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UNIVERSITY OF GHANA

COLLEGE OF EDUCATION

SCHOOL OF INFORMATION AND COMMUNICATION STUDIES

DEPARTMENT OF INFORMATION STUDIES

THE USE OF THE INTERNET BY STUDENTS OF PRESBYTERIAN UNIVERSITY COLLEGE

BY

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THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PHLILOSOPHY IN INFORMATION STUDIES DEGREE

DECEMBER 2021

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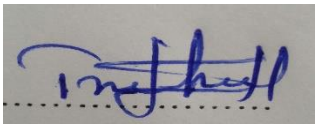
DECLARATION

I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere. All the sources used have been duly acknowledged.



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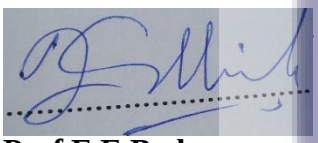

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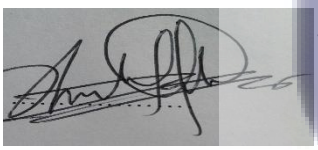

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DEDICATION

This thesis is dedicated to my parents, Mr and Mrs Adusei, my husband Samuel Akuffo Kissiedu and my son, Kwadwo Adusei Kissiedu.

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ACKNOWLEDGEMENT

First of all, I would like to thank the Almighty God for giving me the ability to go through this program successfully. I owe tons of gratitude to my main supervisor Prof E.E. Badu and co-supervisor Dr. Ebenezer Ankrah for their constant guidance and support throughout this project work.

My profound gratitude also goes to all the lecturers in the Department of Information Studies for their contribution towards my academic life. I must say that, I have really learnt a lot from them.

My next gratitude goes to my husband and parents for morally and financially supporting me throughout my education up to this level. Without their support, I would not have come this far.

To the students of Presbyterian University College, who answered the questionnaire that contributed to the success of this study, I say God richly bless you.

Finally, all those whose voices went into the writing of this thesis, may the Almighty God bless you.

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LIST OF ACCRONYMS AND ABBREVIATIONS

PUCG……Presbyterian University College, Ghana

F.U…….....Final Year Undergraduates

P.G…….....Postgraduates

SPSS…….....Statistical Package for Social Sciences

TAM……Technological Acceptance Model

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ABSTRACT

The use of Internet has become integral to accessing information by students. This study sought to do a comparative study on the use of the Internet by postgraduates and final year undergraduates of Presbyterian University College. The study compares students' awareness and use of some selected Internet resources, their perceptions on the ease of use of Internet, their perception on the usefulness of Internet to their academic work, their attitude towards Internet use, their knowledge on Internet search strategies as well as challenges they encountered with its use. The study employed the cross sectional survey and a stratified simple random sampling was used in selecting 200 respondents from the total student population of 1020.

Major findings of the study showed that, postgraduates were generally older adults between the ages of 40.-50 whilst the undergraduates were younger adults between the ages of 21-30. Google and Google Scholar were found to be the Internet resources mostly known and used for academic work by both groups of students with less use of the University's subscribed e-resources and Institutional Repository. The responses from the students also indicated that both groups of students lacked knowledge on effective Internet search strategies such as the Boolean Logic. Although the students generally perceived the Internet to be useful, postgraduates did not perceive the use of Internet to be easy. Attitude towards Internet use by the postgraduates was negative compared to the final year undergraduates. Major challenges of Internet use included slow Internet speed, difficulty in finding the needed information and information overload, high cost of Internet, lack of wireless Internet and inadequate computers in the University Library and restriction of access to the ICT lab.

Recommendations made include increasing awareness and use of subscribed e-resources (academic database), mounting a course on Information Retrieval on the Internet(search

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strategies), increasing the number of computers and installation of wireless Internet in the library, an investment in Internet Bandwidth, provision of hands-on training for students on how to search for information so that students can effectively make use of the Internet for their academic work.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The lives of millions of people around the world have been dramatically altered by Internet use and it therefore plays an essential role in meeting the communication and information needs of learners. The Internet has brought reforms in the area of business, education, governance, healthcare, and even the way people interact relationally (Dentzel 2014)

Previously, one had to walk to a newspaper stand or wait for the paper boy to throw our newspaper at the doorstep (or into the flowers) before we could read and know what was happening around us. Information sharing among people was done by movement from one place to another in order to send, receive or exchange information. Now, it is possible to get information 24/7 from wherever we are on the planet through our phones and online social platforms. Finding people with like interest has been made possible with the Internet. It has enabled people to have access to those that they would have never met in their entire life to become friends thereby flattening the world. (Dietrich, 2011).

1.1.1 Life before Internet

Back in the days before the emergence of the Internet, students made use of encyclopedias and text books if they wanted information about any subject. People including students could learn everything about anything that was known at the time using print media. Sets one could buy included World Book Encyclopedias, Encyclopedia Britannica, and Colier's Encyclopedia.

According to McFadden (2020) **“** Long before Google was even a glint in Sergey Brin one had to work to find information. There used to be things called books, specifically encyclopedias,

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buildings with books (called a library), and for those more tech-savvy there was the mighty Encarta '95". He referred to that period as "the dark times" when one needed to actually search, and read through reams of texts for the information one was looking for. (para 5)

Again, before the Internet, socialization had to take place outside the homes of people. Watching a movie required one to go and pay at a cinema and one had to actually meet and make friends with people in person. Today there is a plethora of platforms and apps like Youtube, Whatsapp, Facebook, Instagram, that allows one to makes friends and watch movies from the comfort zone of their homes.

Social media posts were actually posted on a real wall prior to the advent of the Internet. If one wanted to put up some information for everyone to see there was the need to physically stick something to a wall. A hard copy post needed to be printed, carried somewhere, and stuck to a noticeboard, wall, or another surface.

1.1.2 Life with Internet Today

According to Almarabeh et al (2016), the use of the Internet has grown rapidly during the last decade and currently, millions of people are connected to the Internet making it the backbone of the information economy. It is therefore not surprising that, this age has been referred to as the information age. There is the belief that, the 21st century society is knowledge based, and information and knowledge are vital to the survival of the human race(Rowley and Hartley, 2008)

A survey conducted on global digital population as at October 2020 revealed that almost "4.66 billion people were active Internet users as at October 2020, representing 59 percent of the global population. The survey also revealed that, Mobile phone has now become the most important channel for Internet access worldwide as mobile Internet users account for 91 percent of total

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Internet users" (Statista.com 2021). There are however, stark differences in user distribution according to region. For instance, East Asia has 923 million Internet users, while African and the Middle Eastern regions have lower user figures (Statista.com 2021).

The Internet penetration rate in Ghana as at January 2020, increased to 48 % from 35 % in January 2019 . The indicator is an expression of the percentage of the total population that makes use of the Internet. The number of users of Internet in the last years has been rapidly increasing in the West African countries. (Sasu 2020).

1.1.3 Students' Use of Internet for Academic and Other Activities

Several studies reveal that, students access the Internet either for academic or entertainment purposes. A study by Soegoto and Tjokroadiponto (2018) on the Effect of Internet Use on Academic Achievement and Social Life reveals that, the use of the Internet is prevalent among students and it is used for social activities. Reports from the study indicates that, students' social life is highly influenced by the Internet and in its absence will minimize their social activity. Results from the same study indicate that, students from Indonesian University of Computer and Harapan Bangsa Institute of Technology both in Bandung, would rather resort to using the Internet to learn rather than using a book as their learning reference.

Similarly, Apuke and Iyendo (2018) in a research study, using both quantitative and qualitative research approaches, investigated the role of the Internet in academic research by students. He reported that, out of 250 undergraduate students from three selected Universities in North-Eastern Nigeria, majority indicated that, they relied on their smartphones/handsets to access the Internet through subscription from other Internet providers and have become overly reliant on Google, open access e-Journals, and Yahoo for their academic work.

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Although, there are few researches conducted on the statistics of Internet usage in Ghana, reports by Socialbakers (2014) reports that, there are 31% female users and 69% male users of Facebook in Ghana with the majority being students between the ages of 16 and 24.

The students of Ghana have embraced the social media and are utilizing it for their day-to-day activities. They use it to communicate with friends and course mates and those they would have lost touch with, if not for the advancement in social media and Internet usage in Ghana (Quashie,& Ami-Narh, 2012). With the realization that, the Internet does not only provide a platform for social interactions among users but also facilitates the access to information, students have embraced it and are utilizing it in their academic work. The use of the Internet has now become a crucial tool for educational progression. Learners use the Internet for various purposes such as social, entertainment and educational (Matlala,& Kheswa, 2019)

Although research reveals that Internet use is prevalent among students, there seems to be a disparity when it comes to its use by older adults who are students. This thesis therefore examined the use of the Internet among students by doing a comparative study between undergraduates who are mostly younger adults and postgraduate students who are mostly older adults with special reference to Presbyterian University College.

1.2 Statement of the Problem

Learning being the core business of University students, one would have expected the Internet to be vigorously used for academic work but it seems the students of Presbyterian University College are not fully utilizing the Internet and its resources. First of all, it is common to see students, especially the postgraduate students in the library requesting for articles to be downloaded for them. When Library staff ask them to make use of the Internet to search for information, some of

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them will insist and plead with the staff to do the searching for them. Preliminary interview with some of the postgraduates revealed that, some had little or no foundation in computer literacy and as such find it quite difficult to use the available computers in the library to surf the Internet for information. Some also used their age (old age) as an excuse for not being able to use the Internet. Meanwhile, millions of Ghana Cedis are spent on Internet connectivity for students to use to achieve academic excellence yet it seems they do not want to take advantage of it. This observation is however predominant among postgraduate students.

This problem needs considerable attention because it burdens or increases the work load on library staff with the additional task of searching for academic materials for them. Even though it is the job of a library staff to assist users with information provision, it becomes a burden when the user has little or no foundation in computer literacy. Again, it is expected that by the time students complete their program of study, they would have been experts in information literacy. However, students lacking the necessary skills and knowledge in fishing out relevant information from the Internet for their academic work, may result in graduating students who are 'technotard' or 'computer dummy.'

Secondly, students are often found 'whatsapping' and exchanging messages among themselves or "facebooking" in lecture halls whilst serious lectures are taking place. They seem so much addicted to it and find it difficult to do without it. When this happens, distraction of attention from what is being taught in the classrooms becomes inevitable and the students are likely to be found wanting during examination period. O'Keeffe and Clarke-Pearson(2011) point out that , addiction to social media has the capability of having adverse effects on their, social, psychological , emotional and academic life. However, due to the leverage the Internet affords them, these students seem unable to control themselves.

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Literature reveals that most of the research conducted in the area of Internet is geared towards Internet use and its impact on users. This is evident in the works of (Puspita and Rohed 2018; Wang and Cheng 2021; Zarei Nazari and Farhadpoor 2019; Oshodi Erinfolami and Akinbode 2012). Reports from these researchers indicate that, addiction is prevalent among users.

In Ghana, a number of researches have been conducted on Internet use and its impact on students as well (Yebowaa 2018; Brafi and Aurther 2013). Most of these researches however, focused on high school students or undergraduates in tertiary institutions. There is no empirical research on a comparative analysis of Internet use between postgraduates and final year undergraduates in Presbyterian University College and as such the researcher, deemed it necessary to investigate the seeming gap in literature with respect to Internet Usage.

It is against this background that the researcher sought to investigate the use of the Internet by students with special reference to Presbyterian University College.

1.3 Purpose of the Study

The purpose of this study was to examine the factors affecting the use of Internet and its resources by final year undergraduates and postgraduate students of Presbyterian University College.

1.4 Objectives of the Study

The specific objectives of the research were as follows:

1. To find out the purpose for which Internet was used by final year undergraduates and postgraduates
2. To ascertain students' awareness of Internet resources for academic work by both groups

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3. To establish the frequency of use of Internet resources for academic work by final year undergraduates and postgraduates.
4. To determine students' knowledge on Internet search strategies
5. To compare the ease of Internet use by final year undergraduates and post graduates.
6. To compare perceptions on the usefulness of Internet for academic work between undergraduates and postgraduates.
7. To determine students' attitudes towards Internet use.
8. To identify the challenges encountered by the two group of students in the use of Internet.

1.5 Theoretical Framework

A theoretical framework introduces and describes the theory that explains why a research problem under study exists. Grant and Osanloo (2014) defines theoretical framework as the "blueprint" for an entire research work. It defines how a researcher will methodologically, analytically, epistemologically, and philosophically, tackle a dissertation or thesis as a whole. In simple terms, it provides a platform for a researcher on which to build and support a study. They further assert that, the vision and structure of a study becomes unclear in the absence of theoretical framework similar to that of a house, which without a blue print, cannot be constructed. Therefore, a research plan which includes a theoretical framework permits the dissertation study to be structured and strong with an organized flow from one chapter to the next. In order to understand the use and refusal to use the Internet by students, the Tam Model was adopted.

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1.5.1 The TAM Model

Technology Acceptance Model (TAM) is one of the most frequently employed models used to explain the acceptance of a new information technology. The TAM suggests that, when users are presented with a new technology, a number of factors determine their decision about how and when they will use it.

Its foundation lies further back in time when Ajzen and Fishbein (1980) developed the 'Theory of Reasoned Action', but Davis wanted an easier to use model, to look at technology at work.

TAM is largely credited to Fred Davis in 1986, when he was part of the Computer and Information Systems, Graduate School of Business Administration at the University of Michigan in the USA. Although there are now many variations of the model, the original Technology Acceptance Model would be adopted for this study.

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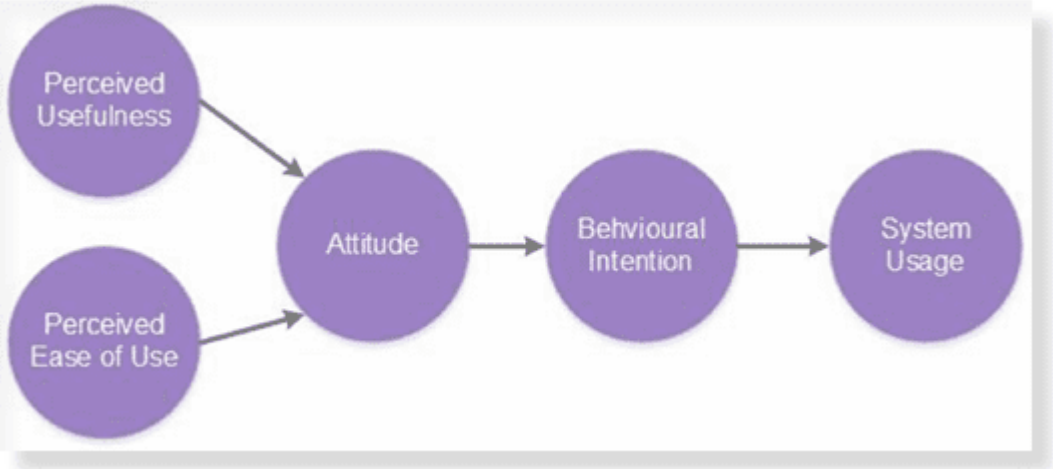
Figure 1.1: Technology Acceptance Model (TAM)



Technology Acceptance Model from Davis, Bagozzi et Warshaw (1989)

According to TAM the success of a new technology adoption is influenced by two main factors:

- Perceived usefulness
- Perceived ease of use

Perceived usefulness: It is defined as the degree to which a person believes that the use of a system will improve his performance. It means whether or not someone perceives a particular technology to be useful for what they want to do.

Perceived ease of Use: Davis defined this as "the degree to which a person believes that the use of a system will be effortless". If the technology is easy to use, then the barriers are conquered. If it is not easy to use and the interface is complicated, no one has a positive attitude towards it.

Attitude: It is set of emotions, beliefs and behaviors towards a particular object, person, thing or even event. Attitudes are most often the result of experience or upbringing and can have a powerful

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influence over behaviour. It involves an individual's judgment that performing a behavior is good or bad. The attitude of a person towards the use of the Internet could influence his or her behavior which also influence the actual acceptance.

Actual Usage: The extent to which users utilize a system and it influenced by a behavioral intention to use a system.

The TAM postulates that, aside the attitude of an individual, the impact one will have on his performance with the use of a system influences his use of that particular system. Therefore, there is the likelihood that, an individual will use a system if he thinks or perceives that, a system will bring an improvement in the performance of his work even if an employee does not welcome a new information system.

According to Davis, perception on the ease of use in addition, has a significant impact on the attitude of a person through two main mechanisms: instrumentality and self-efficacy. Bandura (1982) developed the concept of Self-efficacy and according to this concept, the more a system is easy to use, the greater a user's sense of efficacy becomes. Besides, a tool that is easy to use will make the user feel that he has a control over what he is doing (Lepper on 1985). Perceived ease of use can therefore also have an influence in the improvement of a person's performance. If a user employs less efforts with a tool that is easy to use, he will be able to spare efforts to finish other tasks. (Davis, on 1986)

The Technology Acceptance Model has been applied in a number of studies investigating the adoption of a new technology. For instance, Charness and Boot (2016), in a research study article titled *"***Technology, Gaming, and Social Networking"** in confirmation of this model revealed that, an older adult who perceives digital games as too difficult to play or a waste of time will be

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unlikely to want to adopt this technology, while an older adult who perceives digital games as something easy to learn will be more likely to want to learn how to use digital games.

Davis and Wong (2007) also reported that, students of University of Auckland's intentions to use the CECIL system was moderately influenced by ease of use and perceived usefulness but students' perceptions on the flow and playfulness of the system were stronger influencers of intentions to use.

Applying TAM to this study, helped in facilitating the theoretical interpretation of the reasons for Internet use and refusal to use the Internet by students. This study however focused on perceived usefulness, perceived ease of use and attitude variables of the TAM model.

1.6 Scope and Limitation of the Study

Geographically, the scope of this study was confined to Presbyterian University College, Ghana. It is a multi-campus University with its head campus at Abetifi Kwahu in the Eastern region of Ghana. The satellite campuses are located in Tema, Akropong, Agogo and Kumasi. The study dealt with final year students as well as postgraduate students of 2020/2021 academic year across all the five campuses. Preference was given to this category of students as they are the ones who engage in rigorous research work and are expected to use the Internet. The first, second and third year students were excluded from the study because the researcher considered them not to be the appropriate respondents for the research questions and as such not part of the target group.

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1.7 Significance of the Study

This study is significant in the following ways:

The findings of this study would inform stakeholders about the extent to which the two group of students are using the Internet, the purpose for which students use the Internet and the problems they encounter in its usage. This will enable the management of the University to formulate policies, that will promote effective and healthy use of Internet as well as take measures that will help bridge the gap in Internet use between the two groups.

It will also inform curriculum developers in academic institutions to design courses that will enhance effective searching of academic information from the Internet.

Again, the findings of this study can be used by other researchers as a foundation to extend knowledge.

Lastly, review of literature reveals several studies on students and Internet use in Ghana. This study will therefore add to existing knowledge about how tertiary students especially those from Presbyterian University College use the Internet.

1.8 Organization of the Study

The study was organized into six chapters and they are as follows:

Chapter one provides a general background to the study. It covers the statement of the problem, the purpose, objectives, significance, scope and limitations and organization of the chapters.

Chapter two covers literature review relevant to the study.

Chapter three entails the methodology of the study. It discusses the research design, sampling procedure, research instruments, data collection procedures and analysis of data.

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Chapter four presents data analysis and findings of the study.

Chapter five deals with discussion of findings in light of the objectives of the study.

Chapter six summarizes the major findings of the study and provides conclusion as well recommendations.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Literature review in a research study according to Creswell (2009) shares with readers the results of other studies that are closely related to the study being undertaken. It establishes the relevance of the study as well as serves as a benchmark for comparing the outcome with other findings. This chapter or section discussed related works however with special emphasis on themes that reflect the objectives of the study. Literature was reviewed under the following:

1. Internet Resources and Uses
2. Internet and Education
3. Perception of Students on Internet and Education
4. Internet Resources For Academics
5. Internet Use by Older Adults
6. The Challenges Of Using Internet For Academic Work

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2.2 Internet Resources and Uses

Internet is generally defined as "the largest computer network in the world to connect all existing computer network (Intranet, Wide Area Network, Metropolitan Area Network, Personal Area Network, etc.) along with all computers, connected devices (Smartphone, Tablet , Switches, etc), as well as the computer itself, into a single container world's computer networks."(Puspita and Rohedi, 2018, p2)

The use of Internet has become unavoidable in our daily lives in recent times as it has actually made life simpler, faster and easier. The Internet is used in several situations. This section however would focus on the following: entertainment, communication, businesses, government and politics and travels.

In the olden days, children in the same vicinity used to meet outside and engage in some sort of physical activity. Now, it is almost impossible to see a group of children indulging in outdoor games with increase in the use of Internet. The Internet is now used in entertainment and its meaning has been utterly redefined. Kasule (2013) in an article titled, *The Increase Of Internet Usage In Ghana And Its Implications* posits that, people are able to comfortably entertain themselves in the comfort zone of their home without necessarily going out and this is done through the engagement of oneself in virtual activities such as having conversation with friends on social media sites , video streaming, music streaming, computer games etc The "entire outside experience" of entertainment has been modified with the advent of the Internet.

In the business sector, the Internet is also used in conducting **electronic commerce**. Shahriari et al (2015) defines Electronic commerce also known as E-commerce, as "using computer networks such as the Internet to trade in products or service. E-commerce depends on technologies like

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Internet marketing, mobile commerce, online transaction processing, electronic funds transfer, inventory management systems, electronic data interchange, and automated data collection systems.

In simple terms it is the buying and selling of goods and services via electronic channels such as the Internet where payment is done electronically. Some of the products that can be shopped online includes shoes, clothes, gadgets, appliances or even daily groceries. According to a market research firm TNS Interactive (2011), 57 % of adults in the United States shopped online in 2011, representing a 50 percent growth from the previous year and the most popular items shopped were books, clothes, and music. Statista(2016) reports that, Internet users in the world that engaged in purchasing of products online in 2013 were 41% and as at 2015, China was the leading country that participated in online shopping. The concept of E-commerce is catching up fast in the Ghanaian environment and many people are making purchases online with a click of the button. Ever since the Internet declared a takeover, a different shopping experience which is the online shopping has been provided to Ghanaians. Examples of online shops in Ghana are Sellgh, Cedishop, Jumiagh and many others.

Online shopping saves the time and energy that is used in moving from one shop to another seeking for products and services. Making use of the Internet in one's business gives competitive advantage over those who do not employ it in the work. According to TNS Interactive (2011), the most frequent reason given for not wanting to shop online, is the fear of providing credit card information over the web. TNS Interactive however predicts that, the number of online shoppers will continue to increase as the financial industry works to improve security. Online shopping and banking are therefore creating a cashless society by eliminating the need for printed money.

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Within the sphere of **travelling,** the Internet is also made use of. Making travelling plans for anyone, can be stressful. Prior to the emergence of the Internet, travelling arrangements required one's presence or an appearance, at either a bus station service counter or an airline counter. According to Kasule (2013), travelers with the aid of Internet, can book and cancel flights now without necessarily making an appearance at the airport. With online service provided by airlines, travelers can as well make payments and confirm check-in. Some bus companies in Ghana such as the STC are also putting measures in place to make available, online services which will give travelers the chance to buy ticket using the Internet.

In the arena of government and politics the use of the Internet is also employed. In finding solution to problems in governance, government official have resorted to the use of Internet. According to Hofstetter (2005), the Internet for instance, enables municipalities to quickly respond to disasters and emergencies. The Internet also provides politicians the means to reach and solicit for political votes from people in their constituencies through videoconferencing. According to him, almost every political candidate possesses a website as it has become an influential factor in getting elected into government. In Ghana for instance, almost every political figure ranging from Ministers of Parliament to the President has either a Facebook page or Instagram page through which political messages are communicated to the citizens of Ghana.

Lastly, one aspect of our lives that has been greatly affected by the use of Internet is communication. In the absence of Internet, communication had to be done face to face but with the proliferation of social media sites, communication can be done between people from different continents without moving an inch to the recipient of a message. Harrison (2014) posits that, the Internet modified the traditional mode of communication. She further explains that people were limited to a social network local to them which included relatives, friends, and neighbors who were

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living just a stone throw away from their homes prior to Internet usage. With the increase of Internet use however, especially with social media and smart phones, maintenance of long distance relationships with people has become a possibility regardless of one's location or wherever one is in the world.

In conclusion, the world has embraced the use of Internet and depends on it for the smooth running of their daily lives. It has given businesses the opportunity to achieve a competitive advantage over those who do not apply Internet in theirs, the opportunity to connect with loved ones, and share information with others.

2.3 Internet and Education

A core element of the United Nation's sustainable development goal is education. This goal seeks to ensure quality education for all and sundry as well as creating lifelong learning opportunities for everybody. According to Internet society (2017), access to the Internet is fundamental to achieving this vision as it helps in the improvement of quality education in diverse ways. It also provides a gateway to educational resources, a great deal of information and knowledge as well as providing the means for leaning beyond the classroom.

Chris (2020) also views the Internet as a "go-to for educational purposes" in his article titled "The Role of Internet in Education". He posits that, the Internet is a powerful and an influential tool which allows users to do proper research which results in the contribution of knowledge on different subjects. According to him, in this modern era, many students prefer using search engines like google for their queries, and mind boggling questions. The Internet therefore does play a vital role in education.

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2.3.1 Distance learning

The Internet has brought reforms in the way education is delivered and this is evident in the emergence of Distance Learning across the world. The inclusion of ICTs specifically the Internet, into learning and teaching in Universities has become a salient issue. Institutions of higher education around the globe during the last decade have been rigorously using the Internet as well as computers as teaching tools. (Juana-Espinosa and Luján-Mora 2013). Writing on the Growth in Distance Learning, Wallis *(2020)* reveals that a considerable amount of college students personally decided to enroll in "online" school without the need to physically attend to class for lectures. The students according to him were comfortable with this mode of education through technology as most were usually older adult with families and careers and such wanted more control over their education as well as their lives. Distance Education is defined by Saykili, (2018) as a type of education which "brings together the physically-distant learner(s) and the facilitator(s) of the learning activity around planned and structured learning experiences via various two or multi-way mediated media channels that allows interactions between/among learners, facilitators as well as between learners and educational resources."

Reports by Origon Higher Education Coordinating Commission (2019) reveals that, the yearly amount of students who attend Oregon's Public Universities had a 10.7% increment from 2008 to 2019. This increment in students' enrollment was due to the increment in the amount of students undertaking courses online. There was however, a decrement in the percentage of university students who were not undertaking any online courses as it decreased from 72.5% in 2008-09 to 37.5% in 2018-19.(Wallis 2020) This shows the important role the Internet is playing in education.

It is therefore not surprising that Igun (2005) postulates that, in this age of information globalization, survival of academic institution will be difficult without Internet services.

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Not long ago, several qualified university applicants were refused admission in Ghana because of limitation of space and this challenge of space created a backlog of qualified applicants. For instance, in the 2018/2019 academic year, some 13,117 students joined University of Ghana as freshmen/freshwomen. This figure constitute 41.85% out of the 31,345 applicants who were given admission to the University (University of Ghana 2018). In turn, this backlog compelled the University to offer teaching and learning services through the distance mode and the use of computers and the Internet was central to the achievement of this need.

According to Kotoua et al (2015), the Universities in Ghana, like Kwame Nkrumah University of Science and Technology, University of Ghana and Cape Coast University offered online courses to students by taking advantage of the Internet and their target was the working class in Ghana. According to them, online education presents a big advantage to the working class who are students in that, such students do not have to necessarily resign from their jobs in order to undertake academic programs in the university. Again, there is no need for "mother students" to search for babysitters to take care of their children in order to attend classes. Online education, through the use of the Internet has created easier means of studying and acquiring a degree right at the doorsteps of the working class and students in the world including Ghana.

Despite the seeming widespread of online education and the general use of Internet in the world, Kotoua et al (2015) postulates that, it is not firmly rooted in African societies as compared to the Western society. According to a study by Kotoua et al (2015) on the Growing Of Online Education In Sub Saharan Africa with Ghana as a case study, majority of students in Universities in Ghana still prefer classroom teaching which is face to face, to the cyber schools and therefore the perception about online education is a negative one. According to them, the rate of online

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education through the use of Internet in Ghanaian Universities is still low compared to the Western world but the frequent use of the Internet can result in a change of views. (Kotoua et al 2015)

In conclusion, the use of Internet in academic institution plays a vital role in admitting qualified students who would otherwise not have gained admission as a result of limited physical classroom space. In order to make an improvement in the quality of higher education in the tertiary institutions and make them accessible to more candidates, major investments have to be made in electronic infrastructure such as Internet connectivity and e- learning tools.

2.4 Perceptions of Students on Internet and Education

The reason for utilization of Internet for research and academic purposes by students is derived from the benefits of its use such as getting free access to online magazines, journals and other important information resources. (Apuke and Iyendo 2018). This is affirmed by Hussain (2012) with the view that, Internet use has improved educational research and the sharing of research findings among students and researchers through virtual interactions.

Juana-Espinosa and Luján-Mora (2013) conducted a research on students' perceptions and overall satisfaction with Internet usage in their education and he reported that the students under study, generally showed positive attitude towards the use of Internet in their education as all the respondents admitted that, learning to use is nowadays very important in education while majority of them indicated that it has made life easier. The positive attitude towards Internet use in education was however stronger among male students that the females. Similarly, Ansari (2017) also conducted a research on perceptions about the Internet use among students in Pakistani and a greater majority of them constituting 82.5% of the respondents perceived the Internet to be a great

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tool for learning. Reports of the study also indicated that, the students viewed the Internet to be a problem solver for different problems in their daily lives.

In Ghana, a number of researches have also been conducted to ascertain students' perceptions on Internet. A study by Brafi and Arthur(2013), on Internet Use among Students in Tertiary Institutions in the Sunyani Municipality revealed that, majority out of the 600 students that were chosen randomly, used the Internet to look for information for their assignments and believed the Internet had played a vital role in improving communications among themselves. Many of them however believed that, the cost of access was expensive. Similarly, a study by Ankamah (2018) on Postgraduates Students' Perception Towards The Use Of ICT in Research In Ghanaian Public Universities reports that, students accessed ICT applications like the Internet for quick access to information and most of the respondents indicated that ICT facilities like the Internet in their institutions was very valuable as it met their research needs.

According to an annual survey undertaken by Wiley Education Services (2020) on the Perception of Students on Online Education, 79 % of students who earned a degree online through the use of Internet agreed or strongly agreed that it was worth the cost. Majority of the students also made it clear that, they would have searched for a similar online program elsewhere if their online program were not available at their chosen school. This shows how students are enthused about the inclusion of Internet use in education as they view it as an important tool.

Review of literature on students' perception on Internet use for education shows most students perceive the Internet as a very resourceful tool for their education.

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2.5 Internet Resources for Students

Internet resources are information resources that are made accessible to users in a networked environment through the use of computers and similar devices. Examples are E-journal, E-books, and Online databases. Sahin & Balta,& Ercan(2010) list Internet resources that are available for students' term projects and assignments. They are as follows:

2.5.1 Academic Journals Database

They provide a rich source of specialized online information and are used widely by many students and academics. Academic Databases are subject-specific and are therefore arranged according to subjects and disciplines. Example: PsycINFO database specializes in psychology/counseling. Databases are designed to make quick provision of access to peer reviewed materials which are very useful to students and researchers. Many databases contain the entire text of articles, while others contain abstracts only. They also have several filters which enable limitation or increment of search results in diverse ways. They also can provide access to resources which are not obtainable especially if such databases have been subscribed by an institution.

2.5.2 Search Engines

Search engines are the most widely adopted resources for students' academic projects and are usually open access sites. They can be referred to as 'answer machines'. as they offer relevant results to a searcher's query. Their purpose is to discover, understand, and organize the Internet's content making them accessible to users. In order to get the needed information in a search results, one's search keywords needs to be visible and understandable by the search engines. Information resources accessed through theses engines are usually gathered by students for their research

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projects. By using the advance search button, one is able to filter search results by setting parameters of one's choice. In other words, it provides the opportunity to create a more effective query for relevant search results. For example, one can instruct a search engine to provide specific types of documents like pdf, doc. and ppt, extensions. With the advance search button, extraction of unwanted resources is made possible. Examples of search engines include, Google Yahoo, Bing Baidu, etc.

2.5.3 Electronic Libraries

Seadle and Greifeneder (2007) define a digital library, as the electronic provision of digital documents which complements the task of a traditional library and world wide access to the collection of a digital library is done through the Internet. Electronic Libraries are classified into two main groups. They are closed and open access websites of universities and other websites that are open access via the Internet. Universities' electronic libraries that are closed access usually contain contractual journals and academic books and are highly reliable and trustworthy.Usually collections in such libraries are the best for both graduate and undergraduate students, academicians and researchers. According to Sahin & Balta, & Ercan (2010), open access libraries are not reliable .

2.5.4 Blogs/Forums

Most of the subjects that appear in search engines are written forums and blogs. Information resources from blogs and forums are usually open-access and often times are the results of personal studies of individuals, who might have had interest in the subject. The writers may not necessarily be academicians and some readers judge information from these sources as acceptable. It is

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however advisable that, readers do comparisons with other sources on the same subject by well qualified people to confirm the authenticity of the information before using it.

2.5.5 Preferred Internet Resource by Students for their Academic work

A survey across three Universities in Nigeria by Apuke and Iyendu (2018) shows that, 52.8% of 250 students preferred search engines, specifically Google and Google Scholar whiles Yahoo search earned 16.4%. Similarly, a case study on the Use of Internet resources by University Students during their Course Projects Elicitation phase **by** Sahin & Balta,& Ercan(2010)reveals that , 98 % of the students prefer using search engines especially, Google and Yahoo followed by E-magazines and Online databases with a percentage of 64%. Online-libraries placed the third position with electronic journal as the least preferred Internet resource by students. The study also revealed that, although University students often use email and forum/chat-line in their lives daily, applying them in their studies was not done.

In line with the findings above, reports in a survey conducted to explore the Internet Use Behaviour of Students of the Bharathidasan University by Shanmugam(2018) indicate that, Google is the most preferred Internet resource by students. According to the survey, 353 students representing 88.25% out of 400 mentioned that, they mostly use Google for searching, 284 respondents (71%) make use of Yahoo , 84 respondents (21%) use Alta Vista, 65 (16.25%) indicated that they adopt MSN for searching for information and 48 (12%) of the respondents revealed that, they use Info-seek. 57 (14.25%)mentioned the use of other search engines.

In the quest to find out Internet tools mostly preferred by students in Ghana, researches have been conducted to know the views of Ghanaian Students. Authur and Brafi (2013) identified that 70.4 % of tertiary students found in the Sunyani municipality preferred Google the most, for the purpose

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of searching for academic information. 27.1% of the respondents selected Yahoo. Search engine like Alta Vista, Bing and Ask.com seemed not be popular among the students as the study reported that only 1.8% of the respondents made use of the three search engines. They therefore concluded that, Google and Yahoo were the most popular Internet resource for the students in the municipality under study. Similar findings of Google being the most used Internet resource by students in Ghana can be found in the works of (Ohene 2018 ; osafo 2017; Mantey 2018)

2.6 Internet Use among Older Adults

There seems to be a disparity in Internet use between younger adults and older adults. Statistica (2021) reports that, as at 2019, one third of Internet users in the world were between the ages of 25 and 34 years and the users within this age bracket, constituted the largest group of online users in the globe. Again, 18 % of online users in the globe were between the ages of 18 to 24 years. 14% of online users were between the ages of 45-54 while 10% of online users fell between the ages of 55-64. This clearly indicates that, the use of Internet is predominant among young adults between the ages of 18-34.

According to Lancaster University (2018), despite the increasing numbers of older adults accessing the Internet, a digital gap still exist between the younger adults and older adults. Lancaster University claims older adults comparatively use fewer digital applications and spend less time online as compared to younger adults. Researchers from the University after conducting interviews with older adults who are students of the University, revealed that resistance to the use of digital technologies is not mainly rooted in accessibility issues, as it is widely believed but rather values personally held by them which have to do with the desirability of technology. Again, the fears of making mistakes when using software and the Internet is

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also an important factor that puts technology use among older adults on hold. The study also revealed that older adults, who are students feel comparing websites for information places a greater burden on themselves to become experts in all manner of things, compared to seeking out help from trained professionals with information provision. They further revealed that, some older people are simply put off using online tools because they see them as "being arduous and time consuming" (Lancaster University 2018). This study, is affirmed by Braun (2013) who asserts that**,** a notable digital divide between younger and older Americans still exist. He reports Social networking websites is less popular among older adults when compared to younger adults. In his study, Usefulness and Trust in social networking sites were notable attitudinal predictors of intention to use them. Frequency of Internet usage also appeared to be a significant behavioral predictor of intention to use social networking sites in his study. Again, Buabeng et al (2016) in a research on Student's Perception of Internet Use in Agricultural Colleges in Ghana reported that, although Internet use by students was mostly for academic purposes , when compared across ages, younger students who are less than 40years use the Internet more than older students who are 40years and above when dealing with classroom work and preparing assignments

Findings by Chang, McAllister & McCaslin (2015) on the Barriers to, Internet Use Among Older Adults in Southern California postulates that, the availability of a computer in one's home, age, education, a job that requires computer use, and ethnicity are factors that are very important in predicting Internet use in older adults. Similarly, reports by Pew Research(2017) indicates that, many older adults with lower levels of educational status, and less affluent continue to have a long distant relationship with digital technology. This is affirmed by a research on Internet Use Among Older Adults by Choi and DiNitto 2013. The study points to the relevance of social capital in

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influencing older adults' adoption and learning of Internet technology. According to the study, older adults who were economically and socially disadvantaged used the Internet for email and texting purposes only. They therefore recommended that, training on Internet and computer use for various purposes for older adults need to be taken into consideration, as well as the significant role their social capital can play.

Hou, Wu, and Harrell (2017) also highlights the importance of a psychological disposition factor (technophobia) in Internet use by older adults. According to them, technostress can have the capability of threatening older adults' ability to use digital technologies effectively especially for reading. In their research, they reported that, older adults with higher levels of technophobia, spent more time on reading electronic materials and preferred paper documents the more. They therefore concluded that, individual levels of technophobia was an important barrier to older adults' effective use of mobile and Internet technologies for reading.

Review of literature shows that, younger adults tend to use Internet more than older adults and there are various factors that influence the use of Internet technology among older adults aside their age. This includes social capital, availability of computer at home, a job which requires the use computers, level of education, and technophobia and others.

2.7 Challenges Experienced by Students in using the Internet

It is commonly reported that people who use the Internet frequently or sometimes, encounter challenges in its usage. This prompted Nwagwu, & Adekannbi, & Bello (2009) to conduct a survey on the students of University of Ibadan, Nigeria about the kind of challenges they face in their Internet usage. The study revealed that, Internet speed was the most nagging problem for 63.4% of the respondents. Others complained of overload of information (42.3%), difficulty

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in finding relevant information (37.2 %) and the least problem was privacy issues (34.2%). A quantitative survey carried out by Apuke and Iyendo (2018) among 250 students from three Universities in North Eastern Nigeria also revealed problems faced by students in their Internet usage. Reports from the study indicated that, 86.8% of the students across the three selected institutions had challenges with adequate access to Internet facilities on their campus. Few of them (13.2%) however noted that, they had adequate access to the Internet on their campus. The problem of access was therefore a challenge to majority of the students. In the same study, the students also believed that, lack of interest in digital readiness in their Universities and among their staff, lack of electronic library which allows easy access to journals from academic databases, and inefficient cybercafé in their University environment were the primary issues that discouraged the use of the Internet in their institutions.

Almarabeh et al(2016) also reports that the major constraint among University students, is slow speed of Internet as indicated by 62.31% out of 536 students under study. Another challenge was, not including Information and Communication Technology in the courses syllabuses (46.83%). Similar finding is also reported in the study of Bankole and Babalola (2012). They also reported that 'slowness of the server' was one of the main problems faced by Olabisi Onabanjo University's undergraduate students with regards to Internet usage. Similarly, Fasae and Aladeniyi (2012) also found that, slow Internet speed was the leading problem among students as indicated by 96% of respondents under the study.

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2.8 Conclusion

The researcher reviewed literature similar to the study. Analysis and presentation of literature were arranged under the following themes: Internet Resources and Uses, Perception of Students on

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Internet and Education, Internet Resources For Academics, Internet Use By Older Adults, and the Challenges Of Using Internet For Academic Work. Literature reveals that, students generally make use of Internet for their academic work but older students tend to use it less due to factors such as technostress, age, their perception on ease of use of the Internet and many more. More attention therefore needs to be drawn to older students to enable them to make effective use of the Internet for their academic work.

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CHAPTER THREE

METHODOLOGY

3.1 Introduction

Neuman (2014) refers to methodology as the big structure that houses methods. He further explains that methodology deals with understanding the entire research process which includes its social-organizational context, philosophical assumptions, ethical principles, and the political impact of new knowledge from the research enterprise. In simple terms, it is a guide to research and how it is conducted. Igwenagu (2016) is of the view that methodology helps with the provision of tools for carrying out a research work. It also enables a researcher to develop a critical and scientific attitude when conducting a study.

This section of the study discusses the research methods that were employed in this study. It includes the description of the research design, the population under study, sampling procedures, research instruments and data analysis procedures.

3.2 Research Design

According to Pandey and Pandey (2015), a research design is a plan or a framework used as a guide for collection, measurement and analysis of data. It is likened to a blue print which is needed in advance for the construction of a house. In simple terms, it is the map that is usually developed to guide the research.

The research design that was adopted for this study was the **cross sectional survey**. Thomas (2020) defines cross sectional survey as a research technique in which information is gathered or collected from many different individuals or groups at a single point in time. It provides snapshots

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of a population's characteristics and what is happening at any one moment in time. In this type of study, variables are observed without influencing them. It was therefore prudent to adopt this kind of design since the study was to deal with two different groups, that is undergraduates and post graduates. Cross sectional studies are cheaper to conduct and less time consuming. A key strength of this design is that, they can be used to understand what is really happening in a whole population and not just what is being reported. Data collected can also be used as a basis for further study.

3.3 Selection of Case

Presbyterian University College Ghana (PUCG) was selected for the study. One of the factors that influenced the selection of the case was that, the researcher was conversant with the place and as such foresaw that, gaining access to the target population for the study would be easier. Letters were written to faculty heads explaining the purpose of the research. This helped in reaching all targeted respondents.

Again, the selected case or setting had enough number of students acceptable or ideal for carrying out a quantitative study. The institution also had a variety of students (undergraduates and post graduates) which made it possible for a comparative study to take place. The institution also had Internet service for students' utilization hence making it suitable for the research study.

3.4 Description of the Area of Study

According to the Presbyterian Church history, the first primary school in Ghana was established by the church. This influenced a series of initiatives in the country with regard to the development of education. Several primary and secondary schools were built and managed in partnership with the government. Five years later, it established the then Presbyterian training

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College (PTC) at Akropong, which become the second higher educational institution in West Africa. Fourah Bay College in Sierra Leone was the first.

It was hoped that, the Presbyterian Training College might one day be upgraded to a University just like the Fourah Bay College in Sierra Leone. This vision was not realized until 1996. Initiation of steps into establishing a university was made by the then synod of the Presbyterian Church of Ghana. Presbyterian University Implementation Committee was then formed in 1998 and it was mandated to push forward this initiative. Through the determination and efforts of the church, the University was finally established on the 23 November 2003. John Agyekum Kufuor, who was then the President of Ghana inaugurated the University on the 27th March 2004.

The Presbyterian University College, Ghana is currently a multi-campus Private University, granted accreditation by the National Accreditation Board and it is affiliated to the Kwame Nkrumah University of Science and Technology, University of Ghana, and University of Cape Coast. The first and head campus is located at Abetifi-Kwahu in the eastern part of Ghana with the second campus at Akropong. The third campus at Agogo, fourth at Tema and the fifth in Kumasi. The University therefore has five campuses in all. Some of the University's campuses are cited in semi-urban areas which keep them away from the hustle and bustle of inner city life. The Okwahu, Akuapem and Asante Akyem campuses in addition to being in semi urban areas, have very cool climate which facilitate good academic work.

Presbyterian University was established in response to the inability of Ghanaian Public Universities to admit all qualified students due to limited space, the depleting of ethical and moral values in the Ghanaian society, and the perceived reduction of academic standards. It therefore relates its programs to the developmental needs of Ghanaians in this modern era in terms of research, extension and service, and training. The vision of the University is to be seen as a

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University of excellence that mixes modern trends reflecting principles of Christianity. It therefore has the mission of designing and implementing academic programs within the context of Christian ethics which results in the production of holistic human development, research and teaching. The University currently has six faculties. They are School of Business and Economics, Faculty of Science and Technology, Faculty of Development Studies, Faculty of Education, Faculty of Health and Medical Sciences and Faculty of Law. As and when necessary, new programmes are mounted and obsolete ones are discontinued. (Presbyterian University College Ghana 2020)

3.3 Selection of Subjects

3.3.1 Population

A population is any group of objects or persons that has at least one common feature. Melter and Charles (2011) defines population as the total group represented by a sample to which research findings are generalized. The actual population could be of any size and is normally referred to as the target population to which a researcher would like to generalize (Frankel and Wallen 2006).

With respect to the purpose of the study, the population of this study was made up of all final year undergraduates as well as postgraduates of the 2020/2021 year group. The target population was made up of 628 final year undergraduates and 392 postgraduate students from Presbyterian University making a total of 1020 including both males and females.

The final year undergraduate students and postgraduate students were chosen because they are the ones, who engage in rigorous research projects and make use of the Internet to search for information for their research work (academic work). The researcher therefore found them suitable to answer the research questions. Table 3.1 displays a breakdown of the population under study

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Table 3.1: Population of the Study

Name of Faculty	Number of Final year undergraduates	Number of Post Graduates	Total
School of Business Administration and Economics	167	50	217
Faculty of Science and Technology	54	0	54
Faculty of Law	43	0	43
Faculty of Development Studies.	62	66	128
Faculty of Education.		276	276
Faculty of Health and Medical Sciences.	302	0	302
Total	**628**	**392**	**1020**

Source: Field data, 2021

3.3.2 Selection of Sample Size

The desire to draw conclusions about a large population from a sample of that population is usually a researcher's primary concern. (Leedy and Ormrod 2005). Sampling therefore is a key activity for any research study because usually, the target population is made up of too many individuals for a research to include as respondents.

Glicken (2003) refers to sampling as "the process of selecting a smaller group of participants to tell us essentially what a larger population might tell us if we asked every member of the larger population the same questions". A researcher must therefore ensure that a chosen sample truly represents the population by adopting an appropriate strategy of selecting an appropriate sample that addresses possible distortion of data and bias. (Leedy and Ormrod 2005)

The ever-increasing need for a representative statistical sample in empirical research has led to several proposed methods of determining a sample size but this study adopted a sampling method proposed by Fraenkel and Wallen (2000).

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According to Fraenkel and Wallen (2000), there is no clear cut answer to what constitute an adequate or sufficient size for a sample. They are of the view that, a sample depending on a population should not be too large nor too small. That is, if it is too small, the sample cannot be possibly representative and if it is too large, one may be limited by time and energy. A sample however, should be sufficiently large. This therefore raises the question 'At what point does a sample become sufficiently large?" The best answer according to Fraenkel and Wallen (2000) is that "a sample should be as large as a researcher can obtain with a reasonable expenditure of time and energy". On this note, a sample size of 200 was chosen out of the total population under study which is (628+392) 1020.

Due to the difference in the population number of the two main groups, the 200 as the chosen sample size was distributed proportionately according to the population in each educational level. (postgraduate and undergraduate). Below is the calculation for the distribution of the selected sample size (200) across the final year undergraduates and postgraduates.

For the final year undergraduates:

$$\frac{628\text{(total of final year undergrad.)} \times 200\text{(chosen sample for the entire study)}}{1020\text{(total of target population)}} = 123.13$$

So based on the calculation, 123 students was sampled from the final year undergraduates.

For Postgraduates

$$\frac{392\text{(Total of Post Graduates.)} \times 200\text{(chosen sample for the entire study)}}{1020\text{(total of target population)}} = 76.86\ (77)$$

Using the proportional sampling calculation, 123 was sampled from the final year undergraduates while 77 was sampled from the postgraduates.

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Table 3.2 displays the number of respondents selected from each faculty out the sample size chosen for each educational level.

Table 3.2: Sample Size taken from each Faculty

Name of Faculty	**Final Year undergrad.**	**Sample size in each faculty**	**Post Graduates**	**Sample size in each faculty**
School of Business Administration and Economics	167	33	50	10
Faculty of Science and Technology	54	11	0	
Faculty of Law	43	8	0	
Faculty of Development Studies.	62	12	66	13
Faculty of Education.			276	54
Faculty of Health and Medical Sciences.	302	59	0	
Total	**628**	**123**	**392**	**77**

3.3.3 Sampling Technique

There are two main types of sampling methods. They are probability sampling and non-probability sampling. Probability Sampling considers every item in the population and therefore provides an equal chance of being selected in the sample. Examples include, Stratified random, Simple random, Cluster sampling, Systematic sampling and Multi stage sampling.

Non Probability sampling does not give equal chance to every item in the population. In this type of technique, the sample of participants does not necessarily have to be representative, or chosen randomly, but there is the need for a clear reason for the exclusion or inclusion of some individuals or cases rather than others (Taherdoost 2016) Examples include: Quota sampling, Snowball sampling, Judgment sampling, and Convenience sampling.

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The Simple Random Sampling technique was adopted for this study. Thomas (2020) defines Simple Random Sampling as a sampling technique which gives each member of the population, an even chance of being selected in a sample. The population was first stratified or divided into subgroups (or strata) who all share a similar characteristic. In this case, subjects were grouped under post graduates and undergraduates. Papers were cut into pieces and 'Yes' and 'No' were written on them. They were then folded and placed into a blow and mixed together to avoid a potential participant to see what was written on them. The bowl was then passed around for participants to pick one and all those who picked a "yes" were selected to be respondents for the study. This method was to give each member an equal chance of being chosen. This procedure was done in all the six faculties during their examination period and the required number of respondents for each faculty, as seen in table 3.2 was selected accordingly to achieve the sample size of 200. According to Frankel and Wallen (2000) applying random sampling in a stratified population increases the likelihood of representativeness of subgroups.

3.4 Data Collection Instrument

Collection of data in a research requires a methodical process of gathering specific information from subjects under study for the purpose of analysis to offer solutions to a problem. Data collection according to Kabir (2016), is the process of gathering and measuring information on variables of interest in a well arranged fashion that allows a respondent to answer research questions, test hypotheses and evaluate outcomes.

The data collection element of research is central to all areas of study including Humanities, Business, Physical and Social Sciences, etc. While methods of data collection differs by discipline,

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ensuring accurate and honest collection remains the same. Acquiring quality evidence therefore translates to rich data analysis which is the goal for all data collection.

There are several data collection instruments but this study adopted questionnaire as the tool for data collection.

3.4.1 Questionnaire

A questionnaire is an instrument for research which consists of a series of questions purposely for information gathering from respondents. (Kabir 2016). This instrument of data collection provides the opportunity for respondents to give anonymous correct answers and can produce large amount of data in a short period, making it more economical than any other data gathering instruments (Fraenkel and Wallen 2000).They also often have standardized answers that make it simple to compile data.

The questionnaire was designed to have eight sections and it employed structured close-ended questions. The first section was designed to collect demographic information of respondents.

The second section was designed to collect information on the purpose for which Internet was used. This included questions on the extent to which Internet was used for some selected purposes.

The third section dealt with awareness and use of Internet resources for academic work.

The fourth section was designed to obtain information on the frequency of use of Internet resources

The fifth section was to solicit information on students' knowledge on search strategies.

The six section asked questions on students' perception on the ease of Internet usage.

The seventh section solicited for answers on students' perception on the usefulness of Internet for academic work whilst the eight section focused on students' attitude toward Internet use.

The last section asked questions on challenges encountered by the students in the use of Internet.

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3.5 Pre-Testing

Pretesting is critically examining a survey instrument by a researcher to confirm the validity and reliability of the instrument for a survey. (Converse and Presser 1986). Pretesting according to Babonea and Voicu (2011) enables researchers to recognize inappropriate terms used in the construction of questions, whether or not the set questions follow in an inappropriate sequence, and identify mistakes in the questions with regards to their instructions and layout. In other words, it provides the opportunity to evaluate the appropriateness of a questionnaire in advance.

Before printing out several copies of questionnaire for the study, a total of 20 copies of questionnaire were randomly distributed to final year undergraduate students and post graduate students of KNUST for pretesting which enabled the researcher identify mistakes and undesirable trends that had crept into the questions. This was used to modify the questionnaire.

3.6 Data Collection Procedure

The researcher did not encounter any challenge with regards to data collection. The researcher introduced herself to the Dean of students through an official letter as an MPHIL Student of University of Ghana, conducting a research study with Presbyterian University selected as a case for the study. Permission was then granted to carry out the study. In order to be assured of a 100 percent return rate from respondents, the researcher decided to administer the questionnaire during their end of semester examination for both undergraduates and post graduates.

With the permission and the assistance of invigilators, an instruction was passed to the students to wait in the examination hall after they had finished writing their paper. Copies of the questionnaire

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were then shared among the students and was collected as soon as it was completed by the participants. This helped the researcher to have a 100 percent return rate.

3.7 Analysis and Data Presentation

Data analysis is an essential aspect of research which cannot be eliminated. Data analysis is the process where data (raw facts collected from respondents) is being transformed or manipulated (by a software) to give useful information. According to Calzon (2021), analysis of research data helps in the extraction of insights that support decision-making.

Data was analyzed using Statistical Package for Social Sciences (Version 20). SPSS is a software package created for the management and statistical analysis of Social Science data. Responses of participants were first coded and the coded values were entered into SPSS. Tables were used to present results. Both Exploratory (descriptive) and confirmatory (inferential) data analysis were employed. With the exploratory data analysis, frequencies and percentages were used and for confirmatory data analysis, there was the measurement of differences using the Student's t-test. Significant values that fell below 0.05 were recorded in the tables where statistical significance resulted. Major findings were presented under the major themes in the objectives. For example, data was arranged under purpose for Internet use, awareness of Internet resource etc.

3.8 Ethical Consideration

Arifin (2018) is of the view that, it is important to apply ethical principles that are appropriate to protect human subjects under study in any research. According to him, social scientists, usually dig into the lives of other people in the course of their study and so owe the respondents and the entire society an ethical obligation. Sometimes, delving into the private social lives of people may result in law suit. Thus, frankel and Wallen (2000) indicate that, researchers must make sure that,

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the privacy, rights and welfare of the people under study are protected. Respect for the dignity of research participants therefore should be prioritized.

Informed Consent- The researcher formally sought permission from the University's authorities before carrying out the study. Verbal permission was also sought from respondents before proceeding with the sharing of questionnaire. They were informed about the purpose of the research and assured that, the results of the study would be used purely for academic purposes. Again, participants were also assured of confidentiality of their responses. The researcher also made participants aware that they were free to exercise their will in determining whether or not to participate in the survey.

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CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents the analysis of the data gathered for the study on the use of Internet among students of Presbyterian University College, Ghana. The researcher administered 123 copies of questionnaire to final year undergraduates and 77 copies to post graduates making a total of 200. The researcher had a 100 % return rate from the respondents. Data is organized under headings of the major themes in the objectives of the study. This chapter is therefore organized under the following subheadings:

1. Demographic Information of Respondents
2. Purpose of Internet Use by Students (Final Year Undergraduates and Postgraduates)
3. Awareness of Internet Resources for academic work by both groups
4. Frequency of Use of Internet resources for academic work by students
5. Students' knowledge on Internet search strategies
6. Perceptions on the Ease of Internet Use by final year undergraduates and post graduates.
7. Perceptions on the Usefulness of Internet for academic work between undergraduates and post graduates.
8. Students' attitude towards Internet use.
9. Problems encountered by students in the use of Internet. (Undergrad. and postgrad.)

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4.2 Demographic Information of Respondents

Demographic information collected in a survey according to Allen (2017) allows researchers to gain background information on their participants. It allows researchers to describe the composition of the participants under study and better analyze their data. Common demographic questions seek to explore participants' age, sex, race, ethnicity, education and can include any background characteristics that a researcher deems essential to a research project. With respect to this research work, the demographic information collected was on age, gender, and faculty of respondents. This was to reveal the characteristics of respondents that influence Internet use.

4.2.1 Gender

Respondents were asked to indicate their gender and Table 4.1 below displays the responses.

Table 4.1: Responses on Gender

Gender	**Final Year Undergraduate**		**Postgraduate**	
	No.	%	No.	%
Male	73	(59.3%)	43	(55.8%)
Female	50	(40.7%)	34	(44.2%)
Total	123	(100%)	77	(100%)

Source: ***Field Data, 2021***

With regards to the gender of respondents, 59% (73) of the final year undergraduates were male whereas 40.7% (50) were females. In the case of Postgraduates, 55.8%(43) were males whilst 44.2%(34) were females. Response clearly shows that, majority of the respondents were males in both groups.

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4.2.2 Age

In order to ascertain whether age plays a role or influences Internet use, respondents were asked to indicate the range within which their age falls. Below is a tabular presentation of respondents' age.

Table 4.2.2: Responses on Age of Students.

Age	Final Year Undergraduate		Postgraduate	
	No.	%	No.	%
21-30	96	78.0%	0	
31-40	25	20.3%	24	31.2%
41-50	1	0.8%	46	59.7%
50+	1	0.8%	7	9.1%
Total	123	100%	77	100%

Source: ***Field Data, 2021***

With respect to age grouping, four main age groups were identified (21-30, 31-40, 41-50 and 50+) In the case of final year undergraduates, 78.0%(96) had their ages within the age range of 21-30, 20.3% (25) fell within the 31-40 category, 0.8%(1) was within the age group of 41-50 and 0.8%(1) was within the 51+ group. Results in the postgraduate group reveal that 31.2%(24) were in the age group of 31-40, 59.7%(46) of respondents fell in the 41-50 group, 9.1%(7) were within the 50+ group. Nobody in the postgraduate group had his or her age falling in the 21-30 age group. Statistics on respondents' age indicate that, majority of the respondents in the final year undergraduate group were in the age bracket of 21-30 whiles most of the respondents in the postgraduate group fell in the 41-50 age gap.

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A t –test was conducted to see if a significant difference existed between the ages of the two group. The results indicated a significant difference existed. The P-value (.000) was less than .05(level of significance) The mean age for Final year Undergrad=1.24 Postgrad.=2.78

4.2.3 Faculty

Respondents were asked to indicate their faculty and the results proved that, data collected was across all the five faculties of Presbyterian University College. Table 4.4 provides a tabular presentation of the faculty to which respondents belonged.

Table 4.4: Responses on Students' Faculty

Faculty	**Frequencies**			
	Final Year Undergraduate		Postgraduate	
	No.	%	No.	%
Science and Technology	11	8.9%	0	0%
Law	8	6.5%	0	0%
Developmental studies	12	9.8%	13	16.9%
Business and Economics	33	26.8%	10	13.0%
Health and Medical Sciences	59	48%	0	0%
Education	0	(0%)	54	(70.1%)
Total	123	100%	77	100%

Source: ***Field Data, 2021***

From the above table it can be seen that, 48%(59) of the final year Undergraduates were from the Faculty of Medical and Health Sciences while 0% was recorded for the postgraduates in the same faculty. This is because the faculty was not offering any postgraduate programme. An outstanding

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majority of 70.1%(57) of the Postgraduates respondents were from the Faculty of Education while 0% was recorded for the final year undergraduate as the faculty was not running any undergraduate program.

26.8%(33) of the final year undergraduates were from Faculty of Business Administration and Economics whiles 13% (10) of the postgraduates came from the same department. 9.8%(12) of the final year undergraduates were from faculty of Developmental Studies while 16.9% of the postgraduates came from the same department. 6.5%(8) of final year undergraduate which is the least came from the law faculty whiles 0% was recorded for Postgraduates in the same department. With respect to Faculty of Science and Technology, 8.9 %(11) was recorded for the final Year undergraduates whereas nothing was recorded for the post graduate in the same department.

It can be said that, data collection reflects views of respondents across all faculties although, the numbers are not proportional.

4.3 Purpose of Internet Use

One of the major objectives of this study was to find out the purpose for which the two groups of students (final year undergraduates and postgraduates use the Internet) use the Internet. They were therefore requested to indicate whether they have had a prior use of the Internet, the reasons for using the Internet as well as the extent to which the Internet is used for some listed purposes. The results are shown below:

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4.3.1 Prior Use of Internet.

Table 4.5: Responses on Prior Use of Internet

Have you used the Internet before?	Frequencies			
	Final year undergraduates		Postgraduates	
	No.	%	No.	%
Yes	(123)	100%	77	100%
No	0		0	
Total	123	100%	77	100%

Source: ***Field data, 2021***

Results from the sample under study indicate that, all 123 final year undergraduates had used the Internet before and all the 77 respondents from the postgraduate group had also used the Internet.

4.3.2 Reasons for using Internet

Table 4.6: Responses on Reasons for Internet use

Purposes	Purpose of Internet use.			
	Final year undergraduates		Postgraduates	
	No.	Percentage	No.	Percentage
Social Media	118	95.9%	32	41.6%
Academic assignment	123	100%	77	100%
e- commerce	69	56.1%	19	24.7%
Downloading of movies	72	58.5%	12	15.6%
Communication(through WhatsApp and email)	123	100%	75	97.4%

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News and sports	56	45.5%	40	51.9%

Source: ***Field Data, 2021***

Results collated from the study indicated that, communication and academic assignment were the purposes for which Internet was mostly used by the final year undergraduate as there was a full count (123) for these purposes. This is followed by social media with a percentage of 95.9%(118). The results also indicated that, 58.5% (72) used the Internet for downloading of movies while a little over half of the final year undergraduates 56.1% (69) used the Internet for e-commerce. News and sports was the least chosen purpose with 45.5%.

Within the postgraduate group, the purpose for which Internet was mostly used was for academic assignment with a 100%(77) count similar to that of the final year undergraduates. This is followed by communication with 97.4% (75). News and sports placed third with a percentage of 51.9% (40) which happens to be least chosen purpose by the undergraduates. Contrary to the undergraduates' high use of Internet for social media with 95.9% it was found out that only 41.6% of the postgraduates used the Internet for social media. E- commerce and downloading of movies placed the 5th and 6th position with 24.7% and 15.6% respectively.

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4.3.3 Frequency of Use of Internet for some listed purposes

Table 4.6: Frequency of Internet Use for some Listed Purposes

	Frequency of Use of Internet											
	Very often				Often				Hardly			
	F.U		P.G		F.U		PG		F.U		P.G	
	No.	%	No.	%	No.	%	No.	%	No	%	No	%
Social Media.	99	80.5%	4	5.2%	17	13.8%	20	26.%	7	5.7%	53	68.8%
Acad. Assgt	67	54.5%	29	37.7%	56	45.5%	48	62.3%	0	0%	0	0%
Ecomm.	25	20.3%	0	0%	33	26.8%	14	18.2%	65	52.9%	63	81.8%
Comm.	104	84.6 %	24	31.2%	16	13%	47	61%	3	2.4%	6	7.8%
Dwld.of Movies	38	30.9%	0	0%	23	18.7%	4	5.2%	62	50.4%	73	94.8%
News and sports	29	23.6%	2	2.6%	16	13%	31	40.3%	78	63.4%	44	57.2%

Source: ***Field Data, 2021***

Results on the frequency of use of Internet for the above listed purposes are as follows:

Results gathered shows that, 80.5% (99) of the final year undergraduates very often use the Internet for **social media** while only 5.7% hardly use it for social media. 13.8%(17) also indicated that they often use it for social media.

Among the postgraduates, a few of them, that is 5.2% (4) indicated that, they very often use the Internet for social media. 26%(20) claimed they often use it for the same purpose while a whopping number of them, that is 68.8%(53) indicated that, they hardly use it for social media.

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A T test confirmed a significant difference between the two main groups with regards to frequency of use of Internet for social media. Sig(.000)<0.05. The final year undergraduates used it more often.

With regards to **academic assignment**, majority 54.5% (67) of the final year undergraduates reported using the Internet very often for academic work whilst 45.5% make use of it often. Nobody made a claim of hardly using the Internet for academic work.

Within the postgraduate group, more than half of the respondents which is 62.3%(48) reported using the Internet often for academic work with 37.7% of them making use of it very often for academic work.

A T test confirmed that, the two groups were significantly different with regards to the intensity of use of Internet for academic work. The frequency was higher among the final years. The Sig.(0.020)<0.05

Concerning **E-commerce**, response from the final year undergraduates indicated that 20.3% (25) of them very often use the Internet for **E-commerce** with 26.8% (33) using it often for the same purpose. More than half of them reported that they hardly use the Internet for e-commerce.

With respect to the postgraduates, an outstanding majority with a percentage of 81.8%

(63) hardly used the Internet for e-commerce. A few of them which constitute 18.2% (14) declared that they use it for e-commerce. A T-Test indicated a significant difference between the two groups. Sig(.000) <0.5. The T-test suggested the degree of use of Internet for Ecommerce was higher among the final year undergraduates.

According to the responses on **communication**, data gathered from the final year undergraduates, showed that, a greater majority which constitute 84.6 % used the Internet very often for

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communication. 13% (16) used it often for the same purpose and only 2.4 indicated they hardly used it for communication.

With the postgraduate group, 61% (47) which is more than half of the respondents claimed they often used the Internet for communication while 31.2% (24) used it very often for the same purpose. A few of them with a percentage of 7.8% hardly used it communication.

A T test indicated a significant difference between the groups. Sig(.000)<0.05 . The intensity of Internet use for communication was higher among the final year undergraduates.

Relating to the responses on **downloading of movies**, reports from the final year undergraduates indicated that 30.9% very often used the Internet for downloading movies, while 18.7% used it often for the same purpose. 50.4% hardly made use of it for movies. Among the postgraduates a greater number of them which constitutes 94.8% hardly used the Internet purposely for downloading movies while a few ie. 5.2 % (4) used it often for the same purpose. A T test indicated a significant difference. Sig. (.000)<.0.05 . Comparatively, downloading of movies was higher among the undergraduates.

Collated results on **news and sports** from the final year undergraduate indicated that, 23.6% used the Internet very often for news and sports while 13% used it often for the same thing. 63.4%(78) hardly used it for the same purpose. Results gathered from the postgraduates showed that (57.2%) hardly made use of the Internet for news and sports. 40.3% often used it for the same purpose with only 2.6% using it very often for news and sports. A T Test indicated the groups were statistically not different. Sig.(.665)>0.05.

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4.4 Awareness of Internet Resources

Another objective of this study was to ascertain students' awareness of some selected Internet resources. Respondents were therefore asked to indicate their awareness on those Internet resources as well as state the resource they actually use or adopt for academic work. Table 4.7 and Table 4.8 displays the results below:

4.4.1 Awareness of Internet Resources for Academic Work

Table 4.7: Responses on Awareness of Internet Resources

Internet Resources	Awareness of Internet Resources			
	Final year undergrad		Postgraduate	
	No.	Percentage	No.	Percentage
PUCG's Subscribed E-Resources	90	73.2%	77	100%
Google	123	100%	77	100%
Google Scholar	119	96.7%	77	100%
Pdf.drive	78	63.4%	44	57.1%
Yahoo	56	45.5%	26	33.8%
Bing	40	32.5%	24	31.2%
PUCG's Institutional Repository	77	62.6%	55	71.4%
Total	583		380	

Source: ***Field Data, 2021***

Data collected on awareness of Internet resources revealed that, 'Google' was the most popular or known resource for academic work for the final year undergraduate as Google had a 100%(123) count. This is followed by 'Google Scholar' 96.7%(119). PUCG's subscribed electronic resources

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was the 3rd most known resource as it earned 73.2%(90). Pdfdrive.com placed fourth position with 63.4%(78). 62.6% also declared their awareness of the PUCG's Institutional Repository thereby occupying the fifth position. The Internet resource which is the least known or popular among the final year undergraduates were Yahoo and Bing with 45.5% and 32.5% respectively.

The Internet resources mostly known by the postgraduates, were PUCG's subscribed E-resources, Google and Google Scholar as all the three were selected at a 100%(123) rate. The second most known resource for this group was the Institutional Repository as it earned a 71.4% (55) count. A considerable number of them which is 57.1% also indicated their awareness for pdfdrive.com thereby placing the 3rd position. This is followed by yahoo with a score of 33.8%. The least known Internet resource for academic work by the postgraduate was Bing which earned 31.2%.

4.4.2 Internet Resources Used for Academic Work

Respondents were asked to indicate the Internet resources they adopt or use for their academic projects and assignment.

Table 4.8: Internet Resources Used for Academic Work

Internet Resources used	Internet Resource used for Academic work			
	Final year undergraduates		Postgraduates	
	Frequency	Percentage	Frequency	Percentage
Use of PUCG's Subscribed E-Resources	61	49.6%	40	51.9%
Use of Google	123	100%	77	100%
Use of Google Scholar	116	94.3%	77	100%
Use of Pdf.drive	64	52%	36	46.8%
Use of Yahoo	30	24.4%	12	15.6%

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Use of Bing	24	19.5%	8	10.4%
Use of PUCG's Institutional Repository	26	21.1%	31	40.3%
Total	444		281	

Source: ***Field Data, 2021***

Collated results indicate that the most used Internet resource by the final year undergraduates is Google, as it was selected at a 100%(123) rate. This is closely followed by Google Scholar with a percentage of 94.3%(113). The third most used resource by this same group of students was pdfdrive.com which earned 52%(64) count. PUCG's subscribed e-resources occupied the 4th position with 49.6% (61). Yahoo. Bing and the Institutional Repository seemed to be less used by the final year undergraduates for their academic as they earned 24.4%, 19.5% and 21.1% respectively.

With regards to the postgraduates, Google and Google scholar were the most used Internet resource for academic work as both were selected by all respondents at a 100% rate. PUCG's subscribed e-resources was the 3rd most used resource with 51.9% (40). 48% claimed they made use of Pdfdrive thereby occupying the 4th position. Similar to that of the final year undergraduates, PUCG's Institutional Repository, Yahoo and Bing also appears to be less used by the postgraduates as they earned 40.3%, 15.6% and 10.4% respectively.

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4.5 Frequency of Use of Internet Resources

As part of major objectives of this study, the researcher sought to establish the extent or degree of use of Internet resources by students. Respondents were therefore requested to state how often they use some listed Internet resources for academic work.

Table 4.9: Responses on Frequency of Use Internet Resources

Internet Resources	Frequency of use											
	Often				**Sometimes**				**Hardly**			
	F.U		**P.G**		**F.U**		**PG**		**F.U**		**P.G**	
	No.	%	No.	%	No	%	No	%	No	%	No	%
The Univ.'s subscribed e- resources	7	5.7%	16	20.8%	44	35.8%	24	31.2%	72	58.5%	37	48.1%
Google	120	97.6%	77	100%	3	2.4%	0	0%	0	0%	0	0%
Google scholar	94	76.4%	73	94.8%	19	15.4%	4	5.2%	10	8.1%	0	0%
Pdfdrive. com	16	13%	3	3.9%	42	34.1%	31	40.3%	65	52.9%	43	55.8%
Yahoo	0	0%	0	0%	9	7.3%	8	10.4%	114	92.7%	69	89.6%
Bing	0	0%	0	0%	19	15.4%	3	3.9%	104	84.6%	74	96.1%
PUCG's IR	0	0%	0	0%	12	9.8%	27	35.1%	111	90.3%	50	65%

Source: ***Field Data, 2021***

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Responses on how frequently students use the above Internet resources showed that, 5.7% of final year undergraduates often used the **University's subscribed e-resources** for their academic projects whiles 35.8% sometimes used it for the same purpose. 58.5% (44) which is more than half of them hardly made use of it. Among the postgraduates, 20.8%(16) often used the University's subscribed e- resources while 31.2% (24) used it sometimes for their projects. The remaining 48.4% (37) also claimed they hardly made use of it. A T-test indicated the two groups were statistically different. The Sig(.000)<.05

Findings pertaining to the frequency of use of **Google** indicate that, 97.6% of final years undergraduates often use google in searching for information for their academic projects while the remaining 2.4%(3) reported using it sometimes. There was no score for hardly using Google among this group. Within the postgraduates, all the 77(100%) respondents reported that they often use Google. A T-test indicated the two groups were significantly not different. Sig(0.83)>0.05

Results on **google scholar** regarding frequency of its use by students show that, 76.4% of final year undergraduates often used it and 15.4% of them used it sometimes. Nobody reported hardly using it for academic work. With regard to the postgraduate group, 94.8%(73) of them indicated that they often use Google Scholar while 5.2% claimed they used it sometimes. A T-test conducted showed that the two groups were significantly different. Sig(.000)<0.05.

Evidence from table 4.9 shows that, 13% of final year undergraduates often use **Pdfdrive.com**, 34.1%(42) use it sometimes while 52.9% hardly make use it. Within the postgraduates group, 3.9% reported using pdfdrive.com often while 40.3% (31) indicated that they sometimes use it. 55.8% claimed they hardly use it for project work. A T-test conducted showed the two groups were significantly not different with regard to the frequency of use of Pdfdrive.com. Sig(.377)>0.05.

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Regarding **Yahoo, a**mong the final year undergraduates, no score was recorded for using yahoo often. 7.3% indicated that they sometimes use Yahoo for their work while the majority constituting 92.7% claimed they hardly use it. Within the postgraduate group, no score was recorded for using yahoo often just like the final year undergraduate group. 10.4% responded that they used it sometimes for their projects while a large chuck of them, that is 89.6% claimed they hardly use it for the same purpose.

Data collected on Bing showed that, 15.4% of final year undergraduates used Bing sometimes for their work whiles a greater majority of 84.6% hardly made use of it. With regards to the postgraduates, 3.9% sometimes used Bing whiles a greater majority which constitute 96.1% hardly made use of it. No score was recorded for using Bing often by both groups.

Findings on **Institutional Repository** show that, 9.8% of final years sometimes employ the use of IR in searching for information for their academic projects while majority of them, that is 90.3% hardly use it. In the postgraduate group, 35.1% indicated that they use the IR sometimes whiles 65% hardly use it. A T test suggested a significant difference between the two groups. Sig(.000<0.05)

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4.6 Point of Internet Access

The researcher wanted find to out where students access Internet for their academic assignments whenever they are on campus. Participants of the study were therefore asked to identify their point of Internet access for information when they are on campus and the responses are found below.

Table 4.10 Responses on Point of Internet access

Points of Internet access	**Final year undergrad.**		**postgraduates**	
	Frequency	Percentage	Frequency	Percentage
The University's Library	25	20.3%	7	9.1
The ICT Lab	19	15.4%	5	6.5
Internet Cafe	0	0	0	0
My Phone and Personal Laptop with Router.	79	64.2	65	84.4%
Total	123	100%	77	100%

Source: ***Field Data, 2021***

Among the final year undergraduates, 20.3% (25) accessed the Internet from the University's library, 15.4%(19) from the ICT Lab and 64.2%(79) from their phones and personal laptops with router. Within the postgraduates, 9.1 %(7) accessed the Internet from the University's Library, 6.5% (5) accessed it from ICT Lab and 84.4% accessed it from their laptops. There was no score for Internet café for both groups.

4.7 Students' Knowledge on Search Strategies

This study also sought to determine students' knowledge on Internet search strategies. The questions asked under this objective were in two major parts. The first one asked respondents to indicate how they search for information on a given topic from the Internet. The second one

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requested participants to indicate their awareness and prior use of Boolean operators as well as the search outcome or results of applying Boolean operators "AND" "NOT" "OR". These questions were to enable the researcher to determine whether or not the students possessed efficient skills of retrieving information from the Internet. Tables 4.11, 4.12, 4.13, 4.14 , 4.15, 4.16.

4.7.1 Search Strategy adopted for the search of information on a Topic

Table 4.11: Responses on Search Strategy

Search strategies	Final year undergrad.		Postgraduates	
	Frequency	Percentage	Frequencies	Percentages
I type the whole sentence on the topic in a search engine	14	11.4%	3	3.9%
I select relevant key words from the topic and search with them	88	71.5%	40	51.9%
I type the whole sentence on the topic and put them under quotes.	19	15.4%	5	6.5%
I prefer to give the topic to an information expert to search for relevant information for me	2	1.6%	29	37.7%
Total	123	100%	77	100%

Source: ***Field Data, 2021***

With reference to table 4.11., results among the final year undergraduates are as follows: 71.5% "select relevant key words from the topic and search with them" as their search strategy, 15.4% "type the whole sentence on the topic and put them under quotes", 11.4% of final year undergraduates chose "I type the whole sentence on the topic in a search engine" and 1.6% "prefer to give the topic to an information expert to search for relevant information" for them.

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In the case of postgraduates, 51.9% "select relevant key words from the topic and search with them". 37.7% "preferred to give the topic to an information expert to search for relevant information for them", 6.5% "type the whole sentence on the topic and put them under quotes"

4.7.2 Awareness on Boolean Operators

Table 4.12: Responses on Awareness on Boolean operators.

Boolean operators (AND, OR, NOT)	Awareness on Boolean operators			
	Final year undergraduates		Postgraduates	
	Frequency	Percentage	Frequency	Percentage
Yes	59	48%	36	46.8
No	64	52%	41	53.2
Total	123	100%	77	100%

Source: ***Field Data, 2021***

Evidence from table 4.12 showed that, awareness rate of Boolean operators among the final year undergraduates was 48% (59). 52% of them answered 'No'. With regard to the postgraduates, 46.8% confirmed being aware of the search operators whiles 53.2% stated the contrary. A T test conducted showed no significant difference between the groups on the awareness of Boolean operators. Sig(.868)>0.05.

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4.7.3 Use of Boolean Operators

The researcher wanted to find out whether respondents used Boolean operators or not despite their awareness of them.

Table 4.13: Responses on Use of Boolean Operators

Use of Boolean Operators	Use of Boolean operators			
	Final Year Undergraduates		Postgraduate	
	Frequency	Percentage	Frequency	Percentage
Yes	52	42.3%	34	44.2
No	71	57.7	43	55.8
Total	123	100%	77	100%

Source: ***Field Data, 2021***

Collated results revealed that, 42.3 %(52) of the final year undergraduates had actually used the Boolean operators to search for information before while 57.7% responded negatively. Among the postgraduates, 44.2% of them had made use of the operators while 55.8% had not.

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4.7.4 Search Outcome of the Application of Boolean AND Operator

The researcher wanted to find out students' knowledge on how Boolean "And" works. With regard to questions on Boolean operators, the researcher instructed respondents to answer them only if they confirmed that they had used it before.

Table 4.14: Responses on the Search Outcome of Boolean AND

Boolean AND	Search Outcome of Boolean AND			
	Final Year Undergraduates		Postgraduates	
	Frequency	Percentages	Frequency	Percentage
Expands search results	15	12.2%	4	5.2%
Narrows search results to relevant information needed	37	30.1%	30	39.0%
Not sure	0	0	0	0
Total	52	42.3%	34	44.2%

Source: ***Field Data, 2021***

The response rate for the question on Boolean AND was 42.3% for final year undergraduates and 44.2% for postgraduates. The results are as follows: Within the final year undergraduate group, 30.1% indicated that Boolean AND "narrows search results to relevant information needed" (correct) whilst 12.2% reported that it "expands search results".(wrong) Among the postgraduates,39.0% reported that the operator ' AND "narrows search results to relevant information needed" (correct) whiles 5.2% claimed that it "expands search results".(wrong)

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4.7.5 Search Outcome of the Application of Boolean OR operator

Respondents were asked to indicate the search outcome of Boolean operator "OR" when it is applied in a search query.

Table 4.15: Reponses on the Search Outcome of Boolean Or

The Boolean 'Or'	Search outcome of Boolean Or			
	Final year undergraduates		Post graduates	
	Frequency	Percentages	Frequency	Percentages
Expands search results	49	39.8%	22	28.6%
Narrows search results to relevant information	3	2.4%	12	15.6%
Not sure	0	42.3%	0	0
Total	52	42.3%	34	44.2%

Source: ***Field Data, 2021***

The response rate for this question was 42.3% for final year undergraduates and 44.2% for postgraduates. It is evidenced from table 4.15 that, 39.8% of final year undergraduates selected " Expands search results" (correct) as the outcome of the application of Boolean "OR" while 2.4% chose " Narrows search results"(wrong). Among the postgraduates 28.6% indicated "Expands search results "(correct) as the answer while 15.6% reported "Narrows search results" (wrong) as the answer to the Boolean OR question.

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4.7.6 Search Outcome for the Application of Boolean NOT

The researcher asked respondents to indicate the search outcome of applying Boolean OR

Table 4.16: Responses on Boolean Operator NOT

The Boolean NOT	Search outcome of Boolean NOT			
	Final year undergrad		Post graduates	
	Frequency	Percentage	Frequency	Percentage
Expands search results	1	0.8%	0	0
Narrows search results to relevant information	51	41.5%	34	44.2%
Not sure	0	0	0	0
Total	52	42.3%	34	44.2%

Source: ***Field Data, 2021***

Results collated on the Boolean "NOT" are as follows. 41.5% of final year undergraduates pointed 'Narrows search results' (correct) as the answer for Boolean 'NOT' while 0.8% (1) selected 'Expands search results" (wrong). With regard to the postgraduates, all the eligible respondents 34(44.2%) for question 17 indicated "Narrows search results" (correct) as the answer to the question above.

It is worthy to note that the response rate among final year undergraduates and postgraduates for question 17 were 42.3% and 44.2% respectively.

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4.8 Perceptions on the Ease of Internet Use by final year undergraduates and post graduates.

Another objective of this study was to compare students' perceptions on the ease of Internet use in searching for information for academic work. Four statements were examined under this objective and respondents were asked to indicate the extent to which they agreed or disagreed with those statements. Results are found below:

4.8.1 Perception on the Searching of Information being easier with the Internet than Books.

Table 4.17: Responses on searching for information on the Internet is easier as compared to books

Searching for information on the Internet is easier as compared to books in print	Final year undergraduates		Postgraduates	
	No.	%	No.	%
Strongly disagree	4	3.3%		
Disagree	25	20.3%	43	55.8%
Unsure	0	0%	0	0%
Agree	39	31.7%	31	40.3%
Strongly Agree	55	44.7%	3	3.9%
Total	123	100%	77	100%

Source: ***Field Data, 2021***

The responses gathered show that, 44.7% of final year undergraduates strongly agreed with this notion, 31.7% of them agreed, 20.3% disagreed and 3.3% strongly agreed. It can therefore be concluded that, 76.4% of the final year undergraduates supported the notion that, searching for information on the Internet is easier than doing same with books in print.

Among the postgraduates, only 3.9% strongly agreed with the statement under review, 40.3% of them agreed, with 55.85% disagreeing. This means that, more than half of the respondents in the

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postgraduates disagreed with the perception that "Searching for information on the Internet is easier than doing same with books in print"

An independent sample T –test was conducted to determine whether a significant difference existed between the two groups under study(post graduate and final year undergraduate) with regard to the statement "searching for information on the Internet is easier than books in print"

Table 4.18: The mean responses on the perception "searching for information on the Internet is easier as compared to books in print"

	Year	N	Mean	Std. Deviation	Std. Error Mean
Searching for information on the Internet is easier as compared to books in print	Final year undergraduate	123	3.18	.869	.078
	Post graduate	77	2.48	.576	.066

Table 4.19 : An Independent samples T -test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig	t	df	Sig(2tailed)	Mean diff.	Std. Error Diff	95% Confidence Interval of the Difference	
									Lower	Upper
Searching for info on the Internet is easier as compared to books in print	Equal variances assumed	12.731	.000	6.244	198	.000	.698	.112	.478	.919
	Equal variances not assumed			6.833	197.309	.000	.698	.102	.497	.900

Using the data in Table 4.19 for reference, the result of the T-Test indicates that, the two groups were significantly different with regards to their views on the statement under review. This is because the p- value(.000) was less than 0.05 (level of significance) Per the mean scores

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between the two groups , the postgraduates did not perceive the searching of information on the Internet to be easier than books as table 4.18 on page 67 shows that, they had a lower score on this variable(2.48) than the final year undergraduates(3.18)

4.8.2 Confusion with the selection of Results from the Internet

Table 4. 20: Responses on Confusion with selection of results from the Internet

I sometimes get confused/overwhelmed when choosing from the thousands of results from the Internet retrieves.	Final year undergraduate		Post Graduates	
	No	%	No.	%
Strongly disagree	11	8.9%	8	10.4%
Disagree	45	36.6%	24	31.2%
Unsure	0	0	0	0
Agree	49	39.8%	39	50.6
Strongly Agree	18	14.6%	6	7.8%
Total	123	100	77	100

Source: ***Field Data, 2021***

Results for the final year undergraduates are as follows; 8.9% strongly disagreed that they sometimes got confused, when selecting from thousands of results that pop up for their queries, 36.6% disagreed with this assertion, 39.8% agreed while 14.6% strongly agreed with the same notion. This means that 54.4% of the final year undergraduates agreed with this statement with less than half of them disagreeing with it.

Among the postgraduates, 7.8% strongly agreed with the statement under review, 50.6% agreed, 31.2% disagreed while 10.4% strongly disagreed. Collated results suggested that a little over half of the postgraduates, that is 58.4% was in support of the statement that, “they sometimes get confused with the selection of answers from the thousands of results that pop up on the Internet”.

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An independent sample t-test was conducted to determine if a significant difference existed between the mean responses of final year undergraduates and post graduates on the perception: I sometimes get confused/overwhelmed when choosing from the thousands of results that pop up for my query (question) when using the Internet.

Table 4.21: The mean responses on confusion with the selection of results from the Internet

	Year	N	Mean	Std. Deviation	Std. Error Mean
I sometimes get confused/overwhelmed when choosing from the thousands of results the Internet retrieves.	Final year undergraduate	123	2.60	.847	.076
	Post graduate	77	2.56	.786	.090

Table 4.22 : Independent samples test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig	t	df	Sig(2tailed)	Mean diff	Std. Error Diff.	95% Confidence Interval of the Difference	
									Lower	Upper
I sometimes get confused/over whelmed when choosing from the thousands of results using the Internet	Equal variances assumed	.808	.370	.361	198	.719	.043	.120	-.193	.279
	Equal variances not assumed			.367	170.450	.714	.043	.118	-.189	.276

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Using the data in Table 2.22 for reference, T-test conducted showed no significant difference between the mean responses of the two groups with regards to the statement under review. (almost the same.) This because the Sig (.719) > 0.05(level of significance). Table 4.21 on page 69 however shows that, final year undergraduates earned a higher score (2.60) than the Postgraduates (2.56) but the difference is statistically not significant. This means both groups admitted to being confused sometimes when selecting results from the Internet.

4.8.3 The need for special training on using Internet for searching

Table 4.23 : Responses on the need for Special training on the use of Internet for searching

I need special training on how to effectively search and retrieve relevant information from the Internet for my academic work	Final year undergrad.		Post Graduates	
	No.	%	No.	%
Strongly disagree	4	3.3%	0	0
Disagree	51	41.5%	20	26.0%
Unsure	0	0	0	0
Agree	53	43.1%	53	68.8%
Strongly agree	15	12.2%	4	5.2%
Total	123	100	77	100

Source: ***Field Data, 2021***

The researcher wanted to find out the extent to which students would admit to needing special training on how to search for relevant information on the Internet. From the table 4: 19, it can be seen, 12.2 % of final year undergraduates strongly agreed with needing special training on how to search the Internet for relevant information. 43.1% agreed, whilst 41.5 % and 3.3% disagreed and strongly disagreed respectively. This means that 55.3% confirmed needing special training on Internet searches.

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In the case of post graduates, 5.2% strongly agreed to needing training, with 68.8% agreeing to needing it. 26% disagreed to needing training. This shows that majority of final year undergraduates which constitutes 74% also admitted that they needed training.

A T-test was conducted to determine if a significant difference existed between the two groups with regards to the need of training on how to search for information on the Internet.

Table 24: The mean responses on the need for special training

	Year	N	Mean	Std. Deviation	Std. Error Mean
I need special training on how to use the Internet to effectively search and retrieve relevant information for my academic work	Final year undergraduate	123	2.64	.737	.066
	Post graduate	77	2.79	.522	.059

Table 25: An Independent Sample T-Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig	t	df	Sig (2tailed)	Mean diff	Std. Error Diff	95% Confidence Interval of the Difference	
									Lower	Upper
I need special training on how to to effectively search for information	Equal variances assumed	20.632	.000	-1.557	198	.121	-.150	.096	-.340	.040
	Equal variances not assumed			-1.682	194.968	.094	-.150	.089	-.326	.026

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Using the data in Table 4.25 for reference, the result of the T- test indicates that the two groups were significantly not different with regards to their views on needing training on how to effectively search for information on the Internet. The p value Sig 0.94 > 0.05(level of confidence). Although Table 4.24 on page 71 shows that the postgraduates had a higher score (2.79) than the final year undergraduates (2.64), the difference in the mean score was not significant.

4.8.4 Internet Use Requires Mental Effort

Table 4.26: Responses on Internet use requires Mental effort

Using the Internet to search for information requires a lot of mental effort	Mental effort			
	Final year undergraduates		postgraduates	
	No.	%	No.	%
Strongly disagree	17	13.8%	9	11.7%
Disagree	62	50.4%	24	31.2%
Unsure	0	0		0
Agree	36	29.3%	37	48.1%
Strongly agree	8	6.5%	7	9.1%
Total	123	100%	77	100%

Source: ***Field Data, 2021***

Evidence from Table 4.20 show that, 6.5% of final year undergraduates strongly agreed with the assertion that, searching for information using the Internet requires a lot of mental effort. 29.3% also agreed with the above statement while 50.4 % disagreed with it. 13.8% also strongly disagreed with it. In totality, 35.8 % of final year undergraduates admitted that using the Internet to search for information requires a lot of mental effort.

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In the case of postgraduates, 9.1% strongly agreed with the statement. 48.1% agreed with it whilst 31.2% disagreed with the notion that, a lot of metal effort is required in the use of Internet for searching for information. 11.7% also strongly disagreed with this assertion. Collated results therefore revealed that, 57.2% postgraduates were in favour of the statement: "Using the Internet to search for information requires a lot of mental effort"

A T- test was run to determine if the mean responses between the two groups were significantly different with regards to the assertion that: Searching for information requires a lot of mental effort.

Table 4. 27: The mean responses on Internet Use requires mental effort

	Year	N	Mean	Std. Deviation	Std. Error Mean
Using the Internet to search for information requires a lot of mental effort	Final year undergraduate	123	2.28	.784	.071
	Post graduate	77	2.55	.820	.093

Table 4.28: An Independent sample T-Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig	t	df	Sig (2tailed)	Mean diff	Std. Error Diff	95% Confidence Interval of the Difference	
									Lower	Upper
Using the Internet to search for information requires a lot of mental effort	Equal variances assumed	.879	.350	-2.249	198	.026	-.261	.116	-.490	-.032
	Equal variances not assumed			-2.226	156.095	.027	-.261	.117	-.492	-.029

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Using the data in Table 4.28 for reference, the t- test result on the variable "Internet usage requires a lot of mental effort" revealed the two groups were significantly different with regards to their views on this assertion. The p value Sig 0.026 < than 0.05(level of significance). The postgraduates believed Internet use required mental effort more than the final year undergraduates as Table 4.27 on page 73 showed that the postgraduates earned a higher score (2.55) than the final year undergraduates. (2.28)

4.9 Comparison of Perceptions on the Usefulness of Internet for academic work between undergraduates and post graduates.

One of the significant objectives was to compare the views of final year undergraduates and post graduates on the usefulness of Internet usage to their academic work. Four statements were examined under this objective and respondents were asked to indicate the extent to which they agreed or disagreed with the statements. Results are displayed below:

4.9.1 Prevention of Time Wastage with the Use of Internet for Searching.

Respondents were asked to agree or disagree with the statement that "Using Internet prevents time wastage in searching for information."

Table 4.29: Responses on Internet use prevents time wastage

Using Internet prevents time wastage in searching for information	Time wastage prevention			
	Final year undergraduate		Post Graduates	
	No	%	No	%
Strongly disagree	5	4.1%	16	20.8%
Disagree	12	9.8%	22	28.6%

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Unsure	0	0%	0	0%
Agree	25	20.3%	36	46.8%
Strongly Agree	81	65.9%	3	3.9%
Total	123	100%	77	100%

Source: ***Field Data, 2021***

The table above is a representation of views from the student groups under study on the assertion that, "Using Internet prevents time wastage in searching for information'. Among the final year undergraduates, 65.9% strongly agreed with this statement. 20.3% agreed, 9.8% disagreed whilst 4.1% strongly disagreed. This means 86.2% supported this statement.

In the case of the Postgraduate group, 3.9% strongly agreed, 46.8% agreed, 28.6% disagreed while 20.8% strongly agreed. This also shows 50.7% of postgraduate supported this notion.

Using the data in Table 4.34 on page 80 for reference, the result of a student's t-test conducted on the variable "Using Internet prevents time wastage in searching for information" revealed that, a significant difference existed between the two groups with respect to their perception on this variable. The P value (.000) of the T–test conducted was less than 0.05(level of significance). Even though majority in both groups admitted that, it prevented time wastage, the final years comparatively agreed more than the postgraduates. Table 4.33 on page 80 shows that the final year undergraduates earned a higher score (3.48) than the postgraduates (2.34).

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4.9.2 Improvement in the quality of academic work with use of Internet Resources.

Table 4.30: Responses on Improvement in the Quality of Academic Work with the Use Of Internet Resources

The use of Internet resources improve the quality of my academic work	Improvement on Quality of academic work			
	Final year undergraduates		Postgraduates	
	No	%	No.	%
Strongly disagree	2	1.6%		
Disagree	8	6.5%	16	20.8%
Unsure	0	0	12	15.6%
Agree	87	70.7%	33	42.9%
Strongly Agree	26	21.1%	16	20.8%
Total	123	100%	77	100

Source: ***Field Data, 2021***

Within the final year undergraduate group, 21.1% strongly agreed, 70.7% agreed, 6.5% disagreed and 1.6% strongly disagreed. This means 91.8% of the final years believed that, the use of Internet resources improves the quality of academic work. In the case of postgraduates, 20.8% strongly agreed, 42.9% agreed, 15.6% were unsure and therefore took a neutral stance and 20.8% disagree. Collated results suggest that, 63.7% of postgraduates believed that using Internet resources improved the quality of their academic work.

A student T test was conducted to determine if a significant difference existed between the two groups with regard to their views on the perception that, 'Internet improves the quality of academic work'. Using the data in table 4.34 for reference, the result of the t-test indicates that a significant difference existed between the two groups although majority in both groups supported the

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statement. The P-value(.000) was less than 0.05(level of significance.) The results showed the final year undergraduates comparatively agreed more as Table 4.33 on page 80 shows that the final years earned a higher score (3.11) than the postgraduates (2.53).

4.9.3 Difficulty In The Performance Of Academic Responsibility Without Internet

Research statement: My academic responsibility will be difficult to perform without Internet.

Respondents were asked to agree or disagree on the notion that, their academic responsibility would be difficult to perform without the Internet.

Table 4.31: Responses on Difficulty Of Performance Of Academic Responsibility Without Internet.

My academic responsibility will be difficult to perform without Internet	Final year undergraduate		Post Graduates	
	No.	%	No.	%
Strongly disagree	0	0	0	0
Disagree	0	0	0	0
Unsure	0	0	0	0
Agree	28	22.8%	54	70.1%
Strongly Agree	95	77.2%	23	29.9%
Total	123	100	77	123

Source: ***Field Data, 2021***

Responses among the final year undergraduates on the assertion that, "academic responsibility will be difficult to perform without the Internet" are as follows: a greater majority of 77.2% strongly agreed and 22.8% agreed. Nobody disagreed nor took a neutral stance on this assertion. In the case of postgraduates, 29.9% strongly agreed and 70.1% agreed to the statement. Just like

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the final year undergraduate group, nobody took a neutral stance nor disagreed with the statement that, academic responsibility will be difficult to perform without Internet.

An independent sample T-test was conducted to determine if a significant difference existed between the two groups with regards their responses on "My academic responsibility will be difficult to perform without the Internet". Using the data in Table 4:34 for reference, the results revealed that, a significant difference existed between the two groups with respect to their views on the above statement, even though majority in both groups supported the statement. The Sig(.000) from the T-test was less than the level of significance(0.05). Comparatively, the final year undergraduates agreed more as Table 4.33 on page 80 shows, they earned a higher score (3.77) than the Postgraduates(3.30)

4.9.4 Provision of Unlimited Access to Information

Respondents were asked by the researcher to state the extent to which they agreed or not with the assertion that, Internet provides unlimited access to information

Table 4.32: Responses on Unlimited access to information.

The Internet provides me with unlimited access to information.	Unlimited access to Information.			
	Final year undergraduate		Post Graduates	
	No.	%	No.	%
Strongly disagree	0	0	0	
Disagree	2	1.6%	7	9.1%
Unsure	0	0%	0	0%
Agree	80	65.1%	54	70.1%

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Strongly Agree	41	33.3%	16	20.8
Total	123	100%	77	100%

Source: ***Field Data, 2021***

With regards to the final year undergraduates, 33.3% strongly agreed, 65.1% agreed and only 1.6% disagreed. Nobody strongly disagreed or took a neutral stance. In totality 98.4% were in support of the statement "The Internet provides me with unlimited access to information. In the case of Postgraduates, 20.8% strongly agreed, 70.1% agreed while 9.1% disagreed. Nobody disagreed or was unsure of this statement. This shows that 90.9% of postgraduate supported the statement under examination.

An independent sample t-test conducted on the two groups of students indicates that, a significant difference existed between the two groups with respect to their responses on "The Internet provides me with unlimited access to information." as evident in the data in Table 4.34. The p value.(009) from the T-test was less than 0.05(level of significance) . Even though majority in both groups supported the statement, table 4.33 on page 80 shows the final years earned a higher score of 3.32 than the postgraduates (3.12)

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Table 4. 33: The Mean Responses on the Usefulness of Internet

	Year	N	Mean	Std. Deviation	Std. Error Mean
Using Internet prevents time wastage in searching for information	Final year undergraduate	123	3.48	.833	.075
	Post graduate	77	2.34	.852	.097
The use of Internet improves the quality of my academic work(assignments and projects)	Final year undergraduate	123	3.11	.576	.052
	Post graduate	77	2.53	1.273	.145
My academic responsibilities will be difficult to perform without the Internet	Final year undergraduate	123	3.77	.421	.038
	Post graduate	77	3.30	.461	.053
The Internet provides me with unlimited access to information	Final year undergraduate	123	3.32	.501	.045
	Post graduate	77	3.12	.537	.061

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Table 4:34 An Independent Sample T Test On Usefulness of Internet Use

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig	t	df	Sig (2tailed)	Mean diff	Std. Error Diff	95% Confidence Interval of the Difference	
									Lower	Upper
Using the Internet prevents time wastage in searching for info	Equal variances assumed	.972	.325	9.349	198	.000	1.142	.122	.901	1.383
	Equal variances not assumed			9.300	158.733	.000	1.142	.123	.899	1.385
The use of Internet improves the quality of my academic work	Equal variances assumed	56.046	.000	4.401	198	.000	.581	.132	.321	.842
	Equal variances not assumed			3.773	95.714	.000	.581	.154	.275	.887
My academic responsibilities will be difficult to perform without the Internet	Equal variances assumed	4.704	.031	7.464	198	.000	.474	.063	.349	.599
	Equal variances not assumed			7.311	150.603	.000	.474	.065	.346	.602
The Internet provides me with unlimited access to information	Equal variances assumed	4.371	.038	2.673	198	.008	200	.075	.053	.348
	Equal variances not assumed			2.630	153.012	.009	200	.076	.050	.351

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4.10 Attitude Towards Internet Use By Final Year Undergraduates And Postgraduates

As part of the objectives of the study, the researcher sought to determine students' attitude towards Internet use. Respondents were asked to indicate their judgements or feelings towards the use of Internet for academic work.

Table 4. 35: Responses on Attitude Towards Internet Use

Statements	Attitude			
	Final Year undergraduates		Postgrad.	
	No.	%	No	%
Using the Internet for academic work is good	109	88.6%	55	71.4%
Using the Internet for academic work is stressful	37	30%	40	51.9%
I feel Internet use for academic work has become a trend so I have no option than to use it	16	13%	35	45.5%
Using the Internet for academic work is favourable.	93	75.6%	50	64.9%
Total	225	207.2	180	233.1

With reference to Table 4. 35, results indicate that, 88.6% of final year undergraduates felt using the Internet for academic work was good whilst 71.4% of postgraduates felt same. With regards to the idea that, the use of Internet was stressful, only 30% of final year undergraduates evaluated its use for academic work as stressful, whilst 51.9% of postgraduates judged its use as stressful. 13% of final year undergraduates also indicated they use Internet for academic work because they feet its use has become a trend so have no option than to adopt it while 45.5% of

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postgraduates had the same feeling. On judging the use of Internet as favourable, 75.6% of final year undergraduates claimed its use was favourable while 64.9% of postgraduates felt same.

An independent sample T-test was conducted to determine if there were significant differences in the attitude responses of both groups and results indicated that the two groups were significantly different with regards to their attitude toward Internet use. The final year undergraduates had a more positive attitude towards Internet use compared to the postgraduates. The P values (Sig) of the attitude statements examined as seen in table 4.37 were less than 0.05 with the exception of the last statement. 'Using Internet is favourable" whose Sig>0.05. The T test table can be found below:

Using Table 4.36 for reference, the final year undergraduates earned a higher score (.89) than the postgraduates on the variable "Using Internet is good". On the variable "Using Internet for academic work is stressful" the postgraduates earned a higher score (.52) than the final year undergraduates. On the variable "I feel Internet use has become a trend so I have no option" the postgraduates earned a higher score (.45) than the final year undergraduates (.13). On "Using Internet is favourable", the final years earned a higher score(.76) than the Postgraduates (.65).

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Table 4.36: The mean responses on attitude towards Internet use

	Year	N	Mean	Std. Deviation	Std. Error Mean
Using Internet is good	Final year undergraduate	123	.89	.319	.029
	Post graduate	77	.71	.455	.052
Using Internet for academic work is stressful	Final year undergraduate	123	.30	.460	.042
	Post graduate	77	.52	.503	.057
I feel Internet use has become a trend so i have no option	Final year undergraduate	123	.13	.338	.030
	Post graduate	77	.45	.501	.057
Using Internet is favourable	Final year undergraduate	123	.76	.431	.039
	Post graduate	77	.65	.480	.055

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Table 4:37: An independent sample T test on attitude towards Internet Use

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig	t	df	Sig (2tailed)	Mean diff	Std. Error Diff	95% Confidence Interval of the Difference	
									Lower	Upper
Using the Internet for academic work is good	Equal variances assumed	38.840	.000	3.139	198	.002	.172	.055	.064	.280
	Equal variances not assumed			2.901	122.755	.004	.172	.059	.055	.289
Using the Internet for academic work is stressful	Equal variances assumed	14.007	.000	-3.153	198	.002	-.219	.069	-.355	-.082
	Equal variances not assumed			-3.090	150.834	.002	-.219	.071	-.358	-.079
I feel Internet use for academic work has become a trend so I have no option than to use it	Equal variances assumed	87.605	.000	-5.468	198	.000	-.324	.059	-.441	-.207
	Equal variances not assumed			-5.013	119.350	.000	-.324	.065	-.453	-.196
Using the Internet for academic work is favourable.	Equal variances assumed	9.349	.003	1.630	198	.105	.107	.065	-.022	.236
	Equal variances not assumed			1.590	148.489	.114	.107	.067	-.026	.239

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4.11 Challenges Encountered by Students in Their Use of Internet and its Resources.

The last objective of this study sought to ascertain the challenges the two groups of students face in their pursuit to use the Internet and its resources for academic work. A number of challenges were listed and the researcher asked respondents to tick or select those that were applicable to them.

Table 4.38 Challenges of Internet usage

Challenges of Internet usage.	Final year undergraduates		Postgraduates	
	Frequency	Percentage	Frequency	Percentage
Lack of Wifi and access to adequate computers and in the library	100	81.3%	49	63.6%
Restricted access to the ICT lab	79	64.2%	11	14.3%
Slow Internet speed on campus	114	92.7%	74	96.1%
inadequate computer skills	7	5.7%	25	32.5%
Information overload and difficulty in finding the needed information	50	40.7	59	76.6%
Computer anxiety(technostress)	3	2.4%	31	40.3%
Irregular power supply	44	35.8%	17	22.1%
Expensive Internet cost.	99	80.5%	73	94.8%
Total	496	403.3	339	440.3

Source: ***Field Data, 2021***

Results on challenges students face with regard to the use of Internet and its resources are arranged according the most considered challenge to the least selected challenge in both groups.

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In the final year undergraduate group, the most considered (selected) challenge was "slow Internet speed on campus "(92.7%). This was followed by "lack of access to adequate computers and Wifi in the library"(81.3%). "Expensive Internet" cost placed 3rd with 80.5%. Restricted access to ICT Lab placed 4th with 64.2%. "Information overload and difficulty In finding relevant information" (40.7%) was 5th . The 6th challenge was irregular power supply and the 7th was lack of adequate computer skills. The 8th and the least challenge for final year undergraduates was computer anxiety (technostress) with 2.4%

In the case of postgraduates, the most considered challenge was "slow Internet speed" (96.1%) just like the final year undergraduate group. The 2nd was "expensive Internet", the 3rd was "Information overload and difficulty in finding relevant information", the 4th was lack of wifi and adequate computers in the library, the 5th was computer anxiety (technophobia), the 6th was lack of computer skills (32.5%), the 7th was erratic power supply(22.1% and the least challenge for the postgraduates was "restricted access to the ICT Lab"(14.3%)

T-test result on 'Lack of Wi-Fi and access to adequate computers and in the library'

A t-test was conducted to determine if a significant difference existed between the two groups. The results indicated that, the two groups were statistically different with regard to their responses as their means were significantly different. The P value(.008) generated by spss was less than 0.05.

T-Test Result on Restricted Access to the ICT Lab

A T –test was conducted to see if a significant difference existed between the two groups with regards to considering **"Restricted access to the Ict Lab** as s challenge. The result of the test indicated that the two groups were statistically different as a significant difference existed in their mean responses. The P value(.000)was less than 0.05(level of significance)

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T-test result on 'slow Internet on campus'

A T-test conducted showed no significant difference in the mean score of the two groups. The two groups were therefore statistically not different with regards to the views on 'Slow Internet speed on Campus' The p value(.292) was bigger than 0.05(level of significance)

T- test result on 'Inadequate computer skills'

A T -test was run to find out if a significant difference existed in the responses of the two groups with regards to inadequate computer skills and the result showed that a significant difference existed between the means of the two group. The P-value (.000)was less than 0.05(level of significance)

T-test result on 'Information overload and difficulty in finding the needed information'

A t- test run on the groups suggested that, the two groups were statistically different with regards their responses on "Information overload and difficulty in finding the needed information" as a significant difference existed between the mean responses of the group. The p-value .000 was less than 0.05(level of significance)

T- test result on computer anxiety

A t-test was conducted to determine if a significant difference existed between the two groups of students. The results suggested a significant difference between the means of the two groups. The two groups were therefore statistically different from each other with regards to "computer anxiety" as a challenge. (It was more of a challenge to the postgraduates than it was to the final year undergraduates.)The P-value (.000) of the test was less than 0.05.

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T-test result on irregular power supply.

A T test suggested a significant difference between the two groups of students as the p-value (.035) was less than 0.05(level of significance). It can therefore be concluded that the two groups were statistically different with regard to their views on "irregular power supply" as a challenge to their use of the Internet and its resources.

T-result on expensive Internet cost

A student's T-test confirmed the two groups were statistically different with regards to their responses to expensive Internet cost. The p-value (.001) was bigger than 0.05 (level of significance).This shows that expensive Internet cost was a challenge to the Postgraduates more than the Undergraduates.

4.12 Point of Information Access

Respondents were asked to indicate their preferred point of information access.

Table 4.39: Responses on preferred point of information access.

Points of information access	Final year undergraduates		Post graduates	
	Frequency	Percentage	Frequency	Percentage
Internet	28	22.8	8	10.4
Books in print	0	0	0	0
I prefer to use both	95	77.2	69	89.6

Source: ***Field Data, 2021***

The researcher wanted to find out the respondents' preferred information access points and the results are as follows. Among final year undergraduates, majority of them constituting 77.2% (95)

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declared that they preferred to use both the Internet and Books in print while 22.8% (28) opted for the Internet only. With the postgraduate group, a greater majority of 89.6 % (69) indicated that they preferred using both whilst 10.4 % selected Internet only. There was no record for 'Books only' in both groups.

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CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Introduction

This chapter presents discussion of research findings. The discussion of findings reflects the objectives of the study and they are follows:

1. Demographic Information of Respondents
2. Purpose of Internet Use by Students (Final Year Undergraduates and Postgraduates)
3. Awareness of Internet Resources for academic work by both groups
4. Frequency of Use of Internet resources for academic work final by students
5. Students' knowledge on Internet search strategies
6. Perceptions on the Ease of Internet Use by final year undergraduates and post graduates.
7. Perceptions on the Usefulness of the Internet for academic work between undergraduates and post graduates.
8. Attitudes towards Internet use
9. Problems encountered by students in the use of the Internet (undergrad and postgrad.)

5.1.2 Demographic Information of Respondents

Demographic information which was collected on research respondents for the study entailed gender, age, educational level and faculty. With regard to gender, majority of the final year undergraduates' respondents were males (59.3%). Similarly, majority of the respondents in the

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postgraduate group were also males (55.8%). It can therefore be concluded that participants of the entire study were made up of more males than females.

With respect to age of the respondents, majority of the final year undergraduate students constituting 78.0 %(96) had their ages falling in the 21-30 category with only 1 person falling in the 41-50group. Within the Postgraduate group, majority of them constituting 59.7 %(46) fell in the 41-50 with the least being 7(9.1%) falling in the 50+ group. This clearly shows that the post graduates were generally older than the final year undergraduates.

With regards to the faculty to which respondents belonged, the results showed that, respondents were from all the six faculties namely: Faculty of Science and Technology, Faculty of Law, Faculty of Developmental studies, Faculty of Business and Economics, Faculty of Education and Faculty of health and Medical Sciences. Among the final year undergraduate group, majority of the respondents were from the Faculty of Medical and Health Sciences followed by Business Administration, Developmental Studies, Science &Technology and the least coming from Faculty of Law. In the case of Postgraduates, majority of the respondents belonged to the Faculty of Education, followed by Faculty of Developmental Studies. The least number was from the Faculty of Business and Economics. Although, the number of respondents from each faculty was not proportional to one another, it can be said that, the data collected at least have a representation of views of students from each faculty.

5.2 Purpose of Internet Use by Students

One of the major objectives was to find out the purpose for which Internet was used. Under this objective, all respondents from both group of students confirmed that they had used the Internet before and also indicated they used the Internet for a variety of purposes. Among the final year

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undergraduates, the topmost purposes for which Internet was used for were communication and academic assignment. This was followed by social media (2nd), downloading of movies,(3rd) ecommerce(4th), and the last was news and sports(5th). In the case of postgraduates, the topmost purpose for using the Internet by them was for academic assignment, followed by communication(2nd), News and sports(3rd), Social media(4th), E-commerce(5th) , with the last being downloading of movies(6).

5.2.1 Frequency of use of Internet for Social media, Academic Assignment, E-commerce, Communication, Downloading of movies and for News and Sports

On how frequently students use the Internet for Social Media, Academic Assignment, E-Commerce, Communication, Downloading of Movies and for News and Sports, results indicate that, a greater majority of final year undergraduates (who happen to be younger adults) use Internet for **social media** very often as opposed to a few postgraduates, (5.2%)(who are older adults) who use it very often for the same purpose. It can therefore be concluded that, the degree of use of the Internet for social media by undergraduates is higher than the postgraduates.

This findings agrees with the assertion of Braun(2013), that a notable digital divide between younger and older adults exists with regard to the use of social networking websites . Again, Duggan and Brenner (2013) reported that, majority of the users of Twitter, a social media application are usually between the ages of 18-29 and two thirds of Facebook users are younger adults. It is worthy to note, that most of the final year undergraduates of this study were younger adults between the ages of 21-30 so it is therefore not surprising that, most of them indicated they use the Internet very often for social media as opposed to the postgraduates who were largely older adult.

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With regards to **academic assignment**, most of the final year undergraduates confirmed using the Internet for it very often whilst majority of the postgraduate group also stated that they use it often for academic assignments. Comparatively, the intensity of Internet use for academic assignments was higher among the final year undergraduates than among the postgraduates. This corroborates the finding of Buabeng et al (2016) in a research on Internet Use by students in Agricultural Colleges in Ghana. He reports that, although the students generally use Internet for academic purposes, when compared across ages, younger students who are less than 40years use the Internet more than older students who are 40years and above when dealing with classroom work and preparation of assignments. This study revealed that majority of the post graduate students were between the ages of 40-50 and therefore agrees with Buabeng et al's reports.

The finding is also in line with the reports by Lancaster University (2018). According to the University's study, older students usually feel burdened when comparing websites for academic information and so tend to use it less.

With regard to the frequency of Internet use for **e-commerce,** the results suggested that, intensity of Internet use for E-commerce was quite low in both groups. Downloading of movies appeared to be higher among the final year undergraduates than the postgraduates and Internet was frequently used for communication by the final years more than the postgraduates. The extent of use of the Internet for communication was also more often among the final year undergraduates than the postgraduates. Concerning News and Sports, the study revealed that both groups hardly use Internet for news and sport. However, the few postgraduates that often use the Internet for news and sports were higher than the number of final years who use Internet often or very often

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for the same purpose. It can therefore be concluded that postgraduates use the Internet for sports and news more than final year undergraduates.

Findings on the frequency of use of the Internet for the above mentioned purposes showed that, the final year undergraduates comparatively used Internet for social media, e-commerce, downloading of movies and communication more than the postgraduates. However, with regard to news and sports, the postgraduates' degree of use of Internet for it was higher than among the final year undergraduates.

5.3 Awareness of Internet Resources for Academic Work by Both Groups

5.3.1 Awareness of Internet Resources

Findings of this study indicate that, the most known Internet resources for academic work among the final year undergraduates was "Google" as all of them admitted being aware of it. This was followed by Google Scholar(2nd), PUCG's Subscribed E-resources(3rd), Pdfdrive.com(4th), PUCG Institutional Repository(5th) ,Yahoo(6th), and the least known resource is (Bing7th). Among the postgraduates, the most known resources were Google, Google scholar and PUCG's Subscribed E-resources as all the respondents admitted knowing these three resources. The second most known resource was PUCG's Institutional Repository (2nd). This was followed by Pdfdrive.com (3rd), Yahoo (4th) and Bing (5th).

Comparing the two groups, there is a clear indication that, the two groups were very much aware of Google and Google Scholar. Whilst all the postgraduates were aware of the subscribed e-resource, awareness of the same resource among the final year undergraduates applied to the majority but not all . A considerable number of respondents(more than half) in both groups were

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also aware of Pdfdrive .com. Awareness on PUCG's Institutional Repository was higher among the postgraduates than among the final year undergraduates. Yahoo and Bing seem to be less known as a resource for academic work by the two groups.

5.3.2 Internet Resources Students Use for Academic Work

With reference to table 4.8, the results showed that, students' selection and actual use of certain Internet resources was different from their awareness of those resources. In simple terms, the fact that students are aware of certain resources does not automatically translate into actual use of such resources.

Finding on which Internet resources students actually adopt or use for academic work with special reference to, PUCG's subscribed resources, Google, Google scholar, Pdf.drive.com, Yahoo, and Bing and PUCG's Institutional Repository are as follows:

With regard to Final year undergraduates, the most used or widely adopted resource for academic work was Google. This is followed by Google Scholar, Pdfdrive (3rd), PUCG's subscribed E-resources (4th), Yahoo (5th), Institutional Repository (6th) and the least was Bing (7th). On the other hand, the most widely used Internet resources by the Postgraduates was Google, and Google Scholar. The 2nd most used resource for them was PUCG's E-resource. This was followed by Pdf-Drive.com (3rd), Institutional Repository (4th), Yahoo (5th) and the least used resource was Bing.

The results clearly indicate that, Google and Google Scholar were the most known and widely used or adopted Internet resource for academic work by both groups of students. PUCG's e-resources seemed to be used by a fragment of both final year undergraduates and postgraduates despite a higher awareness of it among them. Although, findings revealed a 100% awareness of the subscribed e-resource among Postgraduates only 51.9% of them made use of it for their

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academic projects. Awareness of the same resource applied to majority of the final year undergraduates but less than half of them use it for academic work.

Although the Institutional Repository was known by majority in both groups , it was utilized by just a handful of respondents in both groups . Yahoo and Bing seemed to be the least known and used Internet resource for academic work as few respondents stated that they use them.

The findings corroborate Apuke and Iyendu (2018)'s survey of three universities in Nigeria which concluded that majority out of 250 students preferred search engines specifically Google and Google Scholar with the least being Yahoo (16.4%). This finding is also in line with a survey conducted to explore Internet use behaviour of students at the Bharatidasan University by Shanmugam(2018). He reported that**,** 353 students (88.25%) out of 400 mentioned that, they mostly they used Google for searching.

5.4 Frequency of Use of Internet Resources for Academic Work.

This section discusses the frequency of use of Internet resources (Google, Google scholar, PUCG's e-resources, Yahoo, Bing and PUCG's Institutional Repository)

Collated results on the frequency of use of **PUCG's subscribed e resources** indicated that, most of the final year undergraduates hardly use the subscribed e-resources and the rest either use it often or sometimes. Among the postgraduates, majority of them (a little over half) use the e-resources often or sometimes with almost half of them hardly using it. This suggest that frequency of use of subscribed resources is higher among the postgraduates as compared to the final year undergraduates. This was confirmed by a T-test which suggest that, significant difference between the two groups existed with regards to frequency of use the University's subscribed e-resources.

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Results pertaining to Google, indicated that, a greater majority of the final year undergraduates often use google, whiles very few (2.4%) use it sometimes. Among the postgraduates, all the respondents reported they often use google. Both groups therefore have similar degree of using google which is often. . A T-test indicated no significant difference between the two groups.

On **Google Scholar**, most of the final year undergraduates often use Google Scholar whiles the others (15.4) use it sometimes. Among the postgraduate a greater majority of them often use Google Scholar with only 5.2% who use it sometimes. There were no records for hardly using it by both groups. Although both groups use it often, the frequency of use of Google Scholar was a bit higher in the postgraduates group than that of the final year undergraduates. A T- test therefore confirmed a significant difference between the two.

Results on Pdfdrive show that, the frequency of use of pdfdrive.com among majority of final year undergraduates was low as majority stated that they hardly use it. Less than half of them used it either often or sometimes. Within the postgraduates, majority hardly use it for academic work, whiles 40.3%, use it sometimes with very few of them who use it often. It can therefore be said that, pdf drive is fairly used by both groups. According to T-test conducted the two groups were significantly not different.

Concerning **Yahoo** and Bing a greater majority of the final year undergraduates and Postgraduates stated that, they hardly use them as Internet resources for academic work while only a few indicated that, they use them sometimes for academic purposes. This indicates that the degree to which Yahoo and Bing are used for academic work is once in a blue moon or very low in both groups. Findings on Institutional Repository indicated that majority of final year and postgraduates hardly use PUCG's Institutional Repository. However, a T-test suggested a significant difference

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between the two groups indicating that, the frequency of use of the IR comparatively was a bit higher among postgraduates.

Findings on the frequency of use Internet resources in this study corroborates Authur and Brafi's (2013) study which indicates that Google is frequently used by tertiary students in the Sunyani municipality as suggested by 70.4% of the responses whilst Yahoo is hardly used as Internet resource for academic work. Similarly, a study by Sahin & Balta,& Ercan(2010)revealed in their study that, 98 % of the students very often used Google for their academic work with electronic journals as the hardly used Internet resource by students.

5.4.1 Point of Internet access

The results of the study showed that majority of both postgraduate and final year undergraduates accessed the Internet using their "phones and personal laptops with router" when they were on campus while a few of them accessed the Internet from the University's Library and ICT Lab. The fact that majority of students accessed the Internet using their personal phones and Laptops with routers suggests a problem of access to Internet in the University Library and the ICT Lab which needs the rapt attention of the University's management. This finding in line with Kwaa(2019)'s study which found out that, majority of students in some selected schools in Kumasi had limited access to the Ict Lab to access the Internet and therefore had to resort to public cafes . Yebowaa(2018) also reported that majority of students in Wa had limited access to their school's Internet and therefore had to find other means of getting access to the Internet such using their personal phones and public café.

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5.5 Students' Knowledge on Internet Search Strategies.

This section was concerned with finding out the various strategies students employ when searching for information on a given topic with the Internet as well their knowledge on Boolean Operators.

5.5.1 How to search for information on a given topic using the Internet.

Results showed that, a significant number of final year undergraduates "select relevant keywords from a given topic and search with them". Some also "typed the whole topic and put them under quotes". Very few of them indicated they "type the whole sentence on the topic in search engine" and only 2 of them "preferred to give the topic to an information expert to do the searching for relevant information." for them. On the other hand, a little over half of the respondents of postgraduates "select relevant keywords from a given topic" when searching for information on a topic. Quite a number of them (37.7%) "preferred to give the topic to an information expert to do the searching for relevant information" as opposed to only 2 of the Final Year Undergraduates who preferred this strategy. This could probably be due to the fact most of them are workers and as such might not have time to do Internet searches for information. Very few of them indicated that, they "typed the whole topic and put them under quotes" and without quotes.

Even though findings indicated that majority in both groups opted for the selection of relevant key words on a given topic in both groups as their strategy for searching for information, it seems some still preferred information experts to do Internet searches for them especially with the postgraduates. According to Lancaster University(2018), older adults who are students would rather prefer to rather seek out help from information professionals as they feel burdened by the act of comparing websites for information from the Internet.

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5.5.2 Awareness of Boolean Operators

With reference to table 4.12 there was a clear indication that most of the final year undergraduates and Postgraduates had little or no knowledge on Boolean operators used for advance searching. Findings indicated awareness of the operators in both group applied to less than half of the respondents in each of the groups that is 48% and 46.8% for final years and Postgraduates respectively. A t-results showed the groups were significantly not different with regard to their awareness of Boolean operators.

5.5.3 Use of Boolean Operators.

Finding on whether respondents had used Boolean operators before or not revealed that, only 42.3% of final year undergraduates had used it before despite having 48% awareness among them. With regards to the postgraduates, 44.2% answered in the affirmative despite having 46.8% awareness of the operators among them. This shows that not everybody who was aware of the Boolean operators used them in searching. It is also inevitable to conclude that, majority of both groups do not apply the Boolean operators when using the Internet to search for information. A T-test also confirmed that, the two groups were statistically not different with regards to the use of Boolean operators.

5.5.4 Search results of applying Boolean AND, OR and NOT

The researcher instructed respondents to answer these questions only if they answered 'Yes" to having used the Boolean operators before. Response rate on Boolean "And", Boolean "OR" and Boolean "NOT" therefore was 42.3% for final year undergraduates and 44.2% for postgraduates

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Boolean" AND"

Findings on "Boolean AND" showed that, majority of the eligible respondents of the final years provided correct answers by indicating that Boolean AND when used for searching "narrows search results to relevant information needed". Very few of them provided wrong answers by indicating that it "expands search results." Among the postgraduates, majority also provided the correct answer "narrows search results to relevant information needed" as their response to the question on the application of 'Boolean AND'. Very few had it wrong by indicating that Boolean AND "expands search results."

Boolean OR

Results on "Boolean OR" show that majority of the eligible respondents of final year undergraduates opted for "expand search results" which is the correct answer while few had it wrong as indicated by "narrows search results" as their response. Among the postgraduates, majority gave correct responses with quite a number of them having it wrong.

Boolean NOT

Collated results on Boolean NOT indicated that, majority of the final year undergraduates respondents understood how 'Boolean Not" works as they provided the correct answer which is "Narrow search results" while only one person had it wrong by giving the answer " expands search result." On the other hand, all respondents of the postgraduate group, provided correct answers to the question on "Boolean NOT".

Looking at the findings on students' knowledge on search strategies, it can be concluded that knowledge on effective search strategies in both group of students is quite low. This is evidenced by the low record of awareness and use of Boolean Operators. Again, although majority of the

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few eligible respondents (for the questions on Boolean Operators) gave correct answers to indicate that they understood how the connectors worked, the fact still remains that, there were some students who did not know how to use the operators as indicated by their provision of wrong answers.

This finding affirms the finding of a survey by Korobili et al.'s (2011) among Philosophy and Engineering graduate students in Greece. In his study, he reported that 47% of the students had never used Boolean operators while 28% used them seldom.

Similarly, a study by Shuling(2006) reported that most students do not have the required knowledge and skills in conducting advanced search for information. He reiterated that, what most students were familiar with, was the simple or basic search. In his study, he indicated that only 16% of the students knew how to conduct advanced search with Boolean operators whist 55% of the respondents knew how to run a basic search. He therefore recommended that, it was imperative that students make efforts to have an improvement in their searching skills.

Again, the findings of this study on students' knowledge on Internet search strategies corroborates the findings of Hinson's and Amindu's study on Literacy Skills of students in Ghana. They found out that 48% of the students under his study lacked Internet literacy skills needed for the retrieval of relevant information. According to them, Internet literacy skill is very crucial for the academic success of students.

This finding is also consistent with multiple studies which found out that a small percentage of students actually make use of Boolean operators in their searches and are usually limited to the "AND operator" .(Bloom & Deyrup, 2015; Georgas, 2014; Malliari & Kyriaki-Manessi, 2007) .

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5.6 Perceptions on the Ease of Internet Use.

According to the Technology Acceptance Model, "perceived ease of use" is one of the factors that, influence the adoption of a new technology. In relation to this objective, the researcher wanted to find out students' perception on the ease of Internet use and its resources for academic work. Four statements were examined under this objective and finding can be found below.

5.6.1 Searching for information on the Internet is easier as compared to books in print.

Finding on the perception, "Searching for information on the Internet is easier as compared to books in print" indicated that, majority of final years agreed that it was easier to search for information on the Internet compared to books in print while majority of the postgraduates disagreed with it. Postgraduates that agreed with this statement were less than half of the total of respondents in their group while a few final year undergraduates either disagreed or strongly disagreed. The indication is that, postgraduates did not perceive the searching of information from the Internet to be easier than book in prints. The stance of the postgraduates is confirmed by the findings of Abuldukarim(2021) who reported that most of the medical students of Kaduna State University complained about finding it difficult to get what they wanted from online databases and as such see the searching of information on the Internet as not easier than that of a Books in Prints. There are other studies that have found students finding difficulties with online or Internet searches (Bashorun, et al. 2011; Timothy 2014; Derosa et al 2005)

5.6.2 I sometimes get confused/overwhelmed when choosing from the thousands of results the Internet retrieves

Evidence from table 4.20 showed that, majority of the respondents in both groups (final years and postgraduates) agreed that, they get overwhelmed or confused sometimes when choosing from thousands of results the Internet retrieves. The minority of postgraduates and final year

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undergraduates disagreed with the above statement. This finding is consistent with several studies which indicate that students go through mental fatigue, feelings of anxiety and confusion when bombarded with too much information from the Internet. (Gorman and Gorman 2020; Jayadevan 2017)

An independent t-test was run to do determine if there were significant differences between the two groups. The t- test conducted indicated no significant difference between the two groups. The Sig (.719) was bigger than 0.05.(level of significance)

This means that the two groups (final year and postgraduates) were statistically not different with respect to the statement "I get confused/overwhelmed when choosing from the thousands of results that pop up for my query on the Internet."

5.6.3 I need special training on how to effectively search and retrieve relevant information from the Internet for my academic work.

Findings on the statement, "I need special training on how to effectively search and retrieve relevant information from the Internet for my academic work" indicated that, majority of postgraduates agreed that they needed special training on how to use the Internet in terms of searching for relevant information. This is similar to that of the final year undergraduates as most of them also agreed to needing special training on how to search for relevant information on the Internet. This finding is in line with the findings of Abdulkareem (2017) in his study on Challenges of online database searching among Medical students of Kaduna State University. His study revealed that, most of the respondents lacked training on information literacy skills needed to strategize online database search. According to him, lack of training on search strategies skills could lead less or unsuccessful search results.

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Although majority in both groups agreed to needing training, there were quite a number of respondents in both groups who either disagreed or strongly disagreed with this notion .

An independent sample T test indicated no significant difference between the two groups under study with regards to the need of training on how to effectively search for information on the Internet. The p value of 0.94 is more than 0.05(level of confidence)

5.6.4 Using the Internet to search for information requires a lot of mental effort (critical thinking)

The last statement examined under perceived ease of Internet use was "Using the Internet to search for information requires a lot of mental effort (critical thinking). The findings on this statement proves that majority of the postgraduates agreed that, a lot of mental effort is required with the use of Internet in searching for information. Less than half of them were not in favour of this notion and therefore disagreed with the statement. Among the undergraduates, majority disagreed that a lot of mental effort is required with the use of Internet in searching for information. Despite the majority being against the statement, there were quite a number of them who agreed with it. This clearly shows that postgraduates had the belief that a lot of mental effort(critical thinking) is required when searching for information more than that of final year undergraduates.

The stance of the postgraduates is affirmed by Shaughnessy, Viner and Kennedy(2018) in their paper titled "Search Engines and Critical Thinking, Evaluation and Investigation." According to them, in order to retrieve relevant information from the Internet, critical thinking is highly needed especially in the era where there is proliferation of websites on the Internet. They reiterated that, students need to think critically by evaluating sources, looking at multiple sides of an issue and,

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lastly, determine the accuracy or possible bias of a document or posting on the Internet. This means searching of relevant information that suits information needs is not an easy task as it seems.

An independent sample t-test indicated that, the two groups were statistically different with regards to their views on "Using the Internet to search for information requires a lot of mental effort" The p value 0.026 was less than 0.05(level of significance) indicating that there was a significant difference between the two groups.

With regard to the findings on perceived ease of use of Internet in this study, it can be concluded that, the postgraduates, did not perceive Internet use as easy as compared to the Final year undergraduates.

5.7 Perceptions on the Usefulness of Internet for academic work between undergraduates and post graduates.

This objective sought to explore students' thoughts on the usefulness of Internet to their academic projects. Four statement were examined under this objective and the discussion of findings on them are below:

5.7.1 Using Internet prevents time wastage in searching for information

With regards to the above statement, findings show that a whopping majority of final year undergraduates believed "using Internet prevents time wastage in searching for information". Among the post graduates, majority of the postgraduates also had the same belief. According to Ansari (2017) students found the Internet to be the speediest channel as compared to other forms of information channel thereby preventing time wastage. It is worthy to note that, almost half the postgraduates disagreed which implies that those that agreed with the statement was a 'slim

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majority". So even though majority in both groups agreed that Internet prevents time wastage, the final years were more than the postgraduates.

A student t-test therefore suggested a significant difference between the two groups with respect to their views on "using Internet prevents time wastage in searching for information" The P value(.000) of the T –test conducted was less than 0.05(level of significance)

5.7.2 The Use of Internet and its Resources Improve the Quality of my Academic Work

Findings on the above statement suggest a large number of final year undergraduates were in approval with the above statement while a few of them disagreed that the quality of their academic work is improved by the use of Internet and its resources. Most of the postgraduates were in favour of the above statement while quite a number also disagreed that the Internet improved the quality of their academic project. Even though majority in both groups agreed, the final years agreed more. A student T test conducted therefore showed a significant difference between the two groups with regard to their responses to the perception that, Internet improves the quality of academic work. The p value(.000) was less than 0.05(level of significance.

5.7.3 My academic responsibility will be difficult to perform without Internet

With reference to table 4.31, the findings showed that all the respondents in the final year undergraduate group as well as the postgraduate group believed their academic responsibility will be difficult to perform without the Internet. It is however worthy to note that whereas majority of the final years strongly agreed, majority of the postgraduates agreed with the statement. There was no record of anyone in both groups who disagreed or strongly disagreed with the statement above.

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A t-test conducted however revealed there was a significant difference between the two group with respect to their views on "My academic responsibility will be difficult to perform without Internet" The p-value(.000) from the T-test was less than the level of significance(0.05)

5.7.4 The Internet provides me with unlimited access to information

Respondents were asked to indicate how strongly they agree or disagree with the above statement. Findings indicated that majority of final year undergraduates agreed that the Internet provides them with unlimited access to information. Majority of the postgraduate respondents also indicated that they were in favour of the above statement. Only a few respondents disagreed that the Internet provided them with unlimited access to information. Even though majority in both groups agreed, an independent sample t-test conducted indicates there was a significant difference between the means of the two groups as the final year undergraduates agreed more. The p value(.009) from the test was less than 0.05(level of significance)

With reference to the findings of this study, it can be concluded that both final year undergraduates and postgraduates generally perceived the Internet as a useful tool for their work. This finding affirms the study of Ansari (2017) who also conducted a research on perceptions on Internet use among University students in Pakistan. The report indicated that majority that is 82.5% of the students perceived the Internet to be useful as it served as great source of learning and an easily accessible channel for information. Similarly, a survey by Ankamah (2018) on Students' perception Towards the Use of ICT in Research in Ghanaian Public Universities reported that majority of the students viewed ICT peripherals like the Internet as a useful tool for quick access to information thereby meeting their research needs.

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5.8 Attitudes towards Internet Use

From the psychological point of view, Susman (2021) defines attitude, as a set of emotions, beliefs and behaviors towards a particular object, person, thing or even event. According to him, attitudes are often the result of experience or upbringing and can have a powerful influence over behaviour. It involves an individual's judgment that performing a behavior is good or bad and also a general evaluation that an individual is inclined or disinclined to perform the behavior (Ajzen and Fishbein, 1980) as cited in Kim Chun Song (2015).

Findings on students' attitude indicate that majority of both final year undergraduates and postgraduates felt using the Internet for academic work was good even though the final year undergraduates were more. On Internet use being viewed as stressful, few of final year undergraduates judged its use as being stressful as opposed to more than half of postgraduates who viewed its use as stressful. The findings also revealed that, a significant number of postgraduates also felt the use of Internet for academic work had become a trend and so had no option other than to use it. However few final year undergraduates felt same. With regards to the use of the Internet being favorable, majority in both groups judged its use as favourable however, the final year undergraduates were more.

With reference to the findings, the final year undergraduates who were mostly younger adults had a more positive attitude towards use of Internet as compared to the postgraduates who were mostly older adults. This findings is in line with Abedalaziz et al(2013) who reports that , in a survey of 298 postgraduates students in Malaysia, majority portrayed a negative attitude towards computer use and Internet especially among older postgraduates. .

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5.9 Challenges encountered by students in the use of Internet.

The last objective of the study was to identify challenges the students face with regard to use of Internet and its resources. A number of challenges were listed by the researcher who instructed respondents to select those that were applicable to them. Findings show that, the topmost challenge among the final years was slow Internet speed on campus. This was followed by Lack of adequate computers and Wifi in the library (2^{nd}), Expensive Internet cost.(3^{rd}), Restricted access to the ICT Lab(4^{th}), Information overload (5^{th}) Irregular power supply (6^{th}) Lack of adequate computer skills(7th) and the least challenge considered by the final year undergraduates was computer anxiety(8^{th}). Among the postgraduates, the topmost challenge for them was slow Internet speed. This was followed by expensive Internet cost(2nd), information overload(3rd) , Lack of adequate computers and Wifi in the Library(4^{th}) Computer anxiety(5^{th}), Lack of computer skills (6^{th}) , Irregular power supply and the least was Restricted access to the ICT lab.(8^{th}) . The noted challenges are similar to the findings of a number of studies which reports similar challenges faced by students in their studies (Almarabeh & Majdalawi, & Mohammad 2016; Arthur and Brafi 2013; Kwaa 2019).

Although both groups made it clear they experienced the listed challenges in one way or the other, the findings revealed that there were some differences between the two groups with regards to how they viewed each challenge.

5.9.1 Findings on "Lack of Wifi and Access to Adequate Computers in the Library"

On "Lack of Wi-Fi and access to adequate computers in the library, findings showed that, even though majority in both groups considered it as a challenge, those in the final year undergraduate group were a greater majority as compared to the postgraduates and can therefore conclude that "Lack of wifi and access to adequate computers in the library was a challenge to the final year

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undergraduates more than it was to the postgraduates. A T-test indicated the two groups were statistically different with regard to their responses. The P value (.008) generated by T-test was less than 0.05.

Lack of access to wireless Internet and adequate computers seemed to be one of the major constraints for the students with regard to Internet use. Obviously the consequence of this would be to find other means of access to Internet. This probably explains why few students in both groups had the chance to access Internet from the library using the cable Internet. Accessibility therefore is major issue which needs to be put under the consideration by management of the University

5.9.2. Finding on "Restricted access to the ICT Lab"

Collated results suggested that "Restricted access to the ICT Lab" was one of the major challenges of Internet use to the majority of the final year undergraduates. On the contrary, it wasn't a challenge to majority of the postgraduates. A t test conducted, showed that the two groups were statistically different as a significant difference existed in their mean responses. The P value(.000)was less than 0.05(level of significance). Preliminary investigation revealed that, the ICT lab sometimes doubled as a lecture room and examination room for ICT students and was therefore not made available for students all the time for Internet access. It is therefore not surprising that the students named it as challenge to their Internet use.

5.9.3 Slow Internet speed on campus

Findings on slow Internet speed on campus was the topmost challenge faced by both final year undergraduates and postgraduates respondents as a whopping majority in both groups indicated it as their challenge with Internet usage. This shows that both groups to a larger extent agreed that slow Internet speed was major challenge. According to a T-test conducted, there was no significant

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difference in the mean score of the two groups. The two groups were therefore statistically not different with regards to the views on 'slow Internet speed on campus' The p value(.292) was bigger than 0.05(level of significance). Similar to this study, Bankole and Babalola (2012) reported 'slowness of the server' as one of the major problems facing Internet usage among students of Olabisi Onabanjo University.

5.9.4 Inadequate computer skills

With regard to inadequate computer skills, a fragment of postgraduates indicated that, inadequate computer skills was a hindrance to their use of Internet and its resources. Very few of the final year undergraduates saw it as a challenge. Although the minority in both considered inadequate computer skills as a challenge, the postgraduates were more than the final year undergraduates. A T -test confirmed that a significant difference existed between the means of two group. The P-value (.000) was less than 0.05(level of significance).

5.9.5 Information overload and difficulty in finding the needed information

Findings indicated that, the majority of postgraduates had "Information overload and difficulty in finding the needed information" as a challenge while the minority among the final year undergraduates indicated it as their challenge. This means the postgraduates considered it as a challenge more than the final year undergraduates. A t- test run on the groups suggested that, the two groups were statistically different as a significant difference existed between the mean responses of the group. The p-value .000 was less than 0.05(level of significance). According to Hoq (2014), too much information could result in brain freeze or fatigue and the consequence of this could be information avoidance. This could also make a user to lose or miss valuable information. The information overload and difficulty in finding information could be due to lack of knowledge on effective search strategies by the students.

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5.9.6 Computer anxiety (technophobia)

Results collated on computer anxiety (technostress) suggested that, more than one third of postgraduate respondents had computer anxiety as a challenge as opposed to only 3 respondents of final year undergraduates who saw computer anxiety as a challenge to Internet use. It can be concluded that computer anxiety (technostress) was more of a challenge to the postgraduates than it was to the final year undergraduates.) According to Lancaster University (2018), a significant factor holding back technology use like the Internet among older adults is the fear of getting things wrong when using it. A t-test conducted confirmed a significant difference between the means of the two groups. The two groups were therefore statistically different from each other with regard to 'computer anxiety" as challenge. The P-value (.000) of the test was less than 0.05.

5.9.7 Irregular power supply

With reference to table 4.33, the findings indicated that "Irregular power supply" was a challenge to over one third of the final year undergraduate respondents whilst a few respondents from the postgraduate group indicated it as a challenge to their use of Internet and its resources. A T test suggested a significant difference between the groups as the p-value (.035) was less than 0.05(level of significance). It can therefore be concluded that "irregular power supply" was more of a challenge to the final year undergraduates than the postgraduates.

5.9.8 High cost of Internet

According to the findings on this study, expensive Internet cost was seen to be a major challenge to majority of both final year undergraduates and postgraduates. Even though, majority in both groups selected expensive Internet cost, as a challenge they faced, it appeared to be a challenge more to the postgraduates than the final year undergraduates. A student's T-test confirmed the

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two groups were statistically different as the p-value (.001) was bigger than 0.05 (level of significance). The fact that high cost of Internet was major challenge to both groups clearly indicates that, students to a larger extent, might have been privately buying their own Internet bundle.

The above challenges to use of Internet and its resources such as slow Internet connectivity , difficulty in locating relevant information, expensive Internet cost, among others were problems also identified by several studies .(Kwaah 2019; Kumah 2015; Markwei 2002)

5.10 Preferred access points for information

Relating to the findings on students' preferred access points for information, the study revealed that majority of the respondents in both groups preferred to use "both Internet and books in print" as their information access point whiles few in both groups opted for "Internet only". Nobody preferred "books in print' only. This however contradicts the finding of Kumah(2015), who reported that the Internet was the most preferred information access point for students of the University of Ghana . Although majority in both groups opted for "both Internet and books in print", the few final year undergraduates who opted for "Internet only" were more than the postgraduates.

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5.11 Conclusion

Discussion of findings was done in reliance on the responses from participants. Demographic details of respondents encompassed their gender, age, level of education and their faculty. Findings indicated Internet had been used before by all respondents and for a variety of purposes which included communication, social media e-commerce, etc.

For academic purposes, it was revealed that Google and Google scholar were the most used Internet resources by both group of students. It appeared from the study that, both group of students made use of Boolean strategies less. Both group of students appeared to have a positive perception towards usefulness of the Internet although statistical differences existed between them.

There were varying responses between the two groups with respect to perceived ease of use and the final year undergraduates comparatively had a more positive attitude towards the use of Internet. The chapter ended with problems students faced with regard to use of Internet and its resources.

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CHAPTER SIX

SUMMARY OF FINDINGS CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter summarizes major findings of the study based on the study's set objectives. It also presents recommendations in accordance with the responses of participants on the use of Internet and its resources. Lastly this chapter provides a conclusion on the entire study.

6.2 Summary

6.2.1 Overview of the entire study.

The study was envisaged to examine factors affecting the use of Internet and its resources by final year undergraduates and postgraduates of Presbyterian University of Ghana. It sought to find out the purpose of Internet use by both groups of students, their awareness of Internet resources for academic work as well as frequency of use of those resources. It further sought to ascertain students' knowledge on Internet search strategies, their perceptions on the ease of Internet use , their perceptions on the usefulness of Internet for academic work , their attitude towards Internet use and problems encountered by the students in the use of Internet and its resources. The study adopted the cross survey methodology through the use of questionnaire. A sample size of 200 was chosen out the total population of 1020. The selected sample consisted 123 final year undergraduates and 77 postgraduates.

The major findings of the study are summarized below:

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6.2.2 Demographic Information of Respondents

The findings of this study revealed that participants from final year undergraduates were made up of more males than females. Among the postgraduates, respondents consisted of more males than females. This indicates that more males participated in the study as compared to females.

In relation to the age distribution of respondents, majority of the final year undergraduates within the age range of 21-30 whiles majority of the postgraduate fell within 41-50 age group. It can therefore be concluded that majority of the final year were younger adults whiles the majority of the postgraduates were older adults. An independent sample t-test confirmed that a significant difference existed between the mean ages of final year undergraduates and postgraduates.

With regards to the faculty, majority of the final year undergraduates were from Faculty of Medical and Health Sciences followed by Business Administration, Developmental Studies ,Science &Technology and the least came from Law. Contrary to the postgraduates, majority were from the Faculty of Education, followed by Faculty of Developmental Studies. The least were from the Faculty of Business and Economics.

6.2.3 Purpose of Internet Use by Students

According to the results of the study, all the respondents had used the Internet before. Findings indicated that, the purpose for which most final year undergraduates use the Internet were communication and academic assignment. This was followed by social media(2nd), downloading of movies,(3rd) e-commerce(4th), and the least was news and sports(5th). In the case of postgraduates, the topmost purpose for which the Internet was used was academic assignment, followed by communication(2nd), News and sports(3rd), Social media(4th), E-commerce(5th) , with the least being downloading of movies(6). Findings of the study revealed that, the degree of use of Internet for social media was higher among most of the final year undergraduates compared

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to the postgraduates. With regard to the frequency of use of Internet for the above named purposes, the results revealed that final year undergraduates used the Internet more on social media, academic assignment, e-commerce, downloading of movies, and communication than the postgraduates. It was only on news and sports that the postgraduates had a higher frequency of use.

6.2.4 Awareness of Internet Resources for academic work by both groups

Findings on students' awareness on PUCG's subscribed e-resources, Google, Google Scholar, Pdfdrice.com, Yahoo, Bing, Institutional repository.

Comparing the two groups, findings revealed that, the two groups (final year undergraduates and postgraduates) were very much aware of Google and Google Scholar. Whiles all the postgraduates were aware of the Subscribed e-resource, awareness of the same resource among the final year undergraduates applied to the majority but not all. A considerable number of respondents(more than half) in both groups were also aware of Pdfdrive .com. Awareness on PUCG's Institutional Repository was higher among the postgraduates than the final year undergraduates. Yahoo and Bing seemed to be less known as a resource for academic work by the two groups.

Findings on Internet resources used or adopted by students for academic project and assignments.

The findings revealed that, awareness of Internet resources by students did not automatically translate into actual use of them for academic work.

The results indicated Google and Google Scholar were the most widely used or adopted Internet resource for academic work by both groups of students. PUCG's e-resources appeared to be used by a fragment of both final year undergraduates and postgraduates even though, awareness was

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100% among postgraduates. The postgraduates who used the PUCG's subscribed e-resources were a little bit more than the final years undergraduates. Pdfdrive.com were used by some of the final year undergraduates as well as some of the postgraduate even though awareness was higher among the two groups. Few of the final year undergraduates used the PUCG's Institutional Repository even though it was known by majority of them. Some postgraduates also made use of Institutional Repository despite a higher awareness of it by the majority. Yahoo and Bing seemed to be the least used Internet resources as few respondents in both groups stated that they use them for academic work.

6.2.5 Frequency of use Internet resources: PUCG's subscribed e-resources, Google, Google Scholar, Pdfdrice.com, Yahoo, Bing, Institutional repository

Findings on frequency of use of PUCG's subscribed e-resource revealed majority of final years hardly used it while majority of Postgraduates used it either often or sometimes. Pertaining to Google and Google Scholar, findings indicated that, both groups used it often and they were the most frequently used resources. With pdfdrive.com, it was revealed that, majority in both groups hardly use it. Majority in both groups also hardly use Yahoo, Bing and Institutional repository as an Internet resource for academic work.

6.2.6 Point of Internet access

"Phones and Personal Laptops with routers" appeared to be the top most point of Internet access for both group of students when they were on campus. Few indicated that they accessed Internet from the Library and the ICT center. The less use of the Library and the ICT lab is an indication that, there could be problems with accessibility of Internet from the library and the ICT lab. There was no record for "Internet cafe"

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6.2.7 Students' Knowledge on Search Strategies.

Findings on how to search for information on a given topic showed that, "selection of relevant keywords from a given topic" was the most popular search strategy for both final year undergraduates and postgraduates. Few in both groups adopted the phrasal searching. Even though majority opted for the "selection of relevant key words" on a given topic in both groups as their strategy for searching for information, it seemed some still "preferred information experts to do the "Internet searches" for them especially with the postgraduates.

Awareness and Use of Boolean Operators

The study revealed that the awareness rate of Boolean operators among postgraduates and final year undergraduates was low and actual use of the operators for advanced searching of information was even lower in both groups as few respondents indicated that they had used them before.

A test conducted to test respondents' knowledge on the application of Boolean AND, OR NOT revealed some of the respondents in both groups did not understand how Boolean logic worked. Even though majority of the few eligible respondents provided correct answers for the search outcome of the Boolean operators when applied in searching, some still provided wrong answers indicating that they did not know how to correctly apply the operators.

6.2.7 Perceptions on the Ease of Internet Use.

Four statements were examined under the perception of ease of use.

The first one was "**Searching for information on the Internet is easier as compared to books in print."** With regards to this statement, it appeared from the study that, majority of the postgraduates did not find information searching on the Internet to be easier than in books in print as compared to the majority of final year undergraduates who thought otherwise.

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The second statement was "**I sometimes get confused/overwhelmed when choosing from the thousands of results the Internet retrieves.** Findings on this statement revealed that majority of both groups admitted that they sometimes got overwhelmed when selecting from the pool of results the Internet retrieves for their query.

The third statement was **"I need special training on how to use the Internet to effectively to search and retrieve relevant information for my academic work".** The findings on this statement showed that majority in both groups admitted that they needed training on how to effectively search and retrieve relevant information.

The fourth statement was '**Using the Internet to search for information requires a lot of mental effort(critical thinking)"** With regard to this statement, majority of the postgraduates believed that mental efforts was required when looking for information for their academic work but majority of the final year undergraduates believed otherwise.

Generally it appeared the students did not see the use of Internet for information searching to be all that easy especially for the postgraduates.

6.2.8 Perceptions on the Usefulness of Internet for academic work between undergraduates and post graduates.

Four statements were examined under this objectives.

The first statement was **"Using Internet prevents time wastage in searching for information"** With regards to this statement, findings showed that, majority in both groups agreed that the using Internet prevented time wastage in searching for information.

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The second statement was "**The use of Internet and its resources improve the quality of my academic work" .** According to the findings on this statement, majority in both groups confirmed that using Internet and its resources improved the quality of their academic work.

The third statement was "**My academic responsibility will be difficult to perform without Internet"** The findings showed that, all the respondents from both groups either agreed or strongly agreed that, their academic responsibility would be difficult to perform without the Internet. Nobody from both groups disagreed.

The last statement was '**The Internet provides me with unlimited access to information' Fin**dings on the above statement showed that majority in both groups were in favour of the above statement.

It appeared from the findings that both final year undergraduates and postgraduates generally recognized the Internet as a useful tool for their academic work.

6.2.9 Attitudes Towards the Use of Internet for Academic Work

Findings on attitude of students towards the use of Internet showed that, the final year undergraduates comparatively had a more positive attitude towards the use of Internet for academic work.

6.2.10 Challenges Encountered by Students in the Use of Internet.

There were a number of challenges the students faced with regards to the use of Internet and its resources. The findings of the study brought to light that, slow Internet speed on campus, high cost of Internet, lack of Wireless Internet and access to adequate computers in the library, restricted access to the ICT lab were major challenges the two groups (post graduates and final year undergraduates) of students encountered. Information overload and difficulty in finding the needed

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information seemed to be a challenge for some of the respondents in both groups especially for the postgraduates. Whilst "Inadequate computer skills" and "technostress" appeared to be a challenge to a very few final year undergraduates, they were considered as challenges to about one third of the postgraduates.

6.2.11 Preferred access points for information

Relating to students' preferred access points for information, findings showed majority of both final year undergraduates and postgraduates preferred to use both "Internet and books in print" as their point of information access while few students in both groups opted for "Internet only" No one opted for "books only"

6.3 Conclusion

This study sought to examine the use of the Internet for academic work by students of Presbyterian University College. This study was guided by the original Technology Acceptance Model which explains that, perceived usefulness and perceived ease of use influences the adoption of a new technology. The findings of the study indicate that, both postgraduates and final year undergraduates generally perceived the Internet to be a useful tool for their academic work however, majority of the postgraduates did not find its use to be easier as compared to the final year undergraduates and that probably explains why some of them refused to use the Internet for searching for information by themselves. Again, it was obvious from the findings that, final year undergraduates comparatively, had a more positive attitude towards the use of Internet. Moreover, it was revealed that majority in both groups of students had little or no knowledge on effective Internet search strategies needed to retrieve relevant information from the Internet and this could be one of the reasons why some preferred library staff to search for academic articles for them. The study also revealed a heavy dependence on, Google and Google Scholar for academic work

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by both groups of students as they were the most known and used Internet resources for academic work whilst underutilizing the University's subscribed academic databases and Institutional Repository. The major challenges students faced with regards to Internet use and its resources included, slow Internet speed, information overload, high cost of Internet, lack of wireless Internet in the library among others. The students also made it known that, they preferred to use both the Internet and Books in Print as their sources for academic information rather than relying on the Internet only or books in prints only. The University management should therefore find ways of addressing the challenges to ensure effective use of Internet for academic purpose.

6.4 Recommendations

Recommendations for this study are purely based on the findings of this study.

6.3.1 Increasing awareness and use of subscribed E-resources (academic database)

The study showed that, both final year undergraduates and postgraduates relied on Google and Google scholar the most in searching for information for their academic work with lesser use of the University's subscribed e-resources. The management of the University Library should find ways of increasing awareness on the subscribed e-resources as well as encouraging its use among students instead of their heavy dependence on Google for academic information. This can be done by providing students with fliers on the available databases and well as manuals containing procedures for accessing scholarly articles from the databases. It is worthy to know that, articles found in the subscribed academic databases are scholarly and are usually rigorously scrutinized by experts to ensure they meet the needed academic quality unlike Google which can retrieve any article that might not have gone through such process from the Internet.

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6.3.2 Mounting a course on Information Retrieval On the Internet (Search Strategies)

The findings of the study brought to fore that, most of the students lacked knowledge on effective search strategies as indicated by less use and misapplication of Boolean Operators reported in the study. It is therefore not surprising that, some of them indicated information overload and difficulty in finding needed information as their challenge to the use of Internet and its resources. To tackle this situation, the curriculum developers in the University should mount a core course on information retrieval on the Internet for students, to enable all of them learn the various search strategies used in retrieving relevant academic information from the Internet.

6.3.3 Increasing Computers and Installation of Wireless Internet in the Library.

Lack of Wireless Internet and computers in the library was one of the major challenges for the students with regards to the use of Internet. Again it also appeared from the study that, majority accessed Internet using their personal phone and computers with routers whilst few people accessed Internet from the library and the Ict lab. The librarian should therefore advocate for installation of wireless Internet in the library to complement the existing cable Internet to enhance Internet access as well as acquisition of more computers in addition to the existing ones. This will enable students that have personal computers to connect to the wireless Internet, whilst those without personal computers use the library computers with the cable Internet.

6.3.4 An investment in Internet Bandwidth

It was obvious from the study that, a lot of students complained about slow Internet speed on campus. Management should therefore invest in the increment of Internet bandwidth to curb the current slow Internet speed to allow students make effective use of it for their academic work. The University Management can partner with Internet service providers to provide them with a higher bundle at a reduced cost.

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6.3.5 Provision of hands on training for students on how to search for information

The assistant librarians in the library should also provide hands-on training on how to search for academic information from the subscribed databases especially for those, who prefer information professionals to be doing the search for them as a result of technostress. Such training will gradually make them overcome it and eventually will learn to search on their own. This will also alter the negative perception about the ease of use of Internet as well as change the negative attitude towards Internet use.

6.3.6 Regulations on the Use of the University's Internet

Since the final year undergraduates revealed that they frequently use the Internet for social media, it will be prudent for the University's management to put measures in place that will ensure that the Internet is strictly used for academic purpose.

6.4 Suggestions for further study

This study focused on the Use of Internet and its Resources by postgraduates and final year students in Presbyterian University using quantitative approach for data collection. This study can be replicated in other universities adopting both quantitative and qualitative method of data collection such as interviews in order to gain an in-depth insight into why some postgraduates are reluctant to use the Internet to search for academic information.

Again this study can be used by other researchers as basis for a study on assessing information literacy skills of older students in a present day technological era.

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APPENDIX A

QUESTIONNAIRE

Dear Final Graduate Students,

I am a student of University of Ghana investigating the use of Internet among students of Presbyterian University so as to make recommendations to improve the provision of Internet services and its usage. I will be grateful if you could make time to provide answers for the questions below. The outcome of this study is purely for academic purposes, hence any information given will be treated with the needed confidentiality and anonymity. Thank you very much for your cooperation.

Yours sincerely,

Akosua Tiwaa Adusei

Questionnaire on Internet Usage among post graduate and final year undergraduate Students.

Please complete this questionnaire by ticking the appropriate box .

Section A : Demographic Information

1. Gender: a. Female [ ] b. Male [ ]
2. Age: a. 21-30 [ ] b.31-40 [ ] c.41-50[ ] d. 50+ [ ]
3. Year: a.Final year undergraduate [ ] b. Post graduate [ ]
4. Faculty: a. Faculty of Sci & Tech. [ ] b. Faculty of Education[ ] c. Faculty of Law[ ] d. Faculty of Devt. Stds [ ] e. Sch. Of Bus.and Econs.[ ] F. Faculty of Health and Medical Science.

Section B: Purpose for which you use the Internet

5. Have you used the Internet before?

a. Yes[ ] b. No [ ]

6. What do you use the Internet for ? Tick as many as applicable

a. Social media(Instagram, Facebook, Youtube) [ ] b. Academic assignments[ ]

c.E-Commerce (making purchases online) [ ] d. Downloading of movies[ ]

e. Communication (exchanging of messages through whatsapp and email)[ ]

f. Reading News [ ]

7. Indicate the extent(degree) to which you use Internet for the following activities by ticking the appropriate option.

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Activities perfomed with the use of Internet	**Very often**	**often**	**Not used at all**	**Not often**
Visiting Social media sites(Instagram, Facebook, Youtube)				
Academic assignment				
E-Commerce (making purchases online)				
Communication (exchanging of messages through whatsapp and email)				
Downloading of movies from movie sites				
News and sports				

Section C: Students' Awareness of Internet Resources for Academic Work?

8.Which of the following Internet resources for academic work are you **aware** of?
(Please tick as many as applicable)

a. PUCG's subscribed E-resources.[ ] b. Google [ ]
c. Google Scholar[ ] d. Pdfdrive.Com(E-Books)[ ] e. Yahoo[ ]
f. Bing [ ] g. PUCG Institutional Respository [ ]

9. Which of the Internet resources below do you **use** for your academic projects and assignments? (Tick as many as applicable)

a .The University's Subscribed Academic databases[ ] b. Google[ ]
c.Google Scholar[ ] d. Pdfdrive.Com(E-Books)[ ] E. Yahoo[ ]
F. Bing[ ] g. PUCG Institutional Repository[ ]

Section D: Frequency of use of Internet resources for academic work by final year undergraduates and postgraduates.

10.How frequently do you use the following Internet resources for your academic work. ? Tick the appropiate option for each of the resources.

Internet resources	Used Always	Sometimes Used	Hardly Used	Never Used Before
The University's Subscribed Academic databases				
Google				

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Google Scholar				
Pdfdrive.Com(E-Books)				
E. Yahoo				
F. Bing				
PUCG's Institutional Repository				

11.Where do you access the Internet (point of Internet access) for resources/information for your academic work when you are on campus ?
a. The University's Library[ ] b.ICT Lab[ ] c.Internet Cafe [ ] d.My Phone and Personal laptop with modem [ ]

Section E: Search strategies students employ when using the Internet to search for infomation.

12.How do you search for information on the Internet when you are given an assignment on a topic?
a. I type the whole sentence on the topic in a search engine(google, bing etc)
b. I pick up the relevant key words in the topical sentence and search with the selected key words.
c. I type the whole sentence and put them under quotes in the search engine.
d. I prefer to give the topic to an information expert to search for relevant information for me.

13. Are you aware of boolean operators(AND, OR, NOT) used in searching for information on the Internet? Yes [ ] No [ ]

14 .Have you used boolean operators to search for information before?
a.YES [ ] b.NO[ ]
If yes answer question 16 to 18 (tick your answer)
15.The boolean operator 'AND' when used for searching for information on the Internet……..
a.Expands your search results
b.Narrows your search results to relevant information
c. Not sure
16.The boolean operator 'OR' when used for searching for information on the Internet ……..
a. Expands your search results
b. Narrows your search results.
c. Not sure
17.The boolean operator 'NOT' when used for searching for information on the Internet …….

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a. Expands your search results. c. Not sure

b.Narrows your search results.

Section F: Ease of Internet use by final year undergraduates and post graduates.

The table below seeks to analyse how easy or difficult students find Internet usage in searching for information for academic work. Using a likert scale where SD=strongly disagree D=disagree U=unsure A=agree SA=strongly agree, tick the appropriate option.
18.To what extent do you agree with the following statements .

Statements	SD	D	U	A	SA
Searching for information on the Internet is easier as compared to books in print					
I sometimes get confused /overwhelmed when choosing from the many results that pop up for my query(question) when using the Internet					
I need special training on how to use the Internet to effectively search and retrieve relevant information for my academic work.					
Using Internet to search for information requires a lot of mental effort					

Section G: Students' views on the usefulness of Internet for academic work by undergraduates and post graduates.

With reference to the table below, the researcher is interested in students' views on the usefulness of Internet in their academic work. Using a likert scale where SD=strongly disagree D=disagree U=unsure A=agree SA=strongly disagree, tick the appropriate option.

19. Usefulness of Internet

statements	SD	D	U	A	SA
Using Internet prevents time wastage in searching for information					
Use of Internet resources improves the quality of my academic work					
My academic responsibilities will be difficult to perform without the Internet.					
The Internet provides me with unlimited access to information regardless of the time of day .					

20. Section G. What are your judgements/Feeling towards Internet use for academic work. You may tick more than. (attitude towards Internet use)

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1) Using the Internet for academic work is good
2)Using the Internet for academic work is stressful
3)I feel Internet use for academic work has become a trend so I have no option than to use it
4) Using the Internet for academic work is favourable.
5.It will be much better to for me to use the Internet for my assignment than to use books

21.Section H: Which of the following challenges prevent you from effectively using the Internet to search for information for your academic work.

Lack of access to adequate computers in the library	
Restricted access to the Ict lab .	
Slow Internet speed	
Lack of computer skills	
Information overload	
Computer anxiety(Technophobia)	
Irregular power supply	
Expensive Internet cost	

22.Which of the following points of information access would you prefer to consult for your academic work

22. Internet[ ] Books in Print[ ] I prefer to use both[ ]

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