UNIVERSITY OF GHANA, LEGON

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ASSESSMENT OF INFORMATION LITERACY PROGRAMMES IN TERTIARY INSTITUTIONS IN GHANA: A CASE STUDY OF UNIVERSITY OF EDUCATION, WINNEBA AND UNIVERSITY OF CAPE COAST

BY

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THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PHILOSOPHY (MPHIL) DEGREE IN INFORMATION STUDIES.

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DECLARATION

I do hereby declare that, with the exception of references I made to other people's works which are duly acknowledged, this thesis is the result of my own research work under the supervision of Dr. Musah Adams and Prof. E. E. Badu. This work has not been submitted elsewhere for another degree.

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DEDICATION

This thesis is dedicated to God, the source of my life and courage, to my lovely wife, Mrs. Mildred Okai, and my entire family for their continued support.

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LIST OF ABBREVIATIONS

ACRL	Association of College and Research Libraries
ALA	American Library Association
ANCIL	A New Curriculum for Information Literacy
AUC	Ashesi University College
CAUL	Council of Australian University Librarians
CILIP	Chartered Institute of Library and Information Professionals
FSS	Faculty of Social Sciences
FSSE	Faculty of Social Science Education
ICT	Information Communication Technology
IE	Information ethics
IFLA	International Federation of Library Associations and Institutions
IL	Information Literacy
ILC	Information Literacy Course
ILP	Information Literacy Programme
ILS	Information Literacy Skills
ILT	Information Literacy Test
IRS	Information Retrieval Skills

IT	Information Technology
KNUST	Kwame Nkrumah University of Science and Technology
NUC	National University Commission
NR	Norm-reference assessment
OECD	Organisation for Economic Co-operation and Development
RRSA	Research Readiness Self-Assessment
SAILS	Standardized Assessment of Information Literacy Skills
SCONUL	Society of College, National and University Libraries
SPSS	Statistical Package for the Social Sciences
TRAILS	Tool for Real-time Assessment of Information Literacy Skills
UCC	University of Cape Coast
UEW	University of Education, Winneba
UDS	University of Development Studies
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNUDHR	United Nations Universal Declaration of Human Rights

ABSTRACT

This study assesses the information literacy skills of students of University of Education, Winneba and University of Cape Coast in the Central Region. The main objectives of the study are to determine the students' skills to access and use information; gather evidence on how students evaluate information; ascertain the students' awareness of legal and ethical implication of information usage; to investigate barriers to access information by the students and finally to assess the teaching methods employed in teaching. The study employs the multiple case study approach with interviews and questionnaires. Questionnaires were distributed to one hundred and thirty-eight (138) students in the two institutions which represent 10% of the total population. An interview was also conducted with the lecturers of the two universities. A total of sixteen (16) interviewees were used. The questionnaire data was analyzed with the use of the Statistical Package for Social Sciences (SPSS) in line with the objectives of the study. The interviews were analyzed under the thematic areas of the study. The findings of the study show that students to a very large extent were familiar with the various types of information. It was further revealed in the study that students lacked the competencies in using wildcard/truncation and Boolean operators. Some of the barriers to the effective use of information include students not getting the needed materials from the library, lack of support from library staff and lack of information retrieval skills. Other challenges heighted in this include inadequate credit hours, insufficient lecture halls and ICT laboratories. The study therefore recommends among other things, the acquisition of more teaching and learning materials, increase in the credit hours, increase in infrastructure, provision of functional ICT laboratories, employing of more lecturers, making the programme stand-alone course in UEW and placing more emphasis on search strategies to help improve on the programme.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In recent times, the concept of learning has taken a new dimension with the target shifting from the students' understanding and application of knowledge to students' ability to think through things critically and becoming life-long learners in all facets of life (Riedler & Eryaman, 2010; Wong, 2010; Anafo & Filson, 2014). Consequently, these changes have made information literacy an important educational mission, which aims to equip learners for fruitful academic investigation and development in future careers. Information literacy is the ability to conceivethe need for information and taking the right steps to find, assess and apply the information to address the need identified. The importance of information literacy (IL) is not in doubt in this era of information explosion which requires one to have some special skills to navigate through these complex information environments. Furthermore, one cannot achieve educational and professional targets without possessing and appropriately utilizing IL skills. The explosion of information sources and its attendant consequence of information overload have made it imperative that students are equipped with the relevant competencies that can help them to progress through the complex information environment (Ferguson, 2009; Entsua-Mensah, 2015). Information literacy entails information, information communication technology (ICT) and skills that enable learners to function effectively.

Consequently, information literacy is one's ability to identify when and what information is needed, appreciate and understand how information is organized, identify the best retrieval media that could be used to locate and access it; then, evaluate the information critically and use

the information more wisely (Ross, Perkins & Bodey, 2015; Chen, 2015). Information literacy and critical thinking are commonly agreed to be important for students' success in undergraduate, graduate and professional programmes (Association of College and Research Libraries, 2000; Atta-Obeng, 2013). Information literacy, which is of great importance to learners in the modern era is defined as "a set of integrated abilities entailing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning" (Association of College and Research Libraries (ACRL), 2015).

Failure to provide learners with the relevant IL abilities may result in their inability to retrieve relevant information. Again, students without information literacy skills will have difficulty in; "search strategies development; accessing sources of information, including computer-based and other technologies; evaluating information for practical application, integrating new information into existing body of knowledge and using information in critical thinking and problem solving" (Aderibigbe & Ajiboye, 2013; Kim & Shumaker, 2015). Watimoto (2010) and Gross and Latham (2007) opine that one cannot achieve educational and professional targets without having and appropriately utilizing information literacy skills. Several studies have shown that a large number of students lack the needed skills and expertise to search effectively, find, evaluate and organize information for use (Mutula, Kgomotso & Wamukoya, 2006; Dadzie, 2009; Baroutian& Kensington-Miller, 2015).

Adam and Wood (2006), in their study on utilization of information sources attributed the underutilization of existing information and communication technologies and information resources to lack of information literacy programme as they are not able to identify; concepts in their searches, do proper searches, sources of information, make proper use of information

ethically and legally poses a big challenge to students without information literacy abilities. The consequences for not teaching information literacy programme in our academic settings as observed by Mutula, Kgomotso andWamukoya (2004) are; “difficulty in finding information resources needed to undertake their studies; difficulties in using the relevant tools to locate information and knowledge; difficulties in critically evaluating, analysing, and examining the information coming their way and this inevitably hampers effective survival in an information society environment”.

For quite a while now, assessment has turned out to be progressively critical for college and university libraries. As the instructing and learning of information literacy abilities increase more noteworthy consideration crosswise over grounds, so does the need to measure students' learning. On numerous campuses, libraries have been driving the charge in evaluating the adequacy of information literacy programmes and the ability levels of students (Pinto, 2016). Resource distributions, planning of programmes and enhancement, and accreditation standards avocation are a portion of the reasons why libraries are completing both little and expansive scale information literacy assessments of their students. Rust, Price and O’Donovan (2003) found out that result from assessment data influence academic support services, academic programme and educational curriculum.

According to Entwistle (2000), assessment is used as a means of facilitating “deep learning”. The failure of a few lecturers to legitimately survey every one of the areas of learning in students has prompted numerous individuals questioning the validity of the classroom evaluation exercises in many organizations. Deciding the proper assessment instrument, administering it, and deciphering the outcomes can be a test for instructors. Assessment of the information literacy

programme is important so that its impact on students can be measured, including the quality of student research produced before and after the programme (Foo, Majid& Chang, 2017).

In addition, academic institutions on regular basis are being called upon to assess students learning and information literacy programmes are without exception. A variety of assessment strategy settings have been developed from small colleges to large university systems. Assessments are the various ways instructors use to gather data about their teaching and their students' learning (Hanna, 2005; Wakimoto, 2010). The three noteworthy evaluation approaches incorporate learning and abilities tests, execution appraisals and casual evaluations. The information and abilities tests is most generally utilized and detailed. Such tests are less asset escalated and give a valuable premise to permit examinations crosswise over time interims at the individual and institutional level (Price, Becker, Clark & Collins, 2011). Dunaway and Orblych (2011) contended that whatever the methods chosen for the information literacy programme, it is necessary to carry out careful evaluation in order to study the effects of the instruction. Thus, the role of assessment is to provide information that can be used for educational decision-making. IL assessment again, provides input for the revision of the course and can also be used to assess the performance of students.

Johnston & Webber, (2003) stressed the need for formative assessment, that is, measurement of the effectiveness of the instruction for guidance in how to improve the information literacy programme. There are a number of methods available to educators as they seek to assess the information literacy programe. Some of the assessment methods include multiple choice questionnaires, analysis of bibliographies, quiz and test, self-assessment, portfolio, essay, observation, simulation and final grades (Samson & Granath, 2004; Houlson, 2007; Riddle & Hartman, 2000; Samson & Millet, 2003; Nutefall, 2005). The American College and Research

Libraries standards and the TRAILS (Tool for Real-time Assessment of Information Literacy Skills) (2004) could also be used to assess the IL abilities of students. The results of these assessments provide educators with numerical evidence on the current stage of the programme being taught and also offer educators the opportunity to design more applicable IL instructions (Dunaway & Orblych, 2011; Oakleaf, 2009).

1.2 Problem Statement

Surveying teacher capabilities and students learning results are fundamental activities in assessing library instructional programmes. With library obligations ceaselessly being re-assessed and re-built with included duties, it winds up noticeably vital to fuse assessment of instructional programmes so as to approve that students are building up the important information literacy abilities that help the more extensive instructive results. To help with deciding those abilities, principles can be connected to recognize fitting learning results for the instructional programmes and used to outline assessment devices that measure the advancement of those skills.

In the Western world, many IL tests and assessments have been developed and used extensively by many to assess IL programs. The Kent State University libraries in 2016 used the Standardized Assessment of Information Literacy Skills (SAILS) and Tool for Real-time Assessment of Information Literacy (TRAILS) to assess the IL programme. The Research Readiness Self-Assessment (RRSA) was used by theCentral Michigan University in 2016 whilst the Information Literacy Test was used by the James Madison University in 2016. In the African setting, the Sokoine University of Agriculture in Tanzania used the ACRL, 2000 competency standard to assess its undergraduate students.

In Ghana, lots of studies have been done on information literacy programmes. Examples include Owusu-Ansah, 2004; Dadzie, 2007, 2008, 2009; Agyen-Gyasi, 2008; Anafo and Filson, 2014; Afful-Arthur and Filson, 2015). In the area of assessment of the programme in tertiary institutions in Ghana, all the assessments conducted on information literacy (IL) programmes centered on the second cycle institutions. Notable among them was a research by Yeboah (2016), which assessed the IL skills among students in Opoku Ware and Yaa Asantewaa Girls' Senior High Schools using the ACRL, 2006 standards. Tachie-Donkor (2015) also used the Seven Pillars of IL skills to assess the IL skills of teachers of some selected second cycle institutions in the Cape Coast Metropolis.

There was however, a literature gap in the tertiary level in respect to assessment of the information literacy programmes in universities in Ghana, both public and private. It was against this backdrop that this study has been carried out to assess the teaching and learning of the information literacy programme to ascertain the students' competency level in IL and the pedagogies being used in teaching.

1.3 Purpose of the Study

The purpose of this study was to assess the teaching and learning of the Information Literacy programmes at University of Education, Winneba, and University of Cape Coast and to help fill the literature gap that exists in tertiary institutions in Ghana in respect to assessment of IL programmes.

1.4 Objectives of the Study

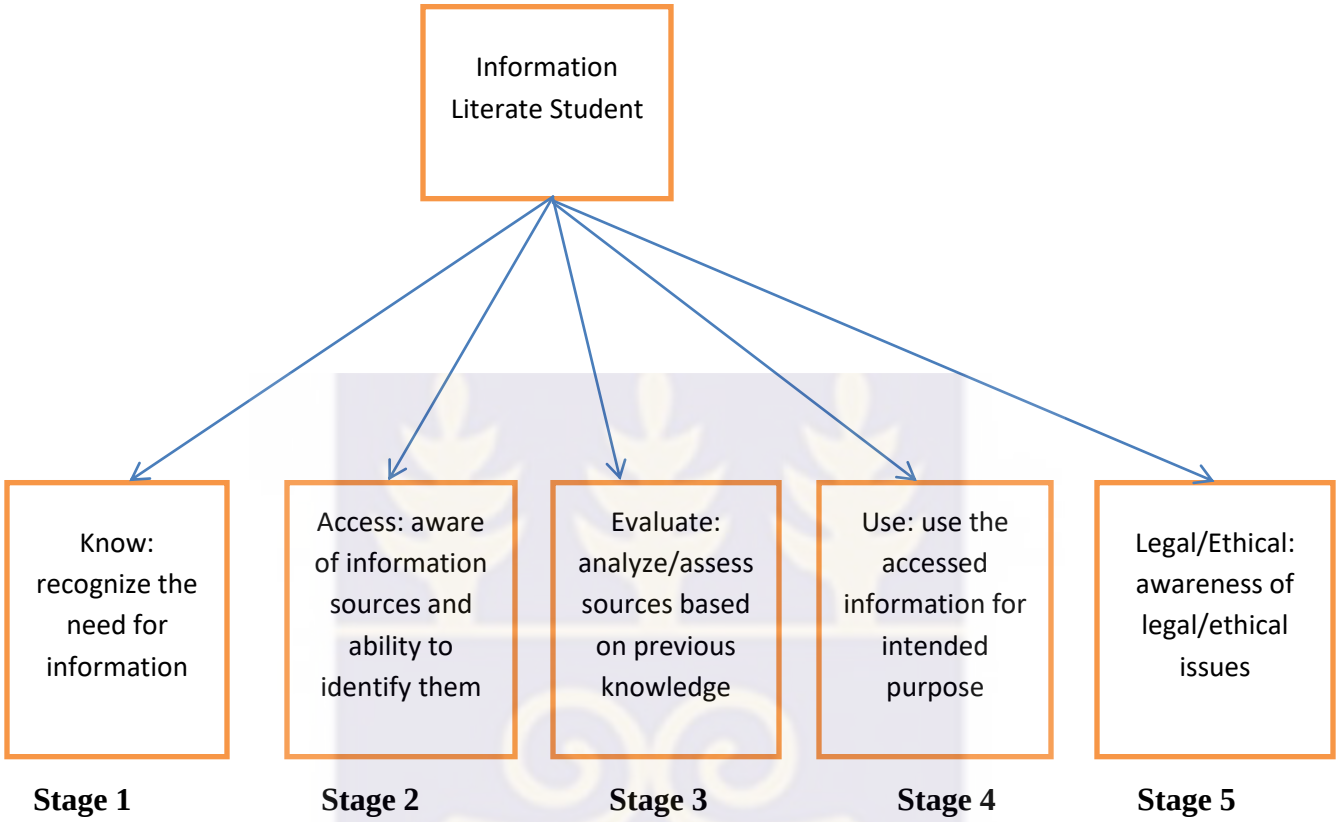
The study sought to address the following specific objectives:

1. To assess whether students of University of Education, Winneba and University of Cape Coast had the requisite skills to access and use the needed information.
2. To examine how students of the University of Education, Winneba and University of Cape Coast evaluated information and its sources.
3. To ascertain the students' awareness of the legal and ethical use of information.
5. To identify the challenges faced by students in accessing information.
6. To examine the teaching methods of lecturers for the information literacy programme in University of Education, Winneba and University of Cape Coast.

1.5 Theoretical Framework

Various theories have been propounded to assess IL skills of students. The researcher adopted the information literacy competency standards (model) developed by the Association of College and Research Libraries (ACRL, 2006). The ACRL standard breaks information literacy into five main areas which are: "Know, Access, Evaluate, Use and Ethical/Legal" (ACRL, 2006). The ACRL standard 2006 is illustrated below:

Figure 1.1: Illustration of ACRL Standard 2006



Source: ACRL 2006

These standards were used to ascertain whether students of UEW and UCC are influenced by variables mentioned in these standards. The researcher was able to assess the IL competency levels of UEW and UCC students and how they applied these standards in their pursuit of information. The findings and the results of this study helped the researcher to offer recommendations.

The frames call for more effective collaboration between librarians, faculty and other educational players on how to redesign instructions that will bring on board assignments and courses with the IL to ensure students' success. The framework was chosen because, it addresses the assessment of the teaching and learning of the IL programme better than any other IL competency skills

framework (Foo, Majid& Chang, 2017). This framework also provides assessment toolkits, which makes it suitable for this study. The Association of College and Research Libraries (ACRL) 2006 IL skills benchmarks have been used by many international institutions to assess their IL programmes. Examples are University of Reading, 2012, University of Jyvaskyla in Finland 2012, Yale University 2013, University of Cape Town 2013 and University of Cambridge 2014.

1.6 Scope and Limitations of the study

The scope of this study covered the second year regular stream of undergraduate students and instructors of University of Education, Winneba Main Campus and University of Cape Coast, Cape Coast. The choice for the second year students was because they were the latest beneficiary of the programme and the need to assess their competency level in relation to their concept formation and search for information for their academic and personal development life. The two institutions are among the public universities in Ghana where information literacy is being taught. UEW rolled out the programme six years ago and UCC was among the first public universities to roll out the programme over twenty years ago. This research was limited to the pedagogical methods of instructors of the programme. This research was also limited to second year students of the Faculty of Social Science Education from UEW, Main Campus and Faculty of Social Sciences, UCC.

1.7 Significance of the study

The results of this study are expected to reveal areas of inadequacies in students' information literacy skills, thereby providing educational planners and administrators, library management and librarians with knowledge that can be used to improve the teaching and learning of the

course which will help students to maximize the use of information resources. The research will also be useful to researchers, as it will add to scholarly research and literature in the field, as well as creating the awareness and importance of IL in tertiary institutions in Ghana. This research is expected to fill the literature gap of assessing the information literacy skills among university students in Ghana because so far little literature exists on this study especially in Ghana.

1.8 Settings

The research environment is the area where the research is being undertaken. For this research, the University of Education, Winneba and University of Cape Coast were the research setting. The two public universities selected for study are located in the Central Region of Ghana with Cape Coast as the regional capital.

1.8.1 Brief history of UEW

The University of Education, Winneba was established as a University College under PNDC Law 322, in September, 1992. The University was granted a full university status in March 2004, by the University of Education Act, Act 672. The University College of Education, Winneba brought together seven diploma awarding colleges located in different towns under one umbrella institution. These Colleges were the Advanced Teacher Training College, the Specialist Training College and the National Academy of Music all at Winneba, the School of Ghanaian Languages; Ajumako, the College of Special Education; Akwapim-Mampong, the Advanced Technical Training College; Kumasi, and the St. Andrews Agricultural Training College, Mampong-Ashanti.

The information literacy skills course was introduced in the 2012/2013 academic year in all the four campuses of the University (Winneba, Ajumako, Kumasi and Asante-Mampong). It is a compulsory three credit hour course for fresh undergraduate students. The course is under the Information Communication Technology (ICT) Unit and is designed to help students in their search and use of information. Some of the topics covered under this course are: the concept of information literacy, information sources, information retrieval and evaluation, copyright issues, plagiarism and citation.

1.8.2 Brief history of UCC

The University of Cape Coast, which was formerly the University College of Cape Coast was established on 15th December, 1962. It was founded mainly to train teachers for Second Cycle Schools and Teacher Training Colleges. It was also to provide more opportunities for Ghanaians yearning for university education and to generate a trained workforce, which is essential for Ghana's economy (UCC Students' Handbook, 2014).

The information literacy skills course is run by the Sam Jonah Library, under the Information Literacy Skills Unit (ILS), of the College of Humanities and Legal Studies. It is taught at the undergraduate level in the first year. This is a one credit hour course which is offered for one semester and focuses on using the library, and developing the necessary research skills of the students for their information seeking needs. Importantly, the course is aimed towards equipping the students with the skills to effectively access information from both print and electronic sources and critically evaluate and use it ethically and legally in decision-making and problem-solving activities (Entsua-Mensah, 2015).

The teaching and learning of information literacy at the Information Skills Unit started over twenty years ago with Information Retrieval Skills (IRS 101) as the course title. The Information Retrieval Skills was later changed to Information Literacy Skills (ILS). The course has been grouped into three aspects namely: libraries and sources of information, organization of knowledge and electronic resources. In the same vein, students have been grouped into sizeable classes and each group is taught by three lecturers with each lecturer handling one aspect of the course. The course also includes tutorials and practical sessions throughout the semester.

1.9 Organisation of the study

The study was structured into six chapters as follows:

Chapter one: This was the introduction which covered the background to the study, statement of the problem, purpose of the study, objectives of the study, theoretical framework for the study, scope of the study, significance of the study and organization of the study.

Chapter two: This was devoted to the review of relevant literature in the study from the World view, African view and Ghanaian view.

Chapter three: This chapter also dealt with the methodology adopted for the study, made up of the research design, selection of the cases, population, sampling and sample size, instrumentation, mode of data collection and analysis.

Chapter four: This looked at the presentation of data and analysis.

Chapter five: This chapter discussed the major findings of the study.

Chapter six: The final chapter considered the summary of findings, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Creswell (2013) is of the view that knowledge accumulates and for that matter people are able to study and build on what has been done already. The aims of a literature review as identified by Neuman (2003) includes; "to demonstrate a familiarity with the body of knowledge and establish credibility; to show the path of prior research and how a current project is linked to it; to integrate and summarize what is known in an area; and to learn from others and stimulate new ideas". The review of relevant literature looked at the following thematic areas under World view, African view and Ghanaian perspective:

a. Development and importance of the information literacy Programme
b. IL in tertiary institutions
c. Access and use to information by students
d. Evaluation of information sources by tertiary students
e. Legal and ethical implication of information use
f. Challenges faced by students in accessing information
g. Teaching methods and skills used in IL programmes
h. The concept of assessment

2.2 Development and Importance of the Information Literacy Programme

2.2.1 Development of Information Literacy

Boekhorst, (1999) expressed that Zurkowski utilized the term IL in 1974 to allude to individuals' capacities for taking care of their information issue whereby use of important innovation is utilized for significant information. From that point forward, the idea has been predominantly utilized by information professionals and custodians, and declared worldwide through the work of the American Library Affiliation (ALA) and the National Forum for Information Literacy.

Information professionals have shouldered high the development of information literacy at the various levels, be it educational, individual, national or international. This interest has been there and can be traced back several years with names such as library instructions or bibliographic and user education (American Library Association, 2000; Virkus, 2003). Universal associations inside and past the information profession are additionally engaged with the IL idea. A body such as the International Federation of Library Associations and Institutions (IFLA) has produced guidelines for assessment of information literacy and its role as lifelong learning, which complement national initiatives (IFLA, 2004). Looking at information literacy from the associations, organizations and individuals perspectives, information literacy is now seen as a global issues that has to be critically looked at for it smooth implementation in all academic institutions, right from the basic education through secondary schools to the university level.

2.2.2 Definition of Information Literacy

For several decades now, the information literacy concept has been widely discussed. Information literacy has been mistaken by many individuals for information technology literacy, computer literacy or library literacy skills. The information literacy skill extends beyond those sets of other skills. Information technology skill is the ability of an individual to use computers and other technologies to accomplish a number of personal and academic goals. Library literacy skills on the other side, is concerned with retrieving, evaluating and using the information resources in the library setting. However, information literacy skills centre more on contents, analysis, evaluations and the usage of the information to create new knowledge and ethically taking part in the environments of learning independent of particular technologies (ACRL, 2015).

In the view of Thomas (2004), Zurkowski who has been viewed as the founding father of information literacy concept in 1974 defined it as "the ability to use techniques and the skills from a wide range of information tools as well as primary sources in moulding information solutions to problems". The National Commission of Excellence in Education in 1984 explained literacy as "the skills required for new careers and citizenship" and "life-long learning" (Baumbach, 1986). Furthermore, in the mid-1990s, the American Library Association's Presidential Committee on Information Literacy described a literate person as one who can "recognize when information is needed, has the ability to locate, evaluate, and use it effectively and has learned how to learn" (American Library Association (ALA), 1998).

According to theUnited Nations Educational, Scientific and Cultural Organization(UNESCO), information literacy encompasses "knowledge of one's information concerns and needs, and the

ability to identify, locate, evaluate, organize and effectively create, use literacy and communicate information to address issues or problems at hand; it is a prerequisite for participating effectively in the information society, and is part of the basic human right of lifelong learning" (UNESCO, 2003). Similarly, the United Kingdom (UK) Chartered Institute of Library and Information Professionals (CILIP) define information literacy as "knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner" (Chartered Institute of Library and Information Professionals (CILIP), 2004). Thomas (2004) also defined information literacy as "the body of knowledge, skills, competencies and the understanding required by an individual to find information effectively and use it appropriately to meet the need that prompted its acquisition". In summary, information literacy is the knowledge of identifying what information is needed and taking the right steps to find and use in an acceptable manner.

2.2.3 Importance of Information Literacy

Thomas (2004) asserts that information literacy skills are used for academic purposes in such areas as scholarly publications and group presentations. The skills identified by scholars and educators as dimensions of critical thinking include the ability to set goals, adjust strategies, carry out tasks, distinguish fact from opinion, establish authority of sources, assess accuracy and relevance, detect bias and underlying assumptions. Undeniably, these are the skills that support information literacy skills instruction. Information literacy skills are needed on the job so that one is able to find, evaluate, use and share information. Consumers are also required to be information literate so that they are able to make decisions on the choice of what to buy.

The power to bring together and build upon existing information and thereby contributing to the creation of new knowledge is very essential as information literacy forms the basis for lifelong learning, known to all disciplines, and leaning environments. Information literacy is of critical importance in academic environment since students are expected to know how to find information and use the information to support their academic work. This has triggered the need for learners in academic institutions to acquire the basic skills on how to look for information, evaluate, use and create new knowledge with the information received (Ross, Perkins & Bodey, 2015).

Information is crucial for advancement of an information society where people have diverse needs for information and is therefore of a great value to learners to know where, and how to find the needed information and using the information critically. An information society without information literacy hinders effective survival. Through the IL programme, users are able to identify and select relevant information through the various search strategies to evaluate, organize and put together the information to address their information seeking needs.

Social problems such as poverty, unemployment and environmental degradation can be curtailed if citizens are able to properly utilize the vast information at their disposal. This assertion was captured in the report of the Economic Commission for Africa in 1996. The report also has it that the evolution of information has affected every facet of life, be it economic or social. For students at the various levels and professionals to cope well in this modern time, they need to acquire the skills to search and use information effectively. Computer networking and the use of computers to access information in the libraries are on the increase in most African tertiary institutions (Pinto, 2016). According to Julien & Barker (2009), students are able to improve on their academic performance when they are able to master the information literacy skills.

However, most learners from their early stage to the advance stage of their education lack the information literacy abilities (Chu, 2009; Chu & Law, 2007).

Proper functioning of libraries have benefited greatly from quality IL education as it has helped to reduce the workload of library staff. A research by Gupta and Kanaujia (2006) in India on some agriculture universities had it that library education programmes have helped to reduce drastically the workload of reference librarians by more than 75% in eight agriculture universities and up to 75% in four agriculture universities. Adam and Wood (2006), in their study attributed the underutilization of existing information and communication technologies and information resources to lack of information literacy programmes as they are not able to identify concepts, do proper searches, source for information, make proper use of information ethically and legally poses a big challenge to students without information literacy abilities.

2.2.4 Models of Information Literacy

Information education supplements individuals' competency with assessing, overseeing and utilizing information, thought about a key learning result (Association of College and Research Libraries (ACRL), 2000). It is therefore that few structures and models of IL have been produced in various nations by singular foundations or national organs keeping in mind the end goal to give the standards, measures and practice to guide and bolster IL instruction in every instructive division.Examples of the frameworks and models of IL are: the Society of College, National and University Libraries (SCONUL) (1999) Seven Pillars of Information Literacy, Chartered Institute of Library and Information Professionals (CILIP) Information Literacy Model, A New Curriculum for Information Literacy (ANCIL), National Information Literacy Framework, Seven Faces of Information Literacy, Association of College and Research Libraries Framework for

Information Literacy, The Big6 Skills Model, the Australian and New Zealand Information Literacy Framework. The requirement for students crosswise over different instruction levels to have essential IL abilities that relate to their instructive levels is likewise a pattern that is progressively being adjusted crosswise over controls and training establishments including tertiary institutions.

2.2.4.1 Association of College and Research Libraries Framework for Information Literacy

The information literacy framework concept by Association of College and Research Libraries was revised in 2015 to include a new definition and ability standards. Key to this new concept is the organization of research, scholarship and understanding of concepts into a connected whole. This framework has been used in several academic institutions to enrich the contents of most educational reforms. The proliferation of information in our current dispensation requires that students be equipped with the relevant abilities to be able to use and create new knowledge with the information at hand.

The concepts that anchor the new frames are organized into six propositions, each of which consists of a central concept to IL, set of knowledge practices, and set of dispositions and they (Association of College and Research Libraries (ACRL), 2015) are: “authority is constructed and contextual; information creation as a process; information has a value; research as inquiry; scholarship as conversation and searching as strategic exploration”. However, any institution which wishes to use this framework must deploy them well to best fit their own settings, including designing learning outcomes and as such neither the knowledge practices nor the dispositions are intended to prescribe what local academic institutions should do whiles using the framework. The frames call for more effective collaboration between librarians, faculty and other

educational players on how to redesign instructions that will bring on board assignments and courses with the IL to ensure students' success. One must be quick to add that none of the two institutions selected for this study uses the revised edition by Association of College and Research Libraries (ACRL) 2015 to teach its students.

2.2.4.2 United Nations Educational, Scientific and Cultural Organization (UNESCO) Model for Information Literacy

Horton (2007) helped develop the United Nations Educational, Scientific and Cultural Organization (UNESCO) model for IL, which recognized

> "that a need exists that requires information for its logical resolution, know how to accurately identify and define the information needed to meet the need, solve the problem, or make the decision, know how to determine whether the needed information exists or not, and if it does not, know how to create, or cause to be created the unavailable information, know how to find the needed information if you have determined that it does, indeed, exist; know how to create, or cause to be created, non available information that you need; know how to fully understand found information, or know where to go for help if needed to understand it know how to organize, analyze, interpret and evaluate information, including source reliability; know how to communicate and present the information to others in appropriate and usable formats and mediums; know how to utilize the information to solve a problem, make a decision or meet a need; know how to preserve, store, reuse, record and archive information for future use; and know how to dispose of information no longer needed, and safeguard information that should be protected" (Horton, 2007, p. 8).

2.2.4.3 Big Six Model

The Big 6 model by Eisenberg and Berkowitz (2006) centres on six broad areas: "task definition; information seeking strategies; location and access; use of information; synthesis and; evaluation". According to Bopp and Smith (2011) this model has been successfully implemented in several academic institutions. Like *Association of College and Research Libraries* (ACRL), the Big 6 also centres more on skills and processes and has enhanced the IL technologies of learners (Baroutian& Kensington-Miller, 2015). The Big 6 model looks extensively on the issue of problem solving. Though this model is described as an approach to problem solving, it does not delve deep into the issues of legal and ethical use of information.

2.2.4.4 The Society of College, National and University Libraries (SCONUL) Seven Pillars Model

The Society of College, National and University Libraries developed the Seven Pillars model in 1999 in UK. Study and conceptual skills are very essential to this model. According to SCONUL, the seven pillar model includes: "the ability to recognize a need for information; the ability to distinguish ways in which the information gap may be addressed; the ability to construct strategies for locating information; the ability to locate and access information; the ability to compare and evaluate information obtained from different sources; the ability to organize, apply, and communicate information to others in ways appropriate; and the ability to synthesize and build upon existing information, contributing to the creation of new knowledge".

2.2.4.5 The Seven Faces of Information Literacy Model

The Seven Faces of Information Literacy model was developed by Bruce in 1997 which delved extensively on knowledge extension, knowledge construction and information technology. This

model also places emphasis on the linkage between technology and information in addition to its core competencies (Bruce, 2002). Bruce's seven faces (1997) are: "the relevance of information technology; sources of information; conception of information; information control; knowledge construction; knowledge extension; and wisdom".

2.2.4.6 The Six Frame Model

The six frames model from Bruce, Edwards, and Lupton (2006) pivots on six unique ways of information literacy and they include: "the individual's view of IL; view of information; curriculum focus; view of teaching and learning; view of content and; view of assessment" (Bruce, Lupton & Edwards, 2006). The Six frames model also varies slightly from other considered models in the sense that it focuses more on the impact of information on the individual than on a set of skills. Premium is placed on IL in different contexts rather than just defining what IL looks like.

2.3 Information Literacy in Tertiary Institutions

The power to bring together and build upon existing information and thereby contributing to the creation of new knowledge is very essential as information literacy forms the basis for lifelong learning, known to all disciplines, and leaning environments. Information literacy is of critical importance in academic environment since students are expected to know how to find information and use the information to support their academic work. This has triggered the need for learners in academic institutions to acquire the basic skills on how to look for information, evaluate, use and create new knowledge with the information received (Ross, Perkins & Bodey, 2015). Most a times, we tend to believe that as students go through their academic work with little difficulty, they gain enough information literacy skills which may be introduced, but what

is required is a parallel integration of information literacy in academic curriculum to form a strong basis for an academic work.

At the global scene, information literacy has been widely integrated in curricula of most countries. In UK, the Quality Assurance Agency for Higher Education (2001) has it that students ought to accomplish a scope of transferable aptitudes from an extensive variety of sources utilizing imperative manual and electronic frameworks with the attention to social issues and equivalent open doors seen as an essential transferable ability. By this mandate a student needs to find out about how to choose the correct channels for various assignments, and requirements to build up the capacity to comprehend issues of availability. Information education ought to accordingly present the capacity to analyze, assess and separate information from various stages, and to choose exact and trustworthy information sources. Information literacy enables the student to buildability to construct abilities to locate and assess varied information.

The information literate person should be able to organize, use and communicate information ethically and effectively by citing accurately, using the right language, respecting the copyright of others and avoiding the danger of plagiarism (Kim & Shumaker, 2015). With an expanding familiarity with the worth and significance of IL, information literacy direction has been broadly inserted in students and postgraduates educational program in the greater part of the colleges around the globe. Darker, Murphy and Nanny (2003) had it that information literacy is part of the standard educational programs in numerous focuses, especially in USA, Canada, Australia, New Zealand, Scandinavia, United Kingdom and the Netherlands. In North America and Europe, information literacy courses have been successfully and well settled in various colleges. College of Washington has information literacy course coordinated in their educational modules which incorporate course materials direction and task joint effort.

College of North Carolina at Chapel Hill has a course which presents the tools for information literacy. The Library of University of Twente founded an IL course of seven modules for different levels of students and these IL courses are normally offered by either the college library or school of library and information science.With an expanding familiarity with the worth and significance of IL, information literacy direction has been broadly inserted in students and postgraduates educational program in the greater part of the colleges around the globe. Darker, Murphy and Nanny (2003) had it that information literacy is part of the standard educational programs in numerous focuses, especially in USA, Canada, Australia, New Zealand, Scandinavia, United Kingdom and the Netherlands.

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George, McCauland, Wache, and Doskatsch (2001) are of the view that information literacy needs to be integrated in the course. Integrating information literacy which is a lifelong learning skill into the mainstream academics is the surest way of encouraging the students to develop these skills (Hiscock & Marriott, 2003). According to Yang (2009), the online delivery of information literacy education is one of the latest modes, which is either the virtual study or management systems settings. An attempt to move the discussion to the institutional level has caused another shift of focus towards more practicable approaches (Bruce, 2002; Johnston and Webber, 2003). Most universities in UK have had 75% integration rate of the information literacy programme for undergraduate and graduate taught course curricula (Saunders, 2012). Council of Australian University Librarians (2004) recognizes that getting IL accepted as part of a higher institutional strategy is an important step in making information literacy legitimate.

A survey conducted by Saunders (2012) across United States had it that most faculty members see the IL abilities of students as somewhat strong in six areas, specifically: “identifying scholarly materials, identifying reliable or authoritative information, finding relevant information, citing sources properly, synthesizing information, and searching databases”. In a study by Baroutian & Kensington-Miller (2015), they reported that faculty perceives the IL skills

of graduate students as good when compared to the undergraduate students. A research on graduate students and research scholars at the Guru Nanak Development University, Amritsar by Kaur and Rani (2012) came to light that approximately 32% of respondents could rightly use the Boolean operators whiles 18% could make right use of meta searching. The use of wildcard and truncation accounted for 4%. Painfully, only one out of every four respondents could rightly identify citations and 50% did not have any knowledge about the fair use of information.

A study by Kumar (2010) on graduate students and faculty members of four technical colleges at Rohtak, Haryana had it that 50% of faculty members and 33% of graduate students did not understand the information literacy concept.Bury (2011) reported in his study that faculty members are of the notion that the IL abilities of students were far below the anticipated standards. The IL abilities of students continue to decline as they progressed through their course of study. In a related study, faculty rated the IL abilities of students as fair but, they however, believe that these competencies can increase with passage of time (Nilsen, 2012).

Research of information literacy abilities in African countries does not portray a very good picture. Many students in Africa, however, at their various levels of education are not familiar with the variety of sources of information at their disposal. Information is crucial for advancement of an information society where people have diverse needs for information and is therefore of a great value to learners to know where, and how to find the needed information and using the information critically. An information society without information literacy hinders effective survival.

While the absence of IL competencies among individuals is a global issue, in Africa this issue is by all accounts more critical due to the atmosphere encompassing its training framework, access to innovation, financial status and socio-learning divide.A study by Baro and Fyneman (2003) revealed that most of the universities students in Nigeria lack the ability to access and use the various libraries resources within the print and online categories. In a similar vein, Kavulya (2003) opined that numerous individuals in Kenya enter advanced education with extremely restricted competencies which averts them getting to information and using the library's exploration potential.

Similarly, in a study performed in Zanzibar, Niu and Hemminger (2012) found that numerous college students were found wanting even on fundamental library competencies. An examination by Kimani (2014) of IL abilities among approaching first-year college students at the Catholic University of Eastern Africa in Kenya found that, while students had computer abilities with applications, for example, word-processing and Statistical Service for the Social Sciences, and could utilize the Internet and its utilizations. Once more, larger part of the students did not have required skills used to look for information and were not comfortable with the different retrieval devices and their uses. The investigation additionally uncovered that while students knew about both electronic and printed data assets, an impressive number of those students didn't know about what constitutes primary and secondary sources.

Information hunting and retrieval is a daunting assignment for tertiary students in Africa in light of the fact that their capacity to do as such is hampered by absence of abilities in different angles including distinguishing ideas, perusing references, an absence of learning of the structure and substance of library lists and of controlled vocabulary, and inadequate pursuit procedures (Oyadeyi, 2014). Therefore, as indicated by Lantz and Brage (2011), training in library research

methods into strategies is expected to enhance library inquire about abilities at each level and such training ought to be offered in the same number of various arrangements, areas and settings as would be prudent. It is from this angle that Lantz and Brage (2011) prescribes that students in Africa ought to be taught in IL or library research into techniques keeping in mind the end goal to make them fit for taking control of the multifaceted information atmosphere of the 21st century. In acknowledgment of this gap, various institutions in Africa have taken a few measures to address this circumstance. For instance, in Kenya a communication skills course for university students, paying little heed to their subject specialization, was introduced all together will help new college students get comfortable with the important abilities related with college scholarly work. In this course, students are instructed an assortment of abilities including library, reading, and in addition writing abilities (Kavulya, 2003).

The teaching and learning of information literacy programmes on the African soil has not been given the needed recognition by most academic institutions. In Nigeria, only a few institutions of higher learning have paid serious attention to the teaching and learning of information literacy course despite the efforts by the National University Commission to make IL compulsory for all academic institutions in Nigeria (Noah, 2004). Mutula, Kgomotso and Wamukoya (2004) in their research at the Botswana University reported that majority of students were not well grounded with the required information literacy skills to undertake various academic work as they had difficulty in identifying, reviewing, selecting and applying information necessary for their academic progression.

There was some significant measure of progress with respect to showing IL abilities to students in advanced education in South Africa. The University of Pretoria and Cape Peninsula University of Technology have figured out how to coordinate IL into the standard scholastic educational modules (Jiyane and Onyancha, 2010). In spite of the fact that the vast majority of the courses were bland and remain solitary, others were credit rating (Jiyane and Onyancha, 2010, p. 20). The Cape Peninsula University of Technology, Central University of Technology, Durban University of Technology, Tshwane University of Technology, University of Cape Town, University of Free State, University of Fort Hare and University of the Western Cape in South Africa have IL as a component of the library's main goal.

In perspective of the way that IL has been acknowledged by most librarians, the same can't be said in regards to their scholarly partners in many colleges in Africa. The absence of help and joint effort among librarians and scholastics has not helped as far as IL strategy definition. In the perspective of Hart and Davids (2010), the missions and objectives of some college still cast a shadow on IL, in this way making it troublesome for librarians to advance. This come from the idea that information abilities are found out and applied best as students do their work, subsequently, the requirement for coordinated effort between the library and the faculty.

Absence of basic administration support, obliviousness of what information proficiency remains for, the ineptness of different divisions to work together for powerful improvement of the programmes, aversion to creative educational programme and deficient technological framework are the significant difficulties for African nations (Noah, 2004). The Tanzanian information education programme is likewise subject to the previously mentioned challenges, joined by absence of enthusiasm with respect to students and absence of devoted approach to manage information literacy.

The real test postured to IL emerges from the ineptness of a few students for college training. Most students originate from poor foundations where the standard of instruction is still low, with next to zero access at all to libraries and innovation (Hart and Davids, 2010; Jiyane and Onyancha, 2010). Such students are hesitant to share in IL programmes since they are to a great extent computer illiterate. The absence of computer literacy brings about a low number of participants at IL sessions. It is along these lines my view that preparation in computer skills ought to be given before the IL abilities as a method for preparing students in appropriate retrieval of information. The use of university libraries are influenced by the learners' perception of the role of information in the learning process. Most students when it comes to IL skills are disadvantaged due to lack of confidence, which is reinforced by teaching methods that do not give room for individual creativity. This has in a way affected academic and research works by students (Pinto, 2016).

As indicated by Jiyane and Onyancha (2010 p. 19), "absence of having the principal information abilities by students who go to college out of the blue represent a test to IL conveyance". The two again watched the issue looked in pulling in students to go to IL sessions which were not obligatory. The aggregate impact of this is low improvement of students' IL capacities and abilities. Another test is the absence of proper facilities and resources, for example, computers and skilled tutors, (Jiyane and Onyancha, 2010), which thusly brings about less consideration on the procurement of best in class and advancement of administrators as instructors. A study by Lwehabura (2007) in four universities in Tanzania had it that 95 per cent of faculty members are of the perception that students do not have the requisite IL competencies. In a related study by Lwoga (2013) of health sciences in Tanzania reported that approximately 73 per cent of faculty

perceived the abilities of undergraduate students as inadequate. Faculty however, had a high confidence in the IL abilities of graduate students.

In Ghana, a study by Anafo and Filson (2014) on Ashesi University College, Ghana, reports that 60 per cent of the respondents had challenge in concepts identification due to lack of basic search skills in the search for information and this confirms a study by Kuvulya (2003) in Kenya.

Till now, several attempts to increase patronage of the use of library materials have not been very successful as most of the students lack the skills to effectively use information in the learning environment. Most students enter the tertiary institutions with little or no idea about how is information is accessed and applied. The reason may be attributed to restricted access to learning materials at the various public or school libraries. Students who gain admission into the tertiary institutions most often shy away from asking for help on how to access and use information for their academic work. Others too, the library building frightens them and again lack the awareness to the various information and services available to them. Some people are of the view that students do not make effective use of resources in the libraries as they lack the needed information literacy competencies to access, organize, evaluate and use information (Dadzie, 2009; Agyen-Gyasi, 2008; Anafo & Filson, 2014; Afful-Arthur & Filson, 2015).

Most students are of the view that they could find and use freely information from the internet without regard to its source. Others too are of the notion that the online wikipedia is the most objective as they always cite information from it. However, the danger is that most of the information on wikipedia does not have any verifiable mechanism for scholars and professionals to review its content.

In Ghana, the integration of IL course into the mainstream curriculum has been by a few institutions, notably the University of Cape Coast, University of Development Studies, Kwame Nkrumah University of Science and Technology and Ashesi University College while the rest are yet to integrate the course into their mainstream curriculum, largely due to the aforementioned challenges. However, IL course is only offered to first year students. The University of Cape Coast and University of Education, Winneba combine the guided tour and the lectured method of teaching in its information literacy programme. Owusu-Ansah (2004) is of the view that, the ineffectiveness of the National Policy on information literacy has accounted for the slow enrollment of the programme into the academic curriculum. Agyen-Gyasi (2008) conducted a study at the Kwame Nkrumah University of Science and Technology and suggested the need to equip learners with the right information retrieval skills which will propel them to use and cite effectively the information resources available to them. Awareness creation is a key step which will afford learners on where and how to find information for their information seeking needs.

2.4 Access and Use of Information by Students

There are numerous sources that information could be accessed from, and some of these information sources available are print, audio, visual, online information etc. Information is core commodity that allows public opinion to form. It is recognized that, access and use of information services require strengthening of the core values of the libraries as espoused by the International Federation of Library Association and Institution (IFLA) even as the digital world and free access to information services continue to evolve. According to Hamilton and Pors (2003) public libraries, as publicly funded institutions supposedly devoid of socio-economic,

political or religious interest or prejudice, are one of the channels that is supposed to provide free access to information for all and sundry.

A comparative research conducted in Iranian Universities by Isfandyaru and Kashi (2011) to find out the role ofinformation technology play in information literacy levels in students revealed that students who make use of information technology or have access to IT to search for information are more information literate than students who do not have access to IT facilities to search for information. Their result further revealed that schools with IT facilities scored two hundred and sixty (260) representing 61% as against schools without IT facilities which scored one hundred and one (161) which represents 39% of the total population of 421 respondents.

Research conducted by Foo, Majid and Chang (2017) to assess information literacy skills among Singapore information age students, found out that various libraries including school libraries were underutilized. The evaluation of information literacy competencies among the students in terms of location, access, use of information and other skills stated by the Big Six Model were found to be unsatisfactory as each of the category of the IL skills recorded below 50% out of the 100% maximum score. Type of university, academic stream of study, family background of the students were some of the issues identified as having greater influence of the IL skills of these students. Even though this research was done in Singapore it could be used to compare with the current study because it was conducted using tertiary students just as this study. Hence, there should be total freedom to access information at anytime, anywhere to help mankind have reliable information for positive development. “The right of access to information and ideas is vital for any society. If citizens are to participate and make informed choices, they must have access to political, social, scientific and economic information and cultural expressions. They need access to the widest range of ideas, information and images. Freedom, prosperity and the

development of society depend on education as well as on unrestricted access to knowledge, thought, culture and information" (FAIFE, 2002, p. 7).

Several International conventions, including the Universal Declaration of Human Rights and the International Covenant on Civil and Political Rights, look to ensure the privilege to opportunity of access to information sources. It additionally expresses that, "these announcements are concerned about maintaining the privileges of citizens to express any view, as well as to approach the fullest scope of perspectives communicated by others". The thought is that access to information enables subjects to partake in the fair procedure and settle on educated decisions that will prompt the improvement of society all in all. It convention goes ahead to state that "if a person's opportunity of access to data or flexibility of articulation is blocked, information flow endures and fair procedures are set back".

As noted by West (2013) "rights-based theories work according to the premise that the right thing to do is determined by the rights that human beings have". For example, the rights agreed on in 1948's United Nations Universal Declaration of Human Rights (UNUDHR). Without opportunity of thought and flexibility of expression set up there are no conditions for opportunity of access to data (FAIFE, 2002). The use of information, especially electronic resources may vary among patrons from different disciplines. Nicholas, Clark, Rowlands and Jamali (2009) reported in their study that, e-journals in the field of life sciences are used more frequently than e-journals in economics and history.

Wu, Huang and Chen (2006) in contrast mentioned that "humanities scholars prefer monographs to periodicals, and that they disagree that e-books will replace printed versions". Littman and Connaway (2004) opine in their study that "students from the disciplines of computer science,

medicine, education, and psychology prefer using e-books". In support of this, Slater, (2009) reported that "students studying computer science, technology, and related fields strongly prefer using e-books".

Rowlands (2008) found varied usage patterns among students from different disciplines. Hamade and Al- Yousef (2010) indicated in their findings which conducted a study of students in Kuwait, found out that, majority of students used books, journal articles and web pages as their preferred types of information resources. There are numerous variables that add to the choice and utilization of various information sources as indicated by Shanmugan (1999). A portion of these are cost, past progress, precision, dependability, completeness, handiness, currency, reaction time, availability, specialized quality and the organization. Yang (1998) shows that, the immediate connection between the nature of utilization by the quality of use and decision making performance has been settled and various research thinks about have exhibited that the accessibility of applicable information normally enhances the exactness of choices. Then again, as stipulated by Thomas (2004) unimportant signals may likewise make the distinguishing proof of pertinent information more troublesome and may diminish decision making performance. All in all sense along these lines, there is a sensible idea that good information prompt great decision making.

Badu (1991) conducted a research at the University of Ghana on information seeking behaviour and information use. It was found that, many students consulted their personal collection of books or information, then department libraries, and then eventually the main library of the university.The reason stems from the fact that, the students claimed they had no or little knowledge of the types of resources available at the library. The study therefore recommended education of users about the library through the integration of user education in the university

curriculum. Wakimoto (2010) and Nutefall (2009) stated in the findings of their study that, students at all levels of education do not use research process which actually involved the ability to recognize information needs, choose the appropriate sources, evaluate and use it for the intended purpose at hand, but rather, rely always on sources like Wikipedia and Google, However, relying on sources shows that there exists the lack of IL which poses a lot of threats to students and prevent them from becoming lifelong learners.

Rehman and Alferesi (2009) on the students in Kuwaiti tertiary institution showed some deficiencies in their information searching skills. It was discovered that majority of the students lacked basic skills in the use and searching of information and most of all their capabilities in the selection and use of information sources was found to be weak and limited. The level of the situation leaves some serious questions about these students level of information literacy. The study recommended that policy makers look critically at the situation for a better solution.

2.5 Evaluation of Information Sources by Tertiary Students

In evaluating the credibility of information source there are several key areas to consider:

1. The authority and credibility of the publisher. There is the need to find out who is the publisher; the author(s); what makes the author an authority on the subject and; does the author fully credit materials taken from other sources?
2. The scope and relevance of the information. Users of information must know the intended audience (general, specialized, scholars, etc.) for the information. Individuals must also check the level of the material (i.e. basic, intermediate or advanced).
3. The coverage of the information. Issues like time periods, geographical area and how comprehensive and specific of the information needs to be considered.

4. The currency and timeliness of information. There is the need for users of information to find out how recent or current of the book or article they intend to use. Individuals must also consider how important of the information to current need one wants to satisfy.
5. The context. Does the book or article fit into its discipline discourse?

Evaluation seems a difficult and complicated process therefore Eisenberg (2008) observed that information evaluation is a task which is so complex to perform, and so many people fail in the area of information evaluation.

In assessing the authenticity of information source there are are several key zones to consider, and these are the specialist of the creator, the background of the publisher of the work and the importance of the work.It is a known fact that not all information available and especially on the Internet is authentic. Information is available in a multiple media such as graphical, aural, and textual. These pose special challenges for students with the issue of evaluating, understanding, and using information in an ethical and legal manner (Bundy, 2004). Studies of students have found that students have "difficulty evaluating the veracity and objectivity of information" (Brown, Murphy, & Nanny, 2003; Hamilton & Pors, 2003).

Johnson and Lamb (2003) suggest that it is imperative for students to learn how to evaluate the quality of information students find on the web and any other information available elsewhere as books, magazines and all other sources. Content of an information and most especially information on the Internet must be evaluated based on the authority, objectivity, authenticity, reliability, relevance, relevance and timeliness of that particular information.

A similar study conducted by Julien and Barker (2008) in Alberta, Canada on how university students find and evaluate information sources revealed that evidence exists in lack of

investigative procedure of information among high school students. The findings confirmed what Brown (2001), and Todd (2004) had also discussed about the lack of searching skills and critical information evaluation skills among students. Heidi and Barker (2009) in their research result into how high school students evaluate information sources found out that, most of the students viewed trustworthiness of information based on the website rather than the content of the information. The overall result shows that 59% of the information sources were Internet based and Google was the most used search engine and they revealed that evaluating the website alone is a risky practice and that the students need to be better equipped on evaluating the content.

However, Brarranoik (2001) in her study with biology students showed that over 80% of the students were more particular and concerned with the content of information and therefore recommended that lecturers should rather give prominence to the process of information searching by equipping the students with the necessary skills and capabilities to search and evaluate for the right sources of information. Scholz-Crane (1998) states that, there is a changing face on how students conduct information research because of World Wide Web (WWW) and that millions of students access information on the web and the process is too simple which has lowered the quality of students' research process. A similar statement was made by Rothenberg (1997) and I quote "You toss a query to a machine, wait for minutes, and suddenly a lot of possible source of information appear on your screen". Barranoik, (2001); Fidel, Davies, and Douglass, (1999) found out that, students demonstrate poor search skills, which include selecting search terms, evaluating websites, and appropriately citing sources.

Lorenzen (2003) discovered in a study that about 35% of the respondents in university lacked evaluation skills, this is based on the answers they provided which indicated that the Internet give them fast responses and as soon as they get information that satisfy their needs they become

fine and evaluating the source of the information is therefore not a priority . Foo, Majid, and Chang (2014) confirmed this as it was also revealed in a study that, tertiary students were unable to distinguish credibility in web sites.

There has been new emerging trends changing of how students conduct information research all because of World Wide Web and some educators feel that the web has actually lowered the quality of how students write and present research papers (Scholz-Crane 1998). He further stressed that the librarian has the duty to teach students the skills necessary for effective evaluation of information sources because, the information available on the web has pushed the teaching of evaluation skills to the forefront today.

Francke, Sundin, andLimberg (2011) indicated that over 80% of the students evaluate their sources, an empirically based understanding of students Information Literacy practice. On the contrary, Farkas (2012) in his research demonstrated in the finding that high school students often address searching for facts without questioning or analyzing the information they acquire. In a similar survey conducted by the Pew Internet and America Life Project as cited by Ferguson (2009) it was found out that nine (9) out of ten (10) students have access to Online Information, because most of them use the Internet for research. Most of these information come in different formats and choices and then rate of number of teenagers and young adults who rely on and use the . To this effect which most of them accept the information of these sites as reliable and therefore it behooves on librarians, teachers and concerned citizens to give a helping hand to these youngsters to understand that they should not put equal value on all information available on online sources and must also be evaluated. He proceeds with that, to successfully assess a information source, you should first decide precisely what you are taking a look at.

Essential and optional sources right off the bat distinguished, at that point recognizing well known and academic sources. An essential wellspring of information is a firsthand or onlooker record of an occasion. It is additionally crude information or actualities which were accumulated at an occasion. They incorporate journals, letters, daily paper articles revealed from an occasion, open archives, laws, court records, addresses, insights, studies, logs, diaries. An optional wellspring of information comes afterward, it is writing that dissects, deciphers, relates or assesses an essential source.

2.6 Legal and Ethical Implication of Information Use

Information users all around the world and most especially students must be made aware of legal and ethical issues such as copyright and plagiarism associated with the use of information available in all sources, be it print, audio, visual, and information found online. There is basically two fundamental issues concern with the use of information, these are copyright and plagiarism. The word "legal" is defined by Webster's Third New International Dictionary as a requirement or right established by law. Plagiarism is an aspect of information ethics, according to the Institute for Information Ethics and Policy (2013) are "the totality of issues that involves an individual's privacy and the public's right to know". Information ethics (IE) can be broadly defined "as a field of applied ethics that 'provides a critical framework for considering moral issues concerning informational privacy, moral agency and some problems arising from the life-cycle examples are creation, collection, recording, distribution, processing of information, especially ownership and copyright, digital divide" (Dika & Hamiti, 2010). Plagiarism is often defined as copying or using someone else's work as your own.

Plagiarism according to Gilton has become a huge problem among universitystudents. However, the authors were to find how best they could offer a helping hand to curtail it through the use of software. Gilton's 2015 survey found the use of the internet by some students in tertiary institutions that plagiarizing the content of a document without analyzing the data for them is the order of the day. The survey further found out that, there is escalating number of tertiary students copying someone's work and make it looks like their own. Gilton detected in the study one hundred and twenty two (122) cases of plagiarism when they ran its papers through the Turnitin plagiarism detection services.

Gilton establishes that ninety eight percent (98%) of UK Universities use Turnitin software to monitor plagiarism. Therefore the issue of plagiarism needs to be addressed particularly at the secondary school level for Ghana too. They therefore recommend that teachers and librarians are the key people to instill good research and writing techniques at Secondary school level.

Webber, Boon and Johnston (2005) defines plagiarism as "knowingly cheating in the form of intellectual theft which still and often eludes detection, and, even when detected, is difficult to prove beyond reasonable doubt". It is often time not equated with copyright infringement, although it can be that, and the difference is often described as being between "theft of text" (the infringement) and "theft of authorship" which takes us in the area of the moral rights of the original author. People are progressively confronted with different and unfiltered data decisions in their studies, in their work environments, and in their lives. Similarly, Bundy (2004) states that these difficulties pose special challenges in evaluating, understanding, and using information in an ethical and legal manner. Todd (2004) showed the extent to which electronic environment played a part in the problem of plagiarism at the tertiary level as far back as 2004 and still persisting.

A current research conducted by the University of the Belearic Island to analyze academic plagiarism among students established a widespread of plagiarism in tertiary education especially among boys. The study revealed that boys tend to be guilty in plagiarism more than girls and also found that plagiarism exist among students that procrastinate academic work until last minute. With a total number of one thousand two hundred and ninety- one (1,291) students sampled, 72.5% admitted of copying without referencing or acknowledging the author of the original work. The study subsequently recommended the need to teach students how to use information effectively and ethically.

Oppendhiem (2008) reports that, there is the likelihood that legal issues surrounding the use of the internet would be more difficult and there is the need for new systems to resolve disputes and that a new body of law will be needed and he called on information professional around the world to meaningfully contributed to the legal debate that is going on.

According to Rowlands (2008) using the Internet to conduct research for information by students has been on the increased regardless of whether the research project required the use of the Internet or not. Samson and Millett (2003) added that the use of Internet for research purposes increases the need by students to employ critical evaluation to find out the reliability, credibility and trustworthiness of the information source.

Similarly, a research conducted with Australian university students by Williamson and McGregor (2006) on the understanding of plagiarism revealed that all students seemed to have understanding of plagiarism but most of the students were unable to recognize it and some also indicated that they did not know how well enough to fulfill the requirement on how to use their own words to analyze their own academic work, example, assignment and essays.

In like manner, the colossal multiplication of assets, media and innovations for access and utilization of data have required that the clients are furnished with the fitting capacities of Information literacy (IL). For this reason, teaching students how to cite information correctly is a fundamental skill (Seamans, 2002). Teaching students the skill to cite properly and correctly would make students cite information sources well to avoid committing the crime of plagiarism.

The one sure best way for student to better understand legal and ethical implication associated with the use of information or concept of information ethics is through the introduction and teaching of the course like Information Literacy in all educational levels especially form senior high school stage. According to Riedler and Eryaman(2010) information literacy would teach students proper methods to cite and at the end, prevent student from violating all aspects of unethical misconduct, cheating and academic dishonesty infringement such as copyright laws and plagiarism.

Parker (2003) proposed that the Internet and full-content databases have made students literary theft a more major issue than previously. Copyright infringement cases among colleges around the globe are swelling up, and the reasons incorporate more Internet resources, the simplicity of reordering, apathetic states of mind towards reference, student obliviousness about reasonable utilization of information, student and faculty hesitance to report, and a consumerist way to deal with getting a degree.

Plagiarism, similar to charges of monetary inconsistencies, can influence an establishment in an extremely open manner when, through rivalry in advanced education and the strength of brand value in showcasing activities in colleges, it can do the most damage. Copyright infringement is essentially exceptionally troublesome completely and substantively to demonstrate.

2.7 Challenges Faced by Students in Accessing Information

Information boundaries or information limits are impediments to access to information. Information boundaries or breaking points impact information require which can thwart their distinguishing proof or mindfulness. Yu-Hui (2015) depicted boundaries to information as signs of the target reality which obstruct the stream of information from the generator or the information framework to the recipient or the beneficiary. Information obstructions additionally emerge at whatever point there is a difference between the perfect and the real availability to distributed information.

McGregor (2006) observed that, 80% of obstructions to information are associated with libraries. The investigation likewise indicated variety in sex in view of shifted reactions from male and female as ladies saw information hindrances as a more major issue more than men. He additionally expressed that Information obstructions are hindrances ruining, deferring or anticipating access to information that is, information chasing, looking and utilizing. Information hindrances emerge in an indistinguishable setting from information required, and are associated with individual attributes and miniaturized scale and full scale ecological conditions.

Then again Byrne (2003) expressed that, entrance to the ground-breaking mix of computerized publications, authority and generalist databases, modern inquiry frameworks and entryways have made exceptional work area access to insightful information and all set up together have given an advanced library which empowers researchers and students to quickly analyze an extraordinary abundance of the academic writing in their own particular orders and those new to them. He additionally focused on access to information is accessible all inclusive 24 hours per day without topographical impediment.

In contrast Byrne (2003) underlined that, access isn't without confinements and that, it is restricted by the accessibility of solid and reasonable information and correspondence advancements, and constrained to those researchers and students who are partnered to associations which have the resources and abilities to provide access. It is likewise restricted to the individuals who are information educated and have a charge of the significant dialects of business case, English dialect specifically.

Byrne (2003) states that "whether it be from a common access Internet facility, home, school, university or workplace, ready access to a computer with reasonable capabilities is essential., without enough computers, it is impossible to get sufficient access time, without adequate memory, speed and storage, it is impossible to open, download or use electronic scholarly information and these problems can be compounded by ageing hardware and lack of technical support". Another study conducted by Rehman and Alfaresi (2009) on Kuwaiti female students, indicated that, the students lacked skills for searching the catalogue, selection of information sources, formation of search strategies ,and selection of pertinent sources to locate information.

Kinegyere (2007) made a proposition and demonstrated that widespread typology of information boundaries comprises of four gatherings. Initially, boundaries associated with individual attributes which incorporate; ignorance boundary, absence of information aptitudes, phrasing hindrance, remote dialect obstruction, absence of time, mental protection from computer and web utilize, mental protection from making inquiry, hindrance of instructive level, uninvolved demeanor, hindrances associated with statistic factors: age, sex and different variables.

The second barrier according to him is, interpersonal barriers which include; lack of help from people who are the source of primary and secondary information example are researchers

seeking to have information from when answers are being sought for in times of solving problems.

The third barrier has to do with, environmental barriers, which include, legal barriers, some information may be held for security and confidentialities associated with it, examples are some governmental, military and judicial information, financial barriers, some information may require some financial commitments before having access to them, geographical barriers, distance can also cause barriers to some information, political barriers, cultural barriers, and lastly, barriers connected with information resources which include libraries, internet or barriers created by authors of information.

Kinegyere (2007) additionally underscored that, this gathering can be partitioned into no less than two subgroups: hindrances in libraries which is absence of resources in parent library, hostile standards in libraries, library's postponements. Other obstructions he focused on including badly designed open hours, course of action of the accumulation, poor notice of information sources in libraries, library uneasiness; and boundaries made by creators and distributers of essential and optional data, which is data over-burden, low nature of data, unessential information, antagonistic information recovery and seeking instruments, distributing delay, control of English dialect, different obstructions, e.g. information not yet distributed.

Bambaro (2014) opines in her study how to overcome the barriers to information, identified how information literacy should become compulsory despite all common challenges cited. She further found out how librarians were able to model information literacy programmes after using critical approach and literary method lab and methodology which is transferrable to other disciplines at Dickinson College. This led to increase in training of students in the English department as

faculty members were interested in the training the students of the department of the school to become better researchers.

As indicated by Rowlands (2008), students do not have a comprehension of what constitutes quality academic information; they can't assess the information retrieved, additionally they are not ready to apply advanced information looking techniques to a scope of interfaces, supporting rather instinctive process like Google just in view of its expected effortlessness. When all is said in done, larger part of understudies confront various difficulties during the time spent in information pursuit, recovery and its utilization. Among the difficulties confronting understudies in their data utilize are dialect hindrances, computer utilize abilities and general involvement in library utilize (Aharony and Bronstein, 2013). For example, Mugyabuso and Stilwell (2008) call attention to that dialect issues not just make them frightful as far as conveying yet influence them to bear different bothers in their scholastic investigations including the utilization of library services.

In like manner, Aderibigbe and Ajiboye (2013) in their investigation of client instruction and information benefits in Nigerian libraries distinguished information lack of education among library clients as a factor upsetting the viable use of reference benefits in the library. Tilvawala, Myers, and Andrade (2009), and Kinengyere (2007) are the greater part of the sentiment that distinctions in learning, information utilize and computerized competency among students is the aftereffect of contrasts in students' social, social and semantic experience.

2.8 Teaching Methods and Skills Used in IL Programmes

Teaching and learning resources refers to materials or all the means of delivering knowledge, such as chalkboards, textbooks, journals, databases, teachers and contemporary instructional

materials such as computers, CD-ROMs, interactive video and multimedia systems Ogula and Onsongo (2009 p. 53). According to Jelagat (2015 p. 9), a learning resource is anything planned, prepared or used to facilitate or reinforce the teaching process in teaching and learning situation. According to Olubayi (2015 p. 10) teaching and learning resources may include well equipped libraries with recommended textbooks, laboratories, well spaced and ventilated classrooms, adequate trained teachers, computers, projectors, good boards, playgrounds, sports equipment, among many others.

A variety of learning resources are essential for effective information literacy training and learning process as they make teaching and learning processes and activities interesting and joyful. This is made possible with the help of sensory aids, as they make students feel motivated and as a result, they learn faster, remember longer, gain more accurate information and receive and understand delicate concepts and meanings. Teaching and learning resources enable the Students to develop their powers of imagination, observation and reasoning (Jelagat, 2015, p. 9). Instructional methods can also be referred to as teaching methods. Instructional methods refer to the process or set of procedures of teaching which tend to promote specific strategies of teaching (Kiruhi, Githua & Mboroki, 2009, p. 51). Were (2003 p. 2) defines teaching as "a process that facilitates changes in Students and entails telling and persuading, showing and demonstrating, guiding and directing the Students' efforts or a combination of these actions". Orlich (2010 p.15) looks at teaching as both an art and science. Instructors build up their science by utilizing precisely arranged, calibrated exercises that mirror a comprehension of a wide range of educating methods. They apply every procedure skillfully to pick up the coveted scholarly, social, emotional, or sensation result (Orlich, 2010).

There are several components of teaching information literacy. They include setting instructional objectives which involves identifying what will be achieved in a given teaching situation. Identification of the content to be taught is another component. It refers to specifying what to be taught, its structure and role. Another component involves selecting appropriate teaching methods and techniques. Identification of suitable instructional resources is another important component of teaching information literacy. The actual presentation of the information literacy content using appropriate methods and resources is another component followed by giving of tests and measurements to find out to what extent the objectives have been attained. Lastly, getting feedback on whether the objectives set had been achieved or not is also a component of teaching (Were, 2003 p. 12). Teaching information literacy requires a variety of instructional materials and equipment such as handouts, projectors, computer, videos, television, the internet, transparencies, felt pens, flip charts, CD-ROMs and films (Ogula & Onsongo, 2009, p. 27).

Teaching methodologies are intended to impart subject matter to the Students. Therefore, selection of information literacy teaching methods must be purposeful and deliberate. Ogula and Onsongo (2009 p. 27) identify a variety of teaching methods, namely: lecture method, case study, group discussion, field trips, simulation, resource persons, demonstrations, seminars, computer workshops, group work, practicals and tutorials.

According to Owusu-Ansah (2004), the decision to choose which media and teaching method depend on certain factors such as the teaching, learning situation, the teaching material, the students and the teachers, and that also no teaching method is appropriate for all. This assertion

has triggered off many methods of IL and a variety of media that are used. Teaching methods may be categorized into group instruction, individual instruction and those appropriate for both.

Owusu-Ansah further listed some methods and media through which IL can be offered by all universities libraries. One is shelf guided, which is considered the most traditional and the oldest form of instruction but often the least well done in modern libraries. Another is the orientation week, considered the most popular and the acceptable method of information use, involves talk and guided tour by librarians. This is usually part of the general orientation program instituted by the university.

Students are taken through library orientation at the early stage of their stay in university education. During this orientation, students are taken round the library to familiarize themselves with the materials and services available to them. This orientation exercise has proven helpful to most students as it is the first time some have seen a huge library, talk less of even using it. Many have raised the issue of the orientation being too short and too early (Aderibigbe & Ajiboye, 2013). By comparison, the one-on-one instruction has the advantage that skills are imparted when the learner is most motivated to use them. Library tour involves taking suitable group of students by a librarian around the library. Through tours, users can be shown the library location of resources.

The lecture method is another way of teaching information literacy skills course in any academic institution. This method is best suited for orientation but not suited for bibliographic instructions. It is good for providing a general introduction to the course on information retrieval but should be supplemented by others methods and audiovisual aids. Audiovisual method refers to the use of audiovisual media (auditory/visual sensatory inputs), such as films, video tape, slide

presentations, and audio tapes and to a large extent, computed-aided instruction. For groups, lectures, seminars and tutorials, audiovisuals, computer-aided learning and tour methods can be used. For individuals, printed guides, pathfinders, practical exercises, program instructions and personal assistance are helpful.

The new online approach to information literacy is seen as the ideal option for information literacy programme where information literacy is integrated into the curriculum. For students to be able to develop their IL potential fully, most practitioners have recommended the total integration as the only solution (Parker, 2003). Kuvulya (2003) is of the opinion that "whichever teaching methods used must teach the students' the different types of tools and services; it should provide an outline for systematic information seeking that is widely applicable, comprehensive and time saving".

2.9 The Concept of Assessment

The term assessment means different things to different people. Nitko (2011) cites the American Federation of Teachers, National Council on Measurement in Education and National Education Association, who see assessment as a method of obtaining information that is used to make decision about students' curriculum and programme and national policy. From this, assessment can be viewed as a means of collecting information about students in order to help in making decisions concerning the students' wellbeing in terms of the curriculum and programme and national policies on education. Cumming and Maxwell (2004) define assessment as "the systematic collection, review and use of information about educational programmes undertaken for the purpose of improving learning and development" (p. 90). They are more specific in the use of assessment results to improve learning and development. This implies that the information

collected from assessment should be that which could be used by tutors to help students to enhance their academic performance.

Lissitz and Schafer (2000) on the other hand viewed assessment as the estimation of the relative magnitude, importance or value of an individual's work or performance observed. According to them, assessment is not just the collection of the information but looking at how valuable the information that has been collected is the focus of assessment. Teachers usually do this as they observe their students at work in school and through the conduct of various tests and other assignments periodically. In assessment, teachers communicate with students through various means in order to gather meaningful information to make decisions concerning different aspects of students. Tamakloe, Amedahe and Atta (2005), maintained that "assessment occurs when one person through some kind of interaction with another, obtains and interprets information about that other person in terms of his knowledge and understanding or abilities or attitudes" (p. 176).

Assessment is the process of observing a sample of a student's behaviour and drawing inferences about the students' knowledge and abilities (Ormrod, 2008). When one is looking at students' behaviour, typically, only a sample of classroom behaviour is used. Assessment is for the benefit of not only the student but the teacher and other stakeholders as well. According to McAlpine (2002), assessment is a form of communication to the student as a form of feedback to their learning. It also serves as feedback to the teachers teaching. To the curriculum designer, it is the feedback on the curriculum and to the administrator as a feedback on the use of resources and to employers to indicate the quality of job applications. From the various definitions by the different authorities, the main issue about the definition of assessment is on the gathering of information about students in order to make an informed decision that will support the wellbeing of the student.

Furthermore, assessment is beneficial in protecting the safety of the society. For example, the Organisation for Economic Co-operation and Development (OECD) (2012) described that the framework of assessing the competency of final year engineering students is to test their ability to use basic engineering and scientific principles, engineering processes and generic skills to solve societal problems. This competency is assessed to ensure that there is improvement in quality of life, social needs, and commercial success of the society (OECD, 2012). Biggs (2003), Boud and Falchikov (2007) are of the views that the process of assessment is complex and its motive and layout are fairly contested and price-encumbered. The practice of evaluation is widely debated by means of academics, enterprise, governments, college students and various stake holders within society, all of whom have their personal agendas, assumptions and views on the matter.

2.9.1 Assessment Techniques

There are various techniques of assessing students. The most common means by which lecturers/instructors attempt to assess their students are tests and examinations (Tamakloe, Amedahe & Atta, 2005). These techniques include, but are not limited to paper and pencil test and performance task. Other means of assessing students are through the responses of students in class, homework performance, and observation of students, interviews/conference with students, students' presentations and portfolios. Paper and Pencil Test/Examination This is often the first choice for formal assessment because of its practicality (Ormrod, 2008). The assessments require students to write independently or to demonstrate understanding of concepts. A teacher gives seatwork as well as homework to students. These help the students practice learning targets.

2.9.2 Purpose of Assessment

It is important that before a teacher decides to assess students, the reasons for the assessment and how to design one that will satisfy those needs must be known. In order to do this, the teacher has to take into account the decisions he is going to make, the information that needs to be gathered to make those decisions and the methods that are appropriate for gathering that information. Dunn, Morgan, O'Reilly and Parry (2004) provide an explanation that, evaluation is used to perform numerous special purposes. They determined that at the same time as it could seem obvious that the cause of assessment is to measure student learning, this thinking is overly simplistic, though, it stays the dominant perspective. In the opinion of Dunn et al (2004) the role and motive of evaluation is far broader than just measuring student learning and maintaining pre-set requirements of achievement. They endorse that powerful assessment is that which diagnoses college students' difficulties, measures students fulfillment (with particular focus ondevelopment) over the years, motivates students, judges mastery of abilities, evaluates coaching performance and gives remarks to college students.

In the programme planning, information from assessment is used to decide placement in groups for assignment or group work or to assign students to a remedial programme. Individuals are grouped according to similar abilities and no student is rejected. It helps to decide how to teach individuals as well as a group as their educational levels would be known. Under the programme evaluation, results from assessment are used to evaluate the effectiveness of a specific curriculum. Assessment of individual progress is used in monitoring students through grades. Grades obtained in an assessment are an indication of the academic progress made by students. Other identified purposes of assessment include the following: diagnosis assessment which deals with the identification of both appropriate content and features of learning activities in which

students have learning difficulties. When the learning difficulties are identified, remedial help is then offered to these students; selection assessment in which the results are used to select individuals for specific educational activity, according to set criteria. Individuals who do not meet these set criteria are not considered for that educational activity. For example, writing an entrance examination to select students to offer a course at the university. Other reasons set by Nitko (2011) about the uses of assessment are: provision of feedback to students and teachers, motivating students, for counseling and guidance decisions and for credentialing and certification.

2.9.3 Types of Assessment

Evaluation could be assembled in different ways and these are developmental, formal or casual, final or continuous, merged or unique, quantitative or subjective, instructor focused or student focused, standard referenced or paradigm referenced, accomplishment or bent, paper and pencil or practical/oral, local or national and performance. In the developmental evaluation, a developing collection of research has discovered that the degree to which instructors install developmental assessment practices in their regular classroom cooperations is firmly identified with student learning and is related with enhanced student accomplishment. The objective of developmental appraisal is to pick up a comprehension of what students know (and do not know) with a specific end goal to roll out responsive improvements in instructing and learning procedures, for example, instructor perception and classroom talk have an essential place close by examination of tests and homework (Ntiko, 2014).

One preferred standpoint of developmental assessment is that it helps with framing a more nitty gritty feeling about student's capacities. In developmental evaluation, educators progress in the direction of principles while distinguishing the components behind the variety in students' accomplishments and adjusting their instructing to address singular issues. Developmental assessment builds students' "learning to learn" abilities by underscoring the way toward instructing and learning, and including students as accomplices in that procedure. It likewise constructs students' abilities at peer-appraisal and self-evaluation, and causes them to build up a scope of compelling learning procedures. It is important that formative assessment is improved in order to help the student to improve on his/her achievement. In the view of Brennan (2006), devising assessments that manifest learning goals is central to good teaching, not just a matter of measuring outcomes. With understanding as goal of instruction, an emphasis on assessment forces teachers to spell out what evidence of understanding would look like and these descriptions of performance propel them to provide students with opportunities to develop and practice these skills that might otherwise have been missed if “understanding” had been left out as the globally stated goal of unit.

2.9.3.1 Formal Assessment

Formal assessment is when the students performing the task are aware that what they are doing is for assessment purposes, examples examinations and thesis. It involves the use of test to obtain data that is then made available to the institution. The data gathered are usually subjected to statistical analysis and comparisons drawn between other students.The criteria for formal assessment have less room for bias (McAlpine, 2002).

2.9.3.2 Informal Assessment

With this kind of assessment, there is no comparison of students' performance. It is usually personal and subjective to the teacher involved. Data for such assessment are from the day to day observation of the students' behaviour, informal conversation and contact with the student, examination of students' notes among others. Informal evaluations center on the perusing practices showed by people and educator perception as opposed to scores and examinations (Guski, 2008).

2.9.3.3 Final/Terminal Assessment

This occurs at the end of a course, example the traditional 'finals' assessment where three years of study is assessed over a period of a few days. Episodic assessment in the view of Passos (2009) deals with the assessment of students at specific times such as at the end of the year or assessment in particular aspects of nursing. This type of assessment is appropriate when learning how each new field of study contributes to understanding others and so it is only more appropriate to assess the learning as a whole than as different parts. A key problem with this form of assessment is that the student's performance may not be a true reflection of his abilities as the test is taken once. This kind of assessment again, generates data that are based on a very small and possibly unrepresentative sample of a student's behaviour (Rothgeb, 2008).

2.9.3.4 Continuous Assessment

Rudner and Schafer (2002)opine that assessment at regular intervals during the course of study, and the modular assessment where judgment is made at the end of a study. It samples all of a student's output in a course and on regular basis; no 'passing' of a student is based on a 'once-

and-for-all' basis. Feedback from the assessment can be used to improve teaching and learning and the final results are based on the performances over a period of time.

2.9.3.5 Convergent Assessment

Convergent assessments are "those tasks that have one correct answer, example is correct answer objectives" (Swaffield, 2008, p. 19). This form of assessment is easier to mark without the assessor being biased and can cover a wider range of the curriculum. It can be marked by a computer as well.

2.9.3.6 Divergent Assessment

This form of assessment is based on opinion and analysis, example, essay type test. They are easy to construct but can consume time in marking. It also requires greater marking skill. It allows students to express themselves (Swaffield, 2008).

2.9.3.7 Quantitative Assessment

Quantitative evaluations comprise of surveying the student to gather information that are spoken to numerically. For example, execution on a test might be scored with the goal that a number speaks to how much an individual performed. Since quantitative information are communicated in numbers, they can be contrasted specifically or subjected with measurable examination, and they can empower the coach influence certain suspicions when contrasting one information with point to another. Quantitative assessment additionally may allow one to express numerically significant changes in execution (given certain conditions). Quantitative information, in this way, are esteemed for the simplicity with which counts and examinations can be made, and for the

effortlessly justifiable portrayals of execution that they deliver (Dunn, Morgan, O'Reilly and Parry, 2004).

2.9.3.8 Qualitative Assessment

This is concerned with the assessment of qualities that an individual possess. A student's view of what constitute a good relationship with a patient is a qualitative data. A typical confusion is that qualitative assessments are not as dependable, legitimate, or objective as quantitative ones. This isn't really the case. There are very much planned and measurably dependable methods for translating and breaking down qualitative information and various resources for figuring out how to utilize qualitative techniques (Silverman, 2001).

2.9.3.9 Student-centred Assessment

In this assessment, students are involved providing an assessment of their own performance or progress. The students are given the opportunity to provide written or oral, formal or informal, journals or reflective narratives of a task assign to them. Teaching and assessing are intertwined and assessment is used to promote and diagnose learning (Dunn, et al 2004).

2.9.3.10 Norm-referenced Assessment

Norm-reference assessment (NR) is a type of evaluation that utilizes government sanctioned test in which comes about contrasting execution of an individual and the execution of a substantial gathering of students. NR is now and again alluded to as scores of "relative standing." NR looks at singular scores in respect to a regulating test, which is a gathering of students with known statistic attributes (age, sexual orientation, ethnicity, or review in school). Correlations are made

utilizing two measurable properties of the regularizing test: the mean and the standard deviation (Harlen and Deakin, 2003).

2.9.3.11 Achievement Assessment

Achievement refers to how well a student has performed in the past (Chapman, 2011). This type of test aims to measure attainment of objectives in school-based curricular. It tries to gauge skills and knowledge developed because of specific instruction.

2.9.3.12 Aptitude Assessment

Aptitude is how well a student will perform in the future. According to Elliot, Kratochwill, Cook and Travers (2000), an aptitude test is a test that predicts a student's performance in a certain task by sampling the cumulative effect on the individual on many experiences. They are used to predict what students can learn. They are used to measure performance based on learning abilities.

2.9.3.13 Paper and Pencil Test

This is often the first choice used for formal assessment because of its practicality (Ormrod, 2008). The assessment requires students to write independently or to demonstrate understanding of concepts. A teacher gives seatwork as well as homework to students for them to respond in writing. These help the students to practice the learning target.

2.9.3.14 Local / Internal Assessment

This assessment set and marked by the school teachers (Yeh, 2001). Students get the mark and feedback regarding the assessment.

2.9.3.15 National / External Assessment

This is set by a governing body and is marked by non-biased personnel. Students only receive a mark. Therefore, students have no idea how they performed in terms of which items were correctly answered (Yeh, 2001).

2.9.3.16 Performance Assessment

Performance based appraisal speaks to an arrangement of systems for the utilization of information aptitudes and work propensities through the execution of assignments that are significant and drawing in to students. This kind of appraisal gives educators information about how to reasonably evaluate a student's performance (Yeh, 2001).

2.10 Summary of Review

In the nutshell, information literacy skills are paramount in today's technological advancements and explosion of information. It has become necessary that, students and individuals acquire skills that would help them to progress through these complex environments they find themselves. Many of the literature reviewed under this section has sort to highlight the much premium placed on the teaching and learning of information literacy. Individuals and students are on regular bases encountered with the problem of making decisions, their ability to select the best option for the decision at hand is very crucial. Again, one's ability to recognize when information is needed and taking the right steps to find, access and use the information in an ethical, social and legal manner is considered a major step in one's education. In our quest to make students and individuals an independent learner, they must be provided with the relevant skills that would help them to achieve their various goals as they progress from the basic level through to their university education.

As the teaching and learning of the IL programme unfold, there is the need to evaluate the appropriateness of the teaching methods and find out whether students are really grasping the concept as intended. A variety of methods could be used being it formal, student-centered, lecturer-centered, presentation among other methods to assess the learning outcomes of students. All over the world, assessment has served as the impetus to improve the teaching and learning of various programmes of which Ghana is no exception.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The methodology section describes the research design of the study. It also includes the population, sample and sampling procedures, research instruments as well as data collection and data analysis procedures.

3.2 Research Design

The multiple case studies method design was used for the study. Hagan (2006 p. 240) defines the case study method as "an in-depth, qualitative studies of or a few illustrative cases". The case study is an approach fit for analyzing basic or complex situation, with units of examination fluctuating from single people to vast partnerships and organizations; it involves utilizing an assortment of lines of activities in its information gathering fragments, and can definitively make utilization of and add to the use of theory or hypothesis (Yin, 2003, p. 183).

Moreover, the multiple case studies helps the researcher to capture different subtleties, examples, and more idle components that other research methodologies may disregard. The case study strategy tends to concentrate on comprehensive portrayal and clarification; and, as a general proclamation, any phenomenon can be considered bycase study. In education, case studies abound and include studies of unique people and programmes as well as special programming (Alexander & Bennett, 2005).

Case studies are a unique way of capturing information about human behavior for the following reasons: a case study focuses on one individual or one thing which allows for very close

examination and scrutiny and the collection of a great deal of detailed data. They do not necessarily result in hypotheses being tested; they suggest directions for further study and the ability to allow people to speak in their own voices make them valuable sources of data (Salkind, 1994, p. 195).

3.3 Selection of Cases

The Central Region with Cape Coast as it regional capital can boast of three public universities consisting of University of Education, Winneba, University of Cape Coast and Cape Coast Technical University. The region can also boast of a number of private universities. For the purpose of this study, the researcher focused on two of the public universities in the region which are the University of Education, Winneba and University of Cape Coast. The two institutions are among the public universities in Ghana where information literacy is being taught. UEW rolled out the programme six years ago and UCC was among the first public universities to roll out the programme over twenty years ago.

Again, this research was limited to the pedagogical methods of lecturers of the programme. This study was also limited to second year students of the Faculty of Social Science Education from UEW, Main Campus and Faculty of Social Sciences, UCC. The choice for the second year students was that they were the latest beneficiaries of the programme in both universities and the need to assess their competency level in relation to their concept formation and search for information for their academic and personal development life.

3.3.1 Population

The population of a survey can also be defined as the entire set of units for which the survey data are to be used to make inferences (Lavrankas, 2008). Therefore, the population defines those units for which the findings of the study are meant to generalize. The population for this study was second year students of the Faculty of Social Sciences Education, UEW Main Campus, second year students of the Faculty of Social Sciences, UCC and lecturers for the IL Programme from the two institutions. The Faculty of Social Science, UEW, Main Campus has a second year students' population of 643 (UEW Matriculation Brochure, 2016), and 8 lecturers (UEW Staff Directory 2017) for the programme. The Faculty of Social Sciences, UCC has a second year students' population of 739 (UCC Matriculation Brochure, 2016), and 10 lecturers (UCC Staff Directory, 2017) handling the IL programme. The total targeted population for the study was 1,400 made up of 1,382 students' respondents and 18 lecturers. The full breakdown is represented in Table 3.1:

Table 3.1: Target Population

Name of Institution	STUDENTS	LECTURERS	**TOTAL**
UEW (Faculty of Social Science Education)	643	8	**651**
Faculty of Social Sciences	739	10	**749**
Total	**1,382**	**18**	**1,400**

Source: UEW and UCC Staff Directory and UEW and UCC Matriculation Brochure, 2016.

3.3.2 Sample size

A sample is a portion of the total population. The sample size is "the number of observations used for calculating estimates of a given population" (Smith, 2010). Considering the number of the targeted population of students from the two universities, the researcher decided to take 10 percent which was in line with Nwana's (1992) assertion that when the population is in a few thousands, a researcher can choose 10 percent and this translated into 138 student respondents from the two universities. Also, all the 18 lecturers for the programme from the two public universities were considered for the study to gather in-depth data on the subject matter based on the research questions since they are the ones who teach this programme. So the total sample size for the study was 10 percent of students' respondents (138) and the 18 lecturers, making 156 as the total sample size.

Table 3.2: Sample Size for Students

Name of Institution	**Population**	**Sample Size**
UEW (Faculty of Social Science Education)	643	64 (643/1,382*138)
UCC (Faculty of Social Sciences)	739	74 (739/1,382*138)
Total	**1,382**	**138**

3.3.3 Sampling Techniques

The convenience examining strategy was utilized to choose students' respondents for the survey. Convenience examining otherwise called accidental sampling is a sort of non likelihood or non irregular testing where individuals from the objective populace that meet certain useful criteria, for example, simple openness, geographical proximity, accessibility at a given time, or the ability

to take an interest are incorporated with the end goal of the examination. It is likewise alluded to the examining subjects of the populace that are effortlessly open to the study. Convenience tests are once in a while viewed as 'incidental examples' since components might be chosen in the example basically as they simply happen to be situated, spatially or officially, close to where the study is leading the information accumulation. Convenience Sampling is reasonable, simple and the subjects are promptly accessible. The fundamental target of convenience sampling is to gather data from members who are effectively open to the study like enrolling suppliers going to a workforce conference for think about interest. Albeit normally utilized, it is neither deliberate nor vital. The principle suspicion related with convenience sampling is that the individuals from the objective populace are homogeneous. That will be, that there would be no distinction in the exploration comes about acquired from an arbitrary example, a close-by test, a co-agent test, or an example accumulated in some difficult to reach some portion of the populace.

The willingness of the respondents to participate in this study was the main reason for choosing this technique (convenience sampling) as respondents were given the liberty to choose whether to be part of the study or not. For university of Cape Coast, the respondents were gotten from the second year students reading Sociology, Anthropology, Economies, Hospitality Management and Population and Health all from the Faculty of Social Sciences. A visit to these departments lecture halls was enough to exhaust the sample size chosen for this study from UCC (74 respondents). The researcher presented the clearance letter to the lecturers from each of the above mentioned departments. From there, the researcher introduced himself and the purpose of the study to the students, and those who showed interest in the study were given copies of the questionnaire to answer. The distribution and collection was done by the researcher with

assistance from form two national service personnel from the department of Economics. The distribution and collection for the data took four days.

In the case of University of Education, Winneba, there was a little challenge as two lecturers refused the researcher entry even after inspecting the authorization letter from the Department of Information Studies and the clearance from the Dean of Faculty of Social Sciences Education. In addition, many students were not willing to participate in the study. Against all these setbacks, the researcher with assistance from two national service personnel from the Faculty was successful in distributing and collecting sixty-four (64) copies of the questionnaire within two days.

The purposive testing system was likewise used to talk with teachers from the two universities for the investigation. The purposive sampling method, likewise called judgment examining, is the ponder decision of a member because of the characteristics the member has. It is a non-likelihood strategy that does not require hidden speculations. Basically, the researcher chooses what should be known and embarks to discover individuals who can and will give the information by uprightness of learning or experience. It is ordinarily utilized as a part of qualitative research to recognize and select the information rich cases for the most legitimate use of accessible resources. This includes recognizable proof and choice of people or gatherings of people that are proficient and well-informed individuals with a phenomenon of intrigue. Notwithstanding learning and experience, the accessibility and readiness to take an interest, and the capacity to impart encounters and assessments in a well-spoken, expressive, and intelligent way is exceptionally essential. Speakers from the two establishments were chosen intentionally

for this examination since they educate the programme and are better put to give clever commitments to this research.

3.4 Research Instruments

Research instruments are fact finding strategies and are tools used for data collection. They may include questionnaire, interview, observation and reading. Research instruments chosen must be valid and reliable. The validity and reliability of any kind of research depends extensively on the appropriateness of the instrument (Neuman, 2003; Annum, 2017). This study used both the questionnaire and interview. The questionnaire was for student respondents and the interview for the lecturers of the programme from the two universities.

3.4.1 Interview

An interview is a method of field investigation whereby a researcher meets his respondents and through the interaction, asks specific questions to find answers to his research problems. This method is used when respondents are willing to talk and have adequate knowledge about a research problem. The various forms of interview are: the standardized (formal or structured) interview, the unstandardized (informal or nondirective) interview, and the semi standardized (guided semi structured or focused) interview (Berg, 2007). The researcher structures specific questions and asks these questions during his encounter with respondents. The following advantages make the interview an ideal instrument for data collection. First, interviews can help motivate respondents to give more accurate and complete information as compared to a mailed

questionnaire. The control afforded by the interviewer encourages better responses. This becomes especially important as the information sought becomes more complex.

For the purpose of this study, the researcher adopted the structured interview type. The interview involved lecturers for the IL programme from the University of Education, Winneba Main Campus and the University of Cape Coast. The researcher personally conducted the interview with lecturers from the two universities touching on the issues captured under the objectives for this study. The researcher adopted the face to face interview, with exception of two lectures who because they were not present at the time of the researcher's visits, agreed to telephone interview which were recorded after giving their consent. The researcher used voice recorder gadgets and field note pad to record and write the responses from the respondents and this was made known to them before the interview.In other to overcome the limitations identify above, the researcher ensured that what was recorded was what was interpreted to address the issue of bias. Also, the researcher ensured that there were no variations in the wording from one respondent to anotheras the checklist question method of interview was used. The interview for the lecturers bordered on the teaching methods employed in teaching the course. For the interview, the researcher first submitted the introductory letter collected from the Department of Information Studies to the two institutions, where clearance was given by the respective institution to enable the researcher to conduct the interview. Subsequent to that, the researcher engaged the lecturers to find out the ideal time and place for the interview. Some of the respondents requested the researcher visits them in their homes of which the researcher obliged. Others too had their interviews at their various offices. In addition, two respondents agreed to telephone interview and it was recorded after giving their consent.

The first segment of the interview comprised of introduction by the researcher and then after background information of the respondents was also taken like; age range and level of education. The second segment elicited their views on the teaching methods, the effectiveness of the methods, credit hours, challenges facing the course and how the course can be improved.

3.4.2 Questionnaire

These are formal questions framed and written down for a respondent to provide answers. It can be delivered personally, through telephone or mail. The research employed both the open-ended and closed-ended questions. The questionnaire was in six (6) sections. Section A collected the background information of respondents. Section B assessed students' access and use of information. Section C covered evaluation of information sources. Section D captured the legal and ethical use of information. Section E was devoted to the barriers to effective use of information and Section F considered assessment of the teaching methods. The questionnaire was distributed to the student respondents by the researcher with the help of four national service personnel of the two universities.

The questionnaire offers the following advantages. First, questionnaires can be utilized to accumulate information much more economically and rapidly than interviews. Secondly, with inquiries of an individual and touchy nature, mailed questionnaires may give more precise answers than interviews. Individuals might probably react genuinely to such inquiries when they are not vis-à-vis with a man they see as potentially making judgments about them. Finally, questionnaires dispose of the issue of questioner inclination

3.5 Mode of data collection

In order to have access to the study areas, the researcher collected a letter from the Department of Information Studies, University of Ghana to seek permission from authorities of the two public universities (UEW and UCC) in order to engage the respondents. Copies of the questionnaire were distributed to the respondents from the two universities and it was in sections based on the objectives for the study. The researcher engaged the services of two national service personnel each from the two universities to help in the distribution and collection of the questionnaire which took four days. The researcher personally interviewed the lecturers for the programme and this also took two weeks. Thus, two weeks and four were used for the data collection.

3.5.1 Sources of Data

Data collection was done by combination of both primary and secondary sources. The primary sources consisted of the questionnaire and the interviews conducted and the secondary sources consisted of data emanating from previous works which includes: reports, books, journals, magazines, electronic databases and other related resources that were deemed right for the study.

3.5.2 Pre-Testing

In order to make sure that the instruments for the data collection were appropriate, a pre-testing was conducted. The second year students of Faculty of Social Sciences at the Kwame Nkrumah University of Science and Technology (KNUST)was used for the pre-testing as it has some common features with the two institutions chosen for the study. The first common feature was that KNUST also runs the ILS course on the first year at the undergraduate level and for one credit hour. Moreover, KNUST is one of the public universities in Ghana to start the course. The

faculty chosen was also in line with the chosen faculty from the two universities. One national service personnel from the KNUST library assisted in the distribution and collection of the data. Copies of questionnaires were distributed to twenty (20) second year respondents.

Again, three (3) lecturers for the IL programme from KNUST were interviewed and the three interviews were done in their offices. Two of the responses from the respondents were recorded, whiles the other response was written. The pre-testing was done to ascertain the reliability, validity and suitability of the research instrument. The pre-testing exercise was worth undertaken as some issues of wording and ambiguity were addressed in the subsequent questionnaire and interview checklist.

3.6 Data analysis

Data analysis according to Babie (2005) is the process of extracting from a given data, relevant information, from which a summarized and comprehensive numerical description can be formulated. Data analysis in quantitative and qualitative research relies more on descriptive and inferential analyses. The datawas qualitatively and quantitatively analyzed. The Statistical Package for the Social Sciences (SPSS) software version 22.0 was used to analyse the questionnaire data collected into frequencies and percentages. The responses were grouped according to their various categories. The data were first captured, coded and analyzed and some of the results were presented showing the frequencies and percentages of responses given by the respondents in the form of tables and bar charts.

The recordings of the interview were transcribed and grouped under the various themes for easy interpretation. The thematic concept analysis was used to analyse the interview data after it had been transcribed.

3.7 Ethical Considerations

Ethical issues are moral codes of behavior which a social researcher is supposed to follow in carrying out his/her research work (Obeng, 2013). They are the concerns, dilemmas, and the conflicts that arise over the proper way to conduct research.

In view of this, the researcher obtained letters from the Department of Information Studies to seek permission from the institutions involved in the study, introducing the researcher to the respondents and the purpose for the study. The researcher also assured all respondents that their responses would be treated confidentially. The researcher did not manipulate the data to meet research objectives. The researcher adhered to all the code of ethics governing research in University of Ghana.

Finally, all sources consulted for the study were acknowledged accordingly.

CHAPTER FOUR

PRESENTATION OF DATA AND ANALYSIS

4.1. Introduction

This chapter presents the findings of the study after analyzing the data from the field. The study was aimed at assessing the information literacy programmes of tertiary institutions in Ghana with particular reference to University of Cape Coast and University of Education, Winneba. The analyses of data gathered from the questionnaire were done using frequencies, percentages and inferential statistics and presented undersix themes. The first theme covered an overview of the demographic characteristics of the respondents. The other five themes covered students' access and use of information, evaluation of information sources, legal and ethical use of information, barriers to effective use of information and assessment of the teaching methods. The first four objectives of the study were quantitatively analyzed whilst the fifth objective was analyzed qualitatively.

The study was conducted by distributing a total of 138 copies of the questionnaire for the quantitative analysis of the study, made up of 64 for UEW and 74 for UCC. All the 64 and 74 questionnaires from UEW and UCC respectively were returned for analysis yielding a response rate of 100% which was commendable. The approach of meeting the student respondents at their various lectures halls and the support from two national service personnel from each institution helped to achieve this rate. The researcher started with the quantitative analysis of the data before moving onto the qualitative analysis.

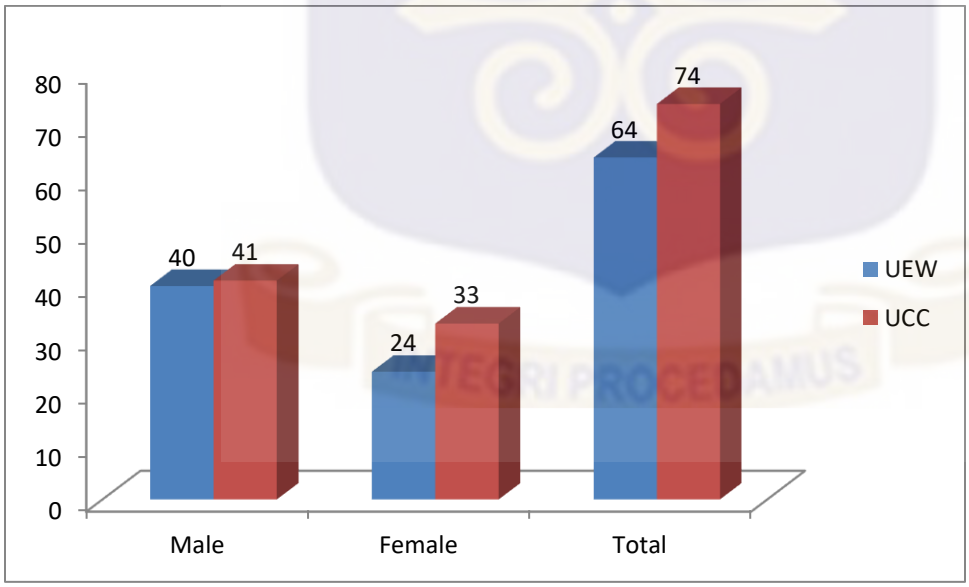
4.2 Socio-Demographic Profile of Respondents

The background data of respondents were obtained from Section A of the questionnaire. The data basically covered the distribution of respondents' gender and age. It is important because it reveals the attributes of the respondents the researcher investigated, as well as making it possible to compare data between respondents that possess different attributes.

4.2.1 Gender of the respondents

Gender is the range of characteristics pertaining to, and differentiating between, masculinity and femininity. Gender distribution is very necessary in research as it may affect the interpretation of the findings. In this regard, the researcher therefore asked the respondents to indicate their gender and this is illustrated in Figure 4.1.

Figure 4.1: Gender of the questionnaire respondents



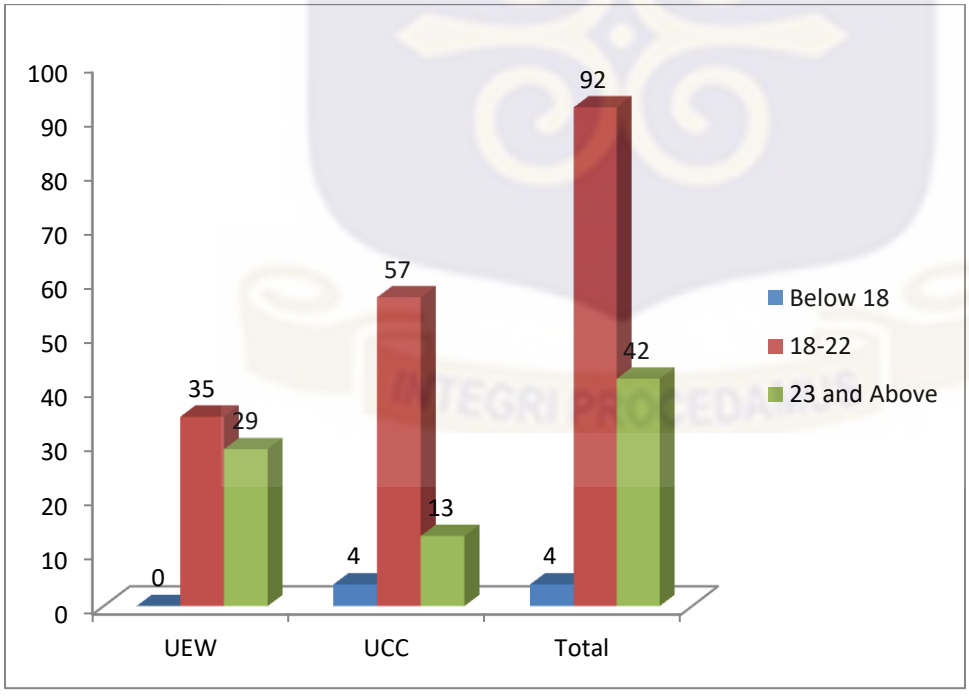
Source: Field data, 2018

Figure 4.1 shows that there were 138 respondents involved in the study. Out of the 138 respondents, 81 (58.7%) were male and 57 (41.3%) were females. The 64 respondents from UEW were made up of 40 (62.5%) males and 24 (37.5%) females as against 74 from UCC made up of 41 (55%) males and 33 (45%) females. From Figure 4.1, it is clear that male respondents dominated in the study from both universities. There were relatively more female respondents from UCC 33 (45%) than their counterparts in UEW 24 (37.5%).

4.2.2 Age of thequestionnaire respondents

The inclusion of ages of respondents in a research helps to determine the average age with which the researcher worked with. With this in mind, the researcher inquired into the age range of respondents. Figure 4.2 establishes the age of students of both universities.

Figure 4.2: Age of the respondents



Source: Field data, 2018

According to Figure 4.2, the highest age range was ’18-22’ with 92 (66.7%) respondents whilst the lowest was ‘below 18’ with 4 (2.9%) responses. Both UEW and UCC had the highest respondents within the ’18-22’ age range with 35 (54.7%) and 57 (77%) respectively while in UCC the lowest response was ‘below 18’ with 4 (5.4%). UEW recorded ‘no response’ for the age range ‘below 18’. It is evident from Figure 4.2 that majority of the respondents were found within the age group of ‘18 and 22’.

4.3 Students Access and Use of Information

The first objective of the research was to assess how students access and use information. This section of the analysis explored how students went about their search for information and how they used the information gotten effectively and efficiently to address the various needs that prompted its acquisition. Thus, data on the level of familiarity with the various types of information used for academic project/work, where they gotthese information from, how often they employed the various search strategies, knowledge on the Boolean operators and students’ level of comfort with the various search skills were examined.

4.3.1 Level of familiarity with the types of information

There are various types of information available to an individual to choose from. These information can be in the form of books, web sites, interviews, pictures/images, videos/movies, music, periodicals, dissertations among others. This section of the analysis explored the respondents’ familiarity with the various types of information.

4.3.1.1 Level of familiarity with books

As part of the first objective, this section of the data analysis was aimed at assessing the respondents' level of familiarity with books as a type of information used for academic project or work.A book can be described as a set of written, printed, or blank pages fastened along one side and encased between protective cover (Oxford Dictionary, 2016). Table 4.1 indicates responses on respondents' level of familiarity with books.

Table 4.1: Respondents' level of familiarity with books

Institution	Not at All Familiar		Slightly Familiar		Somewhat Familiar		Moderately Familiar		Extremely Familiar		No Response		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	2	3.1	5	7.7	1	1.6	17	26.9	37	57.8	2	3.1	64	46.4
UCC	1	1.4	5	6.8	3	4.1	17	23	48	64.9	0	0	74	53.6
Total	**3**	**2.2**	**10**	**7.2**	**4**	**2.9**	**34**	**24.6**	**85**	**61.6**	**2**	**1.4**	**138**	**100**

Source: Field data, 2018

Table 4.1 shows that 85 (61.6%) out of the 138 of the total respondents sampled were extremely familiar with books, 34 (24.6%) indicated that they were moderately familiar with books, followed by slightly familiar with 10 (7.2%), somewhat familiar with 4 (2.9%) and 3 (2.2%) were not at all familiar with books as a type of information. Comparatively, 48 (64.9%) of the respondents in UCC were extremely familiar with books as opposed to 37 (57.8%) in UEW. Again, 17 (23%) of the respondents in UCC were moderately familiar with books as compared to 17 (26.9%) in UEW. This implies that respondents from both institutions were familiar with

books as a type of information for their academic work. The findings reveal very little difference between students of both universities.

4.3.1.2 Level of familiarity with web sites

Having examined respondents' level of familiarity with books, the researcher sets out to find out their familiarity with web sites. A web site is a place on the World Wide Web that is included records composed into a chain of importance. Each record or report contains content or illustrations that show up as advanced information on a computer screen. A web site can contain a mix of designs, content, sound, video, and other dynamic or static materials. Table 4.2 highlights the respondents' level of familiarity with web site.

Table 4.2: Respondents' level of familiarity with web sites

Institution	Not at All Familiar		Slightly Familiar		Somewhat Familiar		Moderately Familiar		Extremely Familiar		No Response		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	1	1.6	4	6.3	5	7.8	29	45.3	23	35.9	2	3.1	64	46.4
UCC	0	0	6	8.1	10	13.5	31	41.9	27	36.7	0	0	74	53.6
Total	**1**	**0.7**	**10**	**7.2**	**15**	**10.9**	**60**	**43.5**	**50**	**36.2**	**2**	**1.4**	**138**	**100**

Source: Field data, 2018

With regard to web sites, 60 (43.5%) respondents from the two universities were moderately familiar with web sites, followed by 50 (36.2%) who indicated that they were extremely familiar.

A higher percentage of respondents in UEW 29 (45.3%) were moderately familiar with web site as a source of information as compared to their counterparts in UCC 31 (41.9%). All the respondents in UCC were familiar with web sites, whereas, 1 (1.6%) in UEW was not at all familiar. It's obvious from the data analysis that more than half of the respondents from the two universities were moderately familiar with web site as a type of information source for the academic projects.

4.3.1.3 Level of familiarity with interviews

An interview is a technique for field examination whereby a researcher meets his respondents and through the communication, makes particular inquiries to discover answers to his/her exploration issues. An interview is a primary source of information available to an individual to use. Table 4.3 presents the data from the field on respondents' level of familiarity with interviews.

Table 4.3: Respondents' level of familiarity with interviews

Institution	Not at All Familiar		Slightly Familiar		Somewhat Familiar		Moderately Familiar		Extremely Familiar		No Response		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	20	31.3	17	26.6	12	18.8	11	17.2	2	3.1	2	3.1	64	46.4
UCC	10	13.5	23	31.1	24	32.4	12	16.2	3	4.1	2	2.7	74	53.6
Total	**30**	**21.7**	**40**	**29**	**36**	**26.1**	**23**	**16.7**	**5**	**3.6**	**4**	**2.9**	**138**	**100**

Source: Field data, 2018

As shown in Table 4.3, out of the 138 respondents, 40 (29 indicated that they were slightly familiar, with 17 (26.6%) respondents from UEW and 23 (31.1%) from UCC. Again, 30 (21.7%) out of the 138 were not at all familiar as opposed to 5 (3.6%) who indicated they were extremely familiar. On an institutional level, more respondents in UEW 20 (31.3%) were not at all familiar with this type of information as against 10 (21.7%) in UCC. On a whole, majority of the students from the two institutions showed lack of familiar with interview as a source of information for their personal and academic work.

4.3.1.4 Level of familiarity with pictures/images

According to Dictionary.com (2015), a picture/image is "a visual representation of a person, object, or scene, as a painting, drawing and photograph". Table 4.4 presents data on respondents' level of familiarity with pictures/images as a type of information available to an individual.

Table 4.4: Respondents' level of familiarity with pictures/images

Institution	Not at All Familiar		Slightly Familiar		Somewhat Familiar		Moderately Familiar		Extremely Familiar		No Response		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	1	1.6	9	14.1	6	9.4	17	26.6	28	43.8	3	4.7	64	46.4
UCC	3	4.1	12	16.2	13	17.6	20	33.8	25	27	1	1.4	74	53.6
Total	**4**	**2.9**	**21**	**15**	**19**	**13.8**	**37**	**26.8**	**53**	**38.4**	**4**	**2.9**	**138**	**100**

Source: Field data, 2018

The analysis of data from the field as illustrated in Table 4.4 shows that 53 (38.4%) of the total respondents sampled from the two academic institutions were extremely familiar with pictures/image, followed by 37 (26.8%) respondents indicated that they were moderately familiar, 21 (15%) respondents were slightly familiar with images. However, 19 (13.8%) and 4 (2.9%) of the total respondents from the two universities indicated they were somewhat and not at all familiar respectively with pictures/images as a type of information for their academic project/work. More respondents in UEW 28 (43.8%) indicated they were extremely familiar with pictures as a type of information than their counterparts in UCC 25 (27%). This implies that majority of the students from the two schools were familiar with images/pictures and that there were very little differences between the schools.

4.3.1.5 Level of familiarity with videos/movies

Videos/movies are other types of information available to students for their academic and personal project or work. Videos/movies refer to recording, manipulating, and displaying moving images, especially in a format that can be presented on a screen. Table 4.5 is an assessment of the respondents' level of acquaintance with videos/movies.

Table 4.5: Respondents' level of familiarity with videos/movies

Institution	Not at All Familiar		Slightly Familiar		Somewhat Familiar		Moderately Familiar		Extremely Familiar		No Response		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	3	4.7	9	14.1	6	9.4	19	29.7	22	34.4	5	7.8	64	46.4
UCC	4	5.4	14	18.9	11	14.9	24	32.4	20	27	1	1.4	74	53.6
Total	**7**	**5.1**	**23**	**17**	**17**	**12.3**	**43**	**31.2**	**42**	**30.4**	**6**	**4.3**	**138**	**100**

Source: Field data, 2018

When it comes to videos/movies, 43 (31.2%) of the respondents were moderately familiar, followed closely by 42 (30.4%) who were extremely familiar. A higher percentage of the respondents from UEW 22 (34.4%) were extremely familiar with movies as compared to 20 (27%) from UCC. Even though the respondents from the two institutions were familiar with videos, respondents in UEW 41 (64.1%) were more familiar with movies than students in UCC 44 (59.5%).

4.3.1.6 Level of familiarity with music

The Merriam-Webster Dictionary (2016) defines music as "the science or art of ordering tones or sounds in succession, in combination, and in temporal relationships to produce a composition having unity and continuity". Table 4.6 depicts responses from respondents on their level of familiarity with music.

Table 4.6: Responses on respondents' level of familiarity with music as type of information

Institution	Not at All Familiar		Slightly Familiar		Somewhat Familiar		Moderately Familiar		Extremely Familiar		No Response		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	7	10.9	5	7.8	3	4.7	19	29.7	27	42.2	3	4.7	64	46.4
UCC	11	14.9	12	16.2	10	13.5	14	18.9	26	35.1	1	1.4	74	53.6
Total	**18**	**13**	**17**	**12**	**13**	**9.4**	**33**	**23.9**	**53**	**38.4**	**4**	**2.9**	**138**	**100**

Source: Field data, 2018

Reading from Table 4.6, it is clear that the respondents were more familiar with this type of information as 53 (38.4%) of the respondents from the two institutions indicated that they were extremely familiar whilst 33 (23.9%) were moderately familiar with music. However, 11 (14.9%) respondents in UCC were not familiar at all with music as a source of information for their academic work. Furthermore, respondents from the two study areas had high level of familiarity with music as 27 (42.2%) and 19 (29.7%) respondents from UEW were extremely

and moderately familiar respectively as compared to 26 (35.1%) and 14 (18.9%) respectively in UCC.

4.3.1.7 Level of familiarity with periodicals/serials

Periodicals are serial publications with distinctive titles that are issued at regular or irregular intervals. This type of information can be published daily, weekly, monthly and biannually. They tend to be more current than books. Examples of periodicals include magazines, journals, newspapers and bulletins among others. The researcher assessed students' level of familiarity with periodicals and the data analysis of this type of information is presented in Table 4.7.

Table 4.7: Respondents' level of familiarity with periodicals/serials

Institution	Not at All Familiar		Slightly Familiar		Somewhat Familiar		Moderately Familiar		Extremely Familiar		No Response		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	16	25	17	26.6	12	18.8	11	17.2	3	4.7	5	7.8	64	46.4
UCC	10	13.5	19	25.7	12	16.2	26	35.1	6	8.1	1	1.4	74	53.6
Total	**26**	**19**	**36**	**26**	**24**	**17.4**	**37**	**26.8**	**9**	**6.5**	**6**	**4.3**	**138**	**100**

Source: Field data, 2018

With regard to periodicals/serials, analysis of data from the field as illustrated in Table 4.7 shows that 26 (19%) respondents from the two institutions were not at all familiar with periodicals, 24 (17.4%) respondents indicated that they were somewhat familiar , 36 (26%) respondents were slightly familiar and 37 (26.8%) of the entire respondents sampled for this study from the two schools indicated they were moderately familiar with periodicals/serials as a type of information for their academic and personal work. Though periodicals contain current information, responses from the two study areas showed their lack of familiarity.

4.3.1.8 Level of familiarity with dissertations

A dissertation is along formal piece of writing on a particular subject, especially for a university degree. The responses from respondents' on their level of familiarity with dissertation are presented in Table 4.8.

Table 4.8: Respondents' level of familiarity with dissertations

Institution	Not at All Familiar		Slightly Familiar		Somewhat Familiar		Moderately Familiar		Extremely Familiar		No Response		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	33	51.6	14	21.9	5	7.8	9	14.1	2	3.1	1	1.6	64	46.4
UCC	19	25.7	24	32.4	12	16.2	13	17.6	5	6.8	1	1.4	74	53.6
Total	**52**	**38**	**38**	**28**	**17**	**12.3**	**22**	**15.9**	**7**	**5.1**	**2**	**1.4**	**138**	**100**

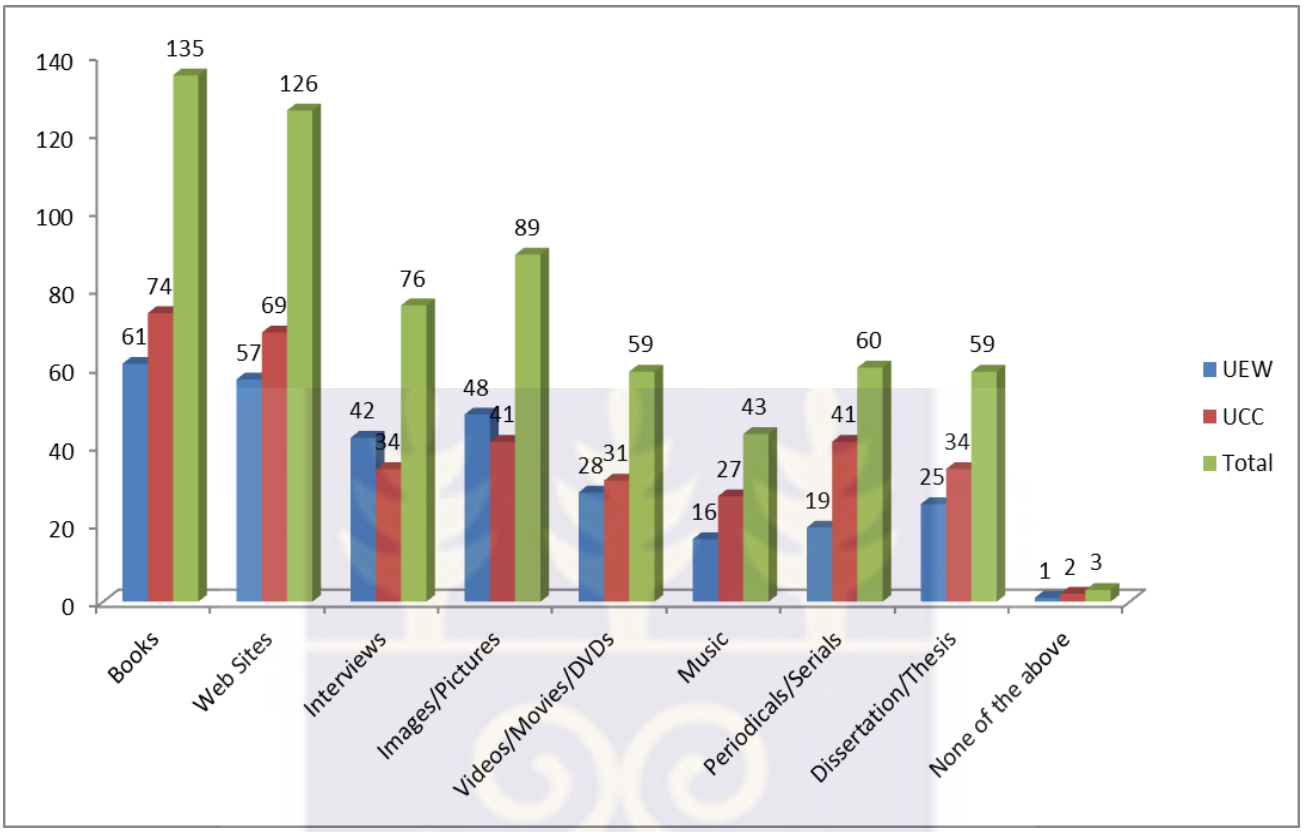
Source: Field data, 2018

Responses from respondents in the two institutions as illustrated in Table 4.8 indicates that 52 (38%) of the respondents from the two universities were not at all familiar with dissertations as a type of information. Again, 38 (28%) of the respondents were slightly familiar with dissertations, 17 (12.3%) indicated that they were somewhat familiar, whilst 22 (15.9%) of the respondents indicated that they were moderately familiar with dissertations. Only 7 (5.1%) of the total respondents from the two universities indicated that they were extremely familiar with dissertations. A high number of respondents 33 (51.6) from UEW were not at all familiar with dissertations as against 19 (25.7%) respondents from UCC. It is clear from Table 4.8 that a significant number of respondents were not familiar with dissertations as a source of information for their academic and personal work. The lack of awareness of the importance of dissertations may account for this rate.

4.3.2 Preferred type of information for academic project/work

Having assessed students' level of familiarity with the various types of information, the researcher set out to find out respondents preferred type of information for personal and academic work. Students normally have their preference to which type of information they consult for academic or project work and the result is depicted in Figure 4.3.

Figure 4.3: Respondents'preference of type of information for academic/project work



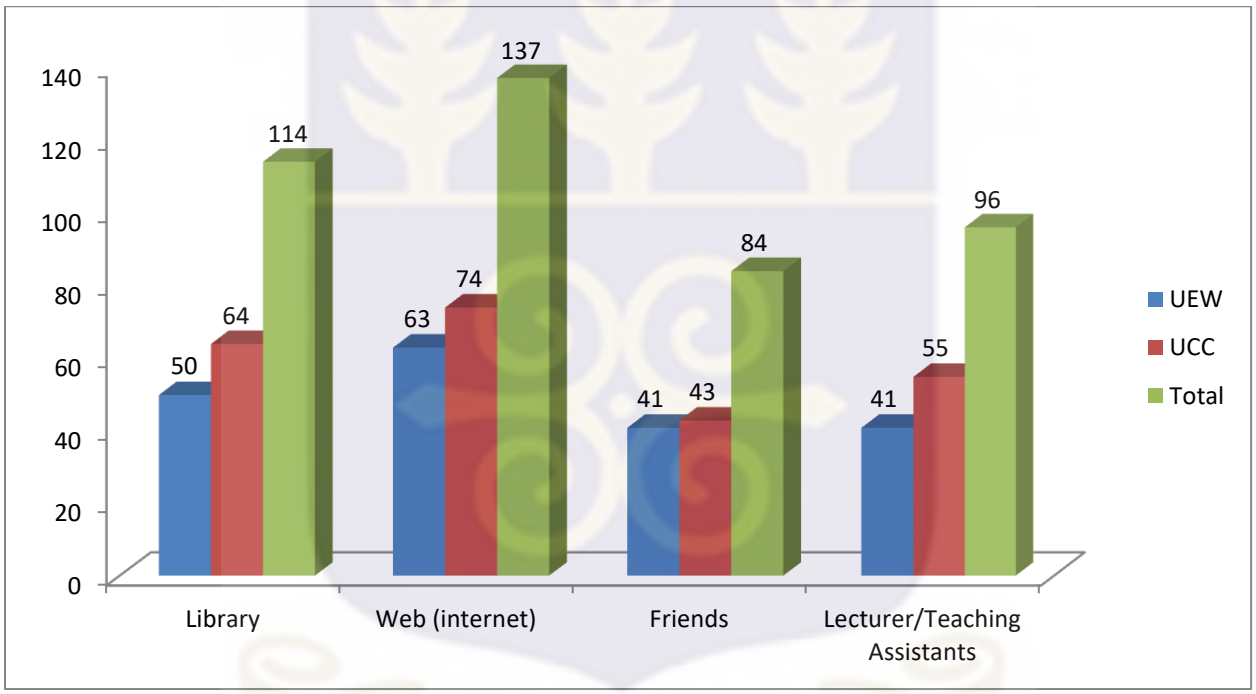
Source: Field data, 2018

As shown in Figure 4.3, out of the multiple responses of 650, majority of the respondents 135 (97.8%) preferred books as a type of information for academic project/work, followed by websites with 126 (91.3%), images/pictures with 89 (64.5%), interviews with 76 (55.1%) and periodicals with 60 (43.5%). Dissertations and music were the least preferred type of information from the two institutions with 59 (42.8%) and 43 (31.2%)respondents respectively. Surprisingly, only 19 (29.7%) and 25 (39.1%) respondents in UEW preferred periodicals/serials and dissertations/theses respectively that came intermittently and were updated frequently as compared to 41 (55.4%) and 34 (45.9%) respectively in UCC.

4.3.3 Sources of information for academic/project work

After knowing the preference of the respondents, it is worth knowing the repository or source where such information could be retrieved for academic project or work. The study established respondents' sources of information for academic project or work as shown in Figure 4.4

Figure 4.4: Respondents' source of information for academic project/work



Source: Field data, 2018

Figure 4.4 shows that most 137 (99.3%) of the respondents in both universities (UCC and UEW) relied on the internet as their source of information for academic and project work. This was followed by 114 (82.6%) respondents who used the library as source of information while 84 (60.9%) relied upon friends as source of information. However, all the respondents 74 (100%) in

UCC indicated the internet as the source of information as compared to 63 (98.4%) of the respondents in UEW. It is clear from the data analysis as illustrated in Table 4.14 that majority of the respondents from the two institutions were interested in searching for information on the internet than the library and consulting friends and Teaching Assistants.

4.3.4 Use of search strategies

Search strategies include the use of Boolean operators, truncation, wildcard, phrase, and synonyms. However, different students use these search strategies differently, at different times and for variance purposes. The search strategies such as Boolean operators, truncation/wildcard, phrase search and synonyms among others form part of the syllabus at the two universities (UEW and UCC). Therefore, the study interrogated the respondents on the rate of usage of these search strategies.

4.3.4.1 Frequency of use of Boolean operators

The Boolean operators play a key role in accessing information on the internet. The use of 'NOT', 'OR' and 'AND' are significant in one's search for information. The use of any of these Boolean operators would determine the kind of results one would have. Most search engines allow individuals to apply the Boolean operators in an "advanced search" option. OR is an operator that allows either word to be present in each record in the results and is used to expand search. The AND is an operator that requires both words to be present in each record in the results. The NOT is a connector that requires the first word to be present in each record in the results, however, it excludes the second word. This area of the analysis explored how often

respondents use the Boolean operators in their search for information. Table 4.9 presents data on respondents' use of Boolean operators.

Table 4.9: Frequency of respondents' use of Boolean operators

Institution	Never		Almost never		Sometimes		Almost every time		Every time		No Response		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	21	32.8	7	10.9	20	31.3	2	3.1	7	10.9	7	10.9	64	46.4
UCC	11	14.9	20	27	25	33.8	6	8.1	7	9.5	5	6.8	74	53.6
Total	**32**	**23.2**	**27**	**19.6**	**45**	**32.6**	**8**	**5.8**	**14**	**10.1**	**12**	**8.7**	**138**	**100**

Source: Field data, 2018

With regard to Boolean operators, a significant proportion 32 (23.2%) of the respondents from both universities had never used it in searching for information for academic purposes or project work, 27 (19.6%) of the respondents indicated that they almost never used it whilst 45 (32.6%) sometimes used it. For UCC, 20 (27%), 25 (33.8%) and 11 (14.9%) of respondents had almost never, sometimes and never respectively used it as against 7 (10.9%), 20 (31.3%) and 21 (32.8%) respondents in UEW respectively. Again, a small portion of 6 (8.1%) and 7 (9.5%) of the respondents in UCC indicated that they almost every time and sometimes respectively used the Boolean operator in their search as opposed to 2 (7%) and 7 (10.9%) respondents in UEW respectively.

4.3.4.2 Frequency of use of truncation/wildcard

A wildcard character is an exceptional character that speaks to at least one different characters. The most normally utilized wildcard/truncation characters are the asterisk mark (*), which commonly speaks to at least zero characters in a series of characters, and the question mark (?), which ordinarily speaks to any one character. Wildcard/truncation characters are utilized as a part of general articulations and in hunting through scrape catalogs down comparable document names. The data in Table 4.10 presents responses on respondents' level of frequency in using wildcard as a search strategy in search for information for personal and academic work or project.

Table 4.10: Frequency of respondents' use of truncation/wildcard

Institution	Never		Almost never		Sometimes		Almost every time		Every time		No Response		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	21	32.8	7	10.9	11	17.2	5	7.8	2	3.1	18	28.1	64	46.4
UCC	16	21.6	21	28.4	20	27	2	2.7	1	1.4	14	18.9	74	53.6
Total	**37**	**26.8**	**28**	**20.3**	**31**	**22.5**	**7**	**5.1**	**3**	**2.2**	**32**	**23.2**	**138**	**100**

Source: Field data, 2018

On truncation/wildcard, 37 (26.8%) of the respondents in all the universities had never used it before in searching for information, followed by 28 (20.3%) who indicated that they almost never used it. Surprisingly, only 7 (5.1%) and 3 (2.2%)of the students from the two universities had used it almost every time and every time respectively for their academic work. Only 31 (22.5%) of the total sampled respondents from UCC and UEW sometimes used it for personal or academic work. In UEW, 21 (32.8%) of the students indicated that they never used it as compared to 16 (21.6%) students in UCC. This implies that more students in UEW had never used the truncation/wildcard function for every day search for information than their counterparts in UCC. This high number of students from the two institutions who had never or almost never used truncation/wildcard could be attributed to the insufficient credit hours allocated to the programme.

4.3.4.4 Frequency of use of phrase search

Phrase searching allows an individual to search for an exact phrase, and it is used for performing simple searches. Table 4.11 presents responses on frequency of respondents' use of phrase search.

Table 4.11: Frequency of respondents' use of phrase search

Institution	Never		Almost never		Sometimes		Almost every time		Every time		No Response		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	10	15.6	1	1.6	21	32.8	12	18.8	12	18.8	8	12.5	64	46.4
UCC	1	1.4	2	2.7	26	35.1	23	31.1	15	20.3	7	9.5	74	53.6
Total	**11**	**8**	**3**	**2.2**	**47**	**34.1**	**35**	**25.4**	**27**	**19.6**	**15**	**10.9**	**138**	**100**

Source: Field data, 2018

With respect to phrase search, 47 (34.1%) and of the respondents from UCC and UEW indicated that they used it sometimes whilst 35 (25.4%) of the respondents from UCC and UEW indicated that they almost every time used the phrase search in their search for information. Only 11(8%) of the respondents indicated that they had never used phrase search. The results showed that the respondents from the two universities (UCC and UEW) had largely used the phrase search strategy.

4.3.4.5 Frequency of use of synonyms

According to the Oxford Dictionaries (2016), a synonym "is a word or expression that implies precisely or almost the same as another word or expression in a similar dialect". Table 4.12 represents information on respondents' utilization of synonyms.

Table 4.12: Frequency of respondents' use of synonyms

Institution	Never		Almost never		Sometimes		Almost every time		Every time		No Response		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	6	9.4	3	4.7	20	31.3	16	25	12	18.8	7	10.9	64	46.4
UCC	3	4.1	4	5.4	20	27	22	29.7	17	23	8	10.8	74	53.6
Total	**9**	**6.5**	**7**	**5.1**	**40**	**29**	**38**	**27.5**	**29**	**21**	**15**	**10.9**	**138**	**100**

Source: Field data, 2018

Table 4.12 shows that 40 (29%) of the respondents from UCC and UEW sometimes used synonyms in their search for information, followed by 38 (27.5%) who used it almost every time whilst 29 (21%) used it every time. On institutional level, 20 (31.3%) and 20 (27%) of the respondents from UEW and UCC respectively sometimes used synonyms in their search for information as against 16 (25%) and 22 (29.7%) respondents from UEW and UCC respectively who almost every time used it.

4.3.5 Level of comfort with search and use of information

Thissection of the study established the ease and flexibility of the respondents in search and use of information. Students must be knowledgeable with the various search strategies in order to get good information for their personal and academic work.

4.3.5.1 Formulating questions based on information needs

An information literate individual must be able to formulate questions or queries based on information needs. Adopting an effective information search system helps one to save time and money as one could spend the whole on the internet trying to formulate queries to retrieve the needed results. The responses from the respondents as shown in Table 4.13 highlights the ability of students to formulate questions based on information needs.

Table 4.13: Respondents' ability to formulate questions based on information need

Institution	Very Comfortable		Comfortable		Neutral		Uncomfortable		Very Uncomfortable		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	18	28.1	29	45.3	16	25	1	1.6	0	0	64	46.4
UCC	17	23	40	54.1	15	20.7	0	0	2	2.7	74	53.6
Total	**35**	**25.4**	**69**	**50**	**31**	**22.5**	**1**	**0.7**	**2**	**1.4**	**138**	**100**

Source: Field data, 2018

On formulation of questions based on information needs, Table 4.13 shows that 69 (50%) of the respondents from UCC and UEW were comfortable with formulation of questions based on information needs, 35 (25.4%) respondents from UCC and UEW indicated that they were very comfortable whilst 2 (1.4%) respondents were very uncomfortable with formulation of questions

based on information needs. In addition, 21 (22.5%) of the respondents were neutral. More than half 40 (54.1%) of UCC respondents indicated that they were comfortable in formulating questions based on information needs as opposed to 29 (45.3%) in UEW. This implies that students from UCC were more comfortable than their counterparts in UEW.

4.3.5.2 Identifying potential sources of information

After an individual had identified his/her need for information, he/she now went further to identify potential sources of information. The identification of information sources was the second standard of the information literacy competency standards according to the 2006 Association of College and Research Libraries. Table 4.14 depicts the students' ability to identify the potential sources of information.

Table 4.14: Respondents' ability to identify potential sources of information

Institution	Very Comfortable		Comfortable		Neutral		Uncomfortable		Very Uncomfortable		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	16	25	31	48.4	14	21.9	3	4.7	0	0	64	46.4
UCC	22	29.7	36	48.6	12	16.2	3	4.1	1	1.4	74	53.6
Total	**38**	**27.5**	**67**	**48.6**	**26**	**18.8**	**6**	**4.3**	**1**	**0.7**	**138**	**100**

Source: Field data, 2018

In Table 4.14, the level of respondents' comfort in respect to identifying potential sources of information were high as 67 (48.6%) and 38 (27.5%) of the students from UCC and UEW were comfortable and very comfortable respectively. Comparatively, 22 (29.7%) and 36 (48.6%) of the respondents in UCC were very comfortable and comfortable respectively in identifying potential sources of information as compared to 16 (25%) and 31 (48.4%) respectively in UEW. Three (3) respondents each from the study area indicated that they were uncomfortable in identifying sources of information. On the whole, majority of the students from the two study areas were comfortable in identifying potential sources of information for their personal and academic work.

4.3.5.3 Developing search strategies

It is always important as an information literate person to develop a strategy on how to get relevant information from the internet. There are a number of search strategies available to an individual to adopt in the quest of seeking information from the internet and they may include the phrase or exact search, Boolean operators, wildcard, truncation and synonyms among others. The data as presented in 4.15 shows how comfortable or otherwise the respondents were in developing their search strategies.

Table 4.15: Respondents' ability to develop search strategies

Institution	Very Comfortable		Comfortable		Neutral		Uncomfortable		Very Uncomfortable		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UEW	23	35.9	16	25	21	32.8	3	4.7	1	1.6	64	46.4
UCC	16	21.6	34	45.9	18	24.3	4	5.4	2	2.7	74	53.6
Total	**39**	**28.3**	**50**	**36.2**	**39**	**28.3**	**7**	**5.1**	**3**	**2.2**	**138**	**100**

Source: Field data, 2018

With reference to Table 4.15 on development of search strategies, 50 (36.2%) of the respondents indicated they were comfortable, followed by 39 (28.3%) who indicated that were very comfortable and 35 (25.4%) could not indicate whether they were comfortable or not. From the same Table 4.15, 34 (45.9%) respondents in UCC were comfortable with developing search strategies as compared to 16 (25%) in UEW. Beside, more students 23 (35.9%) from UEW were very comfortable as opposed to 16 (21.6%) in UCC whilst 21 (32.8%) respondents from UEW and 18 (24.3) respondents from UCC were neither comfortable nor uncomfortable. Cumulatively, it was clear that a large portion of students were comfortable when it came to developing search strategies.

4.3.5.4 Access to sources of information including computer based and other technologies

In order to find out how respondents had access to sources of information including computer based and other technologies, the researcher sought information from the respondents in that regard. Table 4.16 presents data on how comfortable or otherwise the respondents' were in accessing the various sources of information including the computer based and other technologies.

Table 4.16: Respondents' ability to access sources of information including computer based and other technologies

Institution	Very Comfortable		Comfortable		Neutral		Uncomfortable		Very Uncomfortable		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	&	Freq.	%
UEW	28	43.8	20	31.3	13	20.3	1	1.6	2	3.1	64	46.4
UCC	25	33.8	28	37.8	16	21.6	3	4.1	2	2.7	74	53.6
Total	**53**	**38.4**	**48**	**34.8**	**29**	**21**	**4**	**2.9**	**4**	**2.9**	**138**	**100**

Source: Field data, 2018

In Table 4.16, 15 (38.8%) out of 138 of the respondents with 28 (43.8%) from UEW and 25 (33.8%) from UCC were very comfortable in accessing sources of information including the computer based. Again, 48 (34.8%) of the respondents with 20 (31.3%) from UEW and 28

(37.8%) from UCC were comfortable in accessing the computer based information whiles 29 (21%) with 13 (20.3%) from UEW and 16 (21.6%) from UCC were neither comfortable nor uncomfortable. Two respondents each from UCC and UEW were very uncomfortable whilst 1 (1.6%) respondent from UEW and 3 (4.1%) respondents from UCC indicated that they were uncomfortable in accessing information including computer based and other technologies. From the analysis as illustrated in Table 4.16, it is clear that students from UCC and UEW were comfortable in their ability to access to information including computer based and other technologies.

4.3.5.5 Students evaluation of information

Before any information could be used, it must be assessed to find out whether the information is good or not. As students use information from different sources, its incumbent upon them to check where the information is coming from, who are behind that information and also the scope of such information. Table 4.17 assesses how comfortable students were in evaluating information before being used for their personal and academic work.

Table 4.17: Respondents' ability to evaluate information

Institution	Very Comfortable		Comfortable		Neutral		Uncomfortable		Very Uncomfortable		Total	
	Freq.	%	Freq.	%	Freq.	%		Freq.	%	Freq.	%	Freq.
UEW	14	21.9	26	40.6	17	26.6	7	10.9	0	0	64	46.4
UCC	24	32.4	35	47.3	12	16.2	2	2.7	1	1.4	74	53.6
Total	**38**	**27.5**	**61**	**44.2**	**29**	**21**	**9**	**6.5**	**1**	**0.7**	**138**	**100**

Source: Field data, 2018

With regard to evaluation of information, Table 4.17 shows that 61 (44.1%) respondents with 26 (40.6%) from UEW and 35 (47.3%) from UCC were comfortable, followed by 38 (27.5%) out of the 138 respondents with 14 (21.9%) from UEW and 24 (32.4%) from UCC who indicated that they were very comfortable, whereas, 9 (5.5%) of the total respondents for the study indicated that they were uncomfortable when it comes to evaluating information before being used for their personal and academic work. However, 25 (18.1%) of the 138 respondents with 17 (26.6%) from UEW and 12 (16.2%) from UCC were neither comfortable nor uncomfortable in evaluating information. A careful look at Table 4.17 and the analysis revealed that respondents from UCC were more comfortable in evaluating information than respondents from UEW.

4.3.5.6 Organization of information for practical application

How information is organized for practical application is very crucial in today's society. In order to find out how respondents organized information for practical applications, the researcher sought information from the respondents in that regard. The data in this regard is presented in Table 4.18.

Table 4.18: Respondents' ability to organize information for practical application

Institution	Very Comfortable		Comfortable		Neutral		Uncomfortable		Very Uncomfortable		Total	
	Freq.	%	Freq.	%	Freq.	%		Freq.	%	Freq.	%	Freq.
UEW	16	25	22	34.4	22	34.4	3	4.7	1	1.6	64	46.4
UCC	15	20.3	42	56.8	10	13.5	6	8.1	1	1.4	74	53.6
Total	**31**	**22.5**	**64**	**46.4**	**32**	**23.2**	**9**	**6.5**	**2**	**1.4**	**138**	**100**

Source: Field data, 2018

From Table 4.18, it is clear that a significant number 64 (46.4%) of the respondents with 22 (34.4%) from UEW and 42 (56.8%) from UCC were comfortable as against 2 (1.4%) who indicated that they were very uncomfortable. Furthermore, 31(22.5%) respondents with 16 (25%) from UEW and 15 (20.3%) from UCC were comfortable on how information is organized for practical application whilst 32 (23.2%) with 22 (34.4%) from UEW and 10 (13.5%) from UCC were neither comfortable nor uncomfortable. One respondent each from the two institutions were very uncomfortable when it comes to organizing information for practical application. The

respondents from UCC and UEW were comfortable on how to organize information for practical application.

4.3.5.7 Integrating new knowledge into an existing knowledge

Having examined how respondents organized information for practical application, the researcher went further to enquire from the respondents how well they integrated new knowledge into an existing knowledge. Table 4.19 presents responses on how well respondents were able to incorporate the new knowledge acquired into an existing knowledge.

Table 4.19: Respondents' ability to integrate new knowledge into an existing knowledge

Institution	Very Comfortable		Comfortable		Neutral		Uncomfortable		Very Uncomfortable		Total	
	Freq.	%	Freq.	%	Freq.	%		Freq.	%	Freq.	%	Freq.
UEW	14	21.9	20	31.3	21	32.8	5	7.8	4	6.3	64	46.4
UCC	12	16.2	24	32.4	28	37.8	8	10.8	2	2.7	74	53.6
Total	**26**	**18.8**	**44**	**31.9**	**49**	**35.5**	**13**	**9.4**	**6**	**4.3**	**138**	**100**

Source: Field data, 2018

From Table 4.19, 47 (34.1%) of the total respondents with 21 (32.8%) from UEW and 28 (37.8%) from UCC were indifferent on how to integrate new information into an existing body

of knowledge. However, 44 (31.9%) of the respondents from UCC and UEW were comfortable as against 13 (9.4%) with 5 (7.8%) from UEW and 8 (10.8%) from UCC. Again 26 (18.8%) with 14 (21.9%) from UEW and 12 (16.2%) from UCC were very comfortable as opposed to 6 (4.3%) with 4 (6.3%) from UEW and 2 (2.7%) from UCC who indicated that they were very uncomfortable in integrating new knowledge into existing body of knowledge. Even though majority of the respondents from the two schools were comfortable in respect of integrating new knowledge into existing knowledge, a significant percentage of the total sample size was indifferent.

4.3.5.8 Using information in critical thinking and problem solving

Information gathered must be used to solve problems that triggered its search. With this in mind, the researcher posed a question to that effect. The responses from the respondents on their ability or otherwise to use information in critical thinking and problem solving are presented in Table 4.20.

Table 4.20: Respondents' ability to use information in critical thinking and problem solving

Institution	Very Comfortable		Comfortable		Neutral		Uncomfortable		Very Uncomfortable		Total	
	Freq.	%	Freq.	%	Freq.	%		Freq.	%	Freq.	%	Freq.
UEW	21	32.8	25	39.1	15	23.4	1	1.6	2	3.1	64	46.4
UCC	16	21.6	36	48.6	14	18.9	6	8.1	2	2.7	74	53.6
Total	**37**	**26.8**	**61**	**44.2**	**29**	**21**	**7**	**5.1**	**4**	**2.9**	**138**	**100**

Source: Field data, 2018

Table 4.20 reveals that 61 (44.2%) of the total respondents with 25 (39.1%) from UEW and 36 (48.6%) from UCC were comfortable in using information for critical thinking and problem solving as compared to 7 (5.1%) with 1 (1.6%) from UEW and 6 (8.1%) who indicated that they were uncomfortable. Beside, 37 (26.8%) respondents out of 138 with 21 (32.8%) from UEW and 16 (21.6%) from UCC were very comfortable in using information in critical thinking and problem solving. Two respondents each from UCC and UEW were very uncomfortable in respect of using information for critical thinking and problem solving. However, 29 (21%) with 15 (23.4%) from UEW and 14 (18.9%) from UCC indicated that they were neutral to how to use information to address their problems. Though students in the two institutions were comfortable, more respondents in UEW were able to use information in critical thinking and problem solving than respondents from UCC.

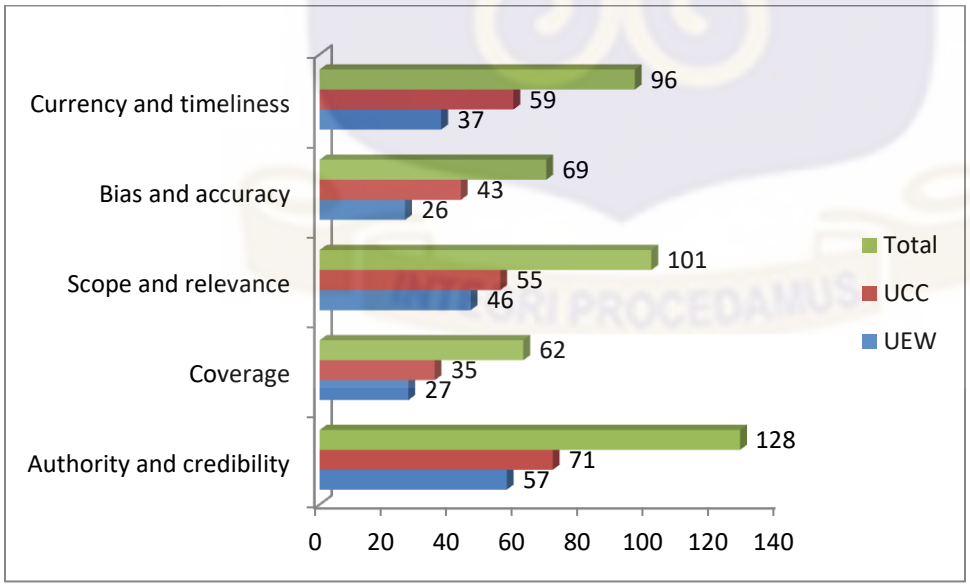
4.4 Evaluation of Information and its Sources

Information is everywhere and rampant, therefore, there is the need to evaluate information before being used for project work or academic purposes. An individual or student must be able to verify the sources of information properly. This is the second objective of the study which assessed how individual evaluate information and their sources. This section assessed among other things the criteria for evaluating information, ways of determining a good source of information, and ways of evaluating information from a website.

4.4.1 Criteria for evaluating information

There are so many factors considered by students or users of information before actually being used to address what problem that triggered the search. The data on respondents' criteria for evaluating information are illustrated in Figure 5.

Figure 4.5: Respondents criteria for evaluating information



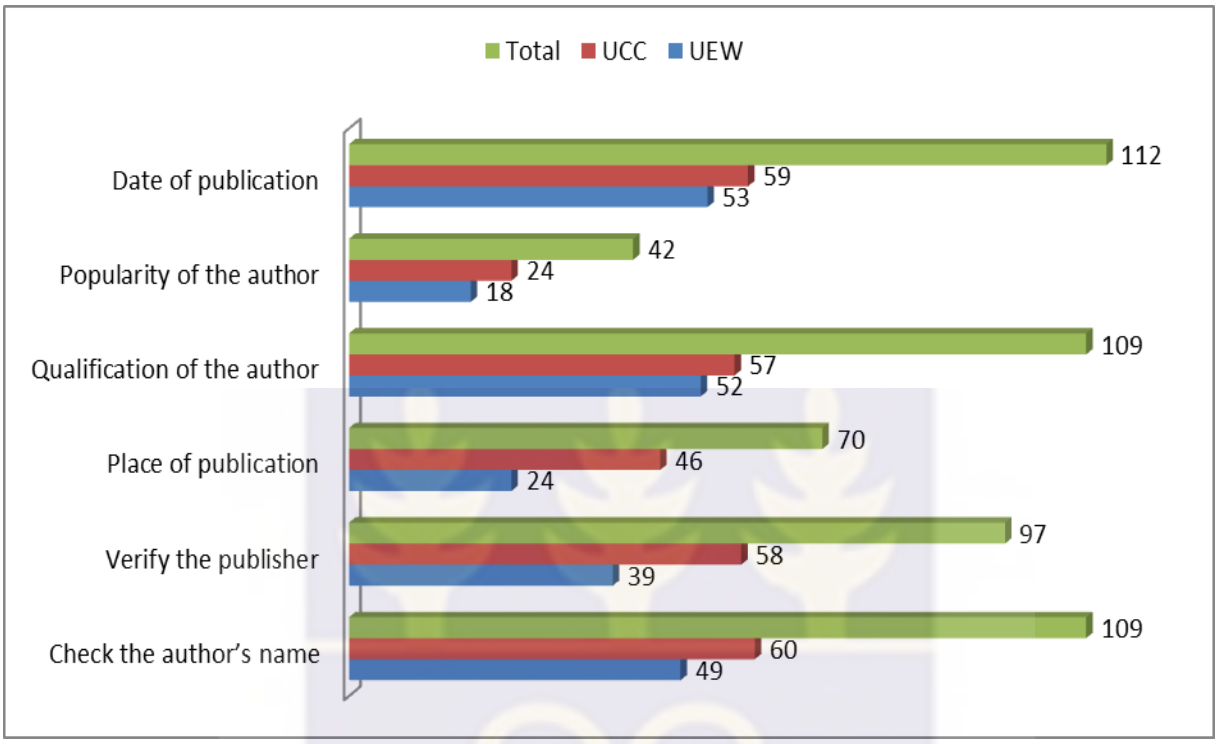
Source: Field data, 2018

Analysis of data from the field as illustrated in Figure 4.5 shows that out of the 456 multiple responses, 128 (92.7%) of the total respondents with 57 (89.1%) from UEW and 71 (95.9%) from UCC evaluated information by considering its sources of authority and credibility, followed by the scope and relevance with 101(73.2%) respondents with 46 (71.9%) respondents from UEW and 55 (74.3%) respondents from UCC. Responses on currency and timeliness was 96 (69.6%) out of the total respondents with 37 (57.8%) from UEW and 59 (79.7%) from UCC whilst 69 (50%) respondents with 26 (40.6%) from UEW and 43 (58.1%) from UCC opted for bias and accuracy. Surprisingly, the least considered criteria to evaluate information respondents from the two institutions involved in this study was coverage with 62 (44.9%) total respondents made up of 27 (42.2%) from UEW and 35 (47.3%) from UCC. From the presentation of analysis in Figure 5, it implies that students paid more attention to sources of authority and credibility, followed by bias and accuracy and then coverage of the information in that order.

4.4.2 Determining a good source of information

Having assessed respondents' criteria for evaluating information, the researcher sought further responses from the respondents on ways of determining a good source of information as presented in Figure 4.6.

Figure 6: Respondents' ways of determining a good source of information



Source: Field data, 2018

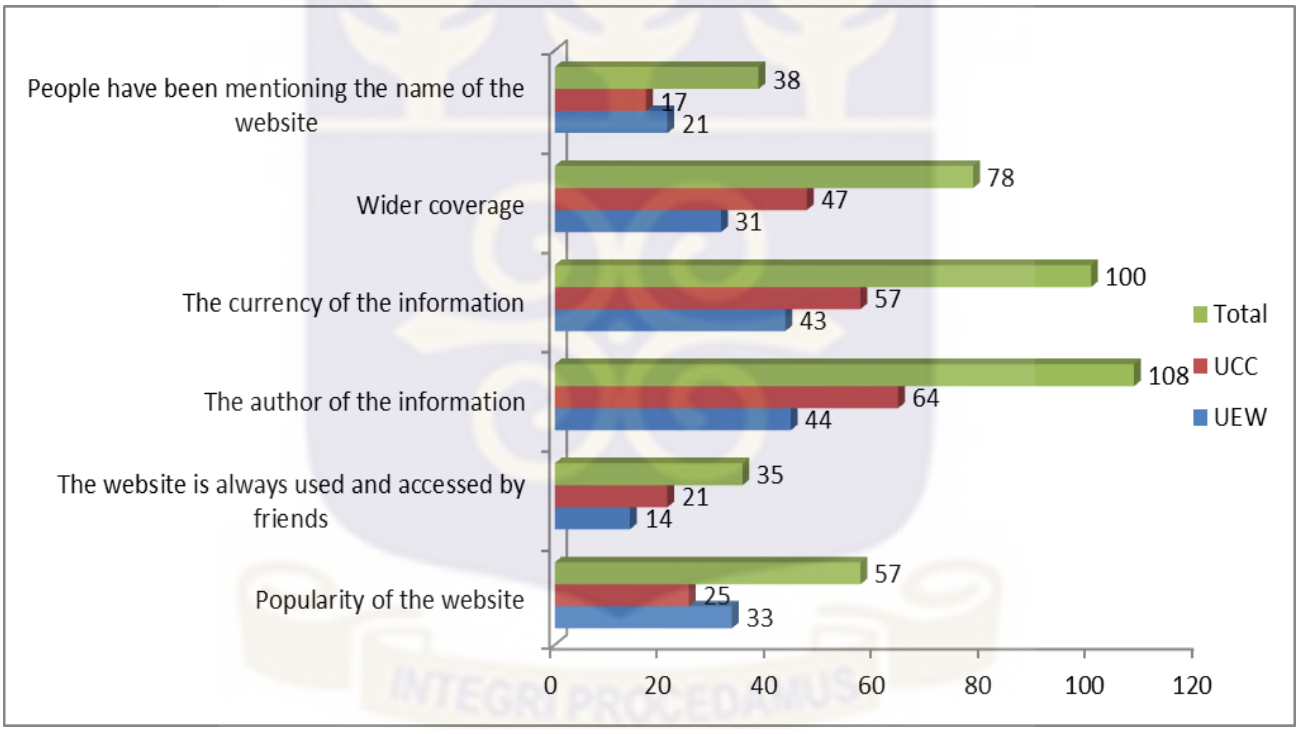
In determining a good source of information, Figure 4.6 shows that 109 (79%) respondents with 49 (76.6%) from UEW and 60 (81.1%) from UCC checked the author's name, 97 (70.3%) respondents with 39 (60.9%) from UEW and 58 (78.4%) from UCC indicated that they verified the details of the publisher whereas 70 (50.7%) respondents with 24 (37.5%) from UEW and 46 (62.2%) from UCC verified the place of publication. Beside, 112 (81.2%) out of 539 multiple responses with 53 (82.8%) from UEW and 59 (79.7%) from UCC indicated that they determined a good source of information through the date of publication as opposed to 109 (79%) respondents comprising 52 (81.3%) from UEW and 57 (77%) from UCC. However, only 42 (30.9%) of the total respondents checked the qualification of the author as a means of determining a good source of information. From the analysis above as captured in Figure 4.6, it

is clear that respondents from UEW and UCC were conversant with the various ways of determining a good source of information.

4.4.3 Evaluating information from a website

There are numerous websites that information can be retrieved from. However, for the sake of authenticity, quality and originality, it should be evaluated before being used for academic or project work. Figure 4.7 shows ways respondents evaluated information from a website.

Figure 4.7: Responses on respondents' ways of evaluating information from a website



Source: Field data, 2018

Due to the numerous websites on the internet, there is the need to evaluate information retrieved from a website. Figure 4.7 shows that 108 (78.3%) of the total respondents from UCC and UEW evaluated information from a website by considering the author of the information whilst 57

(41.3%) with 33 (51.6%) from UEW and 25 (33.8%) from UCC considered the popularity of the website. Furthermore, 35 (25.4%) respondents with 14 (21.9%) from UEW and 21 (28.4%) from UCC evaluated information from a website which were being used and accessed by their friends, the author of the information accounted for 108 (78.3%) responses with 44 (68.8%) from UEW and 64 (86.5%) from UCC whilst the currency of the information recorded 100 (72.5%) responses from UCC and UEW. Seventy-eight (56.5%) of the total respondents checked the wider coverage as against 38 (27.5%) respondents with 21 (32.8%) from UEW and 17 (23%) from UCC who checked website that people have been mentioning. This implies that students from UCC and UEW were conversant with the various mechanics to evaluate information from a website.

4.5 Legal and Ethical Use of Information

The third objective of this study examined the legal, social and ethical considerations with regard to the use of information. It is important to note that the information so acquired should be used in a responsible, culturally sensitive, legal and ethical manner. It is therefore proper that when individuals use somebody's work, they acknowledge the creator of the information. Among the issues covered under this section included respondents' perception on plagiarism and copyright law.

4.5.1 Views on plagiarism

Plagiarism is an intellectual theft and its punishment is harsh because it is academically unpardonable. Students are expected to create original work to fulfill the requirements of the courses they undertake. Fair evaluation can occur only when submitted work reflects each

student's efforts and aptitude. The researcher therefor elicited respondents' views on plagiarism by finding out which of the following statements to them constituted plagiarism (Table 4.21).

Table 4.21: Respondents' views on plagiarism

Statement	UEW		UCC		Total	
	Freq.	%	Freq.	%	Freq.	%
Taking someone else's works, ideas, patency and passing it off as one's own	61	95.3	70	94.6	**131**	**94.9**
Copying a text from a book without citing the source and handing it in as one's constitutes plagiarism	50	78.1	63	85.1	**113**	**81.9**
Copying maps and charts without stating the source constitutes plagiarism	42	65.6	63	85.1	**105**	**76.1**
Rewriting a text in your one's words without stating the source does not constitute plagiarism	13	20.3	19	25.7	**32**	**23.2**
Clearly acknowledging the source of any borrowed ideas that is presented in one's own work	3	47	7	95	**10**	**7.2**

Source: Field data, 2018

Majority of the respondents 131 (94.9%) comprising 61 (95.3%) from UEW and 70 (94.6%) from UCC were able to pick the right statement that constituted plagiarism, which is taking someone else's works, ideas, inventions and passing if off as one's own. Thirty two (23.2%) of

the respondents with 13 (20.3%)from UEW and 19 (25.7%) from UCC had this statement wrong by indicating that copying a text from the internet without citing the source and handing it in as one's own does not constitute plagiarism. Furthermore, 111 (81.9%) respondents comprising 50 (78.1%) in UEW and 63 (85.1%) in UCC were of the view that copying a text from a book without citing the source and handing it in as one's own constituted plagiarism whilst 105 (76.1%) respondents with 42 (65.6%) from UEW and 63 (85.1%) from UCC indicated that copying maps and charts without stating one's source constituted plagiarism. This means that majority of the respondents were abreast with the issues of plagiarism as they were able to tell which statements constitute plagiarism or not.

4.5.2 Views on copyright

Copyright refers to "a procedure whereby the originator of a piece of intellectual property such as a book, article or piece of music receives due recompense for inventiveness or imagination expended" (Harrod, 1981). Table 4.22 presents the perception of the respondents on copyright as they were made to identify the true statement(s) from the following.

Table 4.22: Respondents' view on copyright

Statement	UEW		UCC		Total	
	Freq.	%	Freq.	%	Freq.	%
Copyright describes the rights given to creators for their literacy and artistic works	60	93.8	72	97.3	**132**	**95.7**
Copyright law gives monopoly to authors and creators in order to stimulate intellectual and artistic creativity	47	73.4	62	83.8	**109**	**79**
Computer programmes are eligible for copyright protection	34	53.1	52	70.3	**86**	**62.3**
Users of copyrighted information have rights in the form of fair use	27	42.2	55	74.3	**82**	**59.4**
Ideas and concepts are entitled to copyright protection	33	51.6	41	56.2	**74**	**54**
Sound recordings are not eligible for copyright protection	8	12.5	13	17.6	**21**	**15.2**

Source: Field data, 2018

With regard to the perception of the respondents on copyright, 132 (95.7%) of the respondents with 60 (93.8%) from UEW and 72 (97.3%) from UCC indicated that copyright describes the rights given to creators for their literacy and artistic works, 109 (79%) who indicated that

acopyright law gives monopoly to authors and creators in order to stimulate intellectual and artistic creativity and 82 (59.4%) of the total respondents from UCC and UEW indicated that users of copyrighted information have rights in the form of fair use. Eighty six (62.3%) respondents with 43 (53.1%) from UEW and 52 (70.3%) from UCCwere of the view that computer programmes were eligible for copyright protection. Majority of the respondents were conversant with copyright protection on sound recordings. However, few 8 (12.5%) respondents from UEW and 13 (17.6%) from UCC were of the view that sound recordings were not eligible for copyright protection. Moreover, a significant number 74 (54%) of the respondents, with 33 (51.6%) from UEW and 41 (56.2%) from UCC were of the opinion that ideas and concepts were entitled to copyright protection, which was false. On the whole, majority of the respondents were familiar and understand the issues concerning copyright, only that some respondents were of the view that ideas and concepts were entitled to copyright protection.

4.6 Barriers to effective use of information

The fourth objective looked at the barriers that hinder the effective use of information by individuals. Students are confronted with an array of challenges as they try to use information for their personal and academic work. These barriers include educational level, lack of support from library staff, legal, financial, geographical barriers, users not getting the needed materials from the library, lack of awareness of the sources of information and lack of information retrieval skills. The legal barriers refer to information which may be withheld due to security and confidentialities associated with it with examples being some governmental, military and judicial information. The financial barriers are where some information may require some financial commitments before having access to them such as subscription. Geographical barrier comes about when distance becomes barrier to some information. The unawareness of information

arises when users of information do not have enough information about where and how to access the needed information. The researcher elicited responses from respondents on barriers to effective use of information and this is illustrated in Table 4.23.

Table 4.23: Barriers to effective use of information

Type of Barrier to information use	UEW		UCC		Total	
	Freq.	%	Freq.	%	Freq.	%
I do not get the needed materials in the library	39	60.9	48	64.9	**87**	**63**
Lack of support from library staff	28	43.8	39	52.7	**67**	**48.6**
Lack of information retrieval skills	37	57.8	24	32.4	**61**	**44.2**
Lack of awareness of information	29	45.3	30	40.5	**59**	**42.8**
Financial barrier	31	48.4	28	37.8	**59**	**42.8**
Geographical barrier	27	42.2	18	24.3	**45**	**32.6**
Educational level	22	34.4	9	12.2	**31**	**22.5**

Source: Field data, 2018

Table 4.23 shows that a significant proportion 87 (63%) of the respondents, comprising 39 (60.9%) from UEW and 48 (64.9%) from UCC identified the insufficiency of learning materials in the library as the major blockade to effective use of information. However, 67 (48.6%) of the respondents, 39 (52.7%) from UCC and 28 (43.8%) from UEW indicated that they did not get

the needed support from the library staff. Sixty seven (48.6%) of the respondents indicated the lack of support from library staff as a challenge to use of information, educational level accounted for 31 (22.5%) responses with 22 (34.4%) from UEW and 9 (12.2%) from UCC whilst unawareness of information and financial barriers by way of subscription accounted for 59 (42.8%) from respondents from UCC and UEW.

4.7 Assessment of teaching methods

The fifth objective of the study assessed the various teaching and learning methods employed in the information literacy programme in Ghana with particular reference to University of Education, Winneba and University of Cape Coast. Teaching methods also affect the pre-requisite of the respondents in identifying the information need, source of information, evaluate the information and the source of information as well as using it efficiently and effectively. The first part of this section employed the questionnaire to elicit responses from respondents on their assessment of the programme, which touched on how lecturers involved students in teaching and learning, how the course was structured and the adequacy of the credit hours. The second part of the analysis however, employed interviews with lecturers for the programme.

4.7.1 **The learning and teaching methods encouraged participation**

This section of the study elicited responses from respondents on how learning and teaching methods encouraged discussion. Table 4.24 presents data on learning and teaching methods.

Table 4.24: The learning and teaching methods encouraged participation

Institution	Agree		Neutral		Disagree		Total	
	Freq.	%	Freq.	%	Freq.	%	**Freq.**	**%**
UEW	40	62.5	18	28.1	6	9.4	**64**	**46.4**
UCC	47	63.3	21	28.4	6	8.1	**74**	**53.6**
Total	87	63	39	28.3	12	8.7	**138**	**100**

Source: Field data, 2018

Table 4.24 shows that, 87 (63%) respondents with 40 (62.5%) respondents from UEW and 47 (63.3%) from UCC agreed that the learning and teaching methods employed by the lecturers encouraged students' participation whereas 12 (8.7%) respondents from the two institutions with 6 (9.4%) respondents from UEW and 6 (8.1%) from UCC disagreed to this assertion. However, 39 (28.3%) of the total respondents for the study were neutral with 18 (28.1%) respondents from UEW and 21 (28.4%) from UCC. To a very large extent, the students from both institutions (UCC and UEW) agreed to the assertion that the learning and teaching methods encouraged students' participation.

4.7.2 The structure of the course

Having assessed the learning and teaching methods employed in the programme, the researcher sought further responses from the respondents on how well the course was structured. The responses from the respondents are illustrated in Table 4.25.

Table 4.25: Respondents view on the course structure

Institution	Agree		Neutral		Disagree		Total	
	Freq.	%	Freq.	%	Freq.	%	**Freq.**	**%**
UEW	53	82.8	7	10.9	4	6.3	**64**	**46.4**
UCC	57	77	10	13.5	7	9.5	**74**	**53.6**
Total	110	79.7	17	12.3	11	8	**138**	**100**

Source: Field data, 2018

Data from the field as depicted in Table 4.25 reveals that, 11 (8%) respondents made up of 4 (6.3%) from UEW and 7 (9.5%) respondents from UCC disagreed that the course was well structured as opposed to 110 (79.7%) of the total respondents comprising 53 (82.8%) respondents from UEW and 57 (77%) respondents from UCC agreed to this assertion of the course being well structured. Neutral responses accounted for 17 (12.3%) with 7 (10.9%) respondents from UEW and 10 (13.55) from UCC. On the whole, majority of the respondents agreed that the course was well structured to achieve its objectives.

4.7.3 The adequacy of the credit hours

In order to assess the credit hours allotted to this programme, the researcher quizzed the respondents on how adequate the credit hours were for effecting teaching and learning. The responses of respondents are presented in Table 4.26.

Table 4.26: Respondents view on the adequacy of the credit hours

Institution	Agree		Neutral		Disagree		Total	
	Freq.	%	Freq.	%	Freq.	%	**Freq.**	**%**
UEW	6	9.4	10	15.6	48	75	**64**	**46.4**
UCC	10	13.5	10	13.5	54	73	**74**	**53.6**
Total	16	11.6	20	14.5	102	73.9	**138**	**100**

Source: Field data, 2018

On the adequacy of the credit hours as illustrated in Table 4.26, 102 (73) of the total respondents with 48 (75%) from UEW and 54 (73%) from UCC disagreed that the credit hours were adequate whilst 16 (11.6%) respondents with 6 (9.4%) from UEW and 10 (13.5%) from UCC indicated that the credit hours were adequate. However, 20 (14.5%) of the total respondents with 10 each from UEW and UCC respectively were neutral to the statement. It is clear from the analysis that the credit hours were not adequate for the teaching of the course.

4.8 Interview with Lecturers from the Two Institutions

After analyzing the quantitative data from the respondents, the researcher sought for more insight into the study topic by interviewing lecturers who were involved in the teaching of the programme. This was meant to gather in-depth data on the subject matter.Out of the eighteen lecturers scheduled to be interviewed for the study from the two universities (UEW and UCC) on information literacy course, sixteen took part. Two of the lecturers in UEW agreed to a telephone interview because they were not available at the time of the interview. Their responses were recorded after they had given their consent. The researcher conducted a face to face interview with the fourteen lecturers. The first part of the interview elicited responses on socio-demographic profile of lecturers which looked at the gender, age range, level of education and years of teaching experience. The second part of the interview looked at the following:

1. Quality of resources to support the information literacy course
2. The number of credit hours allocated to this course
3. The teaching method(s) used to teach the information literacy course
4. The effectiveness of the methods used to teach the information literacy course
5. The major challenges facing the information literacy course

4.8.1 Socio-Demographic Profile of Lecturer Respondents

The background data of respondents were obtained from Part One of the interview. The data basically covered the distribution of respondents' gender, age, level of education and years of teaching experience.Eight of the lecturers interviewed were male with 4 from UEW and 4from

UCC and the other 8 also female comprising 2 from UEW and 6 from UCC. This means that there were even distributions of lecturer respondents for the study by way of gender.

Age wise, 8 were within the‘51-60’ age range, followed by age range‘31-40’ with 6 and age range ‘41-50’ with 2. The age distribution of UEW respondents was evenly spread with 2 within age ‘31-40’, age ‘41-50’ with 2 and age ‘51-60’ with 2. In UCC, however, 6 of the respondents were within age ‘51-60’, followed by age ’41-50’ with 4.

Ten of the interviewees with 8 from UCC and 2 from UEW held the Master of Philosophy degree, followed by 1 lecturer from UEW who held the Doctor of Philosophy degree. Five of the interviewees from UCC and UEW held the Master of Arts/Master of Science/Master of Education degrees.

Eight of the lecturer respondents with 3 from UEW and 5 from UCC had taught from five to ten years, followed by below five and above ten years with 4 respectively. UCC had four lecturers teaching the course for more than ten years. It is evident from the analysis that lecturers from both institutions were well experienced in their field which is good for the programme.

The responses from the interviewees were recorded, transcribed and interpreted on the thematic patterns in line with the objectives.

4.8.2 The Quality of Resources to Support the Information Literacy Course

Resources play a key role in the success or otherwise of a programme and for that matter information literacy is no exception. The resources may include human resource, infrastructure, materials for teaching and learning and laboratories. Whereas, the UEW lacked the needed

materials to support the teaching and learning of the information literacy programme, their counterparts from UCC were better off as they had a course book written by some lecturers of the programme to push the course to a higher level as 8 of the interviewees from UCC said that the quality of teaching and learning materials for the information literacy programmewas good while 2 of the lecturers said that it was not too good. This is what some lecturers from UCC had to say about the quality of resource;

UCC Interviewee 1:

"*Some of the resources are good; others too are not so good such as the projectors. We do not have enough projectors, so we don't use the modern way for teaching the students, talk of presentation in terms of power point during tutorials. So in a nutshell, we have some resources available that are good and also our course book is very good for our students*".

UCC Interviewee 2:

"*For the resources especially the course materials we are doing very well with a well-researched material or course book that students can easily refer to. Again, we have facilities to aid in our tutorials and practical sessions even though they may not be enough but they are at least good to start with*".

UCC Interviewee 3:

"*In actual sense, the IL is basically the basis of library studies, so we have a lot of books. We also have a course book prepared by some of the masters or lecturers under the programme. So basically, we have enough resources to support the teaching and learning of the course in this institution*".

UCC Interviewee 4:

"*Our main resource is the human resource. We have a lot of qualified personnel to teach and then we have our modules. These are the major resources that we have and they are very good. So it is really supporting the IL course*".

The development was different from the UEW campusas most of the lecturers said the teaching and learning materials were not good whilst few said they were good for now. Here are some of the views captured on the quality of resource from UEW;

UEW Interviewee 1:

"*Not too good. There is the need for textbooks and other relevant teaching and learning materials for the course as only power point presentation is used mainly to teach*".

UEW Interviewee 2:

"*Teaching materials are adequate. However, learning materials such as books for students use are not available*".

From the responses given above, it is clear that UCC had good quality resources to support the course while that of UEW was not too good.

4.8.3 Adequacy of the number of credit hours for the programme

The course is a one credit hour in both universities. Both lecturers interviewed from the two institutions were of the view that the credit hours were inadequate for the course. These were some of the views from the respondents;

UCC Interviewee 7:

"*That one is very bad. It is woefully inadequate. Only an hour is too small. Because of the time, we at times rush through whatever we are supposed to teach and the students get so confused as well when the one hour is up. So we need more time to be able to teach to the understanding of the students*".

UEW Interviewee 5

"*It is not adequate. We have three weeks (9 hours) to teach an ordinarily semester-long course. Students get tired during class and you can observe it from their attitude. Lecturers have no choice than to use all the three hours for each class with one hour per week for each class, despite the stress on them".*

4.8.4 Teaching Methods Employed by Lecturers

The effectiveness of any programmme depends largely on the methods to be employed. With this in mind the researcher sought in-depth information from lecturers in this regard. On the methods of teaching or delivering, 8 out of the 16 lecturers used a combination of methods such as student centered, participation, lecturer centered, and discussion in lecturing or interacting with the students and these lecturers described it as very effective. Four of the lecturers with 3 from UCC and 1 from used both lecturer-centered and student-centered and described it as effective while 3 of the lecturers with 2 from UCC and 1 from used discussion method only in the delivery and described it as very good. However, only 1 lecturer each from UCC and UEW used either students centered or lecturer centered and described it as ineffective due to large class size among others. Here are some views;

UEW Interviewee 5:

"*I use a combination of all methods though students' participation may not be at the desired level due to inadequate contact hours*".

UCC Interviewee 9:

"*A greater proportion of the method is the lecture method but we also have an avenue for discussions whereby we engage the students on what they have researched on their own. Also, there is demonstration or practical session which also helps us to test what the students have actually learned in practice*".

4.8.4.1 Effectiveness of the Teaching Methods

A follow up question was asked about the effectiveness of the methods employed in teaching. Here, there were mixed responses from both respondents from the two universities. Whiles some said the methods were effective, others said they were not so effective due to large class sizes. This is what some respondents from UCC and UEW had to say;

UEW Interviewee 6

"*It may not be effective considering the large class sizes and the amount of time available for a class. Due to these factors, a lecturer may not be able to adequately utilize relevant teaching approaches to the satisfaction of learners and the lecturers*".

UCC Interviewee 10

"*The lecturing type is not effective as we all have our levels of absorbing issues. But l also think the tutorials handle that short fall*".

UCC Interviewee 3

"*Looking at it from the angle of feedback, at least we are able to trace and track where a lot of work needs to be done so you are able to emphasize more on that side. So a combination of lectures, discussions, demonstrations or tutorials or practicals is just the best*".

4.8.5 Challenges Facing the Information Literacy Course

On challenges of lecturing and learning, most of the lecturers complained about inadequate credit hours, poor internet connections, larger class sizes, insufficient teaching personnel and textbooks, poor students' attitude towards the information literacy course. Two lecturers from UEW had this to say about the challenges facing the information literacy course at their end;

UEW Interviewee 1

"*The period allotted for teaching the course is woefully inadequate considering that the course content is for a semester. Again, the course is not an independent course as it is currently added to the General ICT course for first year students. Whereas the ICT component takes about 9 weeks, IL is allotted just 3 weeks*".

UEW Interviewee 3

"*In respect of assessment, there is a challenge as it is ineffective to conduct effective continuous assessment for our learners within the three week period. Even if you are able to conduct a quiz, you will be unable to mark and grade it since you have just three weeks to finish with that class. In terms of summative assessment, when we set our questions to be added to the General ICT courses, the various departments where we teach sometimes do not add our questions to the final*

examination questions. In the just ended first-semester examination, for instance, our questions were not added to the final examination questions for the students. This affects the perception of students on the course and therefore results in negative attitude towards the course".

Most of the challenges put forward by lecturers from UEW were corroborated by their colleague lecturers in UCC had to say in respect to challenges facing the programme;

UCC Interviewee 9

"*The credit hour is very inadequate because we are only given one credit hour. The contact hours are three hours per semester which is not good at all. The student number is another. We have always asked that the students be put into smaller groups, but they are always talking about room space. The Time Table Committee is always having problems with room space for teaching*".

UCC Interviewee 10

"*Well, the major challenge has to do with students' attitude towards the course. Sometimes, students think they only have to pass the course for passing sake. The university by its attitudesignals that it does not value the course. The course needs a department of its own as we do not know whether we belong to the Faculty of Arts or the Library*"

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Introduction

The study sought to assess information literacy programmes in tertiary institutions in Ghana with particular reference to UCC and UEW. Some findings have been made and are discussed in this chapter. The discussion of the findings was based on the objectives of the study. The objectives were to; assess whether students of University of Education, Winneba and University of Cape Coast have the requisite skills to access and use the needed information, examine how students of the University of Education, Winneba and University of Cape Coast evaluate information and its sources; ascertain students' awareness of the legal and ethical implications of information use; identify the challenges faced by students in accessing information; and examine the teaching methods of lecturers for the information literacy.

The discussion is presented under the following headings:

i. Requisite skills to access and use the needed information
ii. Evaluation of information and its sources
iii. Students' awareness of the legal and ethical implications of information use.
iv. Challenges faced by students in accessing information.
v. Teaching methods of lecturers for the information literacy programme

5.2 Requisite skills to access and use the needed information

In terms of level of familiarity with the types of information, it was found out that 85 (61.6%) of the respondents from both universities with 37 (57.8%) from UEW and 48 (64.9%) from UCC were extremelyfamiliar with books whereas 29 (45.3%) of the respondents from UEW and 31 (41.9%) from UCC indicated that they were moderately familiar with information from web sites. This may be due to the fact that both schools have hybrid libraries well-stocked with books and computers pertaining to the programmes offered in the universities. In addition, respondents from UCC and UEW were more familiar with books, images and web sites as compared to periodicals and dissertations. This concides with the view of Wu, Huang and Chen (2006) that "humanities scholars prefer monographs to periodicals, and that they disagree that e-books will replace printed versions." Similarly, Littman and Connaway (2004) opine in their study that "students from the disciplines of computer science, medicine, education, and psychology prefer using e-books".

In support of this, Slater, (2009) reported that "students studying computer science, technology, and related fields strongly prefer using e-books". In supporting the view Slater, Hamade and Al-Yousef (2010) indicated in their findings which conducted a study of students in Kuwait, found out that, majority of students used books, journal articles and web pages as their preferred types of information resources. There are many factors that contribute to the selection and use of different information sources according to Shanmugan (1999). Some of these are cost, past success, accuracy, reliability, comprehensiveness, usefulness, currency, response time, accessibility, technical quality and the format.

With regard to the preferences of the respondents, it was revealed that 74 (100%) and 69 (93.2%)of the respondents from UCC preferred books and web sites respectively as type of

informationfor academic and project works than their counterparts from UEW with 61 (95.3%%) and 57 (98.1%%) respectively. Surprisingly, only a few of the respondents from UEW preferred periodicals/serials (19, 29.7%) and dissertations/theses (16, 25% %) that come intermittently and are updated frequently. This means that respondents from both universities preferred books and images due to the fact that they were familiar with them. Furthermore, majority 89 (64.5%) of the respondentsin both universities (UCC 48, 64.9% and UEW41, 64.1%) relied on the pictures/images as their source of information for academic and project work.

On the source of information, majority 137 (99.3%) of the respondents from the two universities indicated that they used internet as their chief source of information for their personal and academic works.In addition, 114 (82.6%) of the respondents from UCC (64, 86.5%) and UEW (50, 78.1%) used the library as source of information while few relied upon friends as their source of information. This implies that majority of the respondents were interested in searching information on the internet than the library and consulting friends and Teaching Assistants. This was because the respondents from the two universities had easily access to internet connectivity anytime, anywhere and in potable way. All the respondents from UCC prefer internet because there were presence of more and free access to Wifi or internet connection. The use of information, especially electronic resources may vary among patrons from different disciplines.

5.2.1 Using of search strategies

Rehman and Alferesi (2009) in their study on students in Kuwaiti tertiary institution revealed some deficiencies in their information searching skills. It came to light that majority of the students lacked basic skills in the use and searching of information and most of all their

capabilities in the selection and use of information sources was found to be weak and limited. The situation whereby students does not possessed the requisite competencies to search for information effectively and efficiently leaves some serious questions about these students level of information literacy.

In relation to the search strategies, the findings showed that 37 (26.8%) and 32 (23.2%) of the respondents from UEW and UCC hadnever used truncation/wildcard and Boolean operators respectively in searching for information for academic purposes or project work. This is a threat to the requirements for searching effectively for information on the internet, especially for respondents from UCC. Despite the fact that respondents from UCC used the internet than respondents from UEW, they (UCC) had lower level of skills as compared with respondents from UEW in terms of using Boolean operators and truncation/wildcard. Kavulya (2003) opined that numerous individuals in Kenya enter advanced education with extremely restricted competencies which averts them getting to information and using the library's exploration potential.

In corroborating this findings, a study by Kimani (2014) of IL abilities among approaching first-year college students at the Catholic University of Eastern Africa in Kenya found that, while students had computer abilities with applications, for example, word-processing and Statistical Service for the Social Sciences, and could utilize the Internet and its utilizations. Once more, larger part of the students did not have required skills used to look for information and were not comfortable with the different retrieval devices and their uses. The investigation additionally uncovered that while students knew about both electronic and printed data assets, an impressive number of those students didn't know about what constitutes primary and secondary sources.

Majority 107 (77.5%) and 109 (79.5%) of the respondents in both universities used synonyms and phrases respectivelyin searching for information while a few of the respondents did not. However, a few of the respondents in both universities had no idea about searching with phrases and synonyms. On formulation of questions based on information needs, it was revealed that 69 (50%) of the respondents with 40 (54.1%)from UCC were more comfortable with it than respondents from UEW (29, 45.3%). Even though respondents from the both universities were able to formulate questions based on information needs and were familiar with it, more respondent from UCC were more comfortable than their counterparts from UEW. This is in line with the Association of College and Research Library information literacy competency standard one which talked about information literate person having the skills to formulate queries based on information need.

The findings further revealed that respondentsfrom UCC (36, 48.6%) were more comfortable in identifying potential sources of information for their academic or project work thanrespondents from UEW (31, 48.4%) while a few of the respondents were not comfortable with it. With regard to development of search strategy, 50 (67.5%) of the respondents from UCCwere more comfortable with it as compared to 39 (60.9%) respondents from UEW were not comfortable with it. This means that UCC students had higher skills on identification of potential sources and searching for information. The Seven Pillars model (1999) highlight on the "ability to recognize a need for information; the ability to distinguish ways in which the information gap may be addressed; the ability to construct strategies for locating information; and the ability to locate and access information. Therefore, an ability of the respondents to identify the need for information and accessing it is a plus.

In relation to access to sources of information including computer based and other technologies, 101 (73.2%) of the respondents from both universities were comfortable with it while a few of the respondents were uncomfortable with that. Respondents were very comfortable with computer based and other technologies because they were mostly familiar with computers and the other technologies. However, 28 (37.5%) of the respondents from UCC were not certain on how to integrate new information into an existing body of knowledge. The findings further showed that, majority 95 (68.9%) of the respondents from UEW and UCC were comfortable in their ability to organize information for practical application. Majority 42 (56.8%) of the respondents from UCC indicated that they were comfortable as opposed to 22 (34.4%) from UEW. In addition, 32 (23.2%) of respondents from UCC and UEW were neutral. The respondents from the two institutions were comfortable in their ability to integrate new knowledge into existing ones. Only a few 9 (6.5%) of respondents from UCC and UEW were uncomfortable. Nevertheless, students from the two academic institutions demonstrated an overwhelming 98 (71%) usage of information in critical thinking and problem solving.

5.3 Evaluation of information and its sources

Studies of students have found that students have "difficulty evaluating the veracity and objectivity of information" (Brown, Murphy, & Nanny, 2003; Hamilton, & Pors, 2003).Johnson and Lamb (2003) suggest that it is imperative for students to learn how to evaluate the quality of information students find on the web and any other information available elsewhere as books, magazines and all other sources. Content of an information and most especially information on the Internet must be evaluated based on the authority, objectivity, authenticity, reliability, relevance and timeliness of that particular information.

Majority 59 (79.7%) of the respondents from UCC determined a good source of information through the date of publication, followed by 57 (77%)who checked the qualification of the author and 60 (81.1%) checking the author's name whereas 58 (78.4%) verified the publisher's details. Similarly, respondents from UEW also determined a good source of information through the date of publication, qualification of the author and checking the author's name and verifying the publisher. However, respondents from UEW do so at a decreasing rate as compared to respondents from UCC. Majority of the respondents were interested in date of publication and the publisher rather than the content of the source of information. According to the Seven Pillar model (1999), one's ability to compare and evaluate information obtained from different sources is very crucial.

The findings further showed that 108 (78.3%) of the respondents evaluated information from a website by looking at the author of the information, followed by the currency of the information with 100 (72.5%) and wider coverage with 78 (56.5%). However, a few of the respondents evaluated information from a website by its popularity and the frequency of usage by friends and colleagues. Comparatively, respondents from UCC dominated in evaluating information from a website through those guidelines as compared to UEW. With popularity of website, more respondents from UEW 33 (51.6%) used that while a few of the respondents from UCC 17 (23%) and UEW 21 (32.8%) considered and usedinformation fromwebsite being mentioned by other people. According to Eisenberg (2008), evaluation seems a difficult and complicated process therefore he observed that information evaluation is a task which is so complex to perform, and so many people fail in the area of information evaluation. Lorenzen (2003) observed in another study that about 35% of the respondents in university lacked evaluation

skills.A similar study conducted by Julien and Barker (2008) in Alberta, on how university students find and evaluate information sources revealed that evidence exists in the lack of investigative procedure of information among tertiary students. The findings confirmed what Brown (2001), and Todd (2004) had also discussed about the lack of searching skills and critical information evaluation skills among students. Heidi and Barker (2009) in their research results into how college students evaluate information sources found out that, most of the students viewed trustworthiness of information based on the website rather than the content of the information.

In contrast to above findings, Brarranoik (2001) in her study with biology students showed that over 80% of the students were more particular and concerned with the content of information.Comparatively, this study established that respondents from both the universities were not too knowledgeable in evaluating information and sources.

5.4 Students' awareness of the legal and ethical implications of information use.

Webber, Boon and Johnston (2005) define plagiarism "as knowingly cheating in the form of intellectual theft which still and often eludes detection, and, even when detected, is difficult to prove beyond reasonable doubt. It is usually not equated with copyright infringement, although it can be that, and the difference is often described as being between theft of text and theft of authorship which takes us to the area of the moral rights of the original author". Oppendhiem (2008) reports that, there is the likelihood that legal issues surrounding the use of the internet would be more difficult and there is the need for new systems to resolve disputes and that a new body of law will be needed and he called on information professionals around the world to meaningfully contribute to the legal debate that is going on.

Averagely, 84.3 per cent of the respondents from the two universities were able to choose correctly the right statements on plagiarism. Only a few 10 (7.2%) number of the respondents from both universities indicated that clearly acknowledging the source of any borrowed ideas that an author presents in one's own work constitutes plagiarism, which was a false statement. Again,32 (23.2%) of the respondents fromUEW and UCC indicated thatrewriting a text in one's own words without stating the source does not constitute plagiarism, which was wrong statement.. This means that majority of the respondents were abreast with the issues of plagiarism.

With regard to the perception of the respondents on copyright averagely 84.3% had knowledge on copyright and could identify the correct statement(s) on copyright. Comparatively, this study found out that students from both universities were abreast and aware of both plagiarism and copyright issues and these findings were in contrast with the study by Gilton (2015). Gilton (2015) survey on the use of the internet by some students in tertiary institutions revealed that plagiarizing the content of a document without analyzing the data for them is the order of the day. The survey further found out that, there were an escalating number of tertiary students copying someone's work and making it look like their own.

Similarly, a research conducted with Australian university students by Williamson and McGregor (2006) on the understanding of plagiarism which revealed that all the students seemed to have an understanding of plagiarism but most of the students were unable to recognize it and some also indicated that they did not know how well enough to fulfill the requirements on how

to use their own words to analyze their own academic work. For example, assignments and essays.

5.5 Challenges faced by students in accessing information.

It was revealed that majority 87 (63%) of the respondents from UCC and UEW identified theirinability to get the needed materials in the library as the major blockade to effective use of information. Sixty seven of the respondents attributed the challenge to lack of support from library staff whilst 61 (44.2%) indicated that lack of information retrieval skills was a barrier to effective use of information. Lack of awareness of information and financial barriers accounted for 59 (42.8%) each as against 45 (32.6%) of the respondent from the two institutions who indicated that geographical barrier was a challenge to them. The least of the respondents challenge was educational level with 31 (22.5%).

The findings in this current study confirm and add up on the findings of Jiyane and Onyancha (2010) that the lack of appropriate facilities and resources such as computers and skilled instructors serve as major hindrances to information use. Similarly, Agyen-Gyasi (2008) conducted a study at the Kwame Nkrumah University of Science and Technology and suggested the need to equip learners with the right information retrieval skills which will propel them to use and cite effectively the information resources available to them. Awareness creation is a key step which will afford learners on where and how to find information for their information seeking needs.

5.6 Assessing the teaching methods of lecturers for the information literacy programme

Tamakloe, Amedahe and Atta (2005), maintained that "assessment occurs when one person through some kind of interaction with another, obtains and interprets information about that other person in terms of his knowledge and understanding or abilities or attitudes" (p. 176).Biggs (2003), Boud and Falchikov (2007) are of the view that the process of assessment is complex and its motive and layout are fairly contested and price-encumbered. The practice of evaluation is widely debated by means of academics, enterprise, governments, college students and various stake holders within society, all of whom have their personal agendas, assumptions and views on the matter.

Majority 110 (79.7%) of the respondents from both universities (UEW and UCC) agreed that the course was well structured while few of the respondents disagreed to this notion. Eighty seven (63%)of the respondents from UCC and UEW indicated that the learning and teaching methods employed encouraged full participation. Furthermore, 102 (73.9%) of the respondents from the two universities disagreed that the credit hours were adequate. Even though majority of the respondents agreed that course was well structured and encouraged participation, they had a different view on the adequacy of the credit hours.Nine lecturers interviewed from UCC and UEW indicated that the quality of teaching and learning materials for the information literacy programme was good while 3 of the lecturers said that it was not good enough. Again, 4 interviewed lecturers from the universities indicated that the quality of the resources were not too bad.

On the method of teaching or delivering, most of the interviewees from UCC and UEW (6) used the combination of methods such as student-centered, participation, lecturer-centered and

discussion in lecturing or interacting with the students and these lecturers described it as very effective.Four of the lecturers with 3 from UCC and 1 from used both lecturer-centered and student-centered and described it as effective while 3 of the lecturers with 2 from UCC and 1 from used discussion method only in the delivery and described it as very good. However, only 1lecturer each from UCC and UEW used either students centered or lecturer centered and described it as ineffective due to large class size among others. Ogula and Onsongo (2009) identify a variety of teaching methods, namely: lecture method, case study, group discussion, field trips, simulation, resource persons, demonstrations, seminars, computer workshops, group work, practical and tutorials. However, some lecturers too combine such methods in teaching.

5.7 Summary of findings

On a whole majority of the respondents for this study exhibited a high level of familiarity with the various types of information. Findings in relation to using truncation/wildcard and Boolean operators were in line with a study by Rehman and Alferesi (2009) and Kimani (2014). The findings on the evaluation of information and its sources confirm the study of Johnson and lamb (2003). The findings on evaluation of information contradict the work by Brarranoik (2001). The findings on legal and ethical use of information were inconsistent with McGregor (2006) and Gilton (2015). The challenges students faced in relation to information use include their inability to get the needed materials from the library, lack of support from the library staff and lack of information retrieval skills as the main barriers.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter represents the summary besides conclusion and recommendations. Based on the key findings, conclusion is reached to support the generation of appropriate recommendations to resolve the research questions underpinning the study. Thus, on the basis of the conclusions to be reached on assessment of information literacy programmes in tertiary institutions in Ghana with particular reference to University of Cape Coast and University of Education, Winneba, appropriate recommendations are made to improve information literacy programmes in tertiary institutions.

6.2. Summary of Major Findings

This study was carried out under the following objectives:

1. To assess whether students had the requisite skills to access and use the needed information.
2. Examine how students evaluated information and its sources.
3. Ascertain the students' awareness of the legal and ethical implications of information use.
4. To identify the challenges faced by students in accessing information and
5. To examine the teaching methods of lecturers for the information literacy programme.

The major findings of the research were as follows;

6.2.1 Access and Use of Information

The findings revealed that, 95.3% of the respondents from UEW and 100% from UCC who responded to the questionnaire preferred information from books, followed by web sites with 89.1% from UEW and 93.2% from UCC and images/pictures with 75% from UEW and 55.4% from UCC. The least preferred type of information by students were periodicals with 29.7% from UEW and 55.4% from UCC, dissertation/thesis with 39.1% from UEW and 45.9% from UCC and music with 25% from UEW and 36.5% from UCC.

With regard to students' sources of information, the study revealed that 98.4% respondents from UEW and 100% from UCC used information from the web (internet), library information accounted for 78.1% from UEW and 86.5% from UCC, as opposed to information from friends with 64.1% from UEW and 58.1% from UCC.

In relation to frequency of use of the various search strategies, it was revealed that 31.1% of respondents from UEW and 33.8% from UCC sometimes used Boolean operators, 32.8% from UEW and 21.6% from UCC had never used truncation/wildcard in their search for information, 32.8% respondents from UEW and 35.1% from UCC sometimes use phrase search whilst 31.3% respondents from UEW and 27% from UCC sometimes use synonyms.

Furthermore, the findings showed that 45.3% respondents from UEW and 54.1% from UCC were comfortable in formulating questions based on information need, 48.4% from UEW and 48.6% from UCC had the ability to identify potential sources of information for their academic and personal work whilst 25% from UEW and 45.9% from UCC indicated that their ability to develop search strategies.

In addition, the study revealed that39.1% of the respondents from UEW and 48.6% from UCC were comfortable in using information in critical thinking and problem solving, 34.4% from UEW and 56.8% from UCC were comfortable in organizing information for practical application as against 31.3% from UEW and 32.4% from UCC who indicated that they were comfortable in integrating new knowledge into existing knowledge.

6.2.2 Students Evaluation of Information and its Sources

The study revealed that the majority of the respondents from UEW (89.1%) and UCC (95.9%) evaluate materials based on authority and credibility, followed by scope and relevance with 73.2% from UEW and 73.2% from UCC whilst the least considered by students was coverage with 44.9% from UEW and 42.2% from UCC. In determining a good source of information, the study again revealed that majority of the students from UEW and UCC verified the date of publication, followed by qualification of the author and verifying the name of the author.

6.2.3 Awareness of the Legal and Ethical Use of Information

With regard to the issue of legal and ethical use of information by students for their personal and academic work, it was found out that a large number (94.9%) of the respondents from UEW and UCC were aware of the legal, social and ethical issues associated with the use of information. This came to bear when they were asked to identify statements that were true or otherwise with plagiarism and copyright.

6.2.4 Challenges faced by Students in Accessing Information

The findings of the study revealed that students in both universities were confronted with a number of barriers and obstacles in their attempt to have access to information. The major barrier encountered by students from UEW and UCC were "students not getting the needed information from the library" with 60.9% from UEW and 64.9% from UCC. Lack of support from library staff accounted for 43.8% from UEW and 52.7% from UCC whilst lack of information retrieval skills accounted for 57.8% from UEW and 32.4% from UCC. Other challenges to access of information by respondents include students' unawareness of the information sources, having to pay for some information, educational level and geographical barrier.

6.2.5 Teaching Methods of Lecturers for the Information Literacy Programme

The findings of the study showed that 62.5% of the students from UEW and 63.3% from UCC agreed to the statement that the learning and teaching methods encouraged participation. This was collaborated by lecturers from the two institutions who indicated that the combination of methods were very effective since it encouraged students' participation.

Again, on the structure of the course, it was found out from the study that 82.8% students from UEW and 77% from UCC agreed that the course was well structured to achieve its objectives. On the adequacy of the credit hours 75% respondents from UEW and 73% from UCC agreed that the one credit hour allocated to this programme was inadequate. This does not give enough time for practical sessions. These problems were also corroborated by the interviewed lecturer from UCC and UEW who indicated that the one credit hour does not allow them to have more practical on the various issues discussed in class and this is affecting the programme.

The responses from the lecturers indicated that whereas in UCC the status of the teaching and learning materials were good, that of UEW was not too good. This was due toinsufficient computer laboratories, absence of course book and other learning materials for the programme in UEW.

On the methods used in teaching, majority of the lecturers from UEW and UCC combined more than one method in teaching as they saw it as effective. Some of the method used by the lecturers as enumerated by them include, student centered, teacher centered and discussion but they again raised concern with the credit hours.

6.3 Conclusion

In conclusion, the assessment of the information literacy skills of student is necessary as it is needed to survive this landscape of information overflow globally. The assessment of the programme also makes way for improvement on the course. This is the surest way of not depriving students the opportunity of becoming lifelong learners. It was however established in this study that respondents from UCC and UEW have an appreciable level of understanding and use of the various information literacy competency standards. Particularly, respondents from the two institutions were familiar with the various types of information. Again, respondents in this study preferred information from books to websites. Furthermore, the respondents from both universities were good with phrase search and using synonyms. In addition, students were comfortable in formulating questions based on information need, identifying potential sources of information and developing search strategies.

On ethical and legal use of information, the respondents in this study exhibited a high level of knowledge on the matter as they were able to choose correctly which statement(s) constitutes plagiarism and copyright.

There were however, a small cause for concern as students from the two institutions lacked the search strategy skills such as truncation/wildcard and Boolean operators to effectively retrieve and use information. Respondents from the two universities lacked the skills to evaluate information and its sources, which is key in determining who an information literate person is.

6.4. Recommendations

Based on the findings and outcomes drawn, the following recommendations are put forward by the researcher for consideration;

6.4.1 A stand-alone programme

The IL programme should be a stand-alone programme at UEW. This was evident in the study as lectures complain of their questions at times not included in the main exams questions because the course merged with ICT course and this is affecting the teaching and learning of the progamme at UEW.

6.4.2 Search strategies and evaluation of information

More emphasis should be placed on search strategies and evaluation of information. Lecturers of IL should devote more time in teaching students on the use of truncation/wildcard, Boolean

operators and evaluation of information and its source as well as equipping students with the requisite skills to search for information effectively and efficiently.

6.4.3 Employment of more lecturers

University management in conjunction with the government should employ more lecturers to reduce the students to lecturer ratio for effective teaching and learning of IL at the two universities.

6.4.4 Acquisition of more teaching and learning materials

Acquisition of more teaching and learning materials like textbooks, laptops, projectors and among others is very crucial in improving the teaching and learning of the programme. The provision of these resources would help address the shortfall of students not getting materials to read on especially in UEW where the problem was largely seen. The acquisition of the projectors and laptops would help lecturers to adopt the modern way of teaching which will intend increase the competency level of the students.

6.4.5 Increase in infrastructure

Government should support the university management from the two institutions tobuild more lecturer theatres for effective teaching and learning of IL. The increase in infrastructure would help to reduce the high class size which currently is being witnessed in UCC and UEW.

6.4.6 Provisions of functional ICT laboratories with internet connectivity

Provisions of more functional ICT laboratories are very crucial in the twenty-first century. This would help students to do more practical sessions with the programme.

6.4.7 Increase in credit hours

The increase in the number of contact hours is very crucial for the survival of this programme as both students and lecturers complainedabout the insufficient credit hours allocated to this very important course. The insufficient credit hours do not make room for more effective teaching and learning as students are confronted with little time for practical sessions. The management of UEW and UCC should increase the lecturing period to 3 hours for effective teaching and learning of IL.

6.5 Suggestions for further studies

This study was limited to University of Cape Coast and University of Education, Winneba in the Central Region in Ghana. The research was limited to variables such as assessment, teaching and learning of the information literacy programme. Further studies could be replicated in other universities in Ghana.

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APPENDIX A

UNIVERSITY OF GHANA, LEGON

SCHOOL OF INFORMATION AND COMMUNICATION STUDIES

DEPARTMENT OF INFORMATION STUDIES

Dear Student,

I am David Nii-Okai, a graduate student of the University of Ghana pursuing a Master of Philosophy in Information Studies degree. I am conducting a research entitled**: *Assessment of information literacy programmes in tertiary institutions in Ghana: A case study of UEW and UCC***. I would be grateful if you could spare some time to respond to the following questions to enable me have a fair view on the topic. The information you will provide is strictly confidential and will be used for academic work only. Please, do not write your name anywhere in your response. I greatly appreciate your help and co-operation.

Thank you.

INSTRUCTIONS

Please, respond by ticking (√) against your preferred response(s) for questions with options. For questions that require suggestions or comments, please, use the space provided.

SECTION A: BIOGRAPHICAL INFORMATION

1. Gender a. Male [ ] b. Female [ ]

2. Please indicate age group

a. Below 18 [ ]

b. 18-22 [ ]

c. 23 and above [ ]

SECTION B: ACCESS TO AND USE OF INFORMATION

3. Indicate your level of familiarity with the following types of information. Please, tick (√).

S/n	Type of Information	Not at all	Slightly	Somewhat	Moderately	Extremely
a.	Books					
b.	Web Sites					
c.	Interviews					
d.	Images/Pictures					
e.	Videos/Movies					
f.	Music					
g.	Periodicals/Serials					
h.	Dissertations					

4. What type of information you might use for academic project/work? Please, tick as many as applicable (√).

S/n	Type of Information	Tick as many as applicable (√)
a.	Books	
b.	Web Sites	
c.	Interviews	
d.	Images/Pictures	
e.	Videos/Movies/DVDs	
f.	Music	
g.	Periodicals/Serials	
h.	Dissertations/Theses	
i.	Non of the Above	

5. Where do you get information for your academic project/work?

Source(s) of Information	**Please, tick all that apply (√)**
Library	
Web (Internet)	
Friends	
Lecturers/Teaching Assistants	

6. Please, indicate how often you use each of the following search strategies. **Please, tick (√)**

Search Strategies	**Never**	**Almost never**	**Sometimes**	**Almost every time**	**Every time**
Boolean operators					
Using truncation/wildcard					
Using phrase searching					
Using synonyms					

7. Please, indicate your level of comfort with each of the listed skills. Please tick (√)

	Very Comfortable	**Comfortable**	**Neutral**	**Uncomfortable**	**Very Uncomfortable**
Formulate questions based on information needs					
Identify potential sources of information					
Develop successful search strategies					
Access sources of information					

including computer-based and other technologies					
Evaluate information					
Organize information for practical application					
Integrate new information into an existing knowledge					
Use information in critical thinking and problem solving					

SECTION C: EVALUATION OF INFORMATION AND ITS SOURCES

Instruction-Indicate the appropriate response by ticking (√)

8. What are the criteria for evaluating information? (Tick as many as applicable)

S/n	Criteria	Tick (√)
a.	Authority and Credibility (publisher, author, credentials etc)	
b.	Coverage	
c.	Scope and Relevance	
d.	Bias and Accuracy	
e.	Currency and Timeliness	
f.	Others (please, specify)……	

9. How will you determine a good source of information? (Tick as many as applicable)

S/n	Criteria	Tick (√)
a.	Check the author's name	
b.	Verify the publisher	
c.	Place of publication	
d.	Qualification of the author	
e.	Popularity of the author	
f.	Date of publication	
g.	Others (please, specify)……	

9b. How will you be able to know that the information from the Website is from a right source?

S/n	Criteria	Tick as many as applicable (√)
a.	The popularity of the website	
b.	The website is always used and accessed by friends	
c.	The author of the information	
d.	The currency of the information	
e.	Wider Coverage	
f.	People have been mentioning the name of the website	

SECTION D: LEGAL AND ETHICAL USE OF INFORMATION

10. Which of the following statement(s) is/are **True** about plagiarism? Indicate your answer by ticking.

S/n	Statements	Tick (√)
a.	Taking someone else's works, ideas, patency and passing it off as one's own.	
b.	Clearly acknowledging the source of any borrowed ideas that is presented in one's own work.	
c.	Copying maps and charts without stating the source constitutes plagiarism.	
d.	Copying a text from a book without citing the source and handing it in as one's constitutes plagiarism.	
e.	Rewriting a text in one's own words without stating the source does not constitute plagiarism.	

11. Which of the following statement(s) is/are **true** about Copyright? Indicate your answer by ticking.

S/n	Statements	Tick (√)
a.	Copyright describes the rights given to creators for their literary and artistic works.	
b.	Users of copyrighted information have rights in the form of fair use (academic purposes and knowledge improvement).	
c.	Copyright law gives monopoly to authors and creators in order to stimulate intellectual and artistic creativity.	
d.	Sound recordings are not eligible for copyright protection.	
e.	Computer programs are eligible for copyright protection.	
f.	Ideas and concepts are entitled to copyright protection.	

SECTION E: BARRIERS TO EFFECTIVE USE OF INFORMATION (Tick as Many as Applicable)

12. What kind(s) of problem(s) do you encounter in accessing information? **Tick as many as applicable (√)**

S/n	Type of Barrier	Tick (√)
a.	Lack of awareness of information	
b.	Lack of information retrieval skills	
c.	Educational level	
d.	Lack of support from library staff	
e.	Financial barriers	

f.	Geographical barriers	
g.	I do not get the needed materials in the library	

SECTION F: ASSESSMENT OF THE TEACHING METHODS (Please tick (√))

13. How would you assess the teaching and learning of the course in the following areas? Where: **A=Agree, N=Neutral, D=Disagree**

S/n	Area of Assessment	Agree	Neutral	Disagree
b.	The course was well structured to achieve the learning outcomes.			
i.	The number of credit hours was sufficient for the course.			
k.	The learning and teaching methods encouraged participation.			

14. Please, any recommendation(s).

……
……
……
……
……
……

Thank you.

APPENDIX B

UNIVERSITY OF GHANA, LEGON

SCHOOL OF INFORMATION AND COMMUNICATION STUDIES

DEPARTMENT OF INFORMATION STUDIES

Interview Guide for IL Lecturers

Dear Sir/Madam,

My name is David Nii-Okai, a student from the University of Ghana. I am conducting a research entitled: ***Assessment of information literacy programmes in tertiary institutions in Ghana: A case study of UEW and UCC*** as part of the requirement for the award of a Master of Philosophy (MPhil) Degree in Information Studies. I would be grateful if you could spare a little time to answer the following questions sincerely to help me have a fair idea on the above research topic. The information being sought is purely for academic purposes and under no circumstances would it be disclosed to any person.

Thank you.

Interviewee:

Date :

Time:

SECTION A: BIOGRAPHICAL INFORMATION

1. Gender a. Male [ ] b. Female [ ]

2. Please, indicate age range

a. Below 31 [ ] d. 51-60 [ ]

b. 31- 40 [ ] e. 61 and above [ ]

c. 41-50 [ ]

3. Level of education a. M.A/M.Sc/M.Ed [ ] b. Mphil [ ] c. Phd [ ]

4. Please, for how long have you been teaching the information literacy skills course?

5. How can you describe the quality of the resources (Teaching and learning materials) to support information literacy course?

6. How would you describe the number of credit hours allocated to this course?

7. which teaching method(s) (eg. Teacher centered, students centered, presentations, etc) do you use in the information literacy skills course and why that method(s)?

7a. How would you describe the effectiveness of the methods used to teach information literacy course?

8. In your own opinion, what are the major challenges facing information literacy course?

9. What do you think should be done to improve the teaching and learning of the Information Literacy course at this institution?