. Based on the type of data collected, the researcher used both qualitative and quantitative approaches to analyse the collected data. There are a number of software packages available to facilitate quantitative data analysis. In this study, the data were analysed using IBM Statistical Package for Social Science (SPSS). SPSS is software for editing and analysing data. SPSS is a widely used programme for statistical analysis in Social Sciences (Sabine & Brian, 2004:1). This software was used because it produces visual representation for codes and themes and encouraged the researcher to look closely at the data (Creswell & Poth, 2018:209). This was done with the assistance of a statistician.

Before analysing the raw data, each completed questionnaire was checked for missing data, ambiguity, omissions and errors. The questionnaire responses were then coded and entered into the computer for analysis using SPSS (Williams, 2003; Healey, 2012:23). The questions that were coded were open-ended questions because the researcher wanted to group the responses into themes so that they become easy to tabulate. The researcher used this software to analyse the data where the respondents were expected to tick rather than to explain. The quantitative data were presented using tables and figures.

Microsoft Word was also useful in data analysis and presentation thereof by allowing the researcher to insert tables for themes and to type explanations for the findings obtained from a qualitative and quantitative approach.

Content analysis was also used to analyse qualitative data. Bengtsson (2016:12) terms content analysis “a detailed systematic examination of the contents of a particular body of material for the purpose of identifying patterns, themes, or bias”. Content analysis is typically performed on forms of human communications, including books, newspapers, films, television, and transcripts of conversation collected through document analysis and from open-ended questions. For this study, content analysis was used to analyse qualitative data. The researcher went through the reference list of the assignments to find which online databases were used, verified that the sources that appear under the list of references were also cited in the text and then divided and grouped them according to the online databases. A reference list that cited free online databases were grouped together and those that cited OCDs were grouped together as well. Thereafter, the researcher counted how many students used free online databases to complete the assignment and how many used OCDs. Lastly, the researcher counted the number of OCDS and free online databases used in the assignments.

The second step with content analysis entailed the creation of categories. The researcher came up with categories by grouping the respondents’ responses into themes (Creswell & Poth, 2018:189). Thirdly, the researcher reviewed themes and defined them. Lastly, the researcher presented the responses in tables and by headings and subheadings. Content analysis was useful during data reduction process for the open-ended questions. The response to open-ended questions by the respondents was exceptionally good and respondents expressed themselves very succinctly.

3.12 ETHICAL CONSIDERATIONS

According to Babbie (2010:64), “research ethics are typically associated with morality and concern matters of right and wrong”. To ensure ethical treatment of respondents in this research study, the following ethical considerations were followed:

- Permission to conduct the study and informed consent

The researcher applied for an ethical clearance certificate in order to be able to collect data at UL under the Programme of Information Studies. After the certificated was issued, the researcher proved to the Programme of Studies that she had been issued with ethical clearance certificate by UL (see Annexure B). Upon producing the ethical clearance certificate to Programme of Information Studies, the researcher was issued authorisation letter (see Annexure C) which were produced to the respondents. The respondents who agreed to take part in the study were requested to complete an informed consent form (see Annexure E). According to Dankar, Gergely, and Dankar (2019), informed consent is a process where a person knowingly and voluntarily gives his or her consent to sign a form and participate in a study.

According to Fouka and Mantzorou (2011:4), the purpose of informed consent was to ensure that the will of the respondents is respected at any cost for the research. Informed consent seeks to incorporate the rights of autonomous individuals through self-determination. Fouka and Mantzorou (2011:4) argue that “individuals can make informed decisions in order to participate in research voluntarily only if they have information on the possible risks and benefits of the research”. To this end, the researcher provided a "non-coercive disclaimer" stating that participation in the study was voluntary and no penalties were involved because of refusal to participate. In this regard, the respondents were fully informed by the researcher about the nature and purpose of the study and were free to choose to participate or not to participate

without coercion or deceit (Polit & Beck, 2006:89). Each respondent signed a written informed consent form to show that he or she is willing to voluntarily participate in the study and share information with the researcher. The contact details of both the researcher and supervisor were written on the consent form for the benefit of participants who would need to discuss or enquire about the study at a later stage.

- Respect and dignity

Respect for persons is one of the fundamental principles in research: It is the recognition of a person as an autonomous, unique, and free individual. In this regard, the researcher recognised that each person has the right and capacity to make her or his own decisions (Pieper & Thomson, 2014:232). Respecting a person ensures that dignity is valued. The respondents were empowered by a brief presentation about their rights for them to make free decisions and given all the information needed to make good decisions. The researcher protected the respondents' dignity by approaching them with respect and introducing herself in a respectful manner and asked them to complete the questionnaire. The researcher did not in any way abuse her position or knowledge for personal power or gain. Lastly, as suggested by Wendler & Wertheimer (2017) the researcher avoided coercive and deceptive practices by informing the respondents about the purpose of the study and by asking them to sign the consent form.

- Respect for anonymity

The issue of anonymity is closely connected with the rights of beneficence. Anonymity occurs when even the researcher cannot link a respondent with the information for that person (Polit & Beck, 2004:711). Anonymity is protected when the subject's identity cannot be linked with personal responses (Fouka & Mantzorou, 2011:6). Anonymity was maintained requesting the respondents not to write their names on the questionnaire.

- Respect for confidentiality

De Vos, et al., (2011) state “confidentiality indicates the handling of information in a confidential manner and it can also be described as the management of private information by the researcher in order to protect the respondent‘s identity”. In this study, confidentiality was maintained by restricting access to raw data to the researcher, researcher‘s supervisor and statistician. Confidentiality was further maintained by means of using pennames when transcribing and analysing data.

- Respect for privacy

Privacy is established on the principle of respect. Privacy is defined as “the right of an individual to determine the circumstances, time, and extent, type of information to share or withhold from others” (Polit & Beck, 2006:91). The definition of privacy implies the element of personal privacy. An invasion of privacy may happen when private information such as beliefs, attitudes, opinions and records, is shared with others, without the respondent‘s knowledge or consent. Moreover, the invasion of privacy can include certain data collection procedure such as participatory observation, hidden observation and reporting about it; questionnaire about intimate, personal matters and certain indirect tests where subjects are not aware of what it is that they reveal and procedures in which information is obtained (De Vos, et al., 2011). The researcher kept the invasion of privacy to the absolute minimum. First, the researcher introduced herself to the respondents and revealed what the study is all about and procedures in which information would be obtained. Additionally, privacy was maintained by not asking questions about intimate, personal matters.

- The rights and protection of the respondents

Adequate consent cover letter was used to protect the respondents (Ngulube, 2003:233) by disclosing information about the study and explaining the voluntary nature of participation. The respondents were informed that they are not being forced to complete the questionnaire and that if they choose not to complete the

questionnaire, they will not be affected in any way. Again, they were informed that if they agree to take part in the study, they have the right to discontinue at any time and tell the researcher that they cannot continue completing the questionnaire. The respondents were informed that there will be no penalties if they discontinue completing the questionnaire.

- Plagiarism

According to Dayyeh and Skakiyya (2018), plagiarism is when someone presents or uses someone else‘s published or unpublished or intellectual products as if they were one‘s own new or original ideas without acknowledging the owners. To avoid plagiarism, all sources consulted were acknowledged by means of in-text referencing, and a full list of references. Furthermore, anti-plagiarism software called Turn-it-in was also used to detect any form of plagiarism.

3.13 CHAPTER SUMMARY

This chapter focused on research methodology. The research paradigm, approaches and design were explained. Furthermore, this chapter explained population and sampling and sampling techniques, pre-test, validity and reliability, study area, data collection instruments, data collection procedure, data analysis, and ethical considerations. The next chapter presents the presentation and interpretation of data.

CHAPTER FOUR: PRESENTATION OF FINDINGS

4.1 INTRODUCTION

The previous chapter discussed the research approach, research design, the study population, sampling and sampling techniques and data collection instruments used in the study. The purpose of this chapter is to present the findings drawn from observation, document analysis and questionnaires. Once data have been collected, it needs to be presented so that findings can be made and conclusions are drawn. This study used both quantitative and qualitative methods to collect and analyse data. The researcher used figures, tables and explanations to analyse and organise data into simpler accounts.

4.2 RESPONSE RATE

A low response rate raises the question of whether the answers received are representative of the sample that was used in the study or are in some way biased. Clearly, higher response rates are better and researchers should strive for a response rate of at least 60%. Maxfield and Babbie (2018:245) concur that “the overall response rate is a guide to the representativeness of the sample respondents”. Sixty-six questionnaires were distributed to 4th year level students pursuing BIS at UL, however, 63 were returned meaning 3 questionnaires were not returned to the researcher. Thus, resulting in a response rate of 95%. Babbie and Mouton (2001:261) state that, “a questionnaire return rate of 50% is adequate for data analysis and reporting”. A return rate of 60% is good and 70% is regarded as very good (Maxfield & Babbie, 2018:245). This means that the response rate for this study was very good.

4.3 OBSERVATION FINDINGS

The researcher was part of the students attending OCD training with the purpose of observing the delivery of the training, student's participation, the librarian's role in motivating and providing feedback. The findings are reported in a narrative form regarding computers and the Internet, librarian and OCDs demonstrated.

i) The researcher observed that not all computers were functional. Therefore, not every respondent had a computer that was connected to the Internet. As a result, some respondents had to share a computer.

ii) The librarian took time to ensure all the respondents understood what was being taught. Both the librarian and students asked questions. The librarian asked some questions, which tested their prior knowledge. In terms of demonstration, he took time to assist those who were failing to understand the demonstrations. In some cases, students were assisting each other.

iii) At the beginning of the OCD training, the librarian asked if all respondents were able to open the online database, he had to demonstrate. Since all agreed, the assumption was that all were computer literate. The prior knowledge probably stems from previous computer usage and searching either OCDs or free online databases from first year level of study when they were completing assignments. The researcher observed that during the OCD training, not all the respondents were able to follow the demonstration because some students asked questions where they did not understand and the librarian answered them by means of doing step-by-step demonstration and ensured that all were on the same page and gave them positive feedback indicating that they were able to search information using OCDs.

iv) The researcher observed that the OCD training was offered for two hours while covering both the use of OCD and search tools and techniques. Two hours were not sufficient, as some students were not able to master everything that was demonstrated. This then led to some students leaving the training without being able to use search tools and techniques.

4.4 DOCUMENT ANALYSIS FINDINGS

The researcher perused students' completed assignments to check if they have cited and referenced sources properly. This was easy as students were instructed by their lecturer to use a minimum of ten sources. Once that was confirmed, the researcher photocopied 66 reference lists from the completed assignments.

The findings were classified under categories in the first column= Information sources used to complete the assignment, second column, N = Number of respondents and third column, % = Percentage.

Table 4.1: References from OCDs, free online databases and books (N=66)

Information sources used to complete the assignment	N	%
• Online commercial databases	14	21
• Free online databases	21	32
• Books	31	47
Total	66	100

The respondents were instructed to complete the assignment they wrote after the OCD training using a minimum of ten reference sources. Table 4.1 reveals that out of 66 respondents, 14 (21%) respondents used OCDs to complete their assignments while 21 (32%) used free online databases. Thirty-one (47%) respondents used books only. Since the study is focusing on whether students rely on OCDs or free online databases for their academic work, but not books the findings revealed that the majority, 21 (32%) of the respondents used free online databases.

Table 4.2: Articles and journals used to complete the assignments (N=66).

Online commercial databases	Free online databases
• JSTOR	• https://www.theatlantic.com.doc
• Emerald	• https://digitalcommons.3un.edu

• EBSCOhost	• https://worldcientificnews.com
• ScienceDirect	• http://hdl.handle.net
•	• http://encore.tut.ac.za
•	• https://epress.lib.uts.edu.au
•	• https://www.inasp.info.pubs
•	• https://moariakier.wordpress.com
•	• http://connect.ala.org
•	• https://dx.doi.org
•	• https://bus206.pressbook.com

Students prefer to cite journals from free online databases because they do not require keywords formulation and they sometimes accidentally retrieve relevant information without using the search tools and techniques. The online databases (OCDs and free online databases) mentioned in Table 4.2 above were listed under the reference list of the assignments of the respondents. The journals cited indicated they were sourced from which online databases, the web address were used. In terms of online database usage, it became clear that in most cases, students share sources whereby more students have used one source. In 2019, UL library subscribed to 43 OCDs, of which 17 covered multidisciplinary subjects.

4.5 QUESTIONNAIRE FINDINGS

As indicated, questionnaires were used as an instrument to collect data. The data collected through the questionnaire is presented by the use of tables, figures and descriptions thereof. In terms of tables, the second column represents number (N) of the respondents and the third one is for percentage (%).

4.5.1 The need for OCD training

In order to gather background information on self-efficacy, the respondents were asked to indicate whether they agree or disagree with the two listed statements. Different response options were provided and respondents could mark one block only using five Likert scales without a midpoint (neutral or indifferent) as the intention was not to get unsure answers as the respondents were familiar with the topic. The respondents were also provided with the option for others where they were requested to comment in the space provided. The findings are shown in Table 4.3.

Table 4.3: The need for OCD training (N=63)

The need for OCD training	Strongly Agree	Agree	Disagree	Strongly Disagree
• I did not need more OCD training as my self-efficacy levels are high and were already using them at the time of training	4	11	18	30
• The OCD training was helpful as self-efficacy levels were low and relied more on Google & Yahoo search engines	33	20	10	0

Table 4.3 depicts that 4 (6%) respondents strongly agreed while 11 (17%) agreed with the statement that they did not need more OCD training as their self-efficacy levels were high and they were already using OCDs at the time of the training. Eighteen (29%) respondents disagreed with the statement whereas 30 (48%) strongly disagreed with the statement that they did not need more OCD training as their self-efficacy levels were high and were already using OCDs at the time of training.

The majority (33, 52%) of the respondents strongly agreed while 20 (32%) agreed

with the statement that OCD training was helpful as their self-efficacy levels were low and relied more on Google and Yahoo search engines, whereas 10 (16%) disagreed with the statement.

4.5.2 Delivery of OCD training

Using the Likert scale, the respondents were requested to rate their level of agreement or disagreement on delivery of OCD training regarding the statements given in Table 4.4. The respondents were also provided with the option for others where they were requested to comment in the space provided.

Table 4.4: Delivery of OCD training (N=63)

Delivery of OCD training	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
Verbal persuasion by the training librarian				
• Librarian took enough time to explain and demonstrate searching of OCDs	20	37	4	2
• Librarian paused to give the students time to ask questions	22	26	9	6
• Librarian warned the students of what to avoid when formulating keywords	20	32	7	4
• Librarian ensured that students followed step by step demonstrations	16	37	10	0
• Librarian gave students chance to search the exact topic that was used as part of the demonstration	18	33	10	2
• Librarian also allowed the students to search topics of interest and was helpful to assist those struggling to get relevant information sources	20	27	11	5

• Librarian was patient enough to repeat the question asked when realising that students were not able give answers	22	27	12	2
• Librarian corrected students when they gave incorrect answers	20	31	11	1

Table 4.4 shows that 20 (32%) respondents strongly agreed while the majority of 37 (59%) agreed with the statement that the librarian took time to explain and demonstrate searching for OCDs. Four (6%) respondents disagreed whereas 2 (3%) strongly disagreed with the statement that the librarian took time to explain and demonstrate searching of OCDs.

Another statement “librarian paused to give students time to ask questions” indicates that 22 (35%) respondents strongly agreed, 26 (41%) agreed, 9 (14%) disagreed whereas 6 (10%) strongly disagreed with the statement.

On the statement “librarian warned the students of what to avoid when formulating keywords”, 20 (32%) respondents strongly agreed, 32 (51%) agreed, 7 (11%) disagreed whereas 4 (6%) respondents strongly disagreed.

The findings further revealed that 16 (25%) respondents agreed while 37 (59%) strongly agreed that the librarian ensured that they followed the step-by-step demonstration. Ten (16%) respondents disagreed.

Moreover, the findings show that 18 (29%) respondents agreed and 33 (52%) strongly agreed with the statement that the librarian gave them a chance to search using the same topics that were used as part of the demonstration. Ten (16%) respondents disagreed whereas 2 (3%) strongly disagreed with the statement.

With regard to the statement “librarian also allowed students to search topics of interest and was helpful to assist those struggling to get relevant information sources” 20 (32%) respondents agreed, 27 (43%) strongly agreed, 11 (17%) disagreed whereas 5 (8%) strongly disagreed.

Furthermore, the findings show that 22 (35%) respondents agreed, 27 (43%) strongly agreed, 12 (19%) disagreed while 2 (3%) strongly disagreed with the statement that the librarian was patient enough to repeat questions asked when realising that students were not able to give answers.

As depicted in Table 4.4, 30 (32%) respondents strongly agreed, 31 (49%) agreed, 11 (17%) disagreed whereas only 1 (2%) respondent strongly disagreed with the statement that the librarian corrected them when they gave incorrect answers.

4.5.3 Factors inhibiting students to enhance self-efficacy levels during the OCD training

It is imperative to elicit factors that have negatively impacted students to enhance their self-efficacy levels. Different response options were provided and respondents could mark only one block still using Likert scale. The respondents were also provided with the option for others where they were requested to comment in the space provided. The findings are shown in Table 4.5.

Table 4.5: Factors inhibiting students to enhance self-efficacy levels during OCD training (N=63

Factors inhibiting enhancement of self-efficacy levels during OCD training	Strongly Agree	Agree	Disagree	Strongly Disagree
Physiological state				
• Nervous as student, I somehow failed to imitate the librarian during OCD training	7	22	26	8
• Stress levels high as a students was not sure that they were correctly following the search tools and techniques	12	31	15	5
• As a students , I lacked confidence as they worried that once they are alone, they won‘t be able to search OCDs on their own	14	22	20	7
Performance accomplishments				
• As a students, I was worried that their search was not going to recall or retrieve the same results as those of the librarian and other students	17	25	14	7
• Self-efficacy levels not at the right level	5	10	28	20
Performance accomplishment and physiological state				
• As a students I could not ask questions as they feared that the librarian and some classmates will note that they are not that computer literate	7	12	30	14
• As a students I could not ask questions as they feared that the librarian and some classmates will note that even though they were computer literate, they were unable to search using Boolean operators and truncation	3	12	29	19

The respondents were requested to rate their level of agreement or disagreement about factors inhibiting them from enhancing their self-efficacy levels during the OCD training, 7 (11%) respondents strongly agreed, 22 (35%) agreed, 26 (41%) disagreed while 8 (13%) strongly disagreed that they were nervous as they somehow failed to imitate the librarian during training.

Regarding the statement "stress levels high as students were not sure that they correctly following the search tools and techniques", 12 (19%) respondents strongly agreed, 31 (49%) agreed, 15 (24%) disagreed while 5 (8%) strongly disagreed.

Concerning the factor "As a students, I lacked confidence as they worried that once they are alone, they won't be able to search OCDs on their own", 14 (14%) respondents strongly agreed, 22 (35%) agreed, 20 (32%) disagreed whereas 7 (11%) strongly agreed.

On the statement that "As a students I was worried that their search was not going to recall or retrieve same results as that of the librarians and other students", 7 (27%) respondents strongly agreed, 25 (40%) agreed, 14 (22%) disagreed while 7(11%) respondents strongly disagreed.

When the respondents were asked about the statement "Self-efficacy level is not at the right level", 5 (8%) respondents strongly agreed, 10 (16%) agreed, 28 (44%) disagreed whereas 20 (32%) strongly disagreed.

About the statement "As a students I could not ask questions as they feared that the librarian and some classmates will note that they are not that computer literate", 7 (11%) respondents strongly agreed, 12 (19%) agreed 30 (48%) disagreed while 14 (22%) strongly disagreed.

Regarding the statement "As a students I could not ask questions as they feared that

the librarian and some classmates will note that even though they are computer literate, they are unable to search using Boolean operators and truncation", 3 (5%) respondents strongly agreed, 12 (19%) agreed, 29 (46%) disagreed while 19 (30%) strongly disagreed.

4.5.4 Self-efficacy levels since attending the OCD training

At this stage, respondents were expected to indicate the tasks they mastered since the OCD training. Different response options were provided and respondents could mark only one block from the following scale. The findings are shown in Table 4.6.

Table 4.6: Self-efficacy levels since attending OCD training (N=63)

Self-efficacy levels since attending OCD training	Strongly Agree	Agree	Disagree	Strongly Disagree
• As a students, my self-efficacy levels are at a high level	19	41	2	1
• As a student, I do independent searches without the librarians	24	37	0	2

The findings illustrate that 19 (30%) respondents strongly agreed, 41 (65%) agreed, 2 (3%) disagreed whereas only 1 (2%) respondent strongly agreed with the statement "My self-efficacy level is at a high level since the training". These findings relate well with Table 4.5 where the respondents indicated that their self-efficacy levels are at the right level.

The findings also show that 24 (38%) respondents strongly agreed whereas 37 (59%) agreed that they do independent searches without the librarians. Only 2 (3%) respondents strongly disagreed with the statement that they do independent searches without the librarians.

4.5.5 Ranking OCDs according to self-efficacy levels in terms of their use (N=63)

In this question, the respondents were requested to rank OCD according to self-efficacy levels in terms of their use using a 1-5 scale (1 being lowest and 5 the highest). The question was focused on four OCDs, namely, EBSCOhost, Emerald, SABINET and JSTOR.

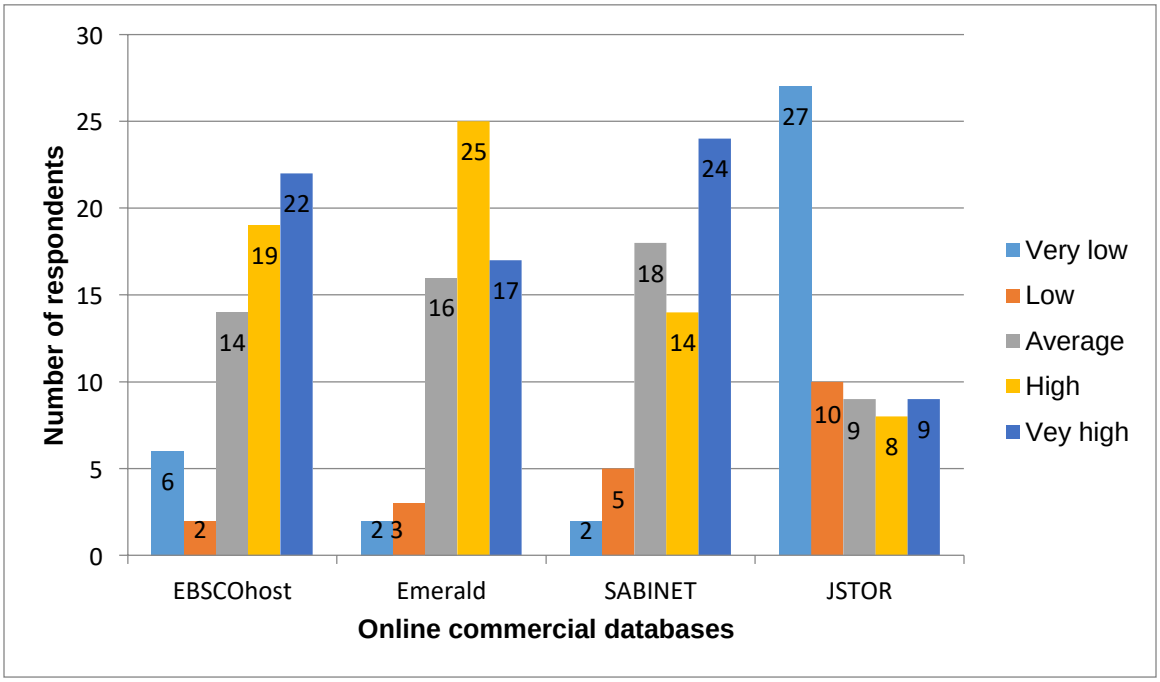

Figure 4.2: Rating OCDs according to self-efficacy levels in terms of use

Figure 4.2 shows that when the respondents were asked to rate their self-efficacy levels in terms of using EBSCOhost, 6 (10%) indicated their levels were very low whereas 2 (3%) indicated that their levels were low. Fourteen (22%) respondents rated their self-efficacy in terms of EBSCOhost as average. In addition, 19 (30%) respondents rated their self-efficacy in terms of using EBSCOhost high while 22 (35%) rated their self-efficacy levels very high.

The findings depicted that 2 (3%) respondents regarded their self-efficacy levels in terms of using Emerald very low followed by 3 (5%) who rated their self-efficacy

levels low. Sixteen (25%) respondents rated their self-efficacy levels average while 25 (40%) rated themselves high. Seventeen (27%) respondents rated their self-efficacy levels very high.

Figure 4.2 demonstrated that 2 (3%) respondents rated their self-efficacy levels in relation to the use of SABINET very low; 5 (8%) to a low level; 18 (29%) to an average level; 14 (22%) to a high level and 24 (38%) rated their self-efficacy levels very high.

When the respondents were asked to rate their self-efficacy levels in terms of using JSTOR, 27 (43%) rated themselves very low while 10 (16%) rated themselves low. Nine (14%) respondents rated their self-efficacy levels average; 8 (13%) to a high level and 9 (14%) to very high level.

4.5.6 Reasons for the rank ordering of self-efficacy level in terms of using OCDs rated the highest in Figure 4.2 (N=63)

In this question, the respondents were asked to give reasons for rating OCD in Figure 4.2 the highest. The aim was to understand why the respondents have high self-efficacy levels in terms of a certain OCD compared to the other ones. Their answers are classified into the following themes:

i) The training was offered on how to use the OCDs

OCD training is important as it equips the students with the skills to use OCDs independently. In line with this, some respondents rated SABINET the highest because they had training on how to use it. They further indicated that having training on how to use SABINET enhanced their self-efficacy levels in terms of using it compared to other OCDs.

ii) SABINET is relevant to my studies

The findings show that the respondents rated SABINET the highest because it contains journals, books and abstracts on Information and Computer Sciences and this helps them when they are given assignments.

iii) Independent use of the OCD

Some respondents rated SABINET the highest because they are able to use it on their own. Being able to use SABINET on their own enhances their self-efficacy levels in terms of using it compared to other OCDs.

4.5.7 The use of OCDs without help (N=63)

In this question, the respondents were asked to use the scale “easy”, “moderate” or “hard” to rate how easy or hard it is to use OCDs: EBSCOhost, Emerald, SABINET, and JSTOR. Figure 4.3 summarises responses of the respondents.

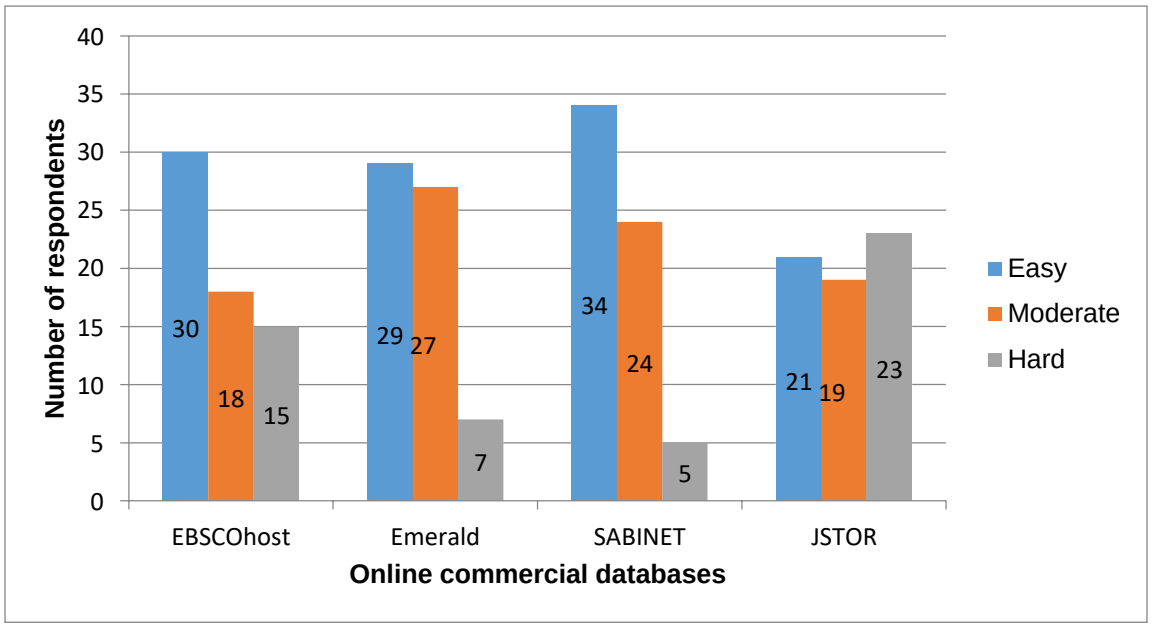

Figure 4.3: The use of online commercial databases without help

The findings were as follows: 30 (47%) respondents rated the use of EBSCOhost easy, 18 (29%) rated it moderate while 15 (24%) rated it hard. Twenty-nine (46%) respondents rated the use of Emerald without help easy; 27 (43%) rated the use moderate while 7 (11%) rated it hard. The findings further revealed that 34 (54%) respondents rated the use of SABINET easy, 24 (38%) rated it moderate while 5 (8%) rated it hard. Lastly, 21 (34%) respondents rated the use of JSTOR without help easy; 19 (30%) rated JSTOR moderate and 23 (37%) rated the use of JSTOR without help hard.

4.5.8 Self-efficacy levels in the use of OCDs based on assignments completed after the OCD training (N=63)

In this question, the respondents were requested to rate their self-efficacy levels in relation to use of OCDs looking at the completed assignments after the OCD training. The rating scales were: Poor =①; Good = ②; Excellent = ③. The findings are presented in Figure 4.4.

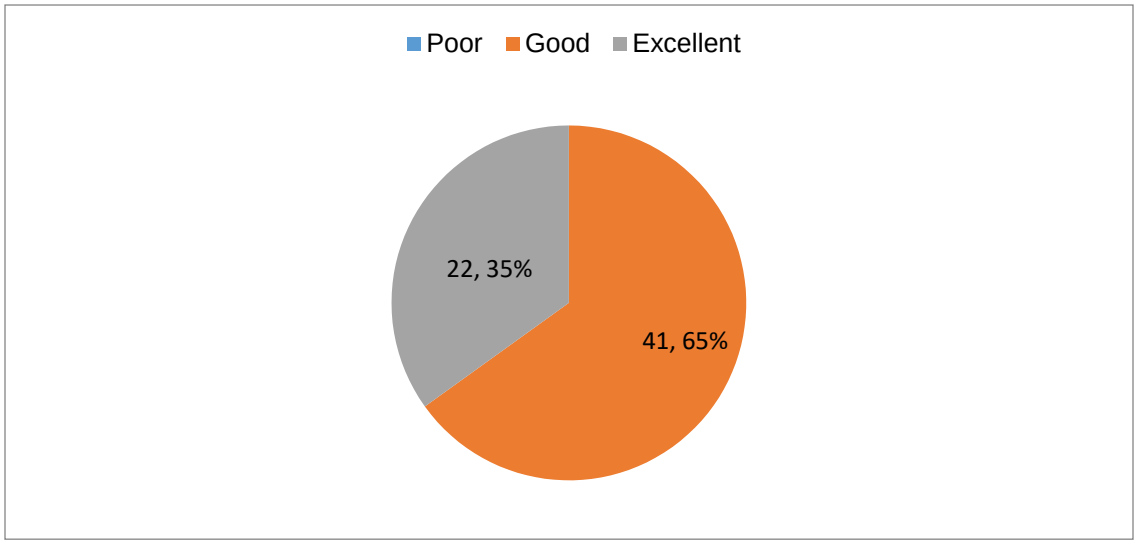

Figure 4.4: Self-efficacy level in the use of OCDs for academic purposes

Figure 4.4 indicates that 41 (65%) respondents rated their self-efficacy levels as good in relation to use of OCDs based on assignments they completed after the

training whereas 22 (35%) indicated excellent. None of the respondents rated their self-efficacy levels as poor. A picture given by the findings of this study is that respondents' self-efficacy levels were at the right level in terms of using OCDs to complete academic work.

4.5.9 Reasons for a rating of self-efficacy levels based on the assignments completed after OCD training

This was an open-ended question, a follow up to Figure 4.4 where the respondents were asked to motivate why they rated themselves as poor, good or excellent in how they have used OCDs to complete assignments after OCD training. The respondents gave different responses for each rating scale; therefore, their responses were grouped into themes and presented as follows.

4.5.9.1 Reasons for rating self-efficacy levels excellent

The respondents rated their self-efficacy levels excellent in terms of using OCDs for their academic work. The reason was that they do not rely on free online databases which allows them to enhance efficacy levels and to be able to access unlimited information while some pointed out that it is because they are able to acknowledge other's work because the information from OCDs have references. In addition, some respondents indicated that they rated their self-efficacy levels excellent in terms of using OCDs because they are able to use search tools and techniques, which enables them to access relevant information, and others revealed that it is because they obtain meritorious marks because of using information from OCDs for their academic work as recommended by their lecturers. Some respondents expressed that:

Respondent 1: "I rated my self-efficacy levels excellent based on the assignments completed after OCD training because I have meritorious achievement in my academic work"

Respondent 2: "I rated my self-efficacy levels excellent simply because I am able to use various OCDs and it's through using Boolean operators and wildcards".

Respondent 3: "I rated my self-efficacy levels excellent simply because I am able to use Boolean operators".

Respondent 4: "I rated my self-efficacy levels excellent simply because I am able to acknowledge other people's work".

Respondent 5: "I rated my self-efficacy levels excellent simply because I am able to use cite journals from OCDs in my academic work and make good presentations".

4.5.9.2 Reasons for rating self-efficacy levels good

The findings reveal that the respondents rated their self-efficacy levels good in terms of using OCDs for their academic work because they have enhanced self-efficacy levels while others indicated that it is because they obtain moderate marks because they have good information searching skills required when using OCDs. The findings further reveal that respondents rated their self-efficacy levels good because they are able to use OCDs to retrieve relevant articles for academic work. Lastly, it is because they have a better understanding and knowledge of the use of Boolean operators and keywords formulation. Some respondents expressed that:

Respondent 1: "I believe I am well based on the assignment completed after OCD training and I see that I have attained better marks than before".
Respondent 2: "I rated my self-efficacy level good because I have enhanced self-efficacy levels".

Respondent 3: "Because I am able to search for OCDs and train others".

Respondent 4: "I can use search tools and techniques to retrieve relevant information for my studies without help from others".

4.5.10 Rating self-efficacy levels in terms of using search tools and techniques (N=63)

In this question, the respondents were asked to rate their self-efficacy levels in terms of using the search tools and techniques. The rating scale was: Poor =①; Good =②; Excellent =③. The findings are reported in Figure 4.5.

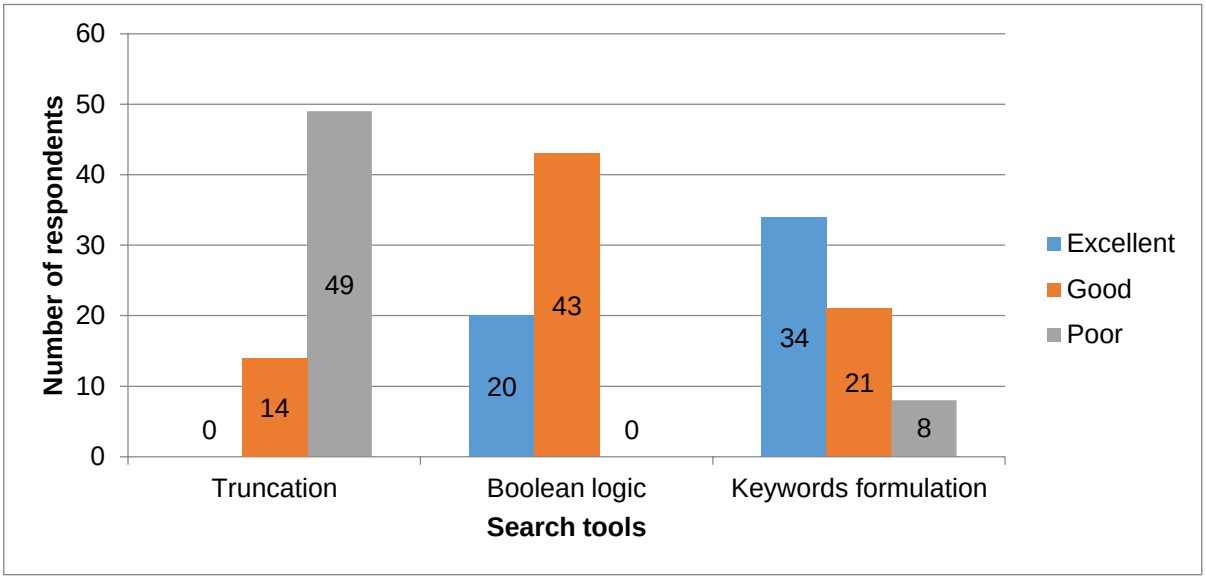

Figure 4.5: Self-efficacy levels in terms of using search tools

Figure 4.5 indicates that 14 (22%) respondents rated themselves good in terms of using truncation while 49 (78%) rated themselves poor in terms of using truncations when searching information on OCDs for their academic work. Forty-three (68%) respondents rated themselves good in terms of using Boolean operators while 20 (32%) rated themselves excellent. Lastly, 34 (54%) respondents rated themselves excellent in terms of keywords formulation; 21 (33%) rated themselves good while 8 (13%) rated themselves poor in terms of keywords formulations.

4.5.11 Reasons for the rating scale chosen in Figure 4.5

This question asked the respondents to motivate why they have rated themselves as in Figure 4.5. The respondents gave different responses that were not discussed in full. Their responses were then classified into themes and presented as follows:

4.5.11.1 Reasons for rating self-efficacy levels in terms of using search tools and techniques as poor

The findings revealed that some respondents rated themselves poor because they still struggle with the formulation of keywords and others indicated that it is because they still struggle with the use of Boolean operators when searching for information. Moreover, other respondents indicated that it is because they are still struggling with the use of truncations. Some respondents expressed that:

Respondent 1: "To be honest I wonder if I'll ever understand truncation. It is difficult for me"

Respondent 2: "If the topic or title is too long, I end up being confused. In reality, keywords can be problematic".

Respondent 3: "I rated my self-efficacy levels poor in terms of using search tools and techniques because I can use them on my own".

Respondent 4: "The use of search tools and techniques is difficult; it is, therefore, the reason I rely on free online databases".

4.5.11.2 Reasons for rating self-efficacy levels in terms of using search tools as good

The findings show that the respondents rated themselves good because they are able to get relevant information using Boolean operators; some rated themselves good because they attended a training where they were taught how to formulate keywords for any given topic while other respondents mentioned that they rated themselves good because their self-efficacy levels are enhanced. For detailed responses, there are the following statements:

Respondent 1: "I now have enhanced self-efficacy levels in terms of using OCDs after attending the training. Yes, I hope to perform excellently next time".

Respondent 2: "Keyword formulation depends on the length of the topic, so if the topic is not long, I can formulate keywords from it".

Respondent 3: "I regard my self-efficacy levels good because I excel with the use of Boolean operators".

4.5.11.3 Reasons for rating self-efficacy levels in using search tools and techniques as excellent

It is depicted from the findings that the respondents rated themselves excellent because they are able to use Boolean operators, which is required when using OCD such as EBSCOhost. Some rated themselves excellent because they are able to formulate keywords for any given topic because during the OCD training they were given a chance to formulate keywords using topics of their own interests. Other respondents rated themselves excellent because they are able to use all the search tools and techniques they were trained on. For a detailed response, there is the following statement:

Respondent 1: "Because of OCD training I am able to formulate keywords and use Boolean operators using all the OCDs we were trained on".

Respondent 2: "I produce good assignments using search tools and techniques"

Respondent 3: "I have enhanced self-efficacy levels in terms of using all the search tools and techniques".

Respondent 4: "I am able to use the search tools and techniques that we were not trained on to search relevant information for my essay"

4.5.12 Frequency of accessing OCDs

This question sought to check how frequent students access OCDs. As such, they were asked to use the scale: Rarely; Sometimes and Usually to indicate how frequently they access OCDs. Findings are presented in Figure 4.6.

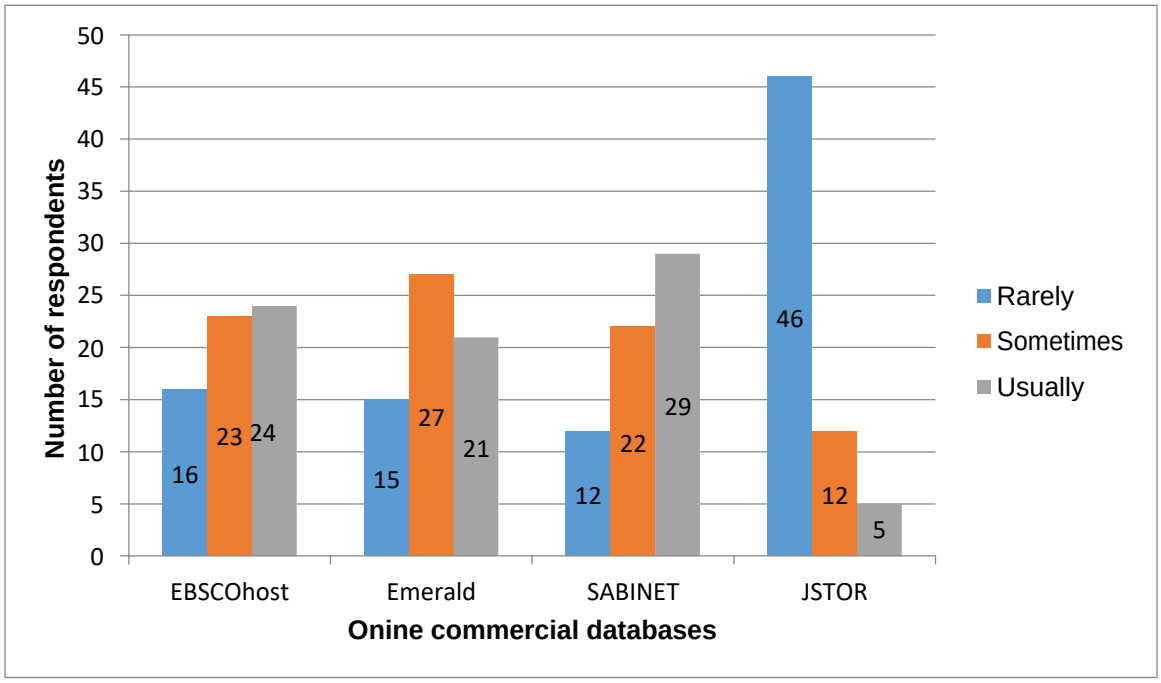

Figure 4.6: Frequency of accessing OCDs

The findings show that 16 (25%) respondents rarely access EBSCOhost; 23 (37%) access it sometimes and 24 (38%) access it usually. Emerald is rarely accessed by 15 (24%) respondents and sometimes accessed by 27 (43%) while 21 (36%) usually access it. The findings again reveal that 12 (19%) respondents rarely access SABINET, 22 (35%) access it sometimes while 29 (46%) access it usually. Lastly, Figure 4.6 shows that JSTOR was rarely accessed by 46 (82%) respondents, sometimes accessed by 12 (19%) and it is usually accessed by 5 (8%).

4.5.13 Practice to improve ones' self-efficacy levels after the OCD training

The researcher wanted to find out if the respondents search OCDs independently after OCD training. The respondents were asked to answer the question with Yes or No. The findings are presented in Figure 4.7.

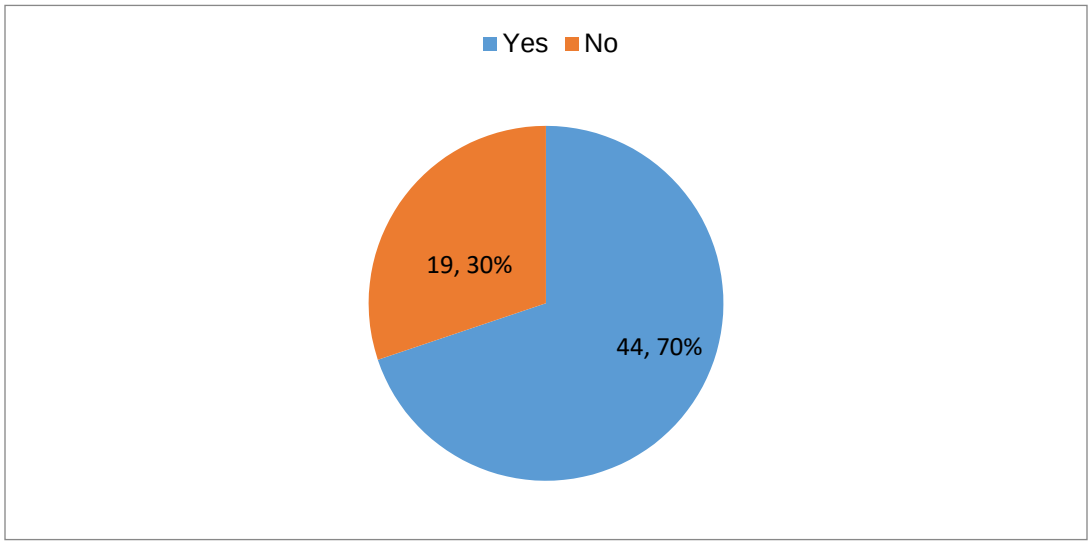

Figure 4.7: Practice to improve self-efficacy level

The findings reveal that the majority of 44 (70%) of the respondents chose "YES" to the question while 19 (30%) chose "YES". This implies that the majority of the respondents did practice the use of OCDs to improve their self-efficacy levels on their own after OCD training.

4.5.14 Improvement of self-efficacy levels due to more practice

With this question, respondents were asked to indicate how their self-efficacy levels have improved due to more practice. Their responses were classified in the following themes:

i) Ability to use search tools and techniques

From the responses, it is revealed that respondents indicated that due to more practice, their self-efficacy levels have improved as they have the ability to use search tools and techniques.

ii) Ability to search for information using OCDs without help

The respondents indicated that because of more practice, they are able to search for information using OCDs without help from librarians and classmates and this improved their self-efficacy levels.

iii) Improvement of academic work

The findings reveal that the academic work of the respondents has improved due to more practice.

4.5.15 Improvement of academic work because of the ability to use OCDs (N=63)

The respondents were asked if they regard their academic work as having improved because of their ability to use OCDs. The respondents were requested to answer the question with Yes or No. The findings are presented in Table 4.7.

Table 4.7: Improvement of academic work because of the ability to use OCDs (N=63)

Improvement of academic work because of the ability to use OCDs	N	%
• Yes	63	100
• No	0	0

Table 4.7 indicates that 63 (100%) respondents chose “Yes”. None of the respondents chose “No”. These findings show that all the respondents regard their academic work as having improved since they are able to use OCDs.

4.5.16 Reasons for stating that academic work has improved because of the ability to use OCDs

The respondents were asked to motivate their answer provided in question 4.5.15. Since this was an open question. Answers were grouped according to the following themes:

i) Obtained good marks

The findings revealed that the respondents stated that their academic work has improved because they are getting good marks in their academic work because they no longer rely on free online databases when completing assignments. Relying on OCDs benefits them because they get good marks as there are marks allocated in their assignments for citing information from OCDs.

ii) Writing good assignments

The respondents indicated that they stated that their academic work has improved because they produce good assignments with less percentage of plagiarism because they cite journals, books and abstracts from OCDs.

iii) Good presentations

Out of 63 respondents, some respondents revealed that their academic performance has improved because they are able to make good presentations that score them good marks from information access from OCDs.

4.5.17 Impact of self-efficacy levels on students' academic work

With this question, the respondents were asked to highlight how self-efficacy levels impacted their academic work. The respondents indicated that self-efficacy levels impact their academic work positively. Their responses are presented in the following themes:

i) Less percentage of plagiarism

The respondents indicated that their self-efficacy levels have impacted their academic work positively as they are able to cite and acknowledge other people's work. They mentioned that because of enhanced self-efficacy levels, their academic work always has a low percentage of plagiarism.

ii) Writing assignments with quality information

The findings revealed that respondents' enhanced self-efficacy levels have impacted their academic work positively as they are able to search OCDs and write assignments with quality information.

iii) Developed information searching skills

The respondents indicated that their academic work has improved due to their self-efficacy levels because they have developed information seeking skills that allows them to access relevant information for their research essays.

iv) Use of OCDs independently

The respondents indicated that their self-efficacy levels affected their academic work positively as they can use OCDs without help from others, which they were not able to do before the OCD training.

4.5.18 Estimated percentage of OCDs reference sources used to complete assignments since attending OCD training (N=63).

In this question, the respondents were requested to state the percentage of OCDs reference sources used to complete assignments since attending OCD training. The findings are presented in Figure 4.8.

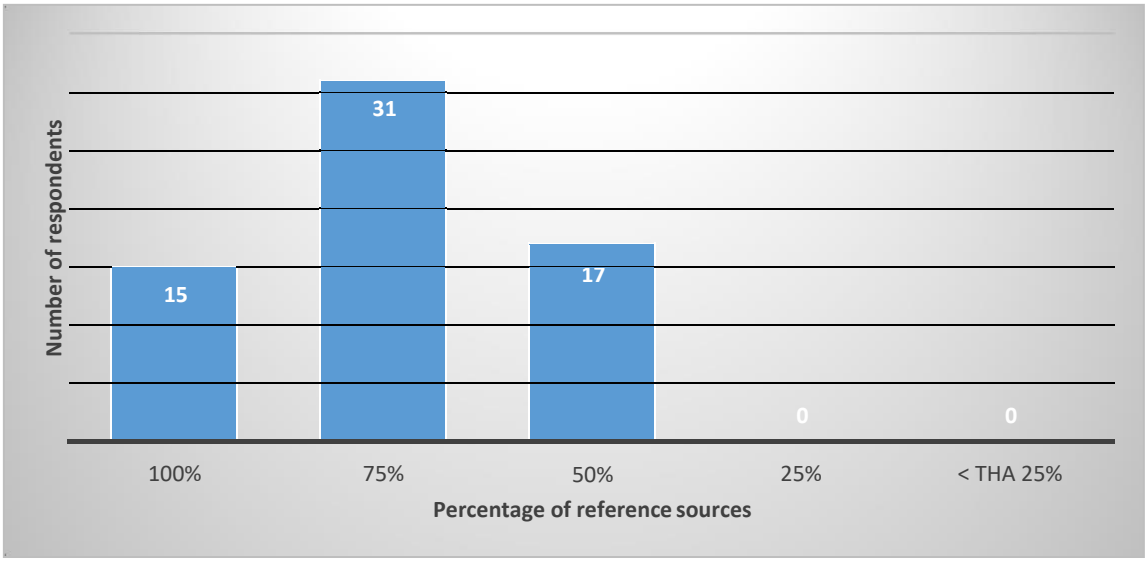

Figure 4.8: Percentage of OCDs reference sources used after the OCD training

Figure 4.8 indicates that 15 (24%) respondents indicated that they had 100% of reference sources from OCDs in their assignments, 31 (49%) had 75% while 17 (27%) had 50% of reference sources from OCDs in their assignments they completed since attending the OCD training. None of the respondents indicated that they had 25% and less than 25% of reference sources from OCDs in their assignments. These findings do not relate well with the findings in Table 4.1, which indicated that the majority of respondents used free online databases to complete their assignments.

4.5.19 Strengths of the respondents in relation to self-efficacy levels in using OCDs

This was an open-ended question where the respondents were asked to state what they regard as their strength in relation to their self-efficacy levels in terms of using OCDs. Their responses are presented in themes below:

i) Citing information sources

The respondents indicated that their strength in relation to self-efficacy levels in using OCDs lies in the ability to cite information sources used to complete their academic work.

ii) Evaluation of reliable information from the Internet

The respondents indicated that their strength in relation to self-efficacy levels in using OCDs lies in the ability to evaluate reliable information from the Internet which benefits them when writing their assignments.

iii) Ability to use various OCDs independently

The respondents indicated that their strength in relation to self-efficacy levels in using OCDs lies in the ability to use various OCDs without help from librarians and classmates.

Some of the respondents expressed that:

Respondent 1: "I am able to use more than one OCD than before".

Respondent 2: "I am able to search for information independently".

Respondent 3 "I pass all my assignments because of being able to use the search tools and techniques".

Respondent 4: "I am able to reference information sources used to complete academic work".

Respondent 5: "I am able to search for information using OCDs I was not trained on".

4.5.20 Challenges students experience when using OCDs

This was an open-ended question where the respondents were asked to highlight the challenges that they are still experiencing when using OCDs. Challenges are presented according to the following themes:

i) Search tools and techniques

The respondents indicated that they still struggle with the use of truncations because they use signs which are difficult to interpret, for example (~ and *). Some other mentioned that they still have problems with keyword formulation because when the topic or title is too long it causes confusions and few indicated that they still struggle with the use of Boolean operators as indicated in Figure 4.5.

ii) Access to OCDs

The respondents who stay off-campus indicated that whenever they have to complete their assignments, they do not have access to OCDs. Some respondents who stayed off-campus wrote:

Respondent 1: "We students staying off-campus struggle to get access to OCDs and it is a problem to write our assignment after hours because we do not have access to free WI-FI and computer laboratories".

Respondent 2: "As much as access to OCDs is available off-campus, not having access to WI-FI remains a problem and most of the time I cannot afford to buy data".

iii) Inability to use OCDs without help

Some respondents indicated they face challenges when they have to access OCDs without help from others. Whenever they access OCDs they need help from classmates because they still struggle with the advanced search of information. They indicated that this is a huge challenge, as they sometimes have to complete their academic work on their own.

4.5 CHAPTER SUMMARY

This chapter presented the findings. The findings revealed that OCD training enhances self-efficacy levels of the students in terms of using OCDs. The following chapter discusses the findings of the study.

CHAPTER FIVE: DISCUSSION OF THE FINDINGS

5.1 INTRODUCTION

The previous chapter presented the findings of the study. This chapter presents a discussion of the findings that were presented in chapter four. The discussion was done in relation to research objectives, outlined in section 1.3.2, literature review discussed in chapter two, data presented in chapter four. The findings are also discussed in relation to self-efficacy theory discussed in chapter two (C.f 2.2.1). This chapter discusses the research findings to evaluate self-efficacy levels in the adoption and use of OCDs. As outlined in chapter one (C.f 1.3.1 and 1.3.2) this study introduced the aim and objectives of the study as follows:

The aim of this study was to evaluate self-efficacy levels in adoption and use of OCDs by 4th year level students pursuing BIS at UL. The objectives of the study were:

a. To solicit from students how OCD training was delivered.
b. To determine whether the self-efficacy levels of 4th year level students pursuing BIS at UL changed during the OCD training.
c. To determine the extent to which self-efficacy levels (post-training) have translated into students citing sources from OCDs in their academic work.
d. To establish the common measurement used by students to gauge their self-efficacy levels in adopting and using OCDs for their academic work.
e. To identify how 4th year level students pursuing BIS at UL dealt with the challenges they encountered during and after the OCD training.

5.2 DISCUSSION OF THE OBSERVATION

i) A computer is a vital tool needed for OCD training to take place. In this study, it was observed that there were computers in the library computer laboratory

connected to the Internet even though some were not functional. However, the OCD training was successful because the students who had no computer shared with others. This means that there is no way one can attend the training and not use the computer because one needs to perform the task given during the OCD training. Computer and the Internet are important information tools that are needed during the OCD training (Sakhaei, Motaarefi, Zinalpoor & Sadagheyani, 2017).

ii) According to Darling-Hammond, Flook, Cook-Harvey, Barron and Osher, (2019), the librarian who offers the training must be someone who knows the literacy processes and the pedagogy that determines how their students learn, know what their students need to understand and meet their standards and have high expectations for their students and encourage them to ask questions. In this study, it was observed that the librarian who offered the OCD training knew the needs of the students. This is because the librarian was able to demonstrate the use of OCDs together with the search tools and techniques. This means that because of the librarian who offered the OCD training, the self-efficacy levels of students improved in terms of using search tools and techniques.

iii) Connor (2005:228) states that students are expected to have computer skills for them to excel during the bibliographic instructions. What was observed in this study is that all the students registered for the BIS degree were computer literate and were able to ask questions. However, there were few respondents who indicated that they were not that computer literate and some respondents requested peers for assistance as indicated in Table 4.5 (C.f 4.5.3). Having computer skills helps them to do hands-on during the training. This means that respondents were able to follow the demonstration during OCD training and enhanced their self-efficacy level (Tsai et al, 2011). It is therefore expected from the respondents to adopt and use OCDs in their academic work as they show enhanced self-efficacy levels in terms of using OCDs.

iv) Delich and Roberts (2017:5) state that the training offered to students need to be divided into subsets. In this study, it was observed that the OCD training was offered for two hours. With these two hours, the librarian had to present the use of OCDs and search tools and techniques, ask questions and answer questions from the respondents. Two hours were not sufficient because the training was not divided into subsets. This means that because the OCD training was offered in a short session, some students continued using free online databases as they left the OCD training without understanding the use of search tools and techniques. Evidence to this is the findings in Table 4.1 that indicated that majority of the respondents still rely on free online databases when completing their assignments.

5.3 DISCUSSION OF DOCUMENT ANALYSIS

It is expected that students will use OCDs to complete their assignments as they showed that they have enhanced self-efficacy levels in terms of using OCDs. However, the findings revealed that majority of the respondents use journal articles from free online databases to complete their assignments even after the OCD training. This finding resembles the finding of Yahaya (2019) who indicated that high self-efficacy levels do not mean that students will adopt and use OCDs. The reason for students to rely on free online databases may be that they do not require the use of controlled vocabulary and help from librarians when searching for information. This finding is similar to the one made by Wang, Wu, Luo, Zhang and Dong (2017) which states that free online databases allow users to access unlimited information without having to use search tools and techniques.

5.4 DISCUSSION OF FINDINGS OF QUESTIONNAIRES

The findings were discussed in line with the questionnaire findings presented in section 4.5.

5.4.1 The need for OCD training

OCD training equips students with skills to use OCDs independently (Ilogho & Nkiko, 2014) as well as prepare them to complete scholarly academic work. In this study, the majority of the respondents attested that they needed training due to them lacking skills in OCD searching. For example, with the majority of the respondents lacking OCD search skills, they do confirm that they found OCD training useful as their self-efficacy levels were low hence, they relied more on Google and Yahoo search engines. The responses confirm that their experiences in OCD training were not useful in carrying out tasks related to OCD searches. In other words, they had low self-efficacy levels in OCD searching. This was confirmed by the documents analysis results whereby the majority of respondents listed reference sources from free online databases.

However, fewer respondents who did not need any training indicated that it is due to their high self-efficacy levels and they were also motivated to try difficult tasks as covered under advanced searches (Boolean operators, truncation and wildcards). Delich and Roberts (2017:3) state that “mastery experience is subjective in that if a student interprets the outcome of their actions to be successful, their self-efficacy levels are increased and they tend to remain resilient and persevere in the face of difficulty. Once established, enhanced self-efficacy tends to generalise to new situations”. The ultimate result of the whole exercise is a good performance in one‘s academic work (Shunk & DiBenedetto, 2015).

5.4.2 Delivery of OCD training

OCD training needs to be delivered in a way that will equip students with searching skills, enhance their self-efficacy levels and enable them to search information independently after the training for their academic work (UL, 2019). According to

Torkzadeh and Van Dyke (2002), when students are equipped with proper training, their self-efficacy levels improve and their academic work improves as well. In this study, the OCD training was delivered properly, this is indicated by the majority of the respondents 37 (59%) who agreed that during the OCD training, the librarian took plenty time to explain and demonstrate searching of OCDs as indicated in section 4.5.2. This means that during the OCD training, the respondents were equipped with searching skills. This resembles the finding of Mufidah (2019) that states that during the teaching practice because the students are given enough time to practice, they end up with a mixture of anticipation, anxiety, excitement and apprehension in the student teachers as they commence their teaching practice.

5.4.3 Factors that could have inhibited students to enhance self-efficacy levels during OCD training

OCD training can be affected by various factors. According to Toteng, Hoskins and Bell (2013), factors such as not being computer literate can inhibit students to enhance their self-efficacy levels during the training. Bandura (1997) states that physiological state moods, emotions, physical reactions and stress levels may influence how you feel about your personal abilities where in some cases the student who is not computer literate may have a worst challenge in using OCDs. In this study, factors that inhibited students from enhancing their self-efficacy levels in terms of using OCDs were stress, nervousness, and lack of confidence. The findings revealed that because of nervousness and stress, the students were not able to ask questions even when they were not following the demonstration which means that some respondents left the OCD training without an outstanding understanding of OCDs as they were nervous. This finding resembles the one of Van Dinther, Dochy and Seger (2011) when stating that symptoms and feelings such as anxiety, stress reactions, tension and excitement can be interpreted as signals of failure and debility and inhibit students from achieving the main goal of the training.

5.4.4 Self-efficacy levels since attending OCD training

The majority of the respondents indicated that their self-efficacy levels were at the right level since attending the OCD training. This was evidenced by their ability to search OCDs independently as indicated in section 4.5.4. This means that there is a relation between self-efficacy and OCD training. Similarly, Ankrah and Atuase (2018) state that students who are trained on OCDs will show enhanced self-efficacy after the training even though it does not guarantee that they will adopt and use OCDs.

5.4.5 Ranking of respondents' self-efficacy levels in terms of using OCDs

The respondents have different self-efficacy levels in terms of using OCDs that they were trained on. The findings indicated that the majority of the respondents rated their self-efficacy levels very high in terms of using SABINET. The respondents rated their self-efficacy levels very high in terms of using SABINET because it is easy to use compared to other OCDs. This correlates with the study findings of Harker and Kizhakkethil (2015) that state that SABINET is easy to use and contains reliable information. This finding gives a picture that students will use SABINET mostly when completing their assignments. Surprisingly, no SABINET sources appeared under the reference list of the assignments they completed after the OCD training.

5.4.6 Reason for rank order of self-efficacy levels in terms of using the OCDs rated 5 (i.e. highest) in Figure 4.2

i) The training was offered on how to use the OCD

The respondents rated SABINET the highest because they had training on how to use it. They further indicated that having training on how to use SABINET enhanced their self-efficacy levels in terms of using it compared to other OCDs. This is in line with the finding of Ilogho and Nkiko (2014) which state that training must be offered to students so that they have the ability to use OCD and rely on them. This means

that respondents will rely mostly on SABINET when completing assignments because they even indicated they usually access it as indicated in Figure 4.6 (C.f 4.5.12).

ii) SABINET is relevant to students‘ studies

Academics need relevant information sources when completing their academic work. The findings show that 31 (49%) respondents rated SABINET the highest because it contains journals, books and abstracts on Information and Computer Sciences and this helps them when they are given assignments as they are related to their modules. This means that with SABINET, the respondents have a core source of information that can help them whenever they have information need.

iii) Independent use of the OCDs

Some respondents 13 (21%) rated SABINET the highest because of the ability to use it independently. Ability to search for information independently enhances their self-efficacy levels in terms of SABINET compared to other OCDs. This means that the respondents are able to search for information for their academic work using SABINET on their own. This will help them as they can complete their tasks on time, as they do not wait for help from others.

5.4.7 The use of OCDs without help

Darling-Hammond, Flook, Cook-Harvey, Barron and Osher (2019) state that individuals will be skilful in using technology that they are trained on and they find using it being easy so that they can employ it effectively. Due to OCD training received, the majority of the respondents rated the use of SABINET easy. This was evidenced by a large number of the respondents 34 (54%) indicating that the use of SABINET was relatively easy compared to other OCDs as indicated under section 4.5.7. This means that the respondents were able to master the use of SABINET

during the OCD training and can search and retrieve unlimited information using this OCD.

5.4.8 Self-efficacy levels in the use of OCDs based on assignments completed after the OCD training

The most profound end result of enhanced self-efficacy levels is to ensure students ultimately adopt and use OCDs for their academic work. The finding of this study shows that the majority 41 (65%) of the respondents rated their self-efficacy levels in terms of using OCDs for their academic work good. This finding gives a picture that respondents use OCDs because they have high self-efficacy levels. However, this finding is inconsistent and contradicts the findings in Table 4.1 as they indicate that the majority of the respondents used free online databases to complete the assignments given after OCD training. This is because having enhanced self-efficacy levels does not mean that one will adopt and use OCDs for academic work (Sejane, 2017).

5.4.9 Reasons for a rating of self-efficacy levels based on the assignments completed after OCD training

The reasons for the rating of self-efficacy levels based on assignments completed after OCD training are discussed as follows:

5.4.9.1 Reason for a rating of self-efficacy levels based on the assignments completed after OCD training excellent

The respondents indicated that they rated their self-efficacy levels excellent in terms of using OCDs for their academic work because they are able to use various OCDs which allow them to enhance their levels of efficacy and to be able to access unlimited information. This finding indicates that only a few respondents are able to use various OCDs. This relates well with Table 4.1 (C.f 4.4) which indicated that only

a few respondents used various OCDs to complete the assignments given after the OCD training.

5.4.9.2 Reason for rating of self-efficacy level based on the assignments completed after OCD training good

According to Boakye (2015:1), there is a correlation between librarians' feedback during the training and students' performance. In line with this, the study finding revealed that the respondents indicated they rated their self-efficacy levels good because they achieve moderate marks. This could be attributed to the librarian's mode of training, wherein the respondents were given individual attention during the OCD training. This shows that the students' academic performance has improved because of OCD training.

5.4.10 Rating self-efficacy levels in terms of using search tools and techniques

In a real situation, the ability to execute searches by keywords, Boolean operators, and truncation is key in indicating that ones' self-efficacy level is at a level where they can work independently. The finding of the study indicated poor efficacy levels in terms of using truncations, which means that the respondents still struggle with the use of this search tool even after the training. This could be because of insufficient time allocated for the OCD training because the librarian did not put emphasis on the use of truncation. This means that the respondents cannot search for information using truncations without help from others.

5.4.11 Reasons for the ratings chosen in Figure 4.5

5.4.11.1 Reasons for rating self-efficacy levels in using search tools and techniques as poor

The finding indicated poor self-efficacy levels poor in terms of using search tools and techniques because of the OCD training was not tailored according to the needs of the respondents and time allocated for the training was insufficient. Therefore, the students were not able to master the use of search tools and techniques. This clearly indicates that students cannot search information for their academic work using truncation which gives a picture that if the respondents are not given training on the use of truncations, they will find themselves being librarians who cannot use search tools and techniques.

5.4.11.2 Reasons for rating self-efficacy levels in using search tools and techniques as good

It was revealed by the finding that the respondents rated their self-efficacy levels good. This is because some of the respondents were able to grasp and master the use of search tools and techniques during the OCD training. This gives a picture that the respondents have a better understanding of the use of search tool and techniques. Therefore, it can be assumed that the students are able to retrieve relevant information for their academic work using OCDs.

5.4.11.3 Reasons for rating self-efficacy levels in using search tools and techniques as excellent

Bachchhav (2016:1) states “to get proper and exact information from the Internet, users need to know the effective techniques and strategies”. In this study, the finding clearly gives a picture that the respondents are able to use search tools and techniques because they rated their self-efficacy levels excellent. This means that during the OCD training, the respondents were able to master the demonstration

on the use of all the search tools and techniques on various OCDs they were trained on. However, this finding is not consistent with what is discussed in section 5.4.11.1. Again, it is surprising that the respondents indicated that they are able to use all the search tools and techniques they were trained on whereas they do not use them in their academic work as presented in Table 4.1.

5.4.12 Frequency of accessing OCDs

The findings revealed that the majority of the respondents indicated that they rarely access JSTOR. The findings relate well with the findings of Figure 4.2 that showed that the respondents rated their self-efficacy levels very low in terms of using JSTOR, it is, therefore, the reason it is rarely accessed. This means that the respondents will not rely on JSTOR when completing assignments, especially for the fact that they indicated they have low self-efficacy in terms of using it as indicated under section 4.5.5. This finding complements the one of the sources of self-efficacy (Performance accomplishment/Past experience) which states that "the basic principle behind self-efficacy theory is that individuals are more likely to engage in activities for which they have high self-efficacy levels and less likely to engage in those they do not" (McAuley, Szabo, Gothe & Olson, 2011).

5.4.13 Practice to improve self-efficacy levels to access OCDs independently after the OCD training

It is common knowledge that practice makes perfect. Toharudin, Rahmat, and Kurniawan (2019) state that students must do tasks on their own to improve their self-efficacy levels. This is in line with the finding of the study which revealed that majority of the respondents improved their self-efficacy levels by practising on their own after the OCD training. This means that practising individually after the OCD training is important as it enhances self-efficacy levels. However, a worrisome issue is that the respondents are frequently practising the use of OCDs, which does not

teach them search skills they lack, that is of using truncation and keyword formulation. It means they will still not adopt and use OCDs as they opted for free online databases, which are easy to use.

5.4.14 Improvement of self-efficacy levels due to more practice

i) Ability to use search tools and techniques

When the student practices the use of OCD independently will have enhanced self-efficacy levels in terms of using search tools and techniques revealed by the finding of the study. This tells one that more practice on OCDs improves self-efficacy levels. When the students are able to use search tools and techniques, they will have enhanced self-efficacy in terms of using OCDs. This means that there is a relation between self-efficacy and ability to search for tools and techniques such as Boolean operators.

ii) Ability to search for information using OCDs without help

Practising the use of OCDs independently gives the students the ability to search OCDs without help from others. Ability to use OCDs independently is a good thing because students are sometimes given tasks they have to complete on their own and in some cases, classmate are not available to offer the help they will complete them on their own. This makes the researcher say more practice is needed for the respondents to overcome the challenges they still encounter and also to adopt and use OCDs.

iii) Improvement of academic work

Wirawan and Bandu (2016:118) indicate that more practice is an important tool that can be used to improve self-efficacy levels. The findings revealed that the academic work of the respondents has improved due to more practice. This is evidenced by the respondents who indicated that there is an improvement in their academic work

because of more practice. This could be because the more they practice, the more they master the use of OCDs and this enhances their self-efficacy levels.

5.4.15. Improvement of academic work because of the ability to use OCDs

For one to prove that students' work has improved post OCD training is when they are citing scholarly journal articles and searching for them independently. Basri, Alandenjani and Almadani (2018:1) assume that there is a relationship between OCDs use and academic performance. It is not surprising that all 63 (100%) respondents affirmed that their academic work improved because of the ability to use OCDs. Other researchers such as Nasir and Iqbal (2019:33) confirm that higher academic self-efficacy levels show better academic performance. This is further supported by researches who show that self-efficacy relates with the academic performance of students when they are able to access information independently (Karaseva, 2016; Schunk 2012). Failure of students to improve their academic work can be the fault of the student or librarian and will translate in academic goals not being reached.

5.4.16 Reasons for stating that academic work has improved because of the ability to use OCDs

i) Obtained good marks

The respondents indicated that because of being able to use OCDs, they are obtaining good marks in their academic work because they are no longer relying on free online databases. This means that relying on OCDs benefits them because they get good marks as there are marks allocated in their assignments for citing information from OCDs. This finding confirms Nasir and Iqbal's (2019:33) finding that higher academic self-efficacy levels show better academic performance.

ii) Writing good assignments

The findings revealed that the respondents indicated that their academic work has improved because of the ability to use the OCDs as they are able to produce good assignments with information obtained from OCDs. This clearly shows that OCDs play a vital role in the academic performance of the respondents.

iii) Good presentations

Basri, Alandenjani and Almadani (2018:1) state that there is a relationship between self-efficacy and academic performance. In this study, it is noted that because of high self-efficacy in the ability to use the OCDs, the respondents excelled academically as they were making good presentations. This means that when students are able to use OCDs, they produced good presentations.

5.4.17 Impact of self-efficacy on students' academic work

i) Less percentage of plagiarism

OCD training enhances self-efficacy levels of the students which enable them to cite others' work and have less percentage of plagiarism. The finding of this study means that the respondents complete their academic work with information from OCDs as it has citations which helps one not use others' work as his or her own. This means that the respondents are able to search relevant information, cite, paraphrase and produce quality academic work with less percentage of Turn-it-in report.

ii) Writing assignments with quality information

Producing quality assignments need one to use relevant and quality information. The finding of this study means that the respondents have the ability to write assignments with quality information. This means that the respondents are able to use OCDs as they are the ones that contain quality information as compare to free online databases.

iii) Developed information searching skills

The respondents have developed information-searching skills because during the OCD training they were given a chance to search for information of their interest to enhance their searching skills. This means that the students can search for information for their academic work because they have developed searching skills.

iv) Use of OCDs independently

Mawere (2018) states that nowadays the students carry the library wherever they go. Therefore, they must be able to use the OCDs on their own. In line with this is the finding of this study that states that the respondents have the ability to use OCDs independently. Ability to use OCDs independently is a need in academia because a lot of tasks requires students to complete them on their own.

5.4.18 Reference sources cited from OCDs to complete assignments after OCD training

In addition to physically checking reference lists, a question was directed at respondents to indicate the percentage of OCD information sources they usually cite in assignments. The findings of this study showed that the majority of the respondents claimed to rely on OCDs when completing assignments. This was revealed by 31 (49%) respondents who indicated that they had 75% of reference sources from OCDs in their assignments they completed since attending the OCD training as indicated in section 4.5.18. This finding resembles the study finding of Akuffo and Budu (2019) that states that university students mainly use e-resources for academic purposes. It is however, significant to note the contradiction that was noted in figures 4.4 and 4.8.

5.4.19 Strengths of the respondents in relation to their self-efficacy levels in using OCDs

Street, Malmberg and Stylianides (2017) indicate that students measure their self-efficacy levels in terms of three basic scales: magnitude, strength, and generality. In this study, the respondents indicated that their strength is to use various OCDs independently. This means that they can access information for academic work without help from others. This is a good thing because when students are given assignments, they are expected to submit good quality work on time, hence they are able to search on their own it means they will be able to complete their work without having to wait for classmates or librarians to help them.

5.4.20 Challenges students experience in terms of using OCDs

i) Search tools and techniques

Challenges facing students largely relates to search tools and techniques, specifically, truncations. This is because the use of truncation is difficult compared to other search tools and techniques. Again, the finding of the study revealed that the respondents still have challenges with the formulation of keywords and the use of Boolean operators. Musingafi, Mapuranga, Chiwanza and Zebron (2015:62) state that, “the university has regional computerised and digitalised libraries and computer laboratories. If the majority of students cannot operate these gadgets and systems, then they are nothing but simply white elephants that have no purpose in the university”. In line with the findings that the majority of the respondents still struggle with the use of truncations, it means they cannot search for information using OCDs that require the use of search tools and techniques.

ii) Access to OCDs

The findings of the study revealed that OCDs are not accessible to the respondents. Twenty-eight (56%) respondents who reported not being able to access OCDs for

their academic work evidenced this. This may be because of some respondents residing off-campus where there is no access to Wi-Fi. Hence, the respondents do not have access to OCDs when they are not on campus. These findings results are somehow related to findings of a study conducted by Aina (2014:45) which established how certain databases were not accessible to respondents despite the fact that these resources were subscribed to and respondents were aware of them. The databases were not all fully accessible due to an inadequate internet facility and electricity supply‖. This meant that when students are off-campus they cannot access OCDs due to no WI-FI (Apuke & Iyendo, 2018).

iii) Inability to use OCDs without help

Inability to search the OCDs independently is a serious challenge faced by the respondents after the OCD training. When respondents are not able to search OCDs on their own it means they cannot complete their academic work on their own. Not being able to complete assignments alone means that the student can fail, complete the assignment with information from free online databases as indicated in Table 4.1 or submit tasks late as having to wait for a classmate to help with the searches. This means that it is important for the student to be able to use OCD independently.

5.5 CHAPTER SUMMARY

This chapter discussed the findings of the study. This study found that the OCD training enhances the self-efficacy levels of the students in terms of using OCD but they continue to rely on free online databases. The following chapter presents the summary, conclusion and recommendations of the study.

CHAPTER SIX: SUMMARY OF THE MAIN FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

The previous chapter discussed the findings of the study. This chapter provides a summary of the main research findings, conclusions and recommendations based on the findings of the study and areas of further study. Conclusions are drawn and recommendations made in this chapter were guided by the aim and objectives of the study as outlined in Chapter one (C.f 1.3.1 and 1.3.2). The aim of this study was to evaluate self-efficacy levels in adoption and use of OCDs by 4th year level students pursuing BIS at UL. The objectives of the study were:

- To solicit from students how OCD training was delivered.
- To determine if the self-efficacy levels of 4th year level students pursuing BIS at UL changed during the OCD training.
- To determine the extent to which self-efficacy levels (post-training) have translated into students citing sources from OCDs in their academic work.
- To establish the common measurement used by students to gauge their self-efficacy levels in adopting and using OCDs for their academic work.
- To identify how 4th year level students pursuing BIS at UL dealt with the challenges they encountered during and after the OCD training.

6.2 SUMMARY OF THE MAIN FINDINGS OF THE STUDY

In view of the discussion of the findings, the findings of the study can be summarised as follows:

- OCD training was delivered properly, this is indicated by the majority of the respondents who agreed that during the OCD the librarian took plenty of time to explain and demonstrate searching of OCDs.

- Self-efficacy level of 4th year level students pursuing BIS at UL changed during the OCD training as their self-efficacy levels changed from low to high.
- Self-efficacy levels of the students have not translated into citing sources from OCDs because the majority still rely on free online databases. In other words, high self-efficacy levels do not mean students will rely on OCDs.
- The respondents use the demonstration, the task given during the OCD training as well as the assignments given by their lecturer after the OCD training to gauge their self-efficacy levels.
- This study found out that there are major challenges that 4th year level BIS students encounter during and after the OCD training. Such challenges include search tools and techniques, access to OCDs and inability to use OCDs without help.
- There is a correlation between self-efficacy levels and students‘ performance.
- OCD training is important in students‘ academic work.

6.3 CONCLUSIONS

The following conclusions were made for this study:

- The training was delivered in a manner that allowed the students to follow the demonstration and have enhanced self-efficacy levels.
- Self-efficacy levels of 4th year level students pursuing BIS changed during the OCD training.
- Self-efficacy levels have not translated into students citing sources from OCDs.
- This study also concludes that assignments are used to gauge the self-efficacy levels of respondents in adopting and using OCDs.

- The strength of the respondents lie is being able to use various OCDs on their own unlike before.

- OCD training enhanced self-efficacy levels of the respondents in terms of using OCDs.

- The study concluded that students encounter various challenges during and after OCD training. Many of these challenges are universal and consistent with those reported in the literature. Among other challenges, search tools and techniques, access to OCDs and inability to use OCDs independently were pointed out in this study.

6.4 RECOMMENDATIONS

6.4.1 Recommendations on how the students' OCD training was delivered

- Tailoring OCD training to students‘ needs

The OCD training should be tailored to students' needs and levels since students attend OCD training with vastly different levels of preparation.

- Continuous awareness programmes about use of OCDs

Lecturers must always emphasise the importance of using OCDs and continue to allocate marks to students who use OCDs to complete their assignments as this will motivate them to rely on OCDs and librarians must encourage students during the OCD training that those who still struggle with the use of OCDs are still welcome to attend the training until they are able to master the use of OCDs and use them for academic work.

- Allocate sufficient time for demonstrating how to use OCDs

The librarian who offers the OCD training should allocate sufficient time for the demonstrations for the students to be able to master both the search of OCDs and the use of search tools and techniques.

- Ensure that all the computers are functioning at all times

The librarian who offers the OCD training should ensure that all the computers in the computer laboratory are functioning before the training starts.

- Offer the OCD training in such a way that it will allow students to feel comfortable to ask questions

The librarian responsible for offering the OCD training should ensure that the training is offered in a manner that will allow students to ask questions so that they will enhance their self-efficacy levels and master the search of OCDs.

6.4.2 Recommendations about whether the self-efficacy levels of BIS 4th year level students changed during the OCD training

The respondents must be offered OCD training from the first year so that during their 4th year level their self-efficacy levels will be at the right level and using OCDs.

6.4.3 Recommendations on the extent to which self-efficacy (post-training) has translated into students citing sources from OCDs

- OCD training to be assessed

The UL-Library should integrate their OCD training with BIS modules so that students will use their enhanced self-efficacy levels to adopt and use OCDs and not continue to rely on free online databases.

6.4.4 Recommendations on common measurement students use to gauge their self-efficacy in adopting and using OCDs for their academic work

- The students should be given assignments more often so that they will use OCDs more often and master their use.
- The students should attend the BI offered by the library every week for them to have enhanced self-efficacy levels and rely on OCDs to complete academic work.

6.4.5 Recommendations on challenges that BIS 4th year level students encounter during and after the OCD training

The library should offer training strictly on the use of search tools and techniques so that students will master their use because OCDs requires the use of the search tools and techniques.

- Train the trainer

These students with high self-efficacy levels should be requested to help students with low self-efficacy levels.

6.5 AREAS FOR FURTHER STUDIES

Although the study has tried hard to achieve a high level of depth, there are certain areas that need to be explored further. Based on the conclusions of this study, the researcher recommends the following for further investigations:

- To use interviews as a way to collect data.
- To evaluate lecturers' role in encouraging students to use OCDs instead of free online databases.

6.6 LIMITATIONS OF THE STUDY

Limitations are inherent in academic work. No researcher can do it all and do it perfectly (Hofstee, 2006:87). In this study, the limitations were as follows:

- Selection of only one assignment (HINA041 assignment). Selecting one assignment may be biased as some respondents could have done better in the previous assignments.
- The researcher was working under time and financial constraints. As such the researcher had to sample the selected population and complete the study within the stipulated time.

6.7 CHAPTER SUMMARY

This chapter focused on the summary of the main findings of the study, conclusions, recommendations, areas for further study and limitations of the study. It has shown that the OCD training plays a crucial role in the academic work of the students. The students show enhanced self-efficacy levels after OCD training. In addition to the findings and conclusions of the study, this chapter also offered recommendations that can assist the management of the UL-Library to know whether the OCD training is important to the students or not and if students use the OCDs for their academic work.

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Annexure A: Covering letter

University of Limpopo

Dear Sir/Madam

QUESTIONNAIRE ON SELF-EFFICACY IN THE ADOPTION AND USE OF ONLINE COMMERCIAL DATABASES (OCDs): A CASE STUDY OF 4TH YEAR LEVEL STUDENTS PURSUING BACHELOR OF INFORMATION STUDIES (BIS) DEGREE, UNIVERSITY OF LIMPOPO (UL).

I am writing this letter to seek your help in a study that I am carrying out. Specifically, I am aiming to investigate if the 4th year level students pursuing BIS degree at the University of Limpopo after attending OCD training have enough self-efficacy to adopt and use them.

This university has been chosen because the study will focus on self-efficacy in the adoption and use of online databases by the 4th year level students pursuing BIS at UL. The research is being carried out within my degree programme in Information Studies at the University of Limpopo.

You will see on the enclosed questionnaire that the questions are simple to answer and they may take less than fifteen minutes to complete them. Your name's anonymity is guaranteed and the answers given will remain confidential.

Thank you.

Yours sincerely

Moraka T 201214086 .....

Annexure B: Ethical clearance certificate

University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 3935, Fax: (015) 268 2306, Email: anastasia.ngobe@ul.ac.za

TURFLOOP RESEARCH ETHICS COMMITTEE

ETHICS CLEARANCE CERTIFICATE

MEETING: February 2018

PROJECT NUMBER: TREC/53/2019: PG

PROJECT:

Title: Self-efficacy in the adoption of online commercial databases: A case study of 4th level students pursuing Bachelor of Information Studies degree, University of Limpopo.

Researcher: T Moraka
Supervisor: Ms. JM Ntsala
Co-Supervisor/s: Dr. MA Dikotla
School: Languages and Communication
Degree: Masters in Information Studies

PROF P MASOKO
CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: **REC-0310111-031**

Note:

i) **This Ethics Clearance Certificate will be valid for one (1) year, as from the abovementioned date. Application for annual renewal (or annual review) need to be received by TREC one month before lapse of this period.**

ii) **Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee, together with the Application for Amendment form.**

iii) **PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.**

Finding solutions for Africa

Annexure C: Authorisation letter from HoD

University of Limpopo
Department of Communication, Media and Information Studies
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 4015, Email:solomon.bopape@ul.ac.za

To: **Ms. MJ. Ntsala**
Lecturer: Programme of Information Studies

From: Prof. ST Bopape
HoD: Dept. of Communication, Media & Information Studies

Date: 14 March 2019

Subject: Departmental permission to conduct research

The purpose of this letter is to grant Moraka Thereza (Student no: - 201214086), permission to conduct research in the Programme of Information Studies. The dissertation is titled, "**SELF-EFFICACY IN THE ADOPTION AND USE OF ONLINE COMMERCIAL DATABASES: A CASE STUDY OF 4TH LEVEL STUDENTS PURSUING BACHELOR OF INFORMATION STUDIES DEGREE, UNIVERSITY OF LIMPOPO**". This also serves as assurance that the department complies with the University of Limpopo policy regarding ethical considerations and will ensure that these requirements are followed in the conduct of this research.

Sincerely,

HoD

Annexure D: Consent cover letter

Dear Respondent

My name is Thereza Moraka; I am currently doing my Master in the Programme of Information Studies, University of Limpopo. I am undertaking a research project which attempts to evaluate self-efficacy in the adoption and use of OCDs by 4th year level students pursuing BIS at UL.

This study will help the management of UL library to find out whether the training they offer to students is important and if students use the OCDs to complete their academic work. Again, this study will assist the lecturers of the Programme of Information Studies to find out if students rely on OCDs as recommended and emphasised in lecture halls or if they rely on free online databases.

Please understand that you are not being forced to fill this questionnaire. However, I would really appreciate it if you do participate in this study. If you choose not to fill this questionnaire, you will not be affected in any way. If you agree to participate, you may stop at any time and tell me that cannot continue completing the questionnaire. If you do this, there will also be no penalties.

Confidentiality will be observed professionally. Your names will not be recorded anywhere and no one will be able to link you to the answers you give. Only the researcher will have access to the unlinked information. The information will remain confidential and there will be no “come-backs” from the answers you give. The questionnaire will take only 15 minutes of your time.

If you have concerns or questions about this study, please contact: Researcher: Thereza Moraka: Cell: 0723860918, Email: morakathereza@gmail.com OR the Supervisor: Ms. M.J Ntsala at: Tel: 015 268 2606, Email: morongoe.ntsala@ul.ac.za.

Yours Sincerely

……

Moraka T

Annexure E: Consent form

CONSENT FORM

I agree to participate in the questionnaire of the study upon the following conditions, and shall freely withdraw from the participation should I feel that the conditions are not being met:

1. The researcher has explained to me in comprehensive terms the nature and purpose of the study.

2. My participation is voluntary and I have the right to withdraw without risking any penalty or loss.

3. That I shall remain anonymous in the study and that raw data from this participation or any other interactions during the study will remain confidential. The data will not be used to disadvantage me, that no other person other than the researcher, the supervisor, and me will have access to the raw data.

…… …… ……

Respondent Date Place

Annexure F: Questionnaire

You have been through online commercial database (OCD) training course offered by the University of Limpopo library in February. Since then your lecturers have given you assignments to complete whereby they expected you to adopt and use online commercial databases (OCDs). PLEASE ANSWER ALL QUESTIONS. IT IS IMPORTANT FOR THE RESEARCHER TO HAVE COMPLETE ANSWERS.

1. You attend online commercial databases training prior to the compulsory one you attended at 4th level. Please respond to the following statements by indicating the most suitable answer with an X.	Strongly Agree	Agree	Disagree	Strongly Disagree
• I did not need more OCD training as my efficacy is high and was already using them at the time of training	①	②	③	④
• The OCD training was helpful as my efficacy was low and was relying more on Google & Yahoo search engines	①	②	③	④
Other (Please comment in the space provided)				
2. How the OCD training was delivered, making you believe that it has enhanced your efficacy level? Please tick all that apply.	Strongly Agree	Agree	Disagree	Strongly Disagree
Verbal persuasion by the training librarian	A			
• Librarian took enough time to explain and to demonstrate searching of OCDs	①	②	③	④
• Librarian paused to give us time to ask questions	①	②	③	④

• Librarian warned us of what to avoid when formulating keywords	①	②	③	④
• Librarian ensured that we followed his step by step demonstrations	①	②	③	④
• Librarian gave us a chance of searching the exact topic that he was using as part of his demonstration	①	②	③	④
• Librarian also allowed us to search topics of interest and was helpful to assist those struggling to get relevant information sources	①	②	③	④
• Librarian was patient enough to repeat when he asked us a question and noted that we were not able to give answers	①	②	③	④
• Librarian corrected us when we gave incorrect answers	①	②	③	④
• Other (Please comment in the space provided)				
3. What factors could have inhibited you to develop strong efficacy levels during the OCD training? (Tick all that apply)	Strongly Agree	Agree	Disagree	Strongly Disagree
Physiological states				
• As a student I somehow failed to imitate the librarian during training	①	②	③	④
• My stress level was high as the student was not sure that was correctly following the search tools	①	②	③	④

• The student lacked confidence as was worried that once alone, won't be able to search OCDs on my own	①	②	③	④
Performance accomplishments				
• As a student I was worried that his or her search was not going to retrieve the same results as that of the librarians and other students	①	②	③	④
• Student's efficacy levels were not at the right level	①	②	③	④
Performance accomplishment and physiological state				
• As a student I could not ask questions as he or she feared that the librarian and some classmates would note that is not that computer literate	①	②	③	④
• As a student I could not ask questions as he or she feared that the librarian and some classmates would note that even though he or she is computer literate is unable to search using Boolean operators and truncation	①	②	③	④
Other (Please comment in the space provided)				
4. Please circle the number that comes closest to your efficacy level since attending the OCD training. Strongly Agree =① ; Agree = ②; = Disagree =③ ; Strongly Disagree =④	Strongly Agree	Agree	Disagree	Strongly Disagree
• Student's self-efficacy is at a high level	①	②	③	④
• Student do independent searches without the librarians	①	②	③	④

5. Below are the four OCDs you were trained on. Please rank your order of efficacy levels in the use of the following OCDs from highest to lowest. Your lowest being 1 and the highest 5.
• _____EBSCOhost • _____Emerald • _____SABINET • _____JSTOR
5.1 Why do you rank your self-efficacy levels in the use of OCDs 5 (i.e. highest) in question 6?

6. How do you rate your efficacy level in the use of the following online commercial databases without help from anyone? Easy = ① Moderate = ② Hard = ③	Easy	Moderate	Hard
• EBSCOhost	①	②	③
• Emerald	①	②	③
• SABINET	①	②	③
• JSTOR	①	②	③

7. Looking at the assignments that you completed this year after the OCD training, rate your efficacy level in relation to the use of OCDs **Poor =①; Good = ②; Excellent = ③**	Poor	Good	Excellent
	①	②	③

7.1 Please motivate why you rated yourself poor, good or excellent

8. How do you rate your efficacy in terms of using the following search tools: Poor =①; Good = ②; Excellent = ③	Poor	Good	Excellent
• Truncations (wildcat symbols) (e.g. *)	①	②	③
• Boolean operators (e.g. and; or; and/or)	①	②	③
• Keywords formulation	①	②	③
8.1 Why have you rated yourself in that specific way? Please comment.			

9. How frequently do you access the following OCDs since the training? Rarely = ①; Sometimes = ②; Usually = ③	Rarely	Sometim	Usually
• EBSCOhost	①	②	③
• Emerald	①	②	③
• SABINET	①	②	③
• JSTOR	①	②	③

10. Did you at one stage practice to improve your efficacy level in terms of accessing OCDs on your own after the training?	
• YES	①
• NO	②
10.1 If YES, how has your efficacy improved due to more practice?	

11. Do you regard your academic work as having improved since you are able to use OCDs?	
• YES	①
• NO	②

11.1 Please motivate your answer (Either YES or NO)
12. How has self-efficacy impacted your studies (are you able to complete your assignments using OCDs?) Please elaborate.

13. You have been completing assignments since attending OCD training. What is the percentage of the reference sources from the OCDs?	**100 %**	**75%**	**50 %**	**25 %**	**< than 25%**

14. After the training, what do you regard as your strengths in relation to your self-efficacy levels in using OCDs?
15. Challenges that you experience with the use of OCDs in order to enhance self-efficacy levels

THANK YOU FOR MAKING TIME TO COMPLETE THIS QUESTIONNAIRE

Annexure G: Observation guide

1. Library computer laboratory

2. Computers

3. Librarian

4. Students

Annexure H: Assignment writing guideline checklist

UNIVERSITY OF LIMPOPO

PROGRAMME OF INFORMATION STUDIES

2019

- It is important to produce work of high quality. This is possible to achieve if you start early. In case you do not understand the assignment, check the meaning of words in the dictionary.
- Read as many books and take down notes.
- Consult your lecturers for more clarification.
- In case of typing and making sure your work is presentable ask classmates or people who are with you at various computer labs. Check computer lab assistants for help**.**

Checklist before you submit your assignment:

Assignment	
SUBSCRIPTION DATABASES OR FREE ONLINE DATABASES[2]	
1. You attended Advanced Bibliographic Instruction (ABI). Use appropriate sources. Reference lists to be assessed.	
2. Are the sources used current and authentic?	
PLAGIARISM[3]	
3. No plagiarism and no ‘cut and paste‘. Use TURNITIN to address the issue.	
REFERENCING AND CONSISTENCY	
4. Did I use Harvard- British style?	
5. Are authors correctly cited? No initials in-text?	

[2] Subscription databases (EBSCOhost, Science Direct, SABINET, etc. Free online databases (Google, Yahoo & Bing)
[3] Check University policy on plagiarism.

6. Is there consistency in the way I have cited?	
7. Did I use &/ and correctly?	
8. What about the place of publication/publisher? Check under which conditions you are allowed to add countries (e.g. UK, USA or South Africa).	
9. Are book/journal titles in italics?	
10. Check that sources other than books or journal articles are correctly cited and referenced.	
11. Check whether you use journal vol. 4.no, pp. (e.g. *Mousaion* 4(3):5-13	
12. If it is a source from the internet, do I have the website and the date accessed?	