

DEPARTMENT OF INFORMATION STUDIES

UNIVERSITY OF GHANA, LEGON

**INFORMATION LITERACY AMONG TEACHERS IN SELECTED SECOND
CYCLE INSTITUTIONS IN THE CAPE COAST METROPOLIS, GHANA**

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**THIS IS THESIS SUBMITTED TO THE DEPARTMENT OF INFORMATION
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REQUIREMENTS FOR THE AWARD OF MASTER OF PHILOSOPHY**

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INTEGRI PROCEDAMUS

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DECLARATION

I, Gloria Tachie-Donkor hereby declare that with the exception of references cited which have been fully acknowledged, this thesis is the result of my own work under the supervision of Dr Mrs. Perpetua Sekyiwa Dadzie. I further affirm that no part of it has been presented for another degree in this University or elsewhere.

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DEDICATION

To the Glory of God, this work is dedicated to my lovely husband Mr. Francis Howard-Ogoe and my two lovely children Leonard Jeffry Howard-Ogoe and Nhyiraba Janelle Howard-Ogoe.



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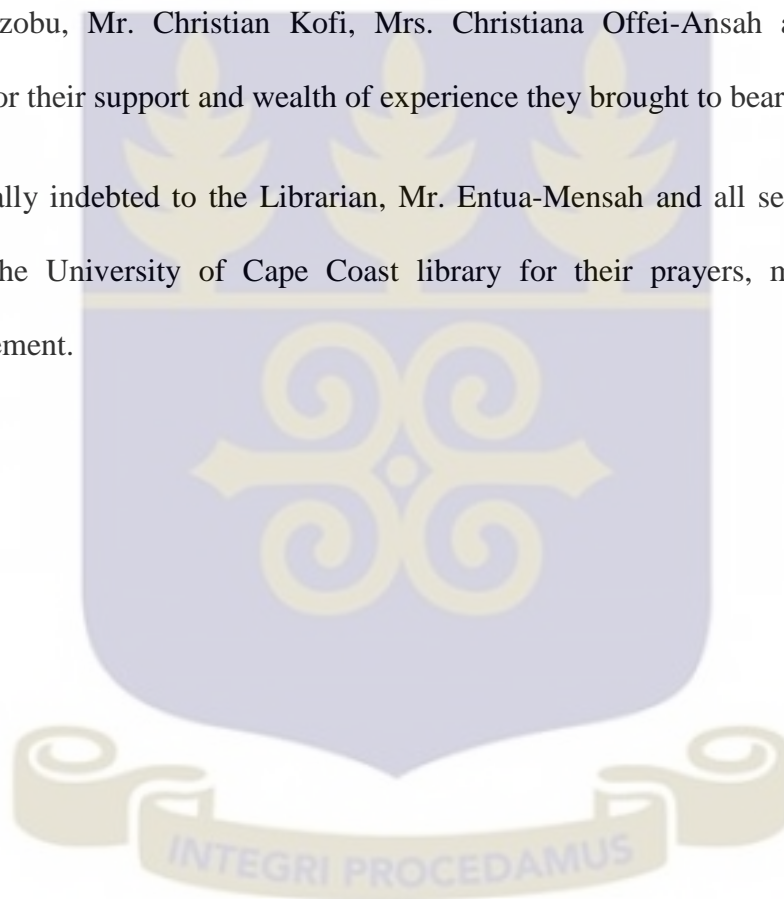


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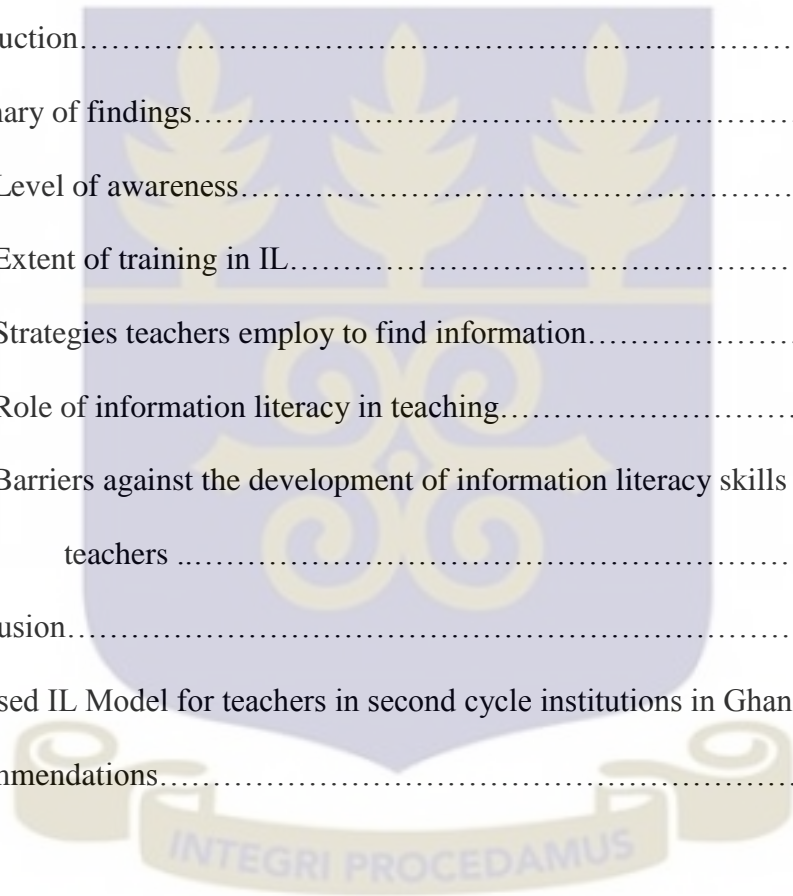
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LIST OF ABBREVIATIONS

SCONUL	- Society of College, National and University Libraries
UNESCO	- United Nations Educational Scientific and Cultural Organizations
HM	- Head Mfantsipim School
HW	- Head Wesley Girls
AHM	- Assistant Head Mfantsipim School
HW	- Head Wesley Girls
AHW	- Assistant Head Wesley Girls



ABSTRACT

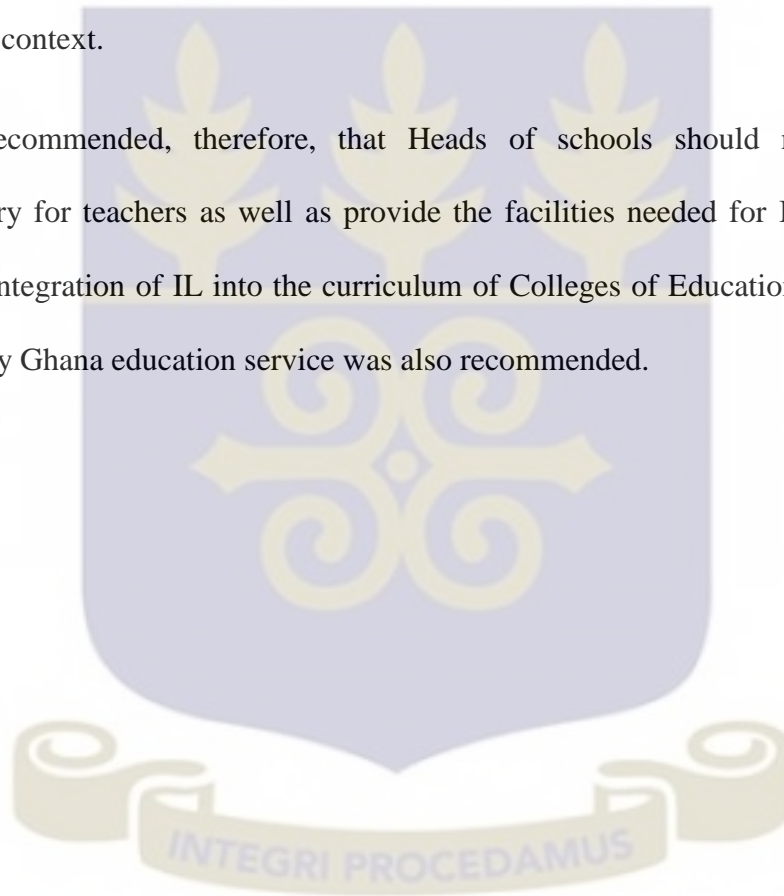
Most Ghanaian second cycle institutions factor little training into information literacy skills for teachers. As a result most teachers are challenged in the use of information literacy in their teaching and learning process. This study therefore set out to examine the current level of information literacy in this era of information age among teachers in second cycle institutions in the Cape Coast metropolis. Being the oldest and among the category 'A' schools in Ghana, Mfantsipim School and Wesley Girls High School were purposively selected for this study. All 179 teachers, including the Head teachers of both schools participated in the study.

The objectives of the study were to determine the level of awareness of information literacy of teachers, to ascertain the extent of training in information literacy skills, to determine the strategies teachers employed in the use of print and electronic resources, to assess teachers' views on the role of information literacy in their teaching activities, and to ascertain the barriers militating against the development of information literacy skills among teachers in both schools.

Questionnaire and interview guide were used to collect data from the teachers and Head teachers respectively. Descriptive statistics was used to analyze the data collected. From the analysis, most of the teachers had information needs, they were aware of the gaps that existed in their subject areas and used diverse information resources available to them to satisfy these gaps. Teachers from both schools had a high preference for Internet sources to keep abreast with information on their subject areas and also update their teaching notes. It was also evident that little or no training was organized for teachers in both

schools in IL. However, it was found out that teachers possessed moderate levels of IL skills and employed various strategies to find information from the various sources available to them. Inadequate resources were a major challenge that affected IL development among teachers. The SCONUL (1999) model was appropriate for the study, but considering the constraints that inhibited teachers IL training in the two selected schools, the SCONUL (1999) model have been revised by the researcher to suit the Ghanaian context.

It was recommended, therefore, that Heads of schools should make IL training compulsory for teachers as well as provide the facilities needed for IL development in schools. Integration of IL into the curriculum of Colleges of Education and Senior High Schools by Ghana education service was also recommended.



CHAPTER ONE

INTRODUCTION

1.1 Background

Information literacy has become a topic of interest for most countries both developed and developing. Currently, the world contains an unimaginably vast amount of information in print and electronic forms which is growing massively. This is due to the fact that a lot of information is being produced every second in this era of continuous technological change. Users of information are confronted with the challenge of locating and using information appropriately from diverse forms and formats.

One must possess certain requisite skills in order to unlock appropriately the advantages that information brings to the individual. Most information out there, both in print and electronic hoist issues of authenticity, validity and reliability. Therefore it is important that users understand the right ways of assessing and using information from different sources. Anunobi & Udem, (2015) simply defined IL as the identification of what time information is needed, why information is needed, where to look for information needed, how to access and evaluate, use and share the kind of information found in an ethical manner.

Information literacy is an umbrella term that embraces concepts such as information handling, computer literacy (ICT), information skills, search skills, media and visual literacy, data curation and data management of information from a wide range of sources (SCONUL, 1999). It can also be said to be a set of information competence and skills

needed by everyone to function properly in the information environment. Information literacy can also be identified as the capability to:

- Determine the nature and extent of the information to be used.
- Judge needed information effectively and efficiently.
- Weigh information and its sources carefully and to incorporate selected information into one's knowledge base.
- Utilize information effectively to achieve a definite purpose.
- Know many of the economic, legal, and social issues concerning the use of information.
- Get and use information fairly and lawfully (Rader, 2002).

Persons with techniques and skills in the use of informational resources in diverse formats to solve problem possess information literacy skills (Eisenberg, 2004). To constitute an information literate society, some developed countries now consider information literacy as a basic human right of their citizens' to evaluate, use and create information for specific purposes (UNESCO, 2005). For instance, in Greece, a person's right to information and the right to participate in the information society are protected by the State (Korobili et al. 2011). Therefore, some citizens are empowered to have confidence in the source of the information they find to effectively achieve their personal, social, occupational and educational goals.

Despite emphasis on the importance of IL for personal, social and occupational goals, the main focus for developments has been formal education. Education has assumed the centre stage in the socio-economic development of both developed and developing nations. Therefore, it has been termed "the engine of growth and national development".

Rader (2002) estimates that 60% of the annual published materials on IL relates to higher education, with 20% focusing on primary and secondary schools. This is a clear indication that much needs to be done on information literacy for secondary schools. Secondary schools need well- structured information literacy policies for teacher development and in the implementation of the curriculum. Teachers' in secondary schools must see themselves as teachers of information literacy irrespective of their area of specialization (National Literacy Trust, 2012). Teachers should bear in mind how information literacy is to be embedded in their own teaching.

In the phenomenon of higher education, strategic rethinking is being advocated as a vision to constitute an information literate University which encompasses every member of the academic community including administrators, lecturers, researchers and students to be information literate persons (Johnston & Webber, 2003). IL for members of the academic community has received increasing attention (Merchant & Hepworth, 2002; Pulkkinen & Wyk, 2002; Rader, 2002). Most tertiary institutions in the world are considering strategic planning for IL to establish the information competencies of lecturers and students by incorporating IL into the curricula and also as a graduation requirement (Eisenberg et al. 2004).

Secondary school IL should consider the role of teachers in the learning environment since quality education cannot be achieved without the skillful direction provided by teachers. There should be policies and guidelines to support teachers' training in IL in order to facilitate teacher development. School teachers' must also bring on board their own life experiences to help them understand the relevance of information literacy to learner development (Bruce, 2004).

Many studies reported in the literature, indicate that teachers play a significant role in the use of IL in secondary education. It is a fact beyond dispute that teachers are indispensable in the successful use and implementation of IL in secondary education. While they prepare students for tertiary studies and for the workplace, their information literacy training should be taken seriously (Merchant & Hepworth, 2002; Korobili et al. 2011).

In the teaching activities, information literacy skills are required of every teacher in an era of information based-society. In searching for information for their teaching task, teachers have to deal with information literacy issues such as verifying the credibility of the source of information. To exploit the different forms and formats of information available, teachers have to take advantage of the emerging information revolution and massive technological changes that comes with it. In other words, teachers need to be abreast with the competences and skills of searching and using information for their teaching purposes.

IL competence for teachers in African schools can be achieved through organizing development programs in information literacy to equip them with requisite skills to search for curricular based materials which support their teaching activities (Pulkkinen & Wyk, 2002).

An empirical research in Ghana by Kwarteng (2011) raised the issue of few connections between teacher education, teachers' professional development, and school needs. She stated that adequate training and development of teachers in the second cycle institutions have great correlation on teacher performance and the student's success in future, therefore teachers professional development should not be down played. There is,

therefore, the need to weave information literacy which covers all aspects of learning into the fabric of teacher development and training programs. This will enable teachers to train students to have specialist knowledge in their fields and also have information literacy competencies required for lifelong learners. Thus information literate teachers need to be concerned with their student's information literacy skills and thereby prepare them for the world of tertiary education.

Students from such teachers will become independent learners, critical thinkers and problem solvers. The competence and skills associated with information literacy of teachers cannot be developed overnight. Senior High School teacher's information literacy knowledge and skills need to be developed slowly over a period of time through training and development programs to achieve better academic work and teaching. Teachers should be motivated to research into background information on taught subjects to organize lessons, to look for in-depth and current information apart from the textbooks, looking for facts and to recommend websites of importance to students based on their level (Merchant & Hepworth, 2002).

1.1.1 Profile of the study area

Cape Coast is a fishing port and the administrative capital of the Central Region of the south of Ghana. According to the 2010 population census report, the population of the Cape Coast metropolis was 169, 894 (Ghana Statistical Service 2012). Schools in the metropolis correspond to the three-tier educational system in Ghana which includes:

- Basic education schools.
- Primary and junior secondary schools.

- Second cycle institutions.
- Tertiary institutions.

There are four educational circuits namely the Cape Coast zone, Aboom zone, Bakano zone and Pedu zone in the metropolis. The study area is made up of one public University, one public Polytechnic, one College of Education, two Nursing Training Colleges. There are also 10 Senior High Schools, 5 private Senior High Schools and over 100 Junior High Schools and Pre-schools, which are both public and private institutions.

The Cape Coast metropolis is one that can boast of “category A” or best performing secondary schools in the country. The ten government Senior High Schools in the metropolis consist of Ghana National College, Mfantshipim School, St. Augustine's College, Adisadel College, Wesley Girls High School, University Practice Senior High School, Christ the King Academy Senior High School, Aggrey Memorial Senior High School, Cape Coast Technical Institute, Oguaa Secondary Technical School and Holy Child Senior High School with more than one thousand (1000) teachers in these schools teaching various subjects. Two of the oldest schools that fall within the category ‘A’ or the best performing schools in the metropolis were used for this study; which are Mfantshipim School and Wesley Girls High School.

1.1.1.1 Wesley Girls High School

Wesley Girls High School is an educational institution for girls; it is the first girls’ secondary educational institution in Ghana. It was established in the Cape Coast metropolis in 1836 by the wife of a Methodist Minister. The school started with twenty five girls who had training in reading and writing, sewing and housekeeping. This

prestigious Methodist educational institution was named after the founder of Methodism, John Wesley. Currently, the school is ranked as the best girls' school in Ghana. Wesley Girls High School has 94 teachers who teach subjects such as Biology, French, Geography, Chemistry, Physics, Elective Mathematics, Christian Religious Studies, English literature, French, History, Elective Mathematics, Music, Business Management, Economics, Financial Accounting, Management-In-Living, Foods and Nutrition, General Knowledge in Art, Textiles, Clothing & Textiles and Graphic Design.

These subjects are grouped under five programs of study including General Science, General Arts, Business, Home Economics and Visual Arts. All students offer core subjects such as English Language, Integrated Science, Core Mathematics, Social Studies and Information Technology. The school can boast of an automated school library with a librarian and an ICT centre which is connected to Wi-Fi. Every year, the school organizes in-service training on all aspects of education for its teachers as part of teacher motivation which have a massive enhancement on teacher productivity. Other in-service training programs for teachers are also organized by subject associations which are sponsored by the school.

1.1.1.2 Mfantsipim School

Mfantsipim School which was previously called the 'Wesleyan High School' was established in 3rd April, 1876 with seventeen students and four teachers in training. The school was instituted as a secondary school as well as a teacher training institution. It is the first boys' secondary educational institution in Ghana by the Methodist church of Ghana to train young boys to occupy the middle level man power. At present Mfantsipim

School falls within the category ‘A’ or the best performing schools in the Cape Coast metropolis. ‘The School’ as it is popularly called offers four programs including General Arts, General Science, Technical and Visual Art. There are 115 teachers in ‘The School’ who handle the various subjects taught in the school which includes Economics, Geography, Religion, Elective Mathematics, Music, English Literature, History, Physics, Chemistry, Biology, General Knowledge in Arts, Ceramics, Picture Making, Technical Drawing, Engineering Science, Applied Electricity and Wood Work. In addition, all students offer core subjects such as English Language, Integrated Science, Core Mathematics, Social Studies and Information Technology. They have a school library with a librarian and an ICT centre for both teachers and students.

These two selected schools Wesley Girls and Mfantipim School are the oldest secondary schools in the Cape Coast metropolis. For teachers in these schools to teach well, they must be in the position to find the right information to support the curricular. In supporting the curricular they must understand their teaching objectives and the need to train students for tertiary education and beyond.

The two selected schools being studied have not subscribed to any academic databases. Training and development workshops are organized periodically for teachers in both schools but it is doubtful whether the training and development programs organized for teachers in these schools integrate information literacy skills. It was precisely this concern that matured this study. In agreement with Bent (2011) information literacy competency training is needed by all disciplines, in all learning environments and in the education of teachers in second cycle institutions. However, not much has been published on information literacy for teachers in second cycle institutions in Ghana.

1.2 Problem statement

Information literacy should be of concern to teachers in an information-based and technology driven society. If teachers are competent enough in searching for curricular based information, they will inculcate into their students the ability to search for information in diverse formats to satisfy their informational needs. Students after school will enter the job market or higher education with decision-making skills and self-directed learning. But there are numerous challenges that confront teachers in achieving this aim.

From observation most Ghanaian second cycle institutions factor little training into information literacy skills for teachers. In places where information literacy is considered, attention is often shifted to computer literacy for ICT teachers while other teachers are denied such literacies and many more such as information skills, searching skills, data management etc. This results in the majority of them, being challenged in using search engines, databases, educational sites, search strategies, appropriate key words and concepts to find information for teaching. A personal interaction with some teachers indicated that evaluating online and print materials for teaching frustrates them. Furthermore, the educational policy in Ghana has not considered information literacy as a taught subject in senior high schools as well as teacher training institutions. As a result some teachers are not aware of the need to possess the competencies and skills to be information literate. Some are technophobic, and others lack the enthusiasm to possess the competence and skills to be information literate thereby failing to look for new information in addition to the curricular, hence their questionable productivity. It was

against this background that the study examined the information literacy level of teachers in second cycle institutions in the Cape Coast metropolis.

1.3 Purpose of the study

The purpose of this study was to examine, the current level of information literacy among teachers in second cycle institutions in the Cape Coast metropolis and based on the findings of the study make recommendations and suggest an appropriate framework suitable for developing teachers IL in Ghana.

1.4 Objectives of the study

In the light of the aim of this study, the following research objectives were set in order to map out the current situation of information literacy among teachers of second cycle institutions in the Cape Coast metropolis.

1. To determine the level of awareness of information literacy among teachers in Mfantsipim School and Wesley Girls High School.
2. To ascertain the extent of training in information literacy skills organized for teachers in Mfantsipim School and Wesley Girls High School.
3. To determine the strategies teachers in Mfantsipim School and Wesley Girls High School employ to find and use information from print and electronic sources.
4. To assess teachers' views in Mfantsipim School and Wesley Girls High Schools on the role of information literacy in their teaching activities.
5. To ascertain the barriers militating against the development of information literacy skills among teachers in Mfantsipim School and Wesley Girls High School.

6. To make recommendations based on the findings of the study.

1.5 Research questions

1. What is the level of awareness of information literacy among teachers in Mfantsipim School and Wesley Girls High School?
2. What is the extent of training in information literacy skills organized for teachers in Mfantsipim School and Wesley Girls High School?
3. What strategies do teachers in Mfantsipim School and Wesley Girls High School employ to find and use information from print and electronic sources?
4. What are teachers' views in Mfantsipim School and Wesley Girls High School on the role of information literacy in their teaching activities?
5. What are the barriers militating against the development of information literacy skills among teachers in Mfantsipim School and Wesley Girls High School?

1.6 Scope of the study

The study is confined to teachers in Mfantsipim School and Wesley Girls High School in the Cape Coast metropolis since the topic under research has a direct bearing on them. These two schools fall into the category “A” schools or the best schools in the Cape Coast metropolis. The conclusions and generalization of the study will not be applicable to schools outside the Metropolis.

1.7 Theoretical framework

The study adopted the Seven Pillars of Information Literacy Skills developed by the Society of College, National and University Libraries (SCONUL, 1999) as the most suitable model. The model has been accepted the world over to assess the competencies of an information literate person including teachers. In April 2011, the 1999 model was

updated and modified to embody new terminologies, concepts, skills and competencies of information literacy while the original seven pillars model continues to be valid. The seven pillars of SCONUL (1999) model shown in figure 1.1.

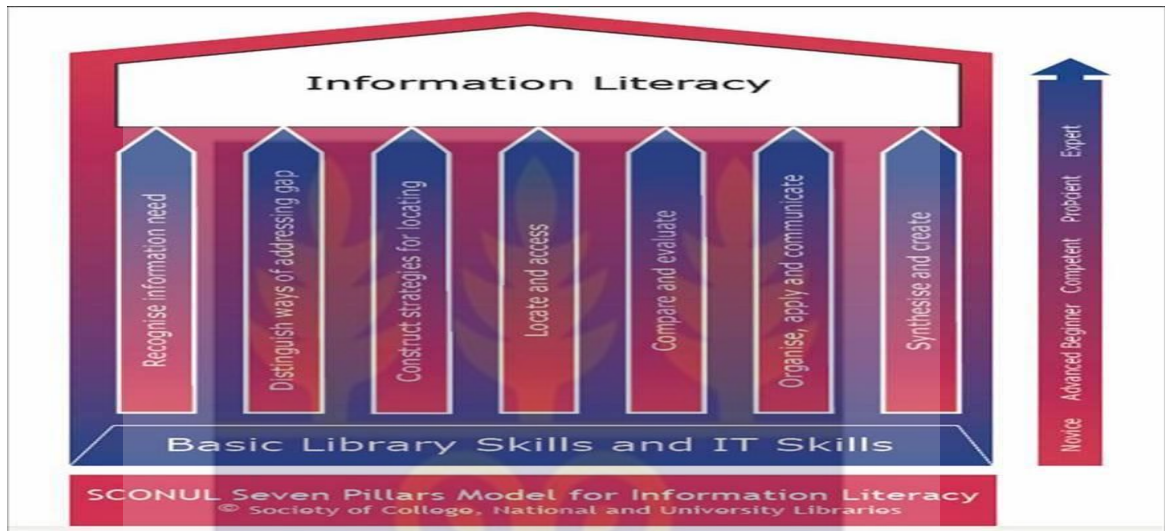


Fig 1.1: The original model of the seven Pillars of Information Literacy, SCONUL (1999)

The core model indicates that an individual’s aptitude, behaviour, background and experiences will influence how they react to information literacy development. In Figure 1.2 below, the model is represented as a three facet circular building on an information landscape in the information world with regards to teacher’s perception at a given time. The coloured portion depicts teacher’s information landscape. The circular nature of the model is an indication that becoming information literate is a continuous process which begins with an individual teacher’s capability to identify the need for information, know the scope and extent of information, plan the use of information, gather various forms of information, evaluate information, manage and present information. Ideally an individual

teacher will have to move from identifying information through to presenting information in a circular direction; but in practice an individual teacher can decide to develop within several pillars concurrently since they are often closely related. The circular nature of the seven pillars of SCONUL (1999) model is shown in figure 1.2.

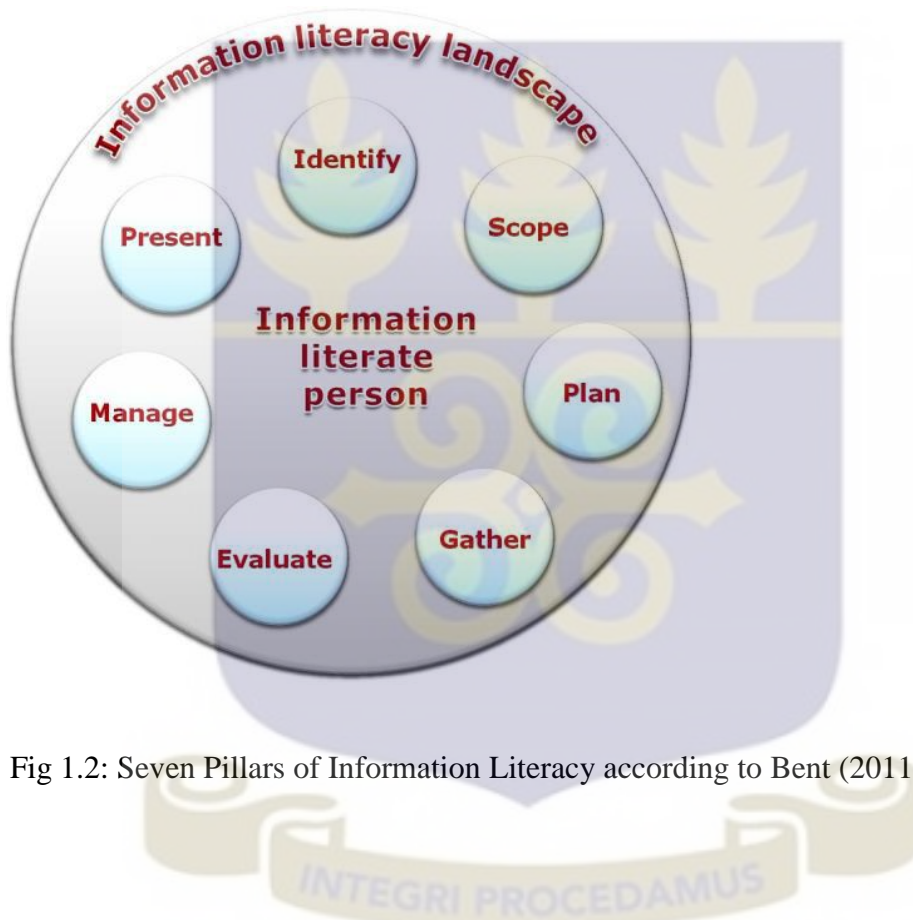


Fig 1.2: Seven Pillars of Information Literacy according to Bent (2011)

Fig 1.3 below shows a cross-sectional representation of the seven pillars of SCONUL (1999) model according to Bent (2011).

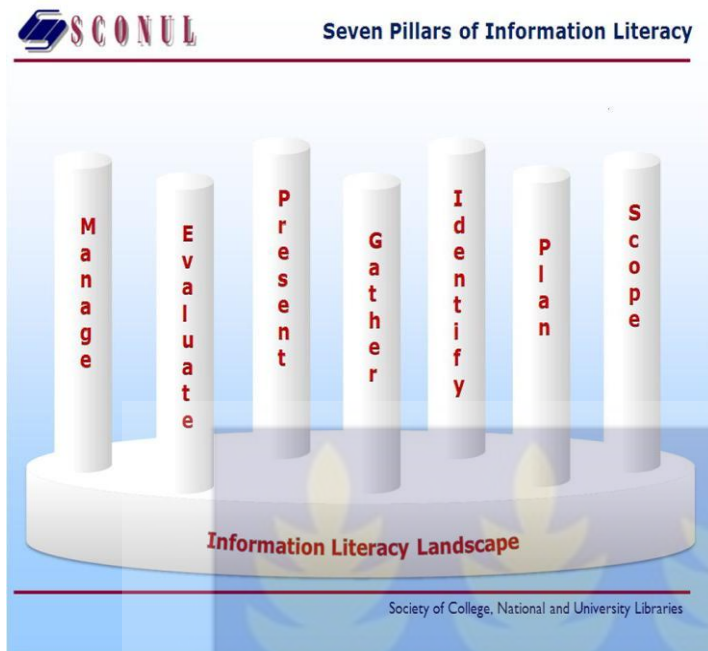


Figure 1.3: Seven Pillars of Information Literacy according to Bent (2011)

In Figure 1.3, the model is pointed towards the set of skills and understandings of teachers; for teacher communities a “lens” should be developed to throw lights on different attributes of teachers in either a simple or complex statement. The language used should be well-known to the specific teacher community. In adopting this model teachers should be flexible. Each pillar represented in the model (FIGURE 1.3) is explained below.

Pillar one: Identify

The information literate teacher should be able to recognize personally the need for information. In the mist of information explosion teachers should develop learning habits to actively seek information, have better understanding of what new information is being produced and in what forms it is being produced. It is considered that a careful use of this

pillar will guide this study to review the current situation of how teachers identify their information needs.

Pillar two: Scope

The second pillar deals with the information literate teacher's understanding in assessing current knowledge and being able to identify gaps. Teachers should demonstrate access to current knowledge on the subjects they teach. They should be able to identify gaps that exist in that area. Information literate teachers must understand the characteristics of different types of information sources and the formats in which they appear and the use of new tools as they become available to them. Pillar two in the study will bring to light how teachers recognise gaps in their subject areas.

Pillar three: Plan

This pillar involves the adequacies of an information literate teacher to construct searching strategies to find information. Information literate teachers should possess the knowledge of searching techniques available for finding information. They should be able to find information using appropriate keywords and concepts within a specified limit. It is believed that the use of this pillar in the study will highlight the aspect of teachers planning their searching strategies to find information.

Pillar four: Gather

Pillar four signifies the information literate teacher's capability to locate and assess information and data needed. Information literate teachers should understand how information and data are gathered from print and electronic sources. They should

recognize the need to be abreast with current information. They should also be able to use appropriate retrieval means to capture full text information from different sources. The use of pillar four in the study will observe how teachers use collaborative tools to create and share information.

Pillar five: Evaluate

Pillar five entails teachers to compare and evaluate information and data from different sources in terms of quality, validity, accuracy, authenticity, reliability and relevance. They should also understand the information and data landscape in their teaching context. An efficient use of this model will bring to bear how teachers evaluate their information sources.

Pillar six: Manage

How to organize and manage information professionally and ethically is identified in pillar six. It looks at information use of teachers with regards to copyright laws and the ability to meet requirements for academic integrity. Manage as the sixth pillar of the model will be demonstrated in the study, awareness of information ethics of teachers.

Pillar 7: Present

With reference to pillar 7 the information literate teacher must apply the knowledge gained by presenting the results of their research in different forms and formats. The teacher should thus be able to blend research results to create new knowledge and distribute it in varying ways. Also teachers should be able to summarize the results of a study verbally and in writing. The proficient use of the final pillar of the model will emphasize the presentation of research results by teachers in diverse ways to students.

1.8 Significance of the study

1. Due to the importance of IL, developing the capacity of teachers in that regard will be of great benefit to both the teachers and the students they teach. One way to do this is to formulate policies that will incorporate IL into the curriculum of Colleges of Education and Secondary Schools. This study therefore serves as a guide for policy makers, especially the Ministry of Education.
2. The study will offer Ghana Education Service guidelines for planning, organizing, managing and evaluating IL programs for teachers.
3. The findings of this study provide guidelines to Secondary Schools in the implementation of information literacy training programs for teachers.
4. The study contributes to scholarly literature in information studies in Ghana as well as will serve as baseline information for further studies of information literacy in Ghana.

1.9 Organization of the study

The study is organized in six chapters as follows:

Chapter One: This Chapter introduces the study by giving the background information, the statement of the problem, purpose of the study, objectives of the study, research questions, scope of the study, theoretical framework as well as the significance of the study.

Chapter Two: deals with the literature review. Reviewing specific areas related to the current study under the following: the concept of information literacy, characteristics and attributes of an information literate person, information literacy and teacher development

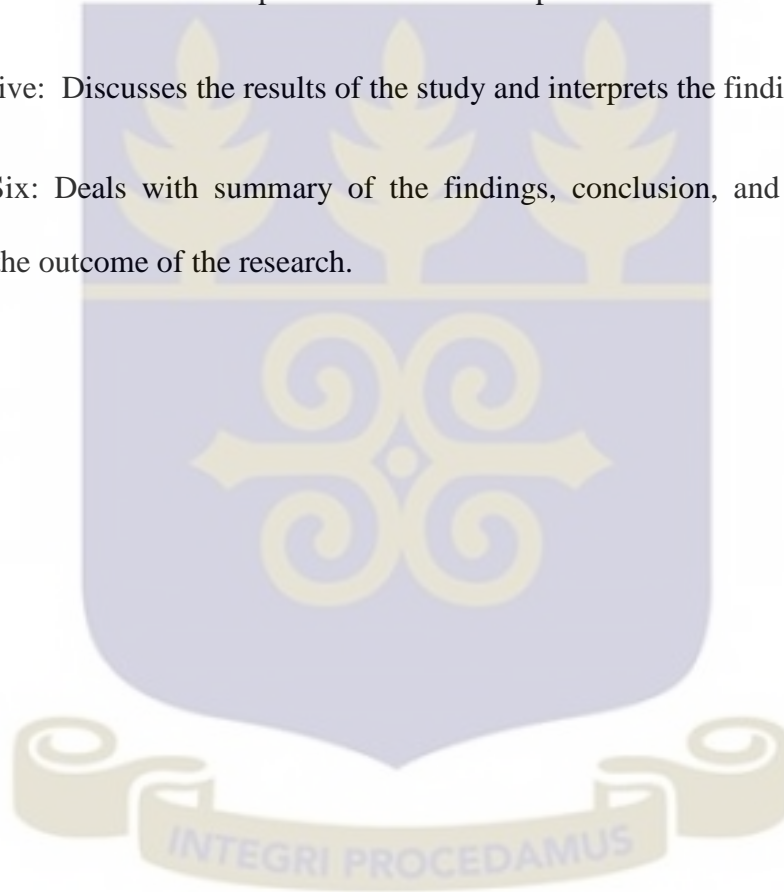
training, models of information literacy for teacher development training and barriers that mitigate the development of information literacy skills among teachers.

Chapter Three: Describes the methodology which covers the research design, selection of case, population, sampling and sampling technique, instrumentation, data collection and analysis of data.

Chapter Four: Deals with the presentation and interpretation of the findings

Chapter Five: Discusses the results of the study and interprets the findings.

Chapter Six: Deals with summary of the findings, conclusion, and recommendations based on the outcome of the research.



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CHAPTER TWO

REVIEW OF RELEVANT LITERATURE

2.1. Introduction

The essence of reviewing literature is to reveal what other studies have said. The understanding of other related studies enables the researcher to tackle the problem being investigated. The following have been outlined by Leedy (1993), as the benefits in reviewing literature; it reveals investigations similar to the problem and the methodologies the researcher used in arriving at conclusions, and can clarify a method for dealing with a similar situation you encounter in the course of your study and will assist to suggest avenues of approaches in difficulties for the current study.

The relevant areas reviewed in this chapter are: the concept of information literacy, characteristics and attributes of an information literate person, information literacy and teacher development training, models of information literacy for teacher development training and the barriers that mitigate the development of information literacy skills among teachers' in second cycle institutions in the Cape Coast metropolis.

A number of studies have been conducted in developing countries on the use of SCONUL to primarily investigate the IL level of teachers and students in higher and secondary education. However, the application of SCONUL in a comparative study of IL level and the understanding of teachers and students in different learning environment was left out. In Ghana, not much has been published about the use of SCONUL to investigate the IL level of teachers in second cycle institutions. It is against this background that the current study seeks to use SCONUL in a comparative study to look into the IL level of secondary school teachers in Ghana. In this light, the researcher has

made effort to review literature related to the study with the main themes of the objectives of the study in mind.

2.2. The concept of information literacy

According to Doyle (1994), the concept of information literacy was first introduced in the United States of America in 1974 by the then President of the United States of America Information Industry Association, Paul Zurkowski within the context of a report he wrote to the National Commission on Libraries and Information Science to attain universal information literacy by 1984 and also to bring on board the needs of people in newly established technological milieu (Kapitzke, 2003).

Zurkowski (1974) gave details of the concept in addressing a goal within an information policy, to transit the traditional library services into a modern sector information delivery to articulate the suite of new information industries that were evolving at that time. To him, information literate individuals have adequate training in the application of information tools to their work. Thereafter, a range of models and terminologies in IL have been developed worldwide in the literature. The concept has assumed centre-stage status and people have increasingly shown interest in defining IL including academicians and librarians.

Literature confirms that the concept of “information literacy” cannot be attributed to a single study or author but relatively from many studies and from various disciplines. Jorosi and Isaac (2008) established in their study that there are various definitions, interpretations and conceptions of IL; they concluded that there is no clear-cut definition for IL. In reviewing key contributions to the development of the definitions of IL, the American Library Association (ALA) Presidential Committee on Information Literacy

(1989), put forward that for someone to be information literate, he or she must be able to recognize when information is needed and show competence to locate, evaluate and utilize information effectively and efficiently the needed information.

The competences implied by this definition involve an understanding of:

- The available resources.
- How to search for information.
- The importance to evaluate information found.
- How to use or work with information found.
- Legal implications of using information.
- How to present or share outcomes of information.
- How to handle findings of information

The US Association of College and Research Libraries (ACRL, 2000), defined key areas in IL as the ability to:

- Determine the nature and scope of information needed.
- Access needed information efficiently.
- Evaluate information and its sources appropriately.
- Utilize information to achieve a specific purpose.
- Understands the social, legal and economic issues affecting the use of information.

The Society of College, National and University Libraries [SCONUL] (1999), a task force on information skills propounded the seven pillars of information literacy to assess the information literate person.

According to SCONUL (1999), librarians and teachers over the world have shown massive interest in the use of the SCONUL (1999) model to deliver information skills to their learners. To confirm this assertion, Johnston and Webber (2003) indicated that SCONUL's "seven pillars of information literacy" is generalized thereby avoiding the risk of limiting IL to only educational context. Thus unlike other frameworks, SCONUL extends IL to a broader information society including teachers, students and persons of non-academic communities.

According to Virkus (2003), the seven set of skills in the pillars demonstrate an iterative process by which information users improve from novice to expert by practicing the skills; thus from a competent information user at the base level of the pillar (novice user) to an information-literate person (expert user). Some users of the SCONUL model prefer the cyclical approach to demonstrate that becoming an information literate person does not follow a linear sequence, but rather there can be development within several pillars of the model simultaneously and independently, although practically they are closely linked.

Korobili et al. (2011) investigated Greece teachers' perception of IL. The study indicated that teachers' in Greece knew little about the concept of IL. The findings of Korobili's study contrasts with Probert's (2009) investigation of teachers' perception of IL where Probert said that most teachers' are aware and understand the concept of information literacy. Korobili's study noted that most teachers misinterpreted IL to be computer literacy. The outcome of Korobili's study also revealed low use of electronic resources; 40.64% of teachers had never used electronic resources to search for information. The author attributed low usage of electronic resources to the fact that, some teachers do not see the need to look for information for teaching elsewhere apart from textbooks.

A research by Ojedokun (2014) looked at librarians' competence in IL in South West Nigerian Universities. The study revealed clearly that librarians were not information literate. The study again recognized that librarians were not familiar with search engines, bibliographic sources, the use of bibliographic data bases as well as evaluating web information and using web tools. Ojedokun by the findings of the study established low IL rate of librarians in South West Nigerian Universities of Nigeria. The author recommended training and re-training of librarians.

2.3. Characteristics and attributes of an information literate person

The self-directed learner should portray the characteristics and attributes of an information literate person. SCONUL (2011) posits that information literate people are conscious of how they gather, use, manage, synthesize and create data in an ethical way with the needed information skills to do so effectively.

In the context of social development, Bundy (2004) indicated that information literacy is a must competency for

- Participative citizenship
- Social inclusion
- The creation of new knowledge
- Personal empowerment
- Learning for life

As a step in the right direction, the Scottish Executive (2004) reported that the Scottish government reviewed and raised the standard of learning through IL with the aim of

giving young adults the chance “to become successful learners, confident individuals, responsible citizens and effective contributors to society and work”. For young persons in Scotland to become information literate persons, teachers need to stand tall in inculcating IL into students.

In view of this, Williams and Wavell (2006) looked at teachers IL in relation to their classroom practices through a semi-structured group discussion. The study investigated teachers’ conception of IL which included how teachers look for information and facts for their teaching activities, how they use technology to find information and how they use the school’s library. According to the results of the study, Williams and Wavell (2006) indicated that the concept of IL was new to most teachers. Also the study revealed that some teachers’ were not aware of the various sources of information that are available and therefore were not able to teach their students how to use these sources of information.

Merchant and Hepworth’s (2002) study on teachers IL indicated that teachers used the Internet and schools library resources frequently to prepare teaching note, develop new concepts and seek clarification on a topic to be taught. Merchant and Hepworth said that teachers in their quest for information for teaching consult familiar resources first. According to Leckie et al. (1996), Familiarity and accessibility of information sources are important and therefore affects an individual’s use of a particular source. Doyles (1992) described the attributes of the information literate person in a Delphi study. In the study a group of experts concluded on the characteristics and attributes associated with information literacy. The author pointed out that the information literate person is an individual who knows that precise and absolute information is the basis for intelligent

decision making. He or she recognizes information gaps, finds potential sources of information and with the use of search strategies accesses different sources of information, weighs up information, categorizes information, inculcates current information into an existing body of knowledge, and utilizes information critically to solve problems. To be information literate an individual must demonstrate these characteristics.

Teachers' source and choice of information as IL persons was established in Merchant and Hepworth's (2002) study on teachers' information literacy in secondary schools. The findings of the study revealed that teachers use information sources like the Internet, textbooks, newspapers, departmental and personal resources and TV to gather information for teaching their students. They gave reasons for using such resources as to research on background information on a topic in order to prepare lessons for teaching, searching for up-to-date information, checking for factual information and looking for web sites and books of relevance.

A study by Bruce (1995) revealed that no graduate can be referred to as educated unless he or she is information literate. Therefore educational environments including second cycle institutions must ensure that staffs who engage in teaching are adequately prepared and resourced in the characteristics of IL. The author emphasized that, a general description of who an information literate person is at all levels will pave way for educators and information providers to infer these characteristics in relation to specific contexts and disciplines. The author further indicated that a more general description considered to be authoritative of an information literate person is that an individual

should be in a position to realize when information is needed and that individual should have the skill to locate, evaluate and use effectively the information needed.

Anunobi and Udem (2015) conducted a case study using SCONUL as a framework to examine IL competences of LIS postgraduate students in the Federal Universities of South East Zone of Nigeria. According to him the SCONUL model significantly outlined in detail the IL levels of LIS postgraduate students. The results of the findings indicated clearly that 95% of LIS postgraduates' students understand when there is the need for information, 87% of students know how to locate information, and 82% of students understand how to evaluate information and a total percentage of 88 of LIS postgraduates know how to utilize information. The author of the study indicated that LIS postgraduate students in the Federal Universities of South East Zone of Nigeria possess a moderate level of IL skills.

Leckie et al., (1996) opined that knowledge of an information source, the content and the perception formed about the source determines the use or non-use of the source and that the more sources people are familiar with, the higher the likelihood that they will use them when they are confronted with an information need, this she added goes a long way to influence their information seeking behaviour.

2.4. Information literacy and teacher development training

The over abundance of information has necessitated education in the handling and use of information for the right purpose. Teachers in particular need to acquire the right skills in retrieving and sorting information for their teaching work. Globally, educating students to be lifelong learners rest in the power of schools teachers. ALA's Presidential Committee

on Information Literacy (ALA, 1989) identified and reported that the "information age is divorced from most teaching styles".

To rectify this situation and bridge this gap, ALA called for a restructuring of students learning process in order to create a new information-age school distinguished by interactive, self-initiated learning whereby the teacher will be thought of as a guide to the learning process. Recommendation five (5) from the ALA's 1989 report stated that "Teacher education and performance expectations should be modified to include information literacy concerns." This recommendation to a large extent will pave way for IL training programs that will prepare teachers to be information-literate, teachers after such IL training programs will be able to select and use educational resources appropriately to prepare their students to be information literate.

In higher education, for example in the UK context, Virkus (2003) reported from the UK that a Conference was held on Information Technology and Information Literacy in Glasgow for teaching IL, he stated that based on the conference, the British Open University, Edge Hill College of Higher Education, Cardiff University, Cranfield University, University College Northampton and the University of Sheffield have developed exciting IL programs, for example 'Good Practices' for students, teachers and staffs. The conference organized many illustrations of good practices in IL for participants.

According to the author most of these programs were based on the SCONUL, (1999) model. The author indicated that SCONUL model was used to engineer the 'Teaching and Learning Online' (TLO) program at the British Open University Institute of Educational Technology to help staff in the progress of online teaching and learning. The

study indicated that, the SCONUL model enabled teams to decide aspects of IL to be included in the course. Johnson (2000) noted that in higher educational institutions in Europe, the UK Standing Conference of National and University Libraries (SCONUL) have been the ring leader in the promotion for information literacy since 1999.

Virkus (2003) also stated that Finnish authors have criticized the Information Literacy Competency Standards for Higher Education approved by the ACRL as not suitable to the Finnish university educational system, even though the ACRL standards is considered as the bases of developmental work in Finland. Virkus (2003) reported that as a result of these criticisms, there has been massive acceptance and interest in the use of the UK SCONUL model for IL training in Finland. According to Virkus, SCONUL model is a model that illustrates obviously the processes of developing information skills.

A study conducted by Molloy (2012), to find out the effectiveness of the JISC Data Management Skills Support Initiative (DaMSSI) training project for UK HEI postgraduate Courses. The study investigated the data management skills and skills progress pattern of post graduates. Molloy used SCONULs' seven pillars of information literacy to map out individual course model to identify discipline-specific requirement of students. The findings of the study revealed that the SCONOL model was appropriate and consistent in supporting the data management training. The study suggested that the SCONUL model should be revised to reflect the wider data management cycle.

Available literature is evidence that students in secondary schools need help and guidance in their search for information for class work and assignments. For instance, Duke and Asher (2012), in an ethnographic research examined how students obtain, evaluate and manage information for their assignment and research work. The outcome of the study

brought to light that, students experience anxiety and confusion in their quest for informational resources for academic work. Duke and Asher proposed that the faculty, the library and librarians should be trained and collaborate to assist students in their search for information to accomplish their research and academic work. Teachers and librarians should be experts in IL before they can transfer these skills to users.

Miller and Murillo (2012) also confirmed in their study that students often struggle with finding informational resources for academic work. According to the research findings, Miller and Murillo (2012) noted that students prefer help from their teachers, student's friends, or their own self-instruction but do not consider help from librarians. It brings to light that students to some extent wish to depend on their teachers for help for finding informational resources for their academic work. This demonstrates the role teachers play in providing students with opportunities of using informational resources. Looking at the role of inculcating IL into students, it can be said without any shred of doubt that no other personality can have influence more profound than the teacher. Therefore the teacher must be trained in IL.

Webber and Johnson (2000) conducted a study on students at the University of Strathclyde looking at their conceptions of information literacy. The study investigated the use of SCONUL model and others. SCONUL emphasize progress development and iterative pattern whereby progress is achieved through practice of the skill. This was confirmed by the study as the authors realized through observation that most students progressed during the semester especially with much reference to students with little knowledge in basic library and IT skills. Webber and Johnson's (2000) study further recognized that most students from the beginning were not able to relate and comprehend

the seventh pillar, thus synthesizing information and creating new knowledge out of information obtained. They noted that SCONUL placed more emphasis on the middle pillars thus locating and accessing relevant information but Webber and Johnston said that students in the course of the study showed progression in evaluation, application and organization of information.

In the course of the study, the authors recognized improved students performance during the class and confirmed that SCONUL model gives detailed explanation of what is expected of the individual in order to attain IL competence. The students of the above study experienced training in IL from novice user to expert user as the SCONUL model have explained. In their conclusion Webber and Johnston (2000) mentioned that, there is the need to sustain progress and appreciate the relationship between the various pillars of SCONUL in IL training, this they said requires time to develop.

On the other hand, Bruce (2004) is of the view that there should be international and national policies and guidelines for teacher education in IL, and the organization of information literacy programs for schools to support staff development. To help bridge the gap between policy and practice, she said IL should mirror the changes to educational culture connected to promoting lifelong learning. She stressed on the need for institutional policies to sustain information literacy education programs to promote staff development and curriculum initiatives. The above point stress out the need for schools to have IL policies for teacher development but its sustainability, thus support and implementation must not be underestimated. Bruce (2004) projected four critical components relevant for IL training:

1. Resources to smooth the progress of learning specific skills.
2. Curriculum that presents opportunities of learning specific skills.
3. Curriculum that promotes enquiry- based learning and also gives way for interactive learning in the information environment.
4. Curriculum that offers the chance to ponder and record events of useful information practices.

Rader (2002) indicated in his study that even though policy mandates information literacy instruction in schools in New Zealand, IL is not always supported at the school level. This he indicated poses a challenge to teachers in the implementation of IL in their instruction since there is no appropriate professional development for teachers.

Merchant and Hepworth (2002), in their study said that there should be training and guidance for teachers on how to incorporate information skills into their teaching. This suggestion by Merchant and Hepworth (2002) somehow is a dream as Lavery and Reed (2006) reported that teachers usually enter the teaching field without the necessary information literacy skills, knowledge and competence that is expected of them. Lavery and Reed (2006) confirmed the assertion made by Williams et al. (2007) stating that teachers themselves are not essentially confident users of information therefore they prefer to restrict their information resources to relatively few sources. Merchant and Hepworth (2002) recommended that greater emphasis should also be placed on information literacy skills during teacher training education. The authors said that currently, much has not been done to create awareness in teachers about the importance

of IL in their self development let alone to inculcate information literacy skills in their students.

To this effect the National Council for Accreditation of Teacher Education (2002) predetermined, that teacher candidates must understand the roles and responsibilities of the education profession thus teacher candidates should be able to use and integrate technology and information literacy in their teaching instructions to enhance student learning. To conclude, the National Council for Accreditation of Teacher Education (2002) said that teacher candidates should no longer see IL as a byproduct of education but rather adopt the skill of IL to accomplish their academic work.

It has therefore become necessary for stakeholders of secondary schools to design training and development programs that will enable teachers to take robust advantage of the information and communication infrastructures available to them for their teaching activities and also to help their students in the use of information appropriately.

One of the main objectives of secondary education over the world in this era of information explosion is to develop information literacy skills of teachers in order for them to prepare students for further learning, and equip them with the knowledge and skills that will enable them to become lifelong learners. With reference to the above discussion, Moore (2002), in a white paper prepared for UNESCO made these recommendations to the Departments of Education:

- Ensure that pre-service teachers practice information literacy as an aid to them as learners, instructional designers and responsive facilitators of learning make sure

newly qualified teachers are competent to develop information literacy experiences for their students.

- Ensure professional development for in-service teachers includes personal exposure in learning through information literacy and information computer technology (ICT).
- Ensure education for schools and teacher-librarianship keep focus on consistent, coherent information literacy development.

Moore (2002) reported that training programs for teachers in IL should start right from colleges of education. He also suggested that instructional designers, facilitators for learning, educators for schools and teacher- librarianship should play a key role in IL development in schools and should therefore collaborate. Ministry of Education (2006), New Zealand, mentioned that there will be teacher support focusing on professional development in information literacy. Bryce and Withers (2003) are of the view that, schools with interest in lifelong learning should also have a strong interest in information literacy development for teachers.

Considering the changing needs for secondary education, the need for teachers to develop IL skills is highly recognized and emphasized thus expectations from school teachers have increased immensely. Williams and Wavell (2006) asserted that teachers are obliged to develop strategies for their students to access, evaluate, synthesize and interpret information from a wide range of sources in various forms and formats. They proposed that teachers should be encouraged to engage in formal continuing professional development (CPD) activities in IL. CPD is another training opportunity for teachers to

develop their competence in IL skills apart from those that have to be organized by their schools.

Concerning CPD programs for teachers, Probert (2009) cited University of Auckland (2008) who reported that information literacy professional development courses in New Zealand are accessible by teachers at all levels irrespective of their teaching areas. Probert (2009), testifies that teachers who have undergone such training programs reported that, they have gained strategies for successfully teaching skills and moreover can implement information literacy instruction into their schools curriculum.

In looking at the importance of teachers' competence and skills in IL, Wen and Wen (2008) also acknowledged competency standards in information literacy for teachers and recommended continuing training in IL skills. The authors in addition recommended that second cycle institutions should look at how well teachers use IL in their teaching. Without information literate teachers, students understanding and use of IL might be in danger since teachers cannot teach what they do not know, in other words teachers themselves must possess IL competence in the first place before transferring these universal set of skills to students.

Williams and Wavell (2007) indicated in their study that teachers' understand IL as a separate subject from the subject they teach therefore; they find it difficult to help students use IL. Probert (2009) further looked at information literacy teaching by regular classroom teachers and again cited Moore (2002) who indicated in his study that primary teachers in five Wellington, NZ secondary schools and primary schools teachers were not acquainted with the concept of information literacy. Many teachers according to Moore

(2002) appeared not to be explicitly inculcating the skills into students. Perhaps the reason may be inadequate support for training teachers in IL skills by their schools. The situation seems the same as Probert (2006), had a similar result in his findings whilst working with teachers from several Auckland, NZ secondary schools. The findings according to Probert (2006) indicated clearly that some teachers have not developed IL skills, therefore their inability to transfer the knowledge of IL to their students.

Flockton et al. (2006) are of the view that the ideology and goals of information literacy are not extensively understood, supported or practiced by the teaching profession. Secondary schools teacher training programs in IL should focus on all teachers to enable them gain competences and skills irrespective of their schools and their subject areas; they are expected to receive training in order to access, locate, use and communicate information in an ethical way. Hereafter, teachers should be prepared to introduce students to information sources and help them to develop information literacy skills. Empirical evidence confirms that teachers can best do this if they themselves are information literate and recognize the importance of IL in the educational process.

Herring (2006), conducted a study in a high school in the United Kingdom. An aspect of the study examined teachers' views of information literacy skills. The study established that teachers had a range of understanding about the importance of information literacy skills. Also the study discovered that teachers had preference for electronic sources of information over printed sources. According to Herring (2006), the teachers' views in many ways reflected the evidence that most teachers are influenced by IL programs organized by the school. Todd et al. (2003) confirmed the fact that, in inculcating IL into

students, teachers who have adequate training in information literacy can be very effective.

Another study by Merchant and Hepworth (2002) looked at the level of information literacy skills of teachers in a wide range of schools. They used a qualitative research technique to observe the information literacy skills of teachers and pupils in two UK grammar schools. Most of the teachers were found to be information literate, majority of the teachers were information literate as a result of their personal interest but not because of any formal training. In the findings (47.8%) respondents affirmed that they have acquired the necessary information literacy skills by themselves. An important aspect of the findings indicated that teachers' skills and attitudes towards information were not being transferred to their pupils.

Vividly, it can be seen from this study that these secondary schools had no policies that facilitated comprehensive training and development in the generic skills of IL for teachers because the teachers stated categorically that it was their personal interest and understanding in IL, which encouraged their training in IL. On the other hand, if these schools had policies that facilitates teacher training in IL, then the policies were not being implemented, which is not prudent enough.

Similarly Togia et al. (2014), in a study in Greece demonstrated that teachers were untrained in IL by their schools and considered themselves as insecure and incompetent in their ability to coach students in IL. Togia et al. recommend teacher training opportunities, on-the-job training and guidance in IL training for teachers. This they said

will boost teachers' ability to support IL training and teaching in their schools. The study also suggested the integration of IL instruction into teacher education programs.

Bawden and Robinson (2002) conducted a case study on a summer school, where training course in information literacy was organized for information professionals including teachers. The study revealed that, the professional development in IL for teachers enabled them to inculcate IL skills into students; these skills empowered students with critical thinking skills which helped them tackle academic work and also to become independent lifelong learners. Bawden and Robinson (2002), stated that for teachers to deal with the complications of the present information situation, a complex and broad form of information literacy is required.

To them information literacy training for teacher development must be correspondingly expansive, varied and context-sensitive. Probert (2009), citing Hannah (2005) indicated that an action research project that was carried out at a Wellington, NZ, high school, also established that planning properly the training of information literacy for teachers yields a good outcome.

In organizing training and development in IL for teachers, Hepworth (2000), outlined important aspect of IL learning which includes

- Education in the use of information tools to obtain, organize, and distribute information.
- Education in the thinking process in relation to knowledge creation
- Education in intellectual ethics in subject area.

- Education in how to communicate with people and distribute data information.

The key areas of information literacy indicated by Hepworth (2000), will guide training programs in IL for teachers. Effective training in IL will allow teachers to cope with data smog by equipping them with the needed skills to find and use information. As a result, teachers will make critical decisions in the use of information for their teaching activities thereby increasing their productivity which will be beneficial to students and the society at large. Walraven et al. (2008), from the Netherlands stated that, teachers lack knowledge and have the assumption that students will develop IL skill naturally. They indicated that IL literacy “has been given little attention in schools”.

From observation, the assumption that secondary school students IL skills can develop naturally may be untrue as these skills need to be learnt. In other words, IL skills for secondary school students need to be inculcated by teachers. From Australia, Cass (2004) pointed out the ultimate relevance of teacher development training in IL by stating that all classroom teachers need professional development in this area. Emmons et al. (2009) believe that the collaboration with academic libraries to prepare teachers to be information literate is very important. Peacock (2001) is also of the view that IL competencies and skills within the curriculum involve the collaborative efforts of academics, staff developers, learning advisers, librarians and administrators.

Todd et al. (2003), in USA, established that teaching of IL skills by trained school library staff yields a positive outcome. Oberg et al. (2000) stated that support from the school principal is also a key factor in the achievement of effective information literacy programs in schools. Probert’s (2009) investigation again revealed that interestingly

many teachers used an information processing model for their teaching but did not understand its importance even after having in-school professional development training. According to the author these teachers did not get the understanding of IL even after displaying diagrams of the model in their classrooms as a guide. The finding of Probert's (2009) should be taken as warning sign for secondary schools having training or planning to have training and development programs in IL for teachers, since the skills in IL cannot be acquired overnight. Sekyere (2008) believes that successful teaching and learning depends on teacher preparedness. To start with, teachers must be prepared and ready for training programs in IL.

2.5. Models of information literacy for teacher development training

Apart from the seven pillars of information literacy propounded by SCONUL (1999), other models have been propounded to serve as guidelines that may influence IL training programs for teachers in both developed and developing countries. Prasanna (2006) said that, to attain the information literacy objectives in IL training, various information scientists have brought to light different models. According to the author these models assist teachers to realize educational goals. Prasanna (2006) outlined examples of such models for teachers training in IL as:

- The PLUS model- Herrings (1996)
- The big 6- Eisenberg/Berkowitz (1987)
- Information Seeking Behaviour -Kuhlthau (1993)

2.5.1 The PLUS model

This model was designed by Herrings (1996), to facilitate thinking skills and self evaluation to promote teacher development in IL. It looks at the Purpose, Location, Use and Self-evaluation during the time of developing information literacy skills. The plus model is not a linear model; teachers may advance within the model concurrently.

The varieties of skills incorporated in the model for teacher development in IL are as follows;

Purpose:

- Cognitive skills- critical thinking skills needed by teachers to identify the already existing knowledge.
- Thinking skills- Brainstorming of concepts as thinking skills exhibited by teachers.
- Skills in formulating questions- Teacher's skills associated in designing questions.
- Skills in identifying information resources- Teacher's knowledge and competence in recognizing information resources.

Location:

- Locational skills- This focuses on the capability of teachers to find information from a variety of sources.
- Selection skills- Teacher's ability to evaluate the usability of information resources.
- IT skills- Teacher's knowledge in using electronic sources like the Internet.

Use:

- Reading skills- Reading abilities of teachers to read information resources to select relevant information or ideas.
- Interactive skills- Communicating skills of teacher's to understand what is being read, viewed or listened to and teacher's capabilities to incorporate this to existing body of knowledge.
- Selective skills- Teacher's ability to select and use the right information for the purpose that prompted its acquisition.
- Evaluation skills- Teacher's ability to assess relevant information in relation to current information material and its sources.
- Recording skills- Here emphasis is placed on teacher's capabilities to document and take notes of what is being read.
- Synthesizing skills- Teachers understanding of bringing together similar ideas facts and information about a topic and incorporate this to existing body of knowledge.
- Writing or presentation skills-This part dwells on teacher's ability to present a well structured write up on essay, report or projects in order to utilize information effectively.

Self-evaluation:

- Self-evaluation skills- Teacher's assessment of the research process and future application of information.

In a nutshell, the PLUS model if effectively applied in the training of IL for teachers, the model will equip teachers to know the purpose for which information is needed,

where to location information, how to use information appropriately and above all personally evaluate the information found and its sources.

2.5.2 Big 6 Eisenberg/Berkowitz (1987)

Another relevant model designed to promote training and development in IL for teachers is the Big 6. Information literacy in this model is described as systematic information behaviour.

It enables teachers to implement lesson and teaching activities. According to Bruce (2002), the IL skills in this model can be thought of as systematic information behaviour. She added that gaining knowledge to be information literate includes practicing the use of the system, or the steps, when engaged in the learning tasks. The skills in the model are acquired in 6 stages.

Stage1- Involves task definition which enables teachers to state specific problems and their information needs.

Stage 2- looks at the information seeking strategies that allows teachers to establish all potential information sources and make relevant selection.

Stage 3- Location and access, this stage involves teacher's ability to locate information from various information sources.

Stage 4- This is the usage of information stage, where teachers are able to engage in reading, listening or viewing and are able to make meaningful deductions from information found.

Stage 5- The objective here involves teacher's capabilities to gather, organize and present information from diverse sources.

Stage 6- The final stage of the model looks at how teachers judges the effectiveness and efficiency of the research process.

Also, the big six model if used accurately in training teachers in IL will empower them in defining their information needs, then look out for strategies that will best help them to find information sources thereby making the right choice of information sources. Hereafter teachers should be able to locate and access information from variety of sources and realize how useful the information found will be relevant. From the diverse sources teachers should be in the position to gather, organize and present information found in the form of supplementing the curricular. But before using information for teaching activities, teachers should be able to evaluate the usefulness of any information found and its source.

2.5.3 Information Seeking Behaviour -Kuhlthau (1993)

Another model that is relevant to teacher training in IL is the Information Search Process (ISP). It is a six stage model by Kuhlthau (1993), to help in teacher training and development in the process of information seeking. The model recognizes three realms of experience common to each stage as:

- The affective (feelings)
- The cognitive (thoughts)
- The physical (actions)

These three stages represent the core model. There is the notion that there is uncertainty in finding information, thus affective and cognitive state of a person influences the increasing and decreasing of the information seeking process. The model indicates that the principle of uncertainty for information seeking is that usually information increases

uncertainty in the early stages of the search process. For teacher's, the affective symptoms of uncertainty, confusion and frustration that show up in the early stages of the search process in information seeking are connected to unclear thoughts about a topic or specific problem a teachers has in mind. The thought of a teacher becomes clearer thereby focusing more on the research process in information seeking as the search process progresses. Uncertainty is removed thus increasing the confidence and interest level of the teacher.

The affective aspects of teachers in the search process includes uncertainty and confusion that affects relevant judgments to be made as well as cognitive aspects which involves personal knowledge and information content. Through actions teachers find information found relevant to the general topic at the onset of the search process.

The holistic views of information seeking process of teacher's perception in the ISP model are:

- Initiation - Teachers becomes aware of lack of knowledge in uncertainty. Thus the realization of information need. Teachers act on possible avenues of topics and where to get information to begin the search process.
- Selection - Teachers understanding of the research topic or problem to be investigated and preliminary uncertainty gives way for readiness to begin the search process based on personal interest and information available at hand.
- Exploration - Teachers feelings of fear, confusion and inconsistency arises when incompatible information is encountered. Here, there is the need for teachers to read more about the general topic or problem to become informed and relate new knowledge into existing body of knowledge. Exploration is seen as the most

difficult stage of the ISP model when information found cause a decrease or dip in confidence.

- Formulation - At this stage, teachers get more focused on the search process with information found as uncertainty reduces and confidence level increases. It is considered the turning point in the ISP model.
- Collection - Here teachers are able to recognize and gather relevant information for the search process while uncertainty decreases and personal interest grows deeper. Relationship between the teacher and the information system function more effectively and efficiently.
- Presentation - This involves teacher's completion of the search process and the ability to communicate his/ her findings of the search process to students or the teacher's ability to put the findings of the search process to meaningful use.

2.6. Barriers that mitigate the development of information literacy skills among teachers

Evidence in research reveals that the training and development programs organized for teachers in secondary schools in the competencies and generic skills of information literacy comes with numerous challenges. Williams and Wavell (2006), researched into information literacy in the classroom. The study accessed secondary school teachers' conceptions and how best teachers can help in the development of information literacy in their schools. The findings of the study demonstrated that teachers were not confident; they did not know how they could influence and effectively support the development of information literacy in their school. Williams and Wavell (2006) further stated in the same study that most teachers felt information literacy was a cross-curriculum skills

building, which is separate from their subject areas of teaching rather than a way of learning and teaching. Therefore the development of IL by teachers is unnecessary.

Another challenge revealed in the study emerged to be the current educational context.

“Teachers felt constrained by overloaded curriculum content, with timetables too tight to allow time for information literacy skills development” though some teachers go through IL training in their schools. Stockham and Collins (2010) said that these skills received by teachers in IL training lacked priority in practice. Many teachers have no interest, time or opportunity to incorporate the skills acquired in IL training into daily lessons and teaching activities, teachers who have time and opportunity are not interested and prepared for this role.

Duke and Ward (2009) found in their study that even though teachers have education programs in IL, most teachers were not sufficiently prepared to use IL skills in their teaching. From these reports IL training in schools for teachers may not be encouraged and sustained by schools. To this effect Torrington (1991), states that training programs can be easily irrelevant, since it may fall into the trap of training for training sake. Bruce (2002) outlined some important difficulty in IL programs for teachers as:

- Some teachers may find it difficult to understand that information literacy is not a requirement for learning, thus IL training is not a program of remediation.
- Some teachers may face difficulty in modifying, changing or constructing new designs for learning experiences.
- Also some teachers face the challenge of how they expect students to learn. They lack the initiative of encouraging students to develop IL skills in their learning since the process approach content is no longer vital.

- Finally the difficulty of technology; this involves learning to use technology and learning to use technology to support learning.

The points mentioned above are mostly some challenges found in IL training programs for teachers in developed countries according to literature but in developing countries not much has been reported on challenges of IL training for secondary school teachers.

2.7 Summary of literature review

The foregoing literature shows that information literacy is conceivably the foundation for lifelong learning in an era of continuous technological change. Available literature indicates that there are many definitions of IL but despite these definitions, a common characteristic or meaning runs through them. In second cycle institutions, literature demonstrates that information literacy is relevant for quality teaching and quality learning. Secondary schools need to ensure that all teachers acquaint themselves in IL through training so that they can help students to learn how to learn to become lifelong learners.

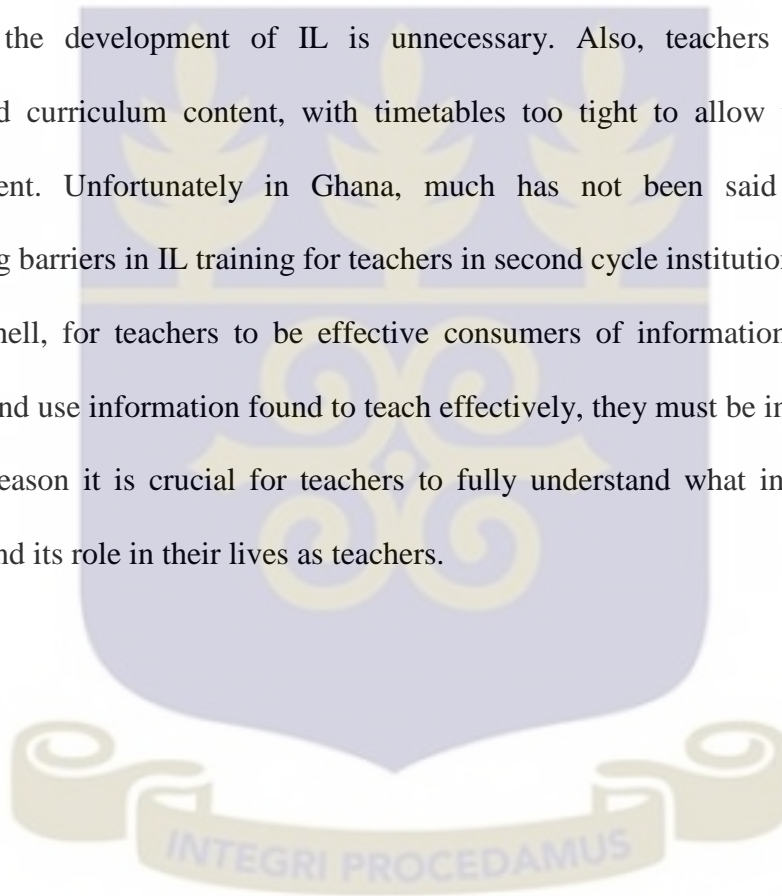
It is evident from the literature, that several authors recommend the use of the SCONUL model for IL training programs for teachers. However, currently not much has been published about the use of SCONUL to investigate the IL level of teachers in second cycle institutions in Ghana. This study seeks to use SCONUL model to investigate the IL level of teachers in selected secondary schools in the Cape Coast metropolis.

The literature established that secondary school teacher's training programs in IL should focus on all teachers to enable them gain competences and skills irrespective of their subject areas. Some models including the PLUS model by Herrings (1996), Big 6 by

Eisenberg/Berkowitz (1987) and information seeking behaviour by Kuhlthau (1993) were found to be relevant and can also be adopted in IL training programs for teachers to assist them to realize their educational goals.

Equally significant was the challenges or barriers that impede the training and development of IL skills among teachers in second cycle institutions. It was established in the literature that, most teachers stated that IL is a cross-curriculum skills building, therefore the development of IL is unnecessary. Also, teachers felt inhibited by overloaded curriculum content, with timetables too tight to allow time for IL skills development. Unfortunately in Ghana, much has not been said in the literature concerning barriers in IL training for teachers in second cycle institutions.

In a nutshell, for teachers to be effective consumers of information who can search, evaluate and use information found to teach effectively, they must be information literate. For this reason it is crucial for teachers to fully understand what information literacy really is and its role in their lives as teachers.



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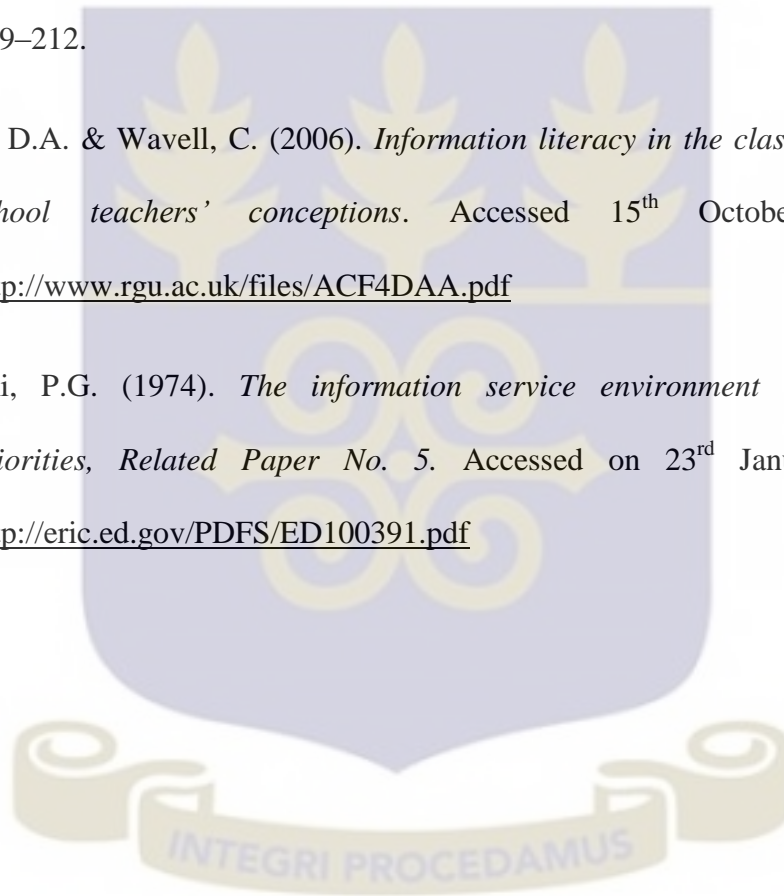
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CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter presents the details of the research design and the logic for choosing it. In other words, this chapter throws light on how the design was used, how the interview was conducted, the analysis of the data and the techniques that were adopted to analyze the data. Issues discussed in this chapter include the research design, selection of case, population, sampling procedure and sample size. Others are data collection procedure, instrumentation and the method of data analysis. Wiersma et al. (2005) posit that methodology is a theoretical structure, underlining assumptions and individuality of human perspective which entails overview to life, the meaning of knowledge and the understanding of human in relation to certain research method. Babbie (2002) defined research methods as the ways, techniques and procedures that are used in implementing the research design or research plan, in consideration to the underlying principles and assumptions that underlie their use.

Considering the above deliberations, the researcher built up a comprehensive approach showing how the study was carried out. The following sections therefore show how the study was carried out; this involves every step in the study. The researcher gave a detailed description of the issues under consideration with insight of how, where and when the study was carried out.

3.2 Research design

Research design provides the appropriate framework which specifies how data relating to a given problem should be collected and analyzed to expand knowledge and understanding. Babbie (2002) said that a research design is the plan that brings to light

the circumstances and procedures for collecting and analyzing data. A well-developed research plan enables the reader to build up confidence in the methods used as the researcher increases validity and minimizes error.

This study adopted the descriptive survey design to solicit information on the current state of the information literacy level among teachers in second cycle institutions in the Cape Coast metropolis. A descriptive survey is aimed at determining the nature of a situation as it exists at the time of the study. The descriptive survey spells out the nature of a given phenomenon and allows facts and findings to be reported as they are (Amedahe, 2002). Fraenkel and Wallen (2002) pointed out that a descriptive survey entails asking over the same set of questions in the form of questionnaire or ability test of a huge population by mail, telephone or in person. The outcome of the result obtained from the sample can be generalized as the representation of the population according to Leedy (2005). The descriptive method is concerned with the analysis of the relationship between variables and development of generalizations (Kirk, 1995).

Furthermore in investigating a variety of educational problems, descriptive study method is relevant (Gay, 1992) as it enables the researcher to observe, describe and document events as they emerge naturally. This design has been chosen based on the objectives of the study and the research questions associated with it. This study dealt mainly with examination of the current status of existing practices in the schools being studied. In spite of the benefits of the descriptive survey, there are other disadvantages. Fraenkel and Wallen (2002) maintained that it is difficult to ensure that the design is clear and not misleading. This happens because survey results can significantly vary depending on the exact wording of the questions. Notwithstanding this difficulty, the descriptive survey

design was appropriate for this study because of its ability to allow generalization from a sample to a larger population. In other words, generalization on a given phenomenon could be derived from a study from sample to a population so that inferences could be drawn about some characteristics, attributes or behaviors of the population (Alvy, Jacobs & Razavieh, 1993). Also sampled elements and the variables under study were simply observed as they existed naturally with no attempts to manipulate them. It is the most appropriate design and could lead to the drawing of meaningful conclusions from the study.

3.3 Selection of case

In the Cape Coast metropolis there are ten government senior high schools consisting of Ghana National College, Mfantipim School, St. Augustine's College, Adisadel College, Wesley Girls High School, University Practice Senior High School, Christ the King Academy Senior High School, Aggrey Memorial Senior High School, Cape Coast Technical Institute, Oguaa Secondary Technical School and Holy Child Senior High School. There are more than one thousand (1000) teachers in all these schools. For the purpose of this study the researcher focused on only two of the second cycle institutions which are Wesley Girls High School and Mfantipim School. Both schools fall into the category “A” or the best schools in the Cape Coast metropolis.

3.4 Population

Pilot and Hungler (1985) explained the target population as the aggregation of the study elements that meet a designated set of criteria. The population of the study comprised all teaching staff of Mfantipim School and Wesley Girls High School. The total number of teaching staff in Mfantipim School is 117 including the Headmaster and his Assistant.

The total number of teaching staff for Wesley Girls High School is 96 including the Head mistress and her assistant. To sum up, the total number of teachers in both schools is 213.

3.5 Sampling procedure and sample size

Sampling refers to the process of choosing units from a population of interest in order to generalize the results to the population from which they were chosen. Fraenkel and Wallen (2002) consider a sample size to be a subset or units of the population. It consists of selected members from the population. Due to the small number of the population, no sampling was done. The total population of 213 participants was used for the study.

3.6 Instrumentation

The study employed two types of instruments to source for information on the information literacy levels of teachers in the Cape Coast metropolis. These are questionnaire and an interview schedule. Sarantakos (2005) posits that the administration of questionnaire and interviews make up the survey method. The study adopted the questionnaire based on its strength such as the production of quick results, it requires less time to administer, few opportunities to be bias on the part of the researcher and it promises a wider coverage. Nevertheless there are some drawbacks that are connected to the use of questionnaire as a tool for gathering data which includes difficulties in creating room for further probing and clarification of questions. The questionnaire had both open and close ended questions. The close ended questions had multiple choice answers. Items on the questionnaire were designed in a way that elicited personal responses from the respondents.

The questionnaire comprised six sections which were based on the objectives of the study:

1. The first section covered respondent's biographical information.
2. The second section reflected the levels of awareness of information literacy among teachers' in Mfantsipim and Wesley Girls
3. The third section brought to light the extent of training in information literacy skills organized for teachers' Mfantsipim and Wesley Girls.
4. The fourth section looked at the strategies teachers employed to find and use information from print and electronic sources.
5. The fifth section further elicited teachers' views on the role of information literacy in their teaching activities.
6. The sixth section determined the barriers that mitigate the development of information literacy skills among teachers in second cycle institutions.

Importantly, the researcher ensured that the questionnaire had no uncluttered appearance within the reading and comprehension abilities of the respondents. Teachers from both schools were identified from the staff list with the help of the Assistant Heads (Academic) and they were encouraged to fill-in the questionnaire. The data collection process covered a period of 3 weeks; from 2nd -20th March 2015. The researcher distributed the final questionnaire personally to teachers in the various schools with the help of other teachers.

To make up for the limitations of the questionnaire, semi-structured interview consisting of open-ended questions was used to compliment the questionnaire data. Sarantakos

(2005) says interviewing is a form of questioning distinguished by the fact that it uses verbal inquiry as its principal technique for collecting data. The interview was conducted for the Headmaster, Headmistress, and the Assistant Heads of the two schools. In structuring the semi-interview guide, the researcher was guided by the interview guide approach by Patton (2003) to draw out an appropriate guide for the interview. Patton proposes interview guide approach as this enables the researcher to choose a general list of topics to be captured without formalizing a specific wording of questions. He maintains that the interview guide gives way for the researcher to probe and ask questions that brings to light the topic under discussion. Again he claimed that interview guide approach allows the “interview to remain fairly conversational and situational” Dates were negotiated for interviewing the Headmaster, Headmistress and the Assistant Heads of both schools around the same period of questionnaire data collection. Permission was sought from the Heads of the various institutions to record the interview. Each interview session took forty-five minutes.

The interview guide was presented in six sections:

1. The first section dealt with the bio-data and characteristics of the respondents such as position or rank and the number of years served on the said position or rank.
2. Section two, concentrated on the head teacher’s views regarding the level of awareness of teachers’ IL.
3. The third section looked at library and Internet facilities available to teachers.
4. The fourth section sought the extent of training in IL skills organized for teachers.

5. The fifth section looked at the Head teachers' views on the strategies teachers employed to look for information.
7. Lastly, section six considered the Head teacher's views on the barriers that mitigate the development of information literacy skills among teachers' in Mfantsipim and Wesley Girls.

3.7 Pre-test

To make sure that the instruments for the data collection was appropriate, a pre-test was conducted. Oppenheim, Katon and Moser, and Sproul (as cited in Sarantakos, 1997) said pre-test seeks to determine the following:

1. To approximate the cost and period of the main study and also test the effectiveness of its organization.
2. To experiment the research methods and research instruments for their reliability, validity and suitability.
3. To verify whether the sampling frame is adequate.
4. To estimate the level of responses and form of drop-out.
5. To gain insight about how diverse or homogenous the survey population is.
6. To enable the researcher to familiarize with the research that is to take place.
7. It offers the researcher and their assistance the chance to practice research in real situations prior to the main study.
8. To test the response of the subjects to the method of data collection and through that the adequacy of its structure.

Two pre-tests were conducted involving two sets of schools within the Cape Coast metropolis to ensure the appropriateness of the research instrument. The questionnaire and interview schedules were pre-tested on some selected teachers and the Assistant Heads of St Augustine's College and Holy Child Senior High School to ascertain the reliability and validity of the research instrument as well as their suitability. The Assistant Heads and teachers from St Augustine's College and Holy Child Senior High were chosen because they have almost the same characteristics as teachers from Mfantsipim School and Wesley Girls High School.

These schools are also among the category 'A' or best schools in the Cape Coast metropolis. The participants for answering the questionnaire were identified from the staff list with the help of the Assistant Headmaster/Headmistress (Academic). Semi-structured interviews consisting of open-ended questions were used for the Assistant Heads of the two schools. Their permission was sought for the interview to be recorded. After the interview, the recorded voice was played back to the Assistant Heads.

The recorded data was transcribed and copies given to the Assistant Heads for their confirmation or otherwise. Upon their agreement, the data was coded into themes and analyzed accordingly. Copies of the coded data were given to the Assistant Heads to verify whether their views were correctly represented. After reading through they agreed with the analysis. This established that the right answers were given to the questions asked in the interview session for the pre-test. After the first study, it was realized from the results that some items in the questionnaire and interview guide were not reliable. Therefore those questions that were ambiguous and inconsistent were noted and accordingly the affected questions were corrected and redesigned appropriately.

3.8 Data collection procedure

The study employed both the qualitative and quantitative approach to collect data. Data collection for the main study began in March, 2015 at the various schools after the necessary corrections were made to the research instrument after pre-testing. A letter of introduction was taken from the Department of Information Studies to seek permission from the various schools to undertake the study and also to explain the rationale of the study.

The researcher personally administered the questionnaires to teachers of the two schools and also conducted the interview for the Heads of the two schools and their Assistants using a list of semi-structured questions written in a standard sequence. For teachers to fully comprehend the questionnaire and answer them appropriately the questionnaire was explained to them. Teachers' from both schools were given the opportunity to ask for clarification of items on the questionnaire.

The interview was held at the various offices of each of the two Heads and their Assistants. Permission was sought from each of them for the interview to be recorded. After each interview, the recorded voice was played back to the Headmaster, Headmistress and the Assistant Heads to confirm whether their views were appropriately represented. After listening, they established that their views have been represented. The recorded data was transcribed after each interview before the next interview was conducted. This was done to prevent the possibility of losing data. During the interview the researcher employed probes to seek clarification where necessary and prompts to guide the interview to be on track. The body language of the respondents of the interview was also observed to enable the researcher widen my scope of understanding of the

phenomenon. Anonymity, confidentiality and obtaining the consents of respondents were three ethical issues that were identified in the study. Before the administration of the instrument, all respondent were assured that the research was purely an academic activity. They were also assured of the confidentiality in the treatment of their responses. Except for some isolated cases, generally, there was mass co-operation from respondents.

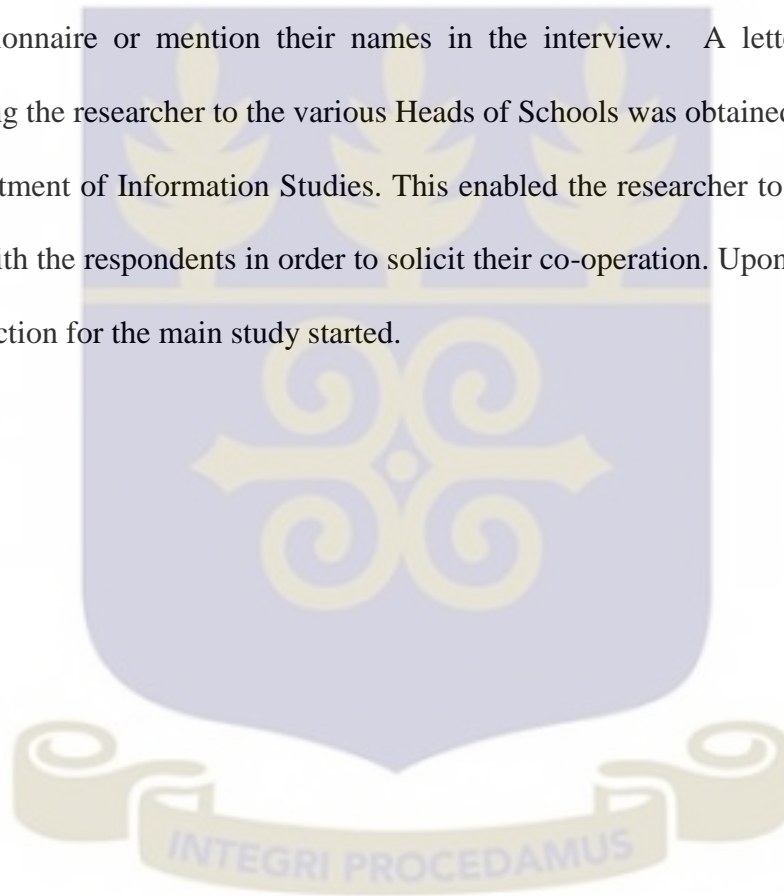
3.9 Data analysis

According to Sarantakos (1998) data analysis enables the researcher to manipulate information captured during the time of the study in order to assess and evaluate the findings for a meaningful conclusion. The recorded interview of the Headmaster, Headmistress, and the Assistant Heads of the two schools were transcribed into word document. In transcribing, care was taken in order not to misrepresent their opinions. The interview data was coded and analyzed to identify recurring themes. The coded data was grouped and analyzed under each research question.

The questionnaire data collected was also coded using numerical values, and analysis was done using Statistical Package for Social Sciences (SPSS) version 20. This made it easier for the researcher to bring out frequency distribution of the responses. Each copy of the questionnaire was numbered serially according to the order in which they are received. Descriptive statistics was employed to summarize the basic features of the data in the study. To illustrate the figures, percentages and frequencies was calculated. Tables and charts were used to present the percentages and frequencies.

3.10 Ethical considerations

The purpose of this study is strictly to contribute to existing knowledge in the area of information literacy among teachers. In view of this, respondents were duly informed about the study before they participated. In conformity with the University of Ghana standards, respondents' confidentiality and non-disclosure of information provided for the study were assured. Therefore respondents were not required to write their names on the questionnaire or mention their names in the interview. A letter of introduction introducing the researcher to the various Heads of Schools was obtained from the Head of the Department of Information Studies. This enabled the researcher to establish personal contact with the respondents in order to solicit their co-operation. Upon their approval the data collection for the main study started.



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CHAPTER FOUR

PRESENTATION AND INTERPRETATION OF RESULTS

4.1 Introduction

This chapter presents and interprets results obtained from the analysis of the data during the field work. The analysis is presented based on the specific objectives of the study.

These include:

- Levels of awareness of information literacy.
- Extent of training in information literacy skills.
- Strategies employed to find information in print and electronic sources.
- Role of information literacy in teaching activities.
- Barriers against the development of information literacy skills among teachers.

Respondents were also made to suggest ways to improve training in IL.

4.1.1 Response rate

In all, 175(83.75%) participants responded to the questionnaire; 102(58.3%) teachers from Mfantshipim and 73(41.7%) teachers from Wesley Girls. Babbie & Mouton (2002) have noted that 50% is regarded as an acceptable response rate in social research surveys while a response rate of 65% is desirable. This survey obtained a response rate of (83.75%) which is very good. In addition to the questionnaire, four key informants were interviewed; two Head teachers and two Assistant Heads were selected.

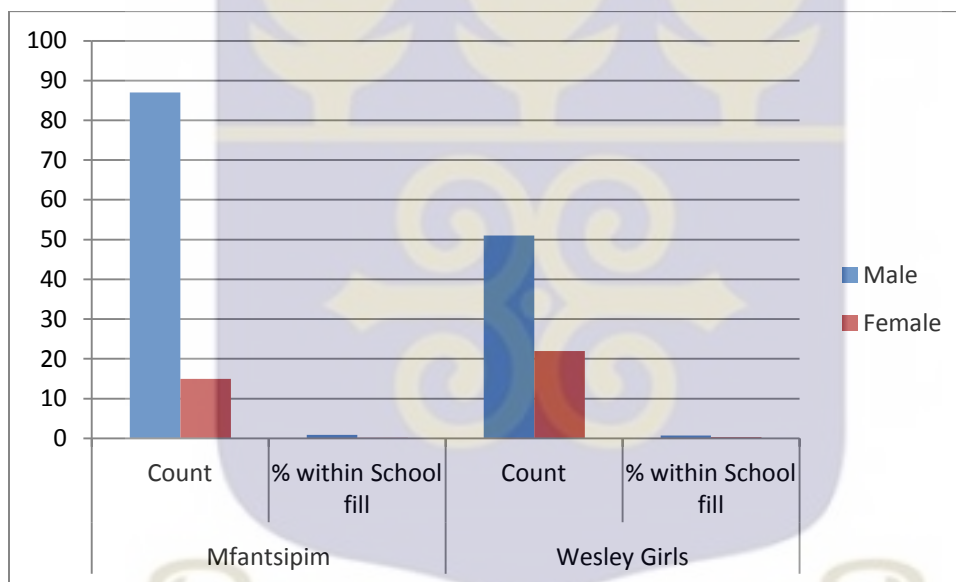
4.2 Background characteristics of respondents

The analysis begins with the background information of respondents. The information sought were sex, age, level of education, years of experience, distribution of years of experience across the various age groups and courses taught.

4.2.1 Sex distribution of respondents

Sex distribution of respondents is presented in Figure 4.1 below.

Fig 4.1: Sex distribution of respondents



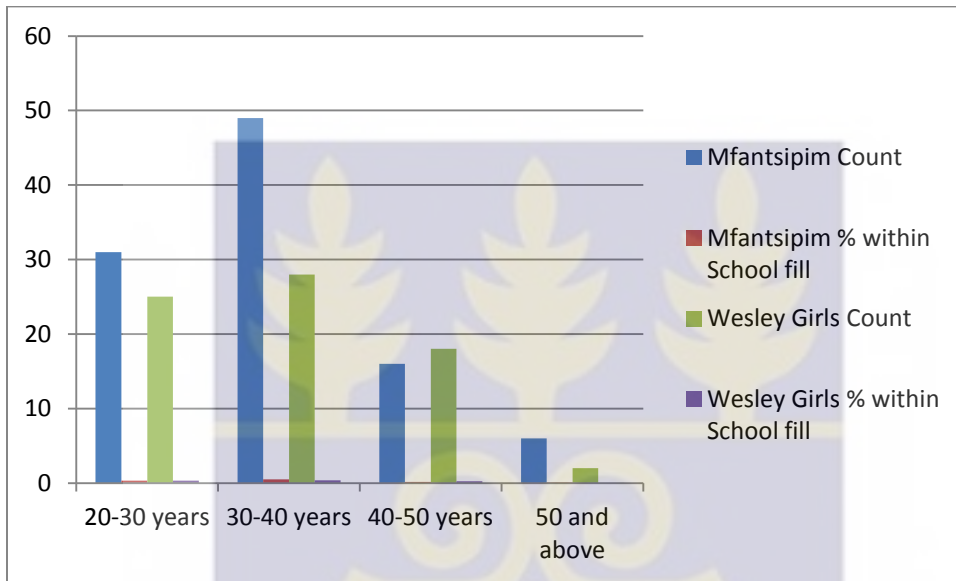
Source: Field data, 2015

From Figure 4.1, out of the 175 respondents, majority were males 138 (78.9%) of which 87 were from Mfantsipim and 51 from Wesley Girls. While 37 (21.1) constituted females of which 15 were respondents from Mfantsipim, 22 were from Wesley girls.

4.2.2 Age distribution of respondents

The ages of the respondents are shown in Figure 4.2 below.

Fig 4.2 Age distribution of respondents



Source: Field data, 2015

As shown in Figure 4.2, most of the respondents (77 representing 44%) were within the age category of 30 and 40 years. In all, about (78.4%) and (72.6%) of the respondents from Mfantsipim and Wesley Girls respectively were less than 40 years and could be considered as within the young to middle age bracket. Considering the topic for the study, it was relevant in that it was assumed they were in the position to respond favorably to the questions bearing in mind the recent developments in the field.

4.2.3 Level of education

The level of education of respondents was also sought. Table 4.1 gives a distribution of the respondents' level of education across the two schools.

Table 4.1: Level of education

Response	Mfantsipim		Wesley Girls		Total	
	Freq	%	Freq	%	Freq	%
University Graduate	101	99.0	69	94.6	170	97.2
Diploma holder	1	1.0	2	2.7	3	1.7
Post-secondary	0	.0	2	2.7	2	1.1
Total	102	100.0	73	100.0	175	100.0

Source: Field data, 2015

As shown in Table 4.1, majority 170 (97.2%) of the respondents had had university education with a few having Diploma 3 (1.7%) and post-secondary 2 (1.1%) education. Out of the 170 (97.2%) University graduates', 101 (99.0%) were from Mfantsipim while 69 (94.6%) were from Wesley Girls. In Ghana, University degree is the requirement for teaching in second cycle institutions. It is, therefore, not surprising that the majority 101 (99.0%) and 69 (94.6%) from Mfantsipim and Wesley Girls respectively were University graduates.



4.2.4 Years of teaching experience

Teachers teaching experiences are outlined in Table 4.2.

Table 4.2: Years of teaching experience

Response	Mfantsipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
Less than two years	9	8.9	9	12.3	18	10.3
2-5 years	37	36.6	23	31.5	60	34.5
6-9 years	23	22.8	17	23.3	40	23.0
10 years and over	32	31.7	24	32.9	56	32.2
Total	101	100.0	73	100.0	174	100.0

Source: Field data, 2015

From Table 4.2, Mfantsipim school had 32 (31.7%) with 10 years and over teaching experience while Wesley Girls had 24 (32.9%) of them teaching for 10 years and over. This disparity in the level of experience across institutions, from the researcher's perspective may not significantly affect the kind of responses given even though it is acknowledged that the older the better. However, since majority of the respondents had taught for more than two years (91.1% for Mfantsipim and 87.7% for Wesley Girls), there is a high likelihood, therefore, that with that level of experience, they would have employed some form of information literacy skills in their teaching notes preparation as well as in their teaching process which is enough for this study.

4.2.5 Courses taught by respondents

The courses that the respondents were teaching were also looked into. The respondents were teaching various courses across the various programmes such as General Arts,

General Science, Technical, Visual Art, Business and Home Economics. The results are shown in Table 4.3.



Table 4. 3: Courses taught by respondents

	Mfantshipim		Wesley Girls		Total	
	Freq	%	Freq	%	Freq	%
Financial accounting	0	.0	2	2.3	2	1.0
English language	13	11.6	14	16.0	27	13.5
Integrated Science	11	9.8	4	4.6	15	7.5
Chemistry	8	7.1	4	4.6	12	6.0
Economics	3	2.7	6	6.8	9	4.5
General Knowledge in Art	3	2.7	3	3.4	6	3.0
Picture making	1	.9	1	1.1	2	1.0
Ceramics	1	.9	1	1.1	2	1.0
Sculpture	0	.0	1	1.1	1	.5
Literature	4	3.6	3	3.4	7	3.5
I.C.T	0	.0	2	2.3	2	1.0
Core Mathematics	25	22.3	14	16.0	39	19.5
Geography	4	3.6	3	3.4	7	3.5
Social Studies	6	5.3	5	5.7	11	5.5
Physics	6	5.3	3	3.4	9	4.5
Elective Biology	6	5.3	6	6.8	12	6.0
Physical Education	2	1.8	2	2.3	4	2.0
Christian Religious Studies	0	.0	1	1.1	1	.5
Food and Nutrition	0	.0	3	3.4	3	1.5
Management in Living	0	.0	3	3.4	3	1.5
French	3	2.7	3	3.4	6	3.0
Graphic Design	1	.9	1	1.1	2	1.0
Business Management	0	.0	1	1.1	1	.5
Elective Mathematics	3	2.7	1	1.1	4	2.0
Home economics	0	.0	1	1.1	1	.5
Technical Drawing	2	1.8	0	.0	2	1.0
History	1	.9	0	.0	1	.5
Music	4	3.6	0	.0	4	2.0
Applied Electricity	1	.9	0	.0	1	.5
Agric Science	3	2.7	0	.0	3	1.5
Government	1	.9	0	.0	1	.5
Total	112	100.0	88	100.0	200	100.0

Source: Field data, 2015

As shown in Table 4.3, the majority 39 (19.5%) were teaching Core Mathematics followed by English Language 27 (13.5%). Other courses that had high frequencies were Integrated Science 15 (7.5%), Chemistry 12 (6.0%), Elective Biology 12 (6.0%), and Social Studies 11 (5.5%).

At Mfantsipim School, the Headmaster and his Assistant Head for academic were interviewed. The Headmaster had been at post for the past five years and was not engaged in teaching. Similarly, the Assistant Head was not teaching and had been at post for one year. Also, at Wesley Girls, the Headmistress was not teaching and had been at post for the past eleven years. However, the Assistant Headmaster academics has been teaching Biology with over seventeen (17) years experience.

4.3 Level of awareness of information literacy

This section of the chapter addresses the first objective which sought to determine the level of awareness of information literacy among teachers in the two selected schools. Some of the questions asked include: teachers' need for information, why teachers require information, and sources of information.

4.3.1 Teachers' need for information

Interview with the Head Teachers showed that the two selected schools have Internet facilities and an ICT centre connected to the school's Wi-Fi. The schools also have libraries.

Out of the 173 responses gathered, almost all of the respondents 172 (99.4%) indicated that teachers required information while a few 1 (0.6%) indicated otherwise. Some of the reasons why teachers required information are captured in Table 4.4.

Table 4.4: What do teachers require information for?

	Mfantsipim		Wesley Girls		Total	
	Freq	%	Freq	%	Freq	%
Update lesson notes for teaching	72	28.0	60	32.3	132	29.8
Entertainment	22	8.6	11	5.9	33	7.4
Acquire new knowledge in subject area	79	30.7	56	30.1	135	30.5
To keep abreast with current information in subject area	84	32.7	59	31.7	143	32.3
Total	257	100.0	186	100.0	443	100.0

Source: Field data, 2015

As shown in Table 4.4, out of the multiple responses of 443, less than half 143 (32.3%) of the respondents indicated that they require information in order to keep abreast with current information in the subject area, with 84 (32.7%) responses from Mfantsipim and 59 (31.7%) from Wesley Girls. Other reasons include new knowledge in the subject area 135 (30.5%), with 79 (30.7%) from Mfantsipim and 56 (30.1%) from Wesley Girls. Other findings include: update lesson notes for teaching 132 (29.8%), with 72 (28.0 %) from Mfantsipim and 60 (32.3%) from Wesley Girls; for entertainment purposes an average of 33 (7.4%) with 22 (8.6%) from Mfantsipim and 11 (5.9%) from Wesley Girls.

4.3.2 Sources of information

Table 4.5 below show respondents' source of information

Table 4.5: Sources of information

Sources	Mfantsipim		Wesley Girls		Total	
	Freq	%	Freq	%	Freq	%
Textbooks	82	32.7	57	31.7	139	32.3
Internet	88	35.1	63	35.0	151	35.0
Old notes	32	12.7	19	10.5	51	11.8
Library materials	38	15.1	35	19.4	73	16.9
Media	2	.8	2	1.1	4	.9
Professors and Colleagues	5	2.0	3	1.7	8	1.9
Seminars and workshops materials	3	1.2	0	.0	3	.7
Databases	1	.4	1	.6	2	.5

Source: Field data, 2015

The most common source of information among the respondents was Internet 151 (35.0%), with Mfantsipim having 88 (35.1%) and Wesley Girls 63 (35.0%). Other common sources include textbooks 139 (32.3%), with Mfantsipim having 82 (32.7%) and Wesley Girls 57 (31.7%), library materials 73 (16.9%), with Mfantsipim having 38 (15.1%) and Wesley Girls 35 (19.4%) and old notes 51 (11.8%). Respondents from Mfantsipim 88 (35.1%) get their information from the Internet as compared to 63(35.0%) of the total respondents from Wesley girls who also indicated that they get their information from the Internet. This implies that both schools use the Internet as a major source of information. The findings reveal very little difference between teachers of both schools.

Interviews with the Head teachers confirmed that teachers need information. According to the Assistant Head of Mfantsipim (AHM), *it's very important since one need to improve upon the old facts*. Also, the Assistant Head at Wesley Girls (AHW) indicated that *teachers' use of information from different sources will enhance their teaching and also promote high performance of students*. On the issue of what teachers require information for, some of the reasons given were: *to enable them update themselves with current issues in their field in order to prepare students well* (AHM); *to teach, for research and personal development* Headmaster, Mfantsipim [HM]; *teaching and also broaden their scope of knowledge. Knowledge gained is therefore imparted to student to enhance their performance* (AHW); *to gain knowledge for teaching* Headmistress, Wesley Girls [HW].

The Head teachers indicated that some of the sources used by teachers to obtain relevant information for teaching were books bought from bookshops, Internet, workshops, seminars, news papers, textbooks, library materials including dictionaries and encyclopedias.

4.3.3 Teachers' preferred source of information

Teachers were asked to indicate their preferred sources of information. The results are presented in Table 4.6.

Table 4.6: Teachers' preferred source of information

	Mfantsipim		Wesley Girls		Total	
	Freq	%	Freq	%	Freq	%
Library materials	26	19.7	18	20.5	44	20.0
Internet	83	62.9	62	70.5	145	65.9
Bookshop materials	15	11.3	7	7.9	22	10.0
Textbooks	7	5.3	1	1.1	8	3.3
Articles	1	.8	0	.0	1	.8
Total	132	100.0	88	100.0	220	100.0

Source: Field data, 2015

Teachers were asked to indicate their preferred source of information. From the responses (as shown in Table 4.6), the Internet emerged as the most preferred source 83 (62.9%) and 62 (70.5%) from Mfantsipim and Wesley Girls respectively. This is not surprising as majority also indicated the Internet as their source of information (Table 4.7). The other preferred sources of information were library materials 26 (19.7) and 18 (20.5%) in Mfantsipim and Wesley Girls respectively. Bookshop materials had 15 (11.3%) and 7 (7.9%) in Mfantsipim and Wesley Girls respectively. Whiles textbooks had 7 (5.3%) and 1 (1.1%) in Mfantsipim and Wesley Girls respectively. The least preferred source of information was articles 1 (0.5%). None of the respondents in Wesley Girls made mention of articles as a preferred source of information, but in Mfantsipim, one person indicated an article as preferred sources of information. This implies that articles are not preferred by majority of the respondents from both schools as a source of information.

4.3.4 Reasons for preference

The next question asked why respondents would prefer a particular source over the others. The results are presented in Table 4.7.

Table 4.7: Reasons for selecting a particular source over the other(s)

Reasons	Mfantsipim		Wesley Girls		Total	
	Freq	%	Freq	%	Freq	%
For faster/quicker access to information	42	26.1	39	33.9	81	29.3
For current information	41	25.5	29	25.2	70	25.4
For large amount of information	32	19.9	18	15.7	50	18.1
For different views on the same subject	45	27.9	26	22.6	71	25.7
Because it's a trusted site	1	.6	3	2.6	4	1.5
Total	161	100.0	115	100.0	276	100.0

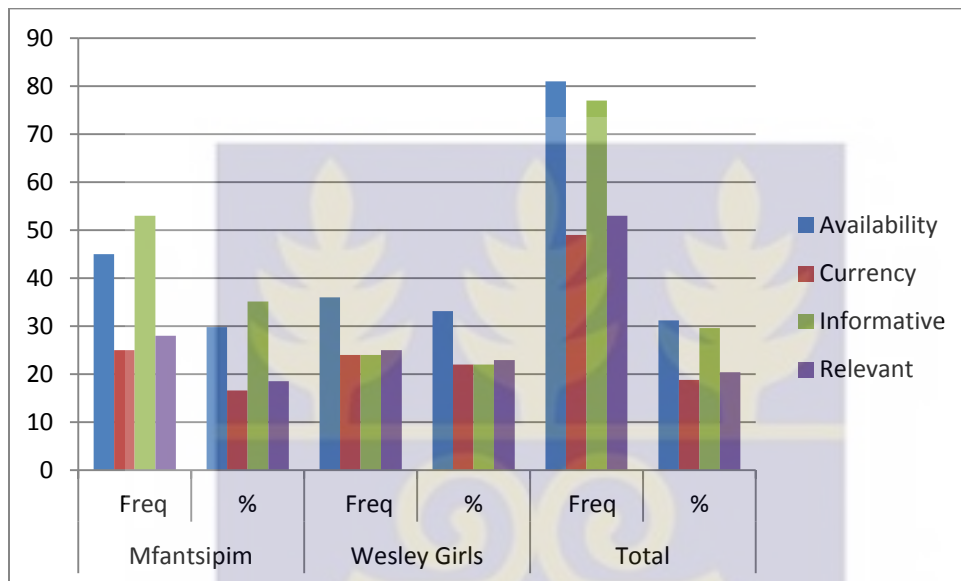
Source: Field data, 2015

Out of the 276 multiple responses in Table 4.7, the most common reason why respondents would select a particular source of information over the other was because of “faster/quicker access to information” 81 (29.3%). This was represented in Mfantsipim as 42 (26.1%) and in Wesley Girls as 39 (33.9%). The other common reason that followed after faster access was “for different views on the same subject” 71 (25.7%), represented in Mfantsipim as 45 (27.9%) and in Wesley Girls as 26 (22.6%). “For current information” 70 (25.4%) represented as 41 (25.5%) in Mfantsipim and in Wesley Girls as 29 (25.2%). follow by “for different view on the same subject” 71 (25.7%), and “large amount of information” 50 (18.1%). Less than 4 (1.5%) of the respondents specified on their own that they choose a particular source because they knew it was a trusted source. This is encouraging in the sense that teachers from both schools know where to find the kind of information they need to support their teaching activities.

4.3.5 Reasons why respondents find some particular sources useful

The next issue presents reasons why respondents found some particular sources useful (Fig 4.3).

Fig 4.3: Reasons why respondents find some sources useful



Source: Field data, 2015

Fig 4.3 indicated that the reason why most 36 (33.1%) of the respondents in Wesley Girls found a particular source useful was because of its availability. Mfantsipim respondents shared a different view from that of the Wesley Girls where majority of their respondents 53 (35.1%) indicated that the informativeness of a source was the main reason why they found a particular source useful. Availability 45 (29.8%), relevance 28 (18.5%) and currency 25 (16.6%) followed in that order for Mfantsipim with regard to reasons for choice of particular sources. Teachers from Wesley Girls, however, considered relevance 25 (22.9%), currency and informative both had 24 (22%) followed by availability (33.1%).

4.3.6 Challenges encountered in using sources

Some challenges that respondents encountered when using information from these sources are presented in Table 4.8.

Table 4.8: Challenges encountered in using sources

Challenges	Mfantsipim		Wesley Girls		Total	
	Freq	%	Freq	%	Freq	%
Information scattered in too many sources	30	16.7	21	14.4	51	15.6
I don't know searching skills and search strategies	10	5.6	4	2.7	14	4.3
Difficult in getting scholarly material	35	19.4	21	14.4	56	17.2
Too much information available	30	16.7	21	14.4	51	15.7
Irregular Internet access	30	16.7	19	13.0	49	15.0
Sometimes the Internet is slow	32	17.8	31	21.2	63	19.3
Irregular power supply	12	6.6	27	18.5	39	12.0
The site is not free	0	.0	1	.7	1	.3
No challenges	1	.5	0	.0	1	.3
Misinformation	0	.0	1	.7	1	.3
Total	180	100.0	146	100.0	326	100.0

Source: Field data, 2015

As shown in Table 4.8, respondents encountered a number of similar challenges which resulted in multiple responses of 326. In individual institutions, difficulty in getting scholarly materials featured most 35 (19.4%) in Mfantsipim which was the fourth highest for Wesley Girls 21 (14.4%). While slow Internet 31 (21.2%) posed a major challenge for teachers of Wesley Girls, it became the second highest for Mfantsipim 32 (17.8%).

The highest 63 (19.3%) challenge as indicated by the respondents was that sometimes the Internet was slow which was evident in both schools from observation. This result confirms the accuracy of the information given concerning the Internet being the most used and most preferred source of information. Other common challenges were too much information is available and information is scattered in too many sources 51 (15.6%) for both schools with Mfantsipim obtaining 30 (16.7%) and 21 (14.4) for Wesley Girls. Irregular Internet access 49 (15.0%) represented the two schools while individually Mfantsipim obtained 30 (16.7%) and 49 (13.0%) for Wesley Girls. On the issue of irregular power supply Mfantsipim had 12 (6.6%) while Wesley Girls had 27 (18.5%).

4.3.7 Awareness of educational sites

Respondents were asked to indicate which educational site they were aware of. The responses gathered have been presented in the table below (Table 4.9).

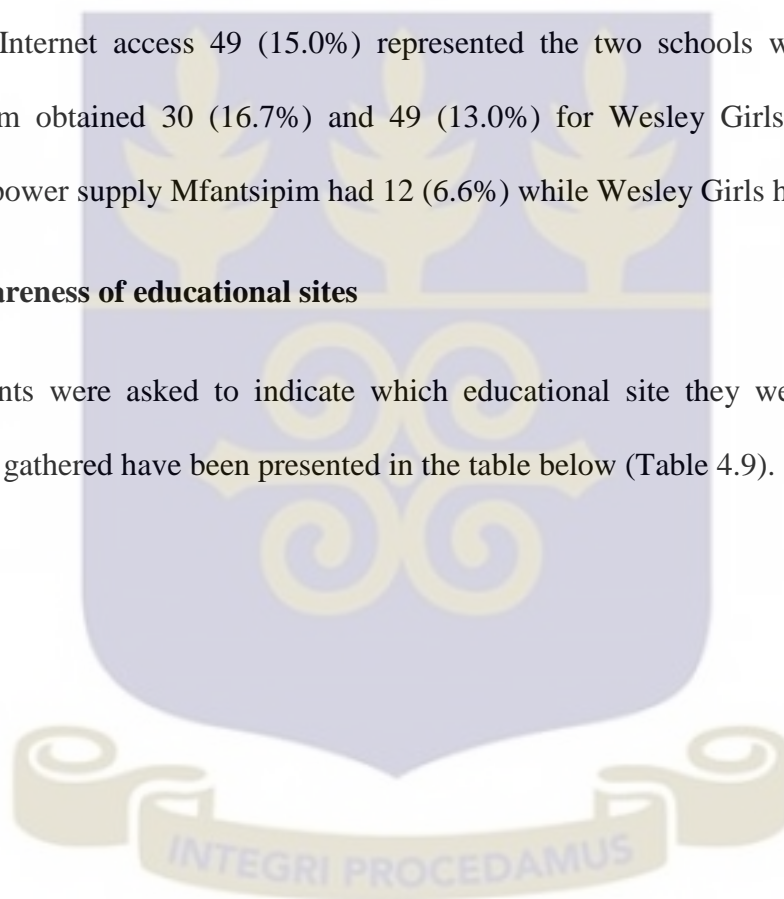


Table 4.9: Awareness of Educational sites

	Mfantsipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
The Science Spot	29	23.4	13	19.7	42	22.3
Vocational Information Centre	3	2.4	7	10.7	10	5.3
Education World	40	32.3	22	33.3	62	33.0
Music Theory	6	4.8	1	1.5	7	3.7
USOE- Fine Arts Secondary	7	5.7	0	.0	7	3.7
Bized	2	1.6	0	.0	2	1.1
Smithsonian Education	7	5.7	3	4.6	10	5.3
NSTA	4	3.2	1	1.5	5	2.7
Teaching Procedural and Technical Skills	21	16.9	10	15.2	29	15.5
BIOED	3	2.4	1	1.5	4	2.2
Edublog	1	.8	0	.0	1	0.5
Biomed	1	.8	0	.0	1	0.5
Smartech	0	.0	1	1.5	1	0.5
Francais Facile	0	.0	2	3.0	2	1.1
Le point du flé	0	.0	1	1.5	1	0.5
Maths world	0	.0	2	3.0	2	1.1
National Geography	0	.0	1	1.5	1	0.5
Pubmed	0	.0	1	1.5	1	0.5
Total	124	100.0	66	100.0	188	100.0

Source: Field data, 2015

Table 4.9 shows some of the educational sites which respondents were aware of. The most common of them were Education World 62 (33.0%), Science Spot 42 (22.3%), Teaching Procedural and Technical Skills 29 (15.5%) and Smithsonian Education 10 (5.3%). Teachers of Mfantsipim specified that they were aware of the following sites, Edublog 1 (0.8%) and Biomed 1 (0.8%), which teachers of Wesley Girls were not aware of them. Wesley Girls teachers also specified some sites that teachers of Mfantsipim were unaware of; Smartech 1 (1.5%), Francais facile 2 (3.0%), Le point du flé, 1 (1.5%),

Maths World 2 (3.0 %), National Geography 1 (1.5%) and Pubmed 1 (1.5%). The Head teachers of Wesley Girls also indicated Bioed, National Geography and Science Spot as the sites teachers were aware of while Mfantsipim stated Education World, Smithsonian Education and Teaching Procedural and Technical Skills.

4.3.8 Educational sites used for teaching

The next issue looked at the sites that were used for teaching.

Table 4.10: Educational sites used for teaching

Response	Mfantsipim		Wesley Girls		Total	
	Freq	%	Freq	%	Freq	%
The Science Spot	31	30.7	11	21.2	42	27.4
Vocational information centre	3	3.0	4	7.7	7	4.5
Education world	32	31.6	21	40.5	53	34.6
Music theory	5	5.0	0	.0	5	3.3
USOE- Fine arts secondary	5	5.0	0	.0	5	3.3
Smithsonian education	3	3.0	2	3.8	5	3.3
Nsta	6	5.9	0	.0	6	3.9
Teaching procedural and technical skills	15	14.8	8	15.4	23	15.0
Pubmed	0	.0	1	1.9	1	0.7
Maths world	0	.0	2	3.8	2	1.3
Le point du fle	0	.0	1	1.9	1	0.7
Francais facile	0	.0	2	3.8	2	1.3
Edublog	1	1.0	0	.0	1	0.7
Total	101	100.0	52	100.0	153	100.0

Source: Field data, 2015

Most of the respondents 32 (31.6%) from Mfantsipim specified Education World as the site they used for teaching. They were not using sites like Biomed, Pubmed, National Geography, and Maths World because they were not aware of them. For Wesley Girls,

most of the respondents indicated usage of Education World 21 (40.5%) and Science spot 11 (21.2%).

4.3.9 Reasons for non-usage of educational sites

The study probed why some respondents were not using some educational sites in both schools and the results are shown in Table 4.11.

Table 4.11: Reasons for non-usage of educational site

Reason	Mfantsipim		Wesley Girls		Total	
	Freq	%	Freq	%	Freq	%
Not aware of these educational sites	33	71.7	23	74.2	56	72.7
Internet access on campus is erratic	5	10.9	4	12.9	9	11.7
I don't know how to access the educational sites	5	10.9	3	9.7	8	10.4
Others	3	6.5	1	3.2	4	5.2
Total	46	100.0	31	100.0	77	100.0

Source: Field data, 2015

Some of the reasons given for non-usage of the educational sites were because they were unaware of them 56 (72.7%), Internet access on campus was erratic 9 (11.7%), and do not know how to access these sites 8 (10.4%). Other reasons include power fluctuations, lack of Internet access, and the sites not related to respondents' subject area.

4.3.10 Effectiveness of educational sites

The next issue considered the effectiveness of these educational sites. The results are presented in Table 4.12.

Table 4.12: Level of effectiveness of educational sites

Response	Mfantsipim		Wesley Girls		Freq	%
	Freq	%	Freq	%		
Very effective	23	30.3	10	22.2	33	27.3
Effective	39	51.3	30	66.7	69	57.0
Somehow effective	14	18.4	4	8.9	18	14.9
Not effective	0	.0	1	2.2	1	.8
Total	76	100.0	45	100.0	121	100.0

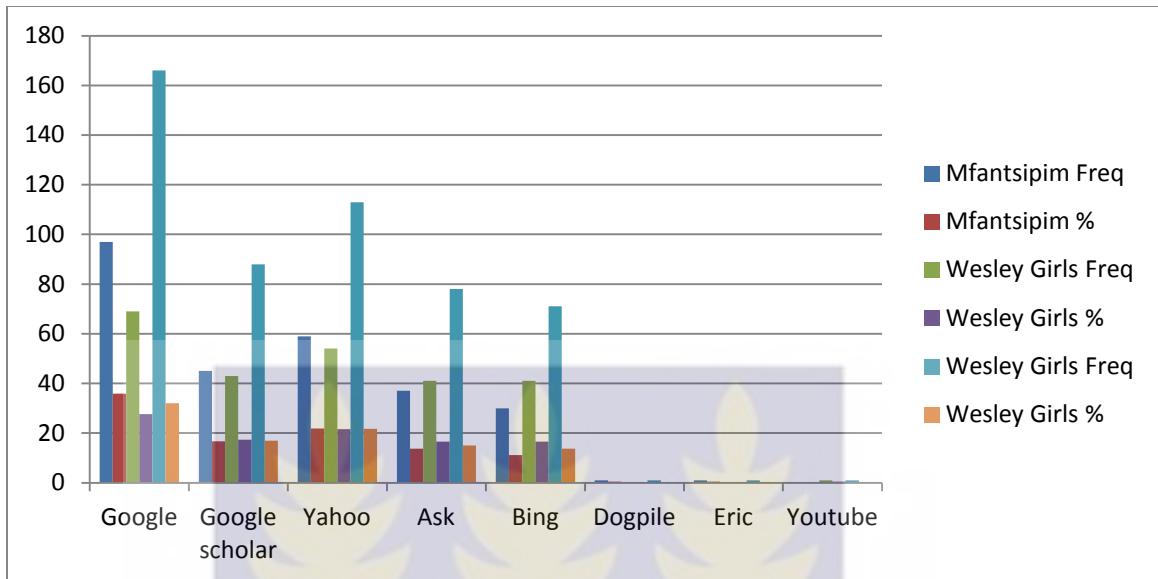
Source: Field data, 2015

Out of the 121 multiple responses gathered, the majority 69 (57%) of the respondents indicated that they were satisfied with the effectiveness of these educational sites in meeting their teaching needs. Very few 1 (0.8%) indicated that the educational sites were not effective. For Mfantsipim, none of the respondents considered the sites ineffective. Respondents were generally of the view that the educational sites were effective 39 (51.3%) for Mfantsipim and 30 (66.7%) for Wesley Girls in satisfying their teaching needs.

4.3.11 Awareness of search engines

The study probed some of the search engines that respondents were aware of. The results are shown in Figure 4.4.

Fig 4.4 Awareness of search engines



Source: Field data, 2015

Out of the 519 multiple responses given, majority 166 (32.0%) of the respondents were aware of Google, followed by Yahoo 113 (21.7%), Google Scholar 88 (17.0%), Ask 78 (15.0%), and Bing 71 (13.7%). Others specified by respondents include Dogpile, Eric, and Youtube.

4.3.12 Search engines normally used by respondents for teaching

The next question examined which of the mentioned searched engines respondents normally used to search for information for their teaching activities. In all, 345 multiple responses were gathered from both schools (see Table 4.13).

Table 4.13: Normally used search engines

	Mfantsipim		Wesley Girls		Total	
	Freq	%	Freq	%	Freq	%
Google	89	57.1	69	36.5	158	45.8
Google scholar	27	17.3	36	19.1	63	18.3
Yahoo	15	9.6	31	16.4	46	13.3
Ask	13	8.4	25	13.2	38	11.0
Bing	9	5.8	27	14.3	36	10.4
Wikipedia	1	.6	0	.0	1	.3
Dogpile	1	.6	0	.0	1	.3
Eric	1	.6	0	.0	1	.3
Youtube	0	.0	1	.5	1	.3
Total	156	100.0	189	100.0	345	100.0

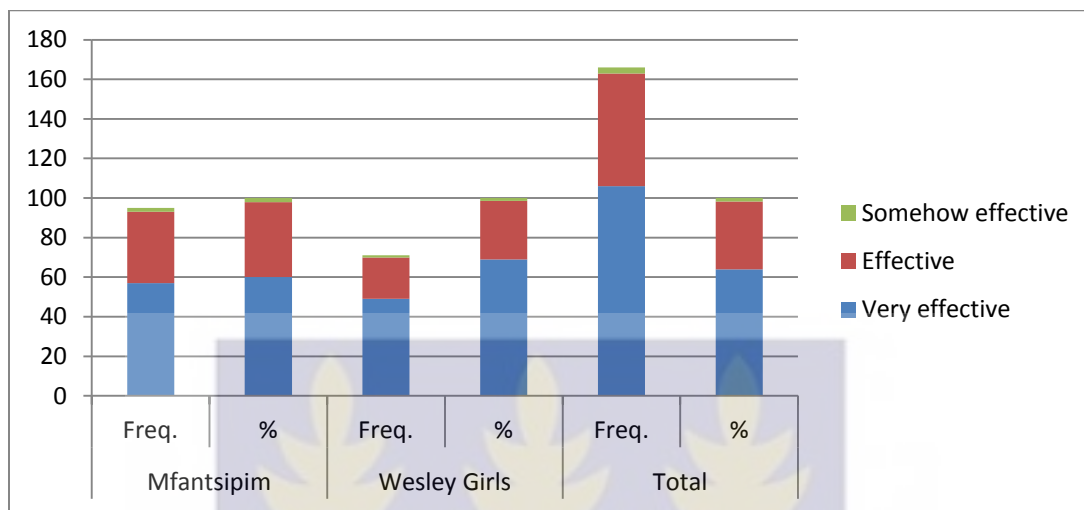
Source: Field data, 2015

Table 4.13 shows that Google 158 (45.8%) was the most commonly used search engines for teaching activities. It was evident that 36 (19.1%) of the respondent of Wesley Girls endorsed the use of Google Scholar search engine as compared to that of Mfantsipim 27 (17.3%). The next most commonly used search engines were Yahoo 46 (13.3%), Ask 38 (11.0%), and Bing 36 (10.4%).

4.3.13 Level of effectiveness of search engines

This section solicited for responses from respondents on their rating of the level of effectiveness of commonly used search engines in retrieving information to meet their teaching needs (Fig 4.5).

Fig 4.5: Google



Source: Field data, 2015

The research findings presented in Fig 4.5 indicate that 57 (60%) of teachers from Mfantsipim rate Google as “very effective” as against 49 (69.0%) from Wesley Girls. For Google’s effectiveness, Mfantsipim rated it 36 (37.9%) while Wesley Girls rated it 57 (29.6%). Both schools rated 2 (2.1%) and 1 (1.4%) respectively as “somehow effective”.

Table 4.14: Google scholar

	Mfantsipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
Very effective	14	26.9	18	39.1	32	32.7
Effective	33	63.5	23	50.0	56	57.1
Somehow effective	3	5.8	3	6.5	6	6.1
Not effective	2	3.8	2	4.3	4	4.1
Total	52	100.0	46	100.0	98	100.0

Source: Field data, 2015

In rating the effectiveness of Google Scholar, 14 (26.9%) of teachers from Mfantsipim rated it very effective as against 18 (39.1%) of Wesley Girls. 33 (63.5%) and 23 (50.0%)

from both Mfantshipim and Wesley Girls respectively rated “effective”. Few respondents 2 (3.8%) from Mfantshipim and 2 (4.3%) from Wesley Girls indicated that Google Scholar is “not effective”.

Table 4.15: Yahoo

	Mfantshipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
Very effective	18	29.5	2	3.8	20	17.5
Effective	28	45.9	23	43.4	51	44.7
Somehow effective	13	21.3	20	37.7	33	28.9
Not effective	2	3.3	8	15.1	10	8.8
Total	61	100.0	53	100.0	114	100.0

Source: Field data, 2015

In terms of the effectiveness of Yahoo, 18 (29.5%) of the respondent from Mfantshipim rated it “very effective”, while 2 (3.8%) of respondents from Wesley Girls indicated it as “very effective”. In stating how “effective” it is, 28 (45.9%) respondents from Mfantshipim agreed while 23 (43.4%) from Wesley Girls also chose the same option. A few respondents from Mfantshipim 2 (3.3%) and a greater percentage of 8 (15.1%) from Wesley Girls indicated that the Yahoo search engine is “not effective”.

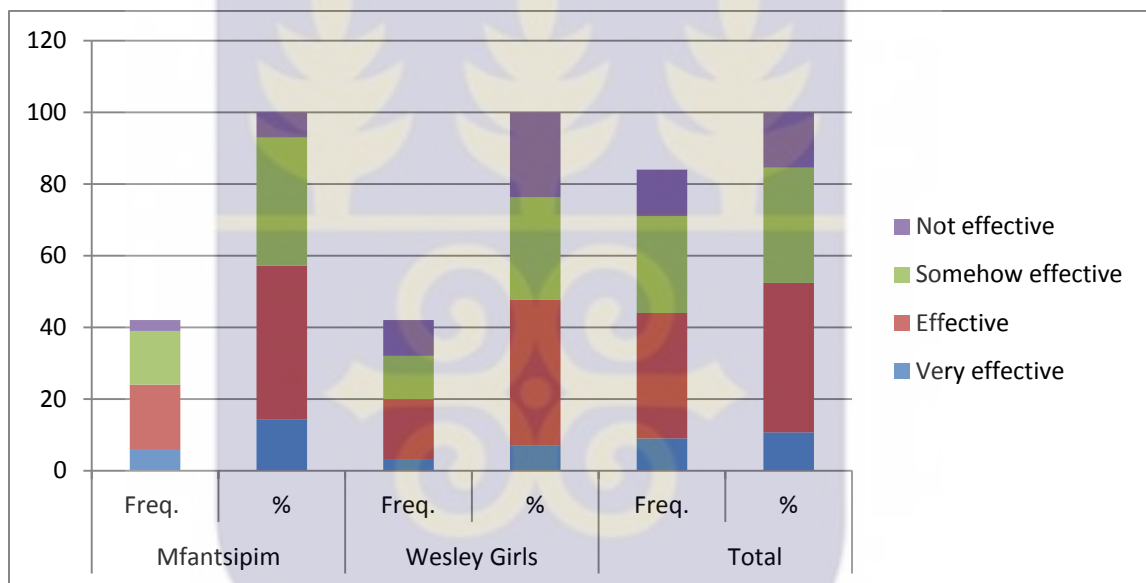
Table 4.16: Ask

	Mfantshipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
Very effective	6	13.6	4	9.3	10	11.5
Effective	19	43.2	19	44.2	38	43.7
Somehow effective	16	36.4	13	30.2	29	33.3
Not effective	3	6.8	7	16.3	10	11.5
Total	44	100.0	43	100.0	87	100.0

Source: Field data, 2015

The fourth search engine Ask was rated as follows “very effective” Mfantsipim 6 (13.6%), Wesley Girls 4 (9.3%). Respondents from Mfantsipim and Wesley Girls rated the effectiveness of Ask search engine as (43.2%) and (44.2%) respectively. Less than half of the respondents from Mfantsipim (6.8%) indicated that Ask was “not effective” as against a greater respondents (16.3%) from Wesley Girls.

Fig 4.6: Bing



Source: Field data, 2015

The fifth search engine Bing was rated by respondents of Mfantsipim as “very effective” 6 (14.3%), “effective” 18 (42.9%), “somehow effective” 15 (35.7%) and “not effective” 3 (7.1%). Wesley Girls also rated Bing as “very effective” 3 (7.1%), “effective” 17 (40.5%), “somehow effective” 12 (28.6%) and “not effective” as 10 (23.8%).

4.4 Extent of training in information literacy skills

The second objective looked at the extent of training in information literacy skills organized for teachers’ in the two selected schools.

4.4.1 Introduction to the use of Internet

The study looked at how respondents were introduced to the Internet. The results are presented in Table 4.17.

Table 4.17: Introduction to the use of Internet

Response	Mfantsipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
I was taught by a friend	16	15.2	11	14.7	27	15.0
I attended Internet school	13	12.4	13	17.3	26	14.5
I learnt it myself	71	67.6	50	66.7	121	67.2
I have no training at all	5	4.8	1	1.3	6	3.3
Total	105	100.0	75	100.0	180	100.0

Source: Field data, 2015

The majority 121 (67.2%) of the respondents indicated that they learnt the use of the Internet on their own. Others were introduced through training at Internet schools 26 (14.5%) while some were taught by a friend 27 (15.0%). However, a few 6 (3.3%) have had no training at all on the use of the Internet.

Table 4.17 shows that apart from those who learnt it on their own receiving the highest percentage in individual institutions, responses differed on means of introduction to the use of the Internet. Whereas the second most common response at Mfantsipim, was through introduction by a friend 16 (15.2%) that of Wesley Girls was through training at Internet schools 13 (17.3%).

4.4.2 Formal training on Internet skills for teachers

The teachers' responses on training in Internet skills are presented in Table 4.18 below.

Table 4.18: Does your school organize any formal training on Internet skills for teachers?

	Mfantshipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
Yes	9	9.0	18	26.1	27	16.0
No	67	67.0	34	49.3	101	59.7
Sometimes	24	24.0	17	24.6	41	24.3
Total	100	100.0	69	100.0	169	100.0

Source: Field data, 2015

As shown in Table 4.18, more than half 101 (59.7%) of the respondents indicated that their school do not organize formal training on Internet skills for teachers while 27 (16.0%) said Yes. About a quarter 41 (24.3%) indicated that their school sometimes organized formal training on Internet skills. The results show that generally, the schools do not organize formal training on Internet skills for the teachers.

This was however different from the Head teachers views. They indicated that their schools sometimes organized formal training on Internet skills for teachers. The response from the AHM indicated *not really* which is in line with what majority of the teachers had expressed. The reason given was that *teachers find their own information when necessary*. Nonetheless, the AHM explained that they sometimes organized Internet training internally for teachers from the Mathematics and Physics department. He explained that the resource persons for such training were from the Computer Science department. Also (AHW) said that, *there used to be training on Internet skills for teachers some years back but currently no*. He further stated that, *for now there is no*

planned time for that. It is taken for granted that the teachers know about the Internet through other means.

4.4.3 Formal training on library skills

The study also probed if the two selected schools organized formal training on library skills for teachers. The results are shown in Table 4.19.

Table 4.19: Formal training on library skills for teachers

	Mfantsipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
Yes	1	1.0	5	7.1	6	3.6
No	88	88.9	61	87.2	149	88.1
Sometimes	10	10.1	4	5.7	14	8.3
Total	99	100.0	70	100.0	169	100.0

Source: Field data, 2015

A higher proportion 149 (88.1%) of the respondents indicated that their schools do not organize any formal training on library skills. Nonetheless, a few 6 (3.6%) indicated that their school organized such formal training for them. The results show that generally formal training on library skills are not organized for teachers. This was also expressed by the Head teachers. The reasons given by the Head teachers for not organizing formal training on library skills for teachers were that: *teachers learnt the use of the library at the university through information literacy course (HM); this has not been seen as an important component of the teaching process, and since it is not part of curriculum, much attention is not directed to it, most teachers have had IL courses at the Universities (AHW); has not found it necessary (HW).*

4.5 Strategies teachers employ to find information from print and electronic sources

4.5.1 Probing up to date information

The study also inquired if respondents received up to date information from the library and the Internet for their teaching activities. Multiple responses were gathered (Table 4.20).

Table 4.20: Probing up to date information

Reason	Mfantsipim		Wesley Girls		Total	
	Freq	%	Freq	%	Freq	%
There is a date stating when the document was originally created	33	28.9	31	34.0	64	31.2
It is obvious when the source was last updated, edited or revised	32	28.1	35	38.5	67	32.7
Most sources indicate material update	46	40.4	25	27.5	71	34.6
Comparing one to another	3	2.6	0	0	3	1.5
Total	114	100.0	91	100.0	205	100.0

Source: Field data, 2015

As shown in Table 4.20, less than half 71 (34.6%) of the respondents were of the view that most sources indicate material update which was mostly indicated by respondents in Mfantsipim School 46 (40.4%). “It is obvious when the source was last updated, edited or revised” were the most common response given by the respondents in Wesley Girls 35 (38.5%). “There is a date stating when the document was originally created” had a response rate of 33 (28.9%) from Mfantsipim while Wesley Girls had 31 (34.0%). “Comparing one material to another” received 3 (2.6%) responses from Mfantsipim as against none for Wesley Girls.

4.5.2 Checking accuracy of information

The study also probed how the respondents knew that particular information was accurate and scholarly. The results are shown in Table 4.21.

Table 4.21: Checking accuracy of an information

Response	Mfantsipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
The source should be part of an edited publication	56	33.3	26	24.8	82	30.0
Accurate information can be verified through reference to credible sources	63	37.5	41	39.0	104	38.1
The authenticity of the information created is indicated	25	14.9	19	18.1	44	16.1
I already know about the subject and their sources	24	14.3	19	18.1	43	15.8
Total	168	100.0	105	100.0	273	100.0

Source: Field data, 2015

As shown in Table 4.21, a little over one third 104 (38.1%) of the respondents indicated that accurate information can be verified through reference to credible sources. Both Mfantsipim and Wesley Girls teachers 63 (37.5%) and 41 (39%) respectively shared the same opinion. The next common checking mechanisms were: the source should be part of an edited publication 82 (30.0%); the authenticity of the information created is indicated 44 (16.1%); and known information about the subject and their sources 43 (15.8%).

4.5.3 Checking for scholarly materials

Teachers were asked to indicate how they checked if a particular information was scholarly or not. Table 4.22 gives their responses, the frequency of responses and percentages.

Table 4.22 : Checking if particular information is scholarly or not

	Mfantsipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
The work is by an authority in the subject area	68	48.2	54	56.3	122	51.5
The work is written for a scholarly community	56	39.7	32	33.3	88	37.1
It is written by a colleague	6	4.3	1	1.0	7	3.0
It is found on the Internet	8	5.7	4	4.2	12	5.0
Can't tell	2	1.4	5	5.2	7	3.0
By comparing one information to another	1	.7	0	.0	1	.4
Total	141	100.0	96	100.0	237	100.0

Source: Field data, 2015

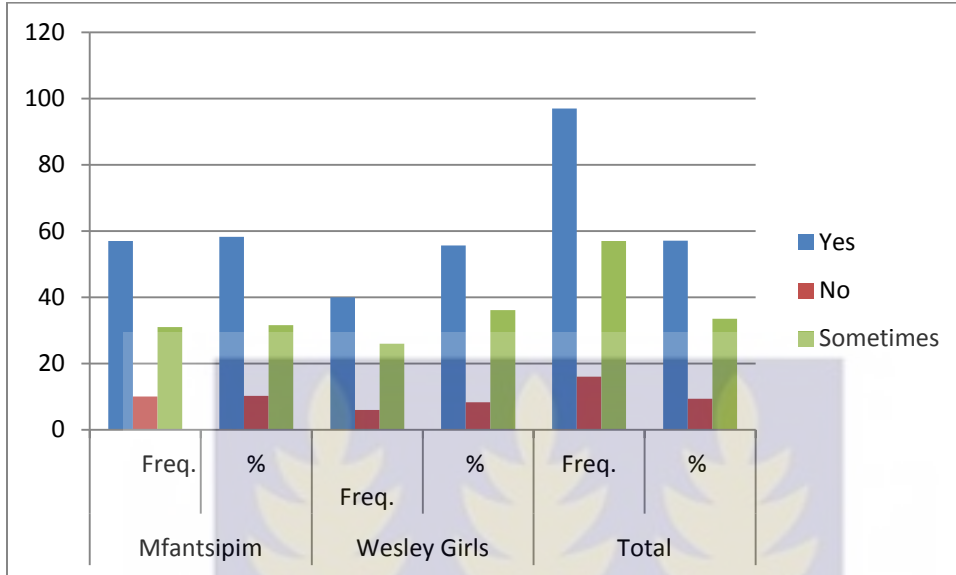
From Table 4.22 which indicates how respondents check if a particular information is scholarly or not, most 122 (51.5%) of the respondents indicated that the work is by an authority in the subject area. “By comparing one information source to another” was the least of the ways alluded to by teachers in both schools 1 (0.7%) and (0%) for Mfantsipim and Wesley Girls respectively for checking if information is scholarly. Some also indicated that the work is written for a scholarly community 88 (37.1%).

4.5.4 Acknowledging sources of information

The study inquired if respondents acknowledged the sources of information they used.

The results are shown in Figure 4.7.

Fig 4.7: Acknowledging sources of information



Source: Field data, 2015

From Figure 4.4, 57 (58.2%) of the respondents from Mfantsipim indicated that they acknowledged the sources of information they used while 10 (10.2%) did not. Respondents from Wesley Girls 40 (55.6%) indicated that they acknowledged the sources they used, however 6 (8.3%) did not. A total respondents of 57 (33.5%) indicated that they sometimes acknowledged the sources of information they used. From the above findings, 97(57.1%) of responses from both schools acknowledged the sources of information they used which is in the right direction as teachers.

4.5.5 Reasons for acknowledging sources

A follow-up question on why respondents acknowledged or did not is presented in Table 4.23.

Table 4.23: Reasons for acknowledging sources of information

Response	Mfantsipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
It is the right thing to do	28	20.7	13	15.1	41	18.6
To prevent plagiarism	51	37.8	39	45.3	90	40.7
For academic integrity	36	26.7	16	18.6	52	23.5
To conform with copyright issues	20	14.8	18	21.0	38	17.2
Total	135	100.0	86	100.0	221	100.0

Source: Field data, 2015

As shown in Table 4.23, out of the 221 multiple responses from both schools, less than half 90 (40.7%) indicated that they did so “to prevent plagiarism” which was the most common reason to both schools. Other reasons included “for academic integrity” 52 (23.5%), “it is the right thing to do” 41 (18.6%), and “to conform to copyright issues” 38 (17.2%). Whereas the next common response among Mfantsipim respondents was for academic integrity 36 (26.7%), that of Wesley Girls 18 (21.0%) was to conform to copyright issues.

4.5.6 Reasons for not acknowledging sources

Respondents indicated why they do not acknowledge the sources that they use (Table 4.24).

Table 4.24: Reasons for not acknowledging sources of information

	Mfantsipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
I am not aware it's the right thing to do	3	23.1	2	33.3	5	26.3
I don't know about plagiarism	3	23.1	1	16.7	4	21.0
I am not aware of academic integrity	1	7.7	0	.0	1	5.3
I am not sure	6	46.1	3	50.0	9	47.4
Total	13	100.0	6	100.0	19	100.0

Source: Field data, 2015

Those who indicated that they do not acknowledge sources of information explained that they were “not sure” 9 (47.4%), “not aware that it was the right thing to do” 5 (26.3%), “were not aware about plagiarism” 4 (21.0%) and 9 (47.4%) of the respondents also signified that they were not sure of what to do.

4.5.7 Inclusion of information into teaching activities

The final issues presented was on how respondents included new information they obtained from libraries and the Internet into their teaching activities. The results are shown in Table 4.25.

Table 4.25: Inclusion of new information into teaching activities

	Mfantsipim		Wesley Girls		Freq.	%
	Freq.	%	Freq.	%		
I summarize new information for teaching	29	26.6	25	32.5	54	29.0
Just give new information to students as it is	11	10.1	4	5.2	15	8.1
I blend information for teaching	67	61.5	48	62.3	115	61.8
I do none of the above	2	1.8	0	.0	2	1.1
Total	109	100.0	77	100.0	186	100.0

Source: Field data, 2015

Out of the 186 multiple responses obtained, the majority 115 (61.8%) of the total respondents indicated that they blend information obtained from libraries and the Internet into their teaching activities with 67 (61.5%) from Mfantsipim and 48 (62.3%) from Wesley Girls. Other ways of including new information are summarizing them for teaching 29 (26.6%) from Mfantsipim and 25 (32.5%) from Wesley Girls. Giving the new information to students as it is, on the average 15 (8.1%), 11 (10.1%) from Mfantsipim teachers and 4 (5.2%) from Wesley Girls teachers. Considering IL and teachers level of education, new information should be scrutinized for students.

Interviews with the Head teachers showed that the most preferred source of information was the Internet. Some of the reasons given were that it was a quicker way of accessing information, convenient and current. The Head teachers were of the opinion that teachers find up to date information from the library and the Internet for their teaching activities. Some of the reasons given were: *this is seen with the regular and constant current information in our educational and political sphere (AHM); no teacher has complained*

of lack of information on the Internet (HM); current issues and contemporary issues are raised since this platform gives up to date information (AHW); they quote the sources of their information and refer students to websites on the Internet (HW).

On the issue as to whether teachers acknowledge sources of information they use for their teaching activities, HM indicated *yes* while HW indicated *not always, teachers use new information from libraries and Internet verbally and as a reference in their lesson notes.*

One clearly defined challenge according to HW was *the sorting of the right information, having time to meticulously strain out the right educational information for the need of the students and syllabus requirement.*

4.6 Role of information literacy in teaching

The forth objective focused on teachers' view on the role of information literacy in their teaching activities. The issues covered include usage of school library resources, accessing the information in the library, frequency of obtaining information from the library, Internet usage, and frequency of obtaining information from the Internet.

Interviews with the Head teachers showed that they have Internet connection, relevant books and textbooks for their teachers in their school libraries. The Head teachers reported that their teachers use the school library and Internet resources to support teaching. According to the HM, *some teachers used the school library and Internet to search for information.* The AHW also explained that *books from various subjects taught are gotten from the library.*

4.6.1 Reasons for use of school library

The study probed the reasons for which the respondents used the school's library resources (Table 4.26).

Table 4.26: Reasons for using school's library resources

	Mfantsipim		Wesley Girls		Total	
	Freq.	%	Total	%	Freq.	%
To look for information to supplement teaching notes	55	44.0	39	43.3	94	43.7
To keep abreast with current information in subject area	42	33.6	30	33.3	72	33.5
To make lesson notes	25	20.0	21	23.4	46	21.4
To educate the general public when the need arises	3	2.4	0	.0	3	1.4
Total	125	100.0	90	100.0	215	100.0

Source: Field data, 2015

From the overall responses from both schools shown in Table 4.33, less than half 94 (43.7%) of the respondents explained that they used school library resources to look for information to supplement teaching notes, 55 (44%) from Mfantsipim and 39 (43.3%) from Wesley Girls respectively. Others explained that they used the library resources in order to keep abreast with current information in subject areas 72 (33.5%), to make lesson notes 46 (21.4%), and educate the general public when the need arises 3 (1.4%).

4.6.2 Reasons for non-use of school library

The study examined why respondents did not use the school's library resources.

Table 4.27: Reasons for not using school's library resources

Reason	Mfantsipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
Opening hours not favorable	12	27.3	7	26.9	19	27.5
Materials available are not relevant for teaching	21	47.7	9	34.6	30	43.5
I am not interested in searching library materials	11	25.0	10	38.5	20	29.0
Total	44	100.0	26	100.0	69	100.0

Source: Field data, 2015

From Table 4.27, less than half 30 (43.5%) of the respondents indicated that the available materials were not relevant for teaching and this was very common in the Mfantsipim School 21 (47.7%) as opposed to “I am not interested in searching library materials” in Wesley Girls 10 (38.5%). Unfavourable opening hours was the least of the reasons given 7 (26.9%) by Wesley Girls while 11 (25.0%) from Mfantsipim indicated “I am not interested in searching library materials” as the least of the reasons for not using the library.

4.6.3 Access to information in the library

The next issue covered was on access to information in the library. The results are shown in Table 4.28.

Table 4.28: Access to information in the library

Response	Mfantsipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
Through the assistance of a library staff	27	32.9	19	38.8	46	35.1
Through friends who know how to use the library	1	1.2	1	2.0	2	1.5
I usually find what I want but with frustration	14	17.1	3	6.1	17	13.0
I know how to search for library materials	40	48.8	26	53.1	66	50.4
Total	82	100.0	49	100.0	131	100.0

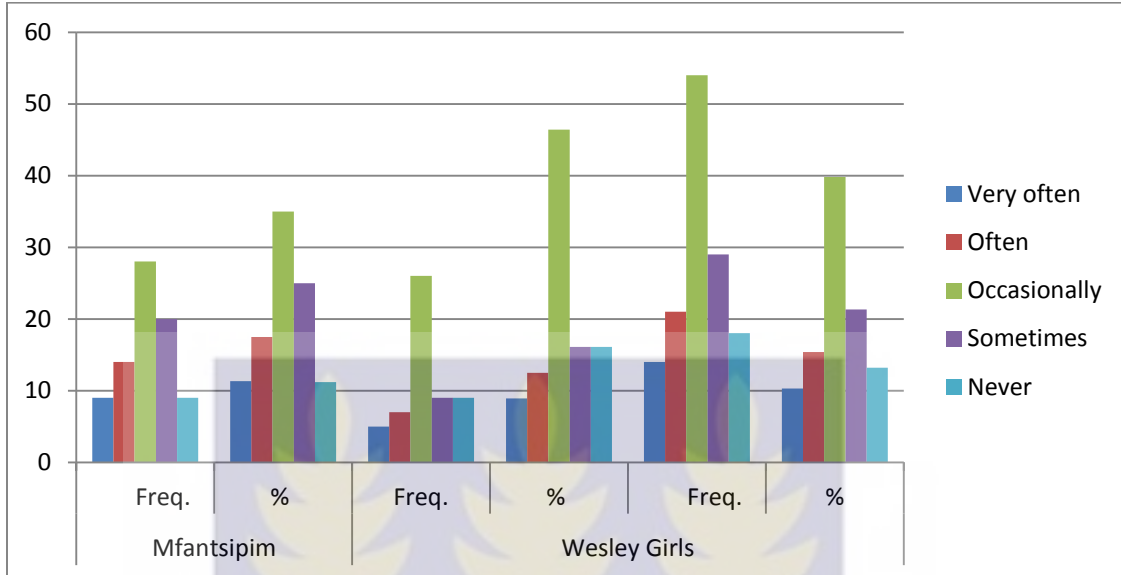
Source: Field data, 2015

From Table 4.28, both teachers from Mfantsipim 40 (48.8%) and Wesley Girls 26 (53.1%) knew how to search for library materials. Some were able to access information through assistance of a library staff 46 (35.1%), on their own accord but with frustration 17 (13.0%). Only few respondents 1 (1.2%) and 1 (2%) for Mfantsipim and Wesley Girls had to use the assistance of friends to search for library materials. This was confirmed by the Head teachers' response which indicated that teachers access information in the library through the assistance of a library staff as well as on their own accord.

4.6.4 Frequency of obtaining information from school library

Frequency of obtaining information from school's library resources are presented in Fig. 4.8.

Fig 4.8: Frequency of obtaining information from school library



Source: Field Data, 2015

As shown in Figure 4.8, 9 (11.3%) respondents from Mfantsipim revealed that they find information from the school’s library “very often” while 5 (8.9%) respondents from Wesley Girl’s indicated same, 14 (17.5%) of the respondents from Mfantsipim indicated that they “often” find the information they need from the library while 7 (12.5%) from Wesley Girl’s also said so. 28 (35.0%) respondents form Mfantsipim said they “occasionally” obtained information from the school’s library resources followed by 20 (25.0%) who indicated “sometimes”. Also 26 (46.4 %) of respondents from Wesley Girl’s indicated that they “occasionally” obtained information from the school’s library resources followed by 9 (16.1%) who indicated sometimes. However, 9 (11.2%) and 9 (16.1%) from both schools indicated that they never obtain information from the school’s library.

4.6.5 Reasons for use of the Internet

On the issue of the reason for use of the Internet, 375 multiple responses were gathered.

The results are presented in Table 4.29.

Table 4.29: Reason for use of the Internet

Reason	Mfantsipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
Research current materials for updating notes for teachers	75	35.5	60	36.6	135	36.0
To get needed information for teaching	70	33.2	54	32.9	124	33.1
Entertainment	25	11.8	16	9.8	41	10.9
Communicate with friends	41	19.4	34	20.7	75	20.0
Total	211	100.0	164	100.0	375	100.0

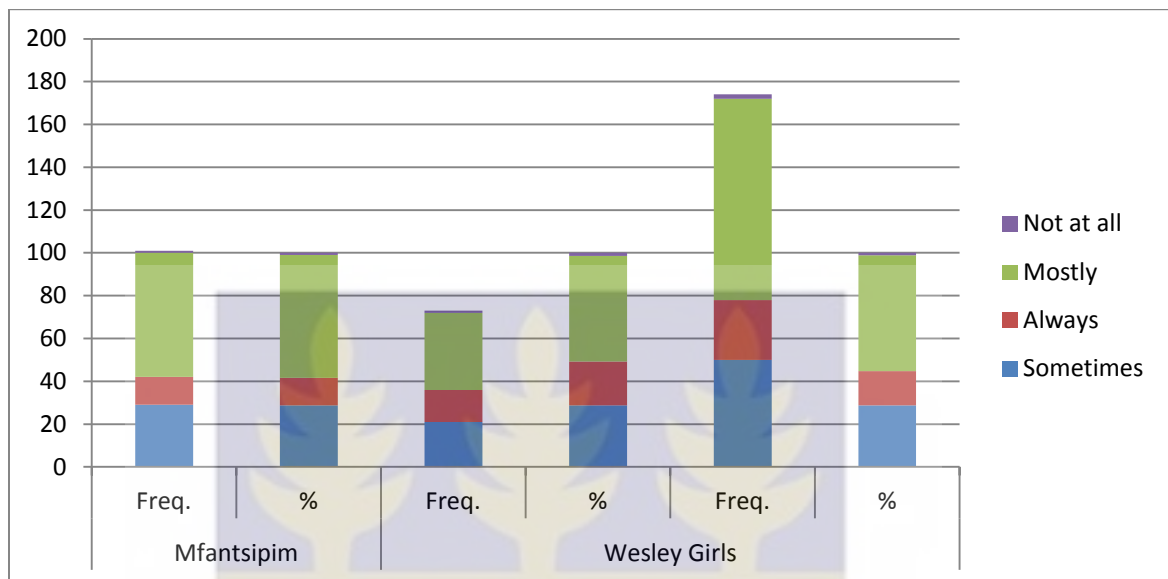
Source: Field data, 2015

As shown in Table 4.29, the most common reason for the use of the Internet was to gather current materials for updating notes for teachers 135 (36.0%). This was evident from both schools with Mfantsipim 75 (35.5%) respondents out of 211 going in favor and 60 (36.6%) respondents from Wesley Girls also sharing the same thought. Other reasons were to get needed information for teaching 124 (33.1%), communicate with friends 75 (20.0%), and entertainment 41 (10.9%). This finding confirms what the Head teachers indicated that their teachers use the Internet to support teaching and obtain up to date information for teaching.

4.6.6 Frequency of use of the Internet

Teachers were asked to indicate their frequency of using the Internet. The results are presented in Fig 4.9.

Fig 4.9: Frequency of use of the Internet



Source: Field data, 2015

The study also found out that a little over half 94 (54.1%) of the respondents always got the information they needed on the Internet followed by those who indicated sometimes 29 (28.7%), and always 28 (16.1%). However, a very few 2 (1.1%) never obtained the information they needed on the Internet.

4.7 Barriers to the development of information literacy skills among teachers

The final objective looked at the barriers that are mitigating the development of information literacy skills among teachers in the two schools. The results are presented in table 4.30.

Table 4.30: Barriers against training on library skills and Internet skills

Response	Mfantsipim		Wesley Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
Time constraints	20	13.7	22	20.6	42	16.6
Interrupted power supply	7	4.8	17	15.9	24	9.5
Instability of Internet	12	8.2	15	14.0	27	10.6
Lack of funds	11	7.5	16	15.0	27	10.6
Inadequate books	6	4.1	3	2.8	9	3.6
Teachers show no interest for training	16	11.0	9	8.4	25	9.9
Not in the curriculum and also not examinable	5	3.4	3	2.8	8	3.2
Not organized often	2	1.4	1	.9	3	1.2
Lack of trained personnel	21	14.4	7	6.5	28	11.0
Lack of facilities	40	27.4	12	11.3	52	20.6
Lack of planning	5	3.4	1	.9	6	2.4
Manpower and logistics	1	.7	1	.9	2	.8
Total	146	100.0	107	100.0	253	100.0

Source: Field data, 2015

From Table 4.30, lack of facilities was the barrier that featured the most 40 (27.4%) in Mfantsipim School. Lack of trained personnel 21 (14.4%), time constraints 20 (13.7%), and teachers not showing interest in training 16 (11%) followed in that order. For Wesley Girls time constraint 22 (20.6%) was mentioned the most; interrupted power supply 17 (15.9%), lack of funds 16 (15%), instability of the Internet 15 (14%) also featured prominently in the barriers. The above barriers were also expressed by the head teachers.

AHM: lack of funds and the current power fluctuations

HM: time and number of computers at the ICT Centre

AHW: Inadequate funding, some teachers are not prepared for these skills

HW: the facilitators, the instrument and availability of the teachers themselves.

4.8 Suggestions from respondents on information literacy training

Respondents were asked to suggest ways by which information literacy skills training could be carried out in their schools. The results are presented in Table 4.31.

Table 4.31: Suggestions

Suggestions	Mfantshipim		Wesley Girls		Total	
	Freq	%	Freq	%	Freq	%
Adequate funds should be given	8	7.2	5	6.6	13	7.0
Availability of materials in the library and Internet access on campus	20	18.0	13	17.1	33	17.6
Administration must embrace this initiation	3	2.7	0	.0	3	1.6
Should be organized departmentally and often	10	9.0	4	5.3	14	7.5
Reliable power supply	2	1.8	4	5.3	6	3.2
Provision of enough computers	6	5.4	2	2.7	8	4.3
Documentation of training procedures	3	2.7	1	1.3	4	2.2
Provide training for all members of staff	7	6.3	3	3.9	10	5.3
Seminars and workshops	6	5.4	3	3.9	9	4.8
Should be done during school vacation and midterms time and should be part of the curriculum	15	13.5	17	22.4	32	17.1
It should be compulsory for every teacher	15	13.5	9	11.8	24	12.8
Resource personnel should be invited to train teachers	9	8.2	6	7.9	15	8.0
Training should be free or subsidized	1	.9	0	.0	1	.5
Training should be practical oriented	2	1.8	1	1.3	3	1.6
Teachers should be made aware of the importance of the training	4	3.6	8	10.5	12	6.5
Total	111	100.0	76	100.0	187	100.0

Source: Field data, 2015

Of the responses, less than half 20 (18.0%) from Mfantsipim and 13 (17.1%) from Wesley Girls indicated that there should be materials in the library and Internet access on campus for the training. For training, 15 (13.5%) from Mfantsipim and 17 (22.4%) from Wesley Girls indicated that training should be organized during vacation and/or mid-terms, thus being a part of the curriculum. Other suggestions include the compulsory training for every teacher 15 (13.5%) for Mfantsipim and 9 (11.8%) for Wesley Girls. Also respondents suggested provision of adequate funds 8 (7.2%) Mfantsipim while Wesley Girl's 5 (6.6%). Only few (0.9% from Mfantsipim and none from Wesley Girls) of the teachers thought training should be free or subsidized.

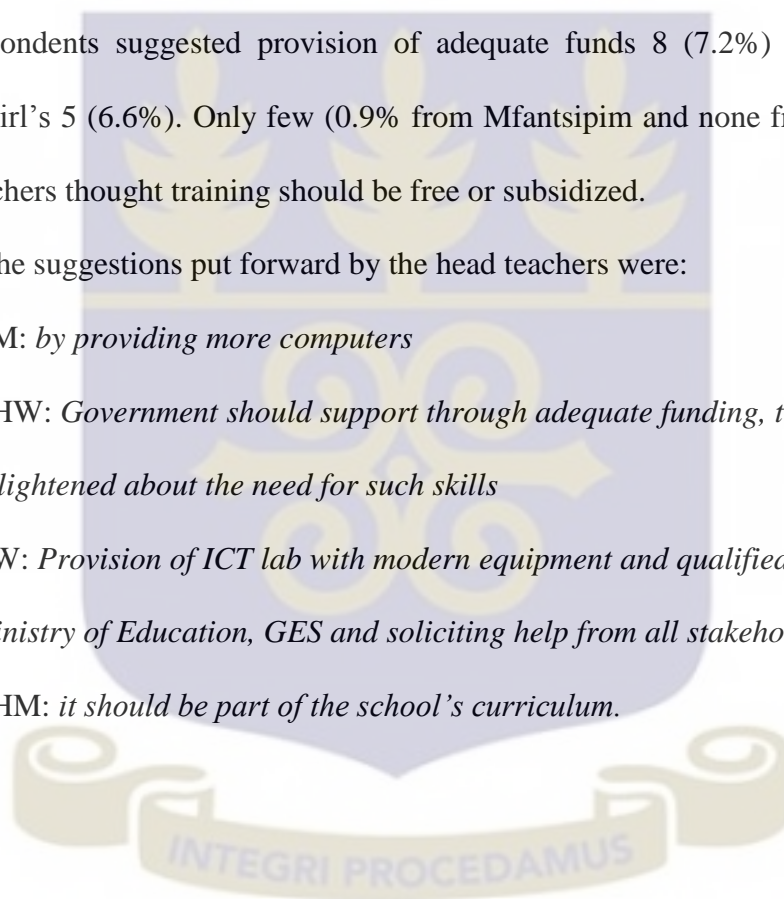
Some of the suggestions put forward by the head teachers were:

HM: by providing more computers

AHW: Government should support through adequate funding, teachers need to be enlightened about the need for such skills

HW: Provision of ICT lab with modern equipment and qualified teachers from the Ministry of Education, GES and soliciting help from all stakeholders.

AHM: it should be part of the school's curriculum.



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CHAPTER FIVE

DISCUSSION AND INTERPRETATION OF RESULTS

5.1 Introduction

This chapter discusses the results of the study as per the objectives outlined in chapter one. The research was undertaken with the aim of investigating information literacy among teachers in second cycle institutions in the Cape Coast metropolis. Mfantshipim School and Wesley Girls High School were used as the case study.

The specific objectives of the study were: to determine the levels of awareness of information literacy among teachers' in Mfantshipim School and Wesley Girls High School; to ascertain the extent of training in information literacy skills organized for teachers' in Mfantshipim School and Wesley Girls High School; to determine the strategies teachers in Mfantshipim School and Wesley Girls High School employ to find and use information from print and electronic sources; to assess teachers' views in Mfantshipim School and Wesley Girls High School on the role of information literacy in their teaching activities; to ascertain the barriers that are mitigating the development of information literacy skills among teachers in Mfantshipim School and Wesley Girls High School; and finally based on the findings of the study recommend appropriate solutions to the challenges.

Related literature was reviewed under the following subheadings: the concept of information literacy; characteristics and attributes of an information literate person; information literacy and teacher development training; models of information literacy for teacher development training and the barriers that mitigate the development of information literacy skills among teachers' in second cycle institutions.

SCONUL's seven pillars of information literacy were used as a theoretical framework for the study. The themes in the SCONUL's framework were related to the objectives of the study. The study employed the descriptive survey design to gain information for the study. Methods used for the study consist of the administration of questionnaire and interview which sought the views of Head teachers, Assistants Heads and teachers on IL.

The discussion begins with the background characteristics of the respondents, level of awareness of IL, extent of training in information literacy skills, strategies employed in searching for information from print and electronic sources, role of information literacy in teaching activities, and the barriers that mitigate the development of information literacy skills among teachers.

5.2 Background characteristics of respondents

The results gathered indicates that 138(78.9%) of the sample was males while 37(21.1%) were females suggesting that there are more male teachers than females in these two selected schools. As shown in Table 4.1, most of the respondents were within the ages of 20-30 and had taught between two to five years. This means that most of secondary school teachers of the sample were in their youthful age. Majority of the respondents (97.1%) were University graduates and that is the acceptable qualification for teachers of secondary schools in Ghana. This suggests that the two schools in the Cape Coast metropolis are not less endowed with respect to quality education. There is the tendency, however, to think that due to their educational level, they would be more information literate but Bruce (1995) states clearly that being a graduate does not make someone information literate and that one can only claim to be educated when he/she is information literate.

The Head teachers were mostly engaged in full-time administration work with the exception of the Assistant Head of Wesley Girls who teaches Biology. Given their relatively long years in service, their responses indicated that they were abreast with the current issues and challenges facing their respective schools in relation to information literacy. Teachers' responses were compared with the steps in the SCONUL (1999) model.

5.3 Level of awareness of information literacy

The first objective sought to determine the level of awareness of information literacy among teachers' in the two selected schools. Teachers' ability to identify and use information resources was looked into. Comparing the views of teachers from the two selected schools, (99.4%) of them agreed that they needed information for their teaching purposes.

From the responses gathered, teachers from the two selected schools were generally aware of and understood the concept of IL but had different interpretations and conceptions of IL. This to some extent influenced greatly their use of the school's library materials and Internet to find information for their teaching activities. Jorosi and Isaac (2008) confirmed this in their study by stating that most teachers in the Community Junior Secondary Schools in Gaborone, Botswana were aware of IL but had varying interpretations and conceptions of what constituted information literacy skills. The study also confirmed Probert's (2009) investigation of teachers' perception of IL where most teachers' were aware and understood the concept of information literacy. The outcome of the study contrasts with the research by Ojedokun (2014) who established low IL level of librarians in South West Nigerian Universities of Nigeria. Again the finding of the study

contracts with Williams and Wavell's (2006) study, where the concept of IL was new to most teachers.

Teachers' ability to recognize personally the need for information is in line with the first pillar of SCONUL's (1999) model (IDENTIFY) which states that the information literate teacher should exhibit the ability to recognize that there is the need for information. From Mfantshipim (91.4%) of teachers as compared to (94.1%) teachers from Wesley Girls said that they needed information to update their lesson notes for teaching, acquire new knowledge in their subject areas and also to keep abreast with current information in their subject areas. Here teachers were able to identify information gaps that existed in their subject areas and source for information to fill these gaps.

This finding of the study is in line with ACRL's (2002) definition of IL. That is the ability of IL persons knowing the nature and scope of information needed. The findings also satisfy the second pillar of SCONUL's model (SCOPE), which dwells on information literate teacher's understanding of assessing current knowledge and being able to identify gaps. This pillar stresses on the ability of the information literate teacher to access current knowledge on the subjects they teach and their ability to understand the characteristics of the various types of information sources. From the responses, teachers from the two schools were able to identify their teaching needs; it can be safely concluded that teachers from both schools satisfied the second pillar of the SCONUL model. From Mfantshipim (95.6%) and from Wesley Girls (96.6%) of teachers indicated that they find information from textbooks, Internet, old notes and the library with the Internet being their major source of information. A few teachers made mention of the fact

that they source find for information from the media, professors, colleagues, seminars, workshops and databases.

The Head teacher's perceived that teachers find and use information from books bought from bookshops, Internet, workshops, seminars, news papers, textbooks, dictionaries and encyclopedias. This confirms the forth pillar (GATHER) of SCONUL which states that information literate teachers should possess the ability to locate and assess information and data needed from print and electronic sources. Teachers indicated Internet as their preferred source of information, thus (35.1%) from Mfantsipim and (35.0%) from Wesley Girls, while library and bookshop followed in that order. As compared to the use of the library (15.1%) of teachers from Mfantsipim and (19.4%) from Wesley Girls indicated that they used the school's library.

There is a clear indication from the above submission that teachers from Wesley Girls use their schools library and Internet resources more than teachers from Mfantsipim. The outcome of the study confirms Merchant and Hepworth's (2002) study on teachers IL, where teachers used the Internet and schools library resources frequently to prepare teaching note, develop new concepts and seek clarification on a topic to be taught.

Interview with the Head teachers from both schools revealed that teachers prefer and desire to use electronic resources as compared to print resources. Teachers' preference and choice of information is confirmed by Merchant and Hepworth's (2002) study where teachers indicated that they find and use information from the Internet, textbooks, news papers, departmental and personal resources. Their choice of electronic sources is consistent with Herring's (2006) study which discovered that teachers had preference for

electronic sources of information over printed sources. It can be deduced from the study that generally, teachers in both schools were aware and made use of the various information sources available to them. This is in line with the definition of the American Library Association (ALA) Presidential Committee on Information Literacy (1989). ALA stated that an information literate person must be able to recognize when information is needed and show competence to locate and utilize effectively and efficiently the needed information. SCONUL put forward that the development of information literacy skills is first recognizing the need for information.

According to Bruce (1995), information literacy is a foundation for lifelong learning especially in the age of continuous technological changes. Therefore, for teachers to keep abreast with information in their subject areas, they need to recognize the need for it and the means to acquire it. Also, this result is confirmed in Tahira & Ameen (n.d) research on Indian teachers which concluded that their information needs were associated more with their teaching activities. It can be concluded that teachers from both institutions recognized the need for information and therefore satisfied the first condition for developing IL skills. The high Internet usage (97.1%) and preference (65.9%) among the teachers' in the study contradicts Korobilli et al. (2011) assertion that about (40.6%) of teachers has never used electronic resources.

On the issue of the reason for their preference of particular information sources, most teachers from both schools routed for easy access to information, while others went for currency, volume, variety and trustworthiness. While Mfantipim teachers found some sources more useful than others for their informativeness, Wesley Girls teachers considered availability important in finding a particular source more useful. The range of

reasons given is in line with Leckie et al. (1996) who pointed out that preference for a particular source of information is influenced by variables such as familiarity, trustworthiness, packaging, timeliness, cost, quality and accessibility.

For teachers of Mfantsipim, the difficulty in getting scholarly materials (19.4%), problems with the Internet (34.5%) and information overload (16.7%) were the major challenges they faced in finding information for teaching. Teachers of Wesley Girls also indicated problems with the Internet (34.2%), information scattered in too many sources, too much information and difficulty in getting scholarly materials as their major challenge. However, information overload should not pose a major problem for an information literate teacher with good searching skills.

Only few (5.6% and 2.7% for Mfantsipim and Wesley girls respectively) stated that they did not know searching skills. Familiarity and accessibility affect the use of a particular source according to Leckie et al. (1996). Also, as stated by Kuhlthau's (1993) model, there are intervening variables that affect information seeking such as the level of complexity, the degree of urgency, uncertainty and other personal, social and environmental factors.

The big six model propounded by Eisenberg & Berkowitz (1987) also intended to promote training and development in IL indicates teacher's capabilities to gather, organize and present information from diverse sources as part of the steps to gain information literacy. The results from the two schools indicate that they were aware of quite a number of educational sites. Comparatively, teachers from Wesley Girls (99.5%) were more aware of a lot of educational sites than Mfantsipim teachers (97.6%).

On usage as well, Wesley Girls teachers used more educational sites than Mfantshipim teachers. It is evident from the results that the more aware teachers were of sources of information, the higher the usage of those sources. This is confirmed by Leckie et al.,(1996) that knowledge of an information source, the content and the perception formed about the source determines the use or non-use of the source and that the more sources people are familiar with, the higher the likelihood that they will use them when they are confronted with an information need. The major reason given for non-usage of some of the educational sites by teachers of both schools were lack of awareness of the sites further makes Leckie et al.'s point even more relevant.

For the sites that were used, most of the teachers from both schools considered them “effective”. Teachers from both schools were aware of a number of search engines such as Google, Google scholar, Ask, Bing, and Yahoo which they also normally used. They considered Google to be “very effective”. It can be deduced from the findings of the study that to some extent teachers from both schools in one way or the other knew how to look for information for their teaching activities from different information sources, which is in line with SCONUL’s pillar three (PLAN). Merchant and Hepworth (2002) claims that teachers are more likely to use familiar resources in their search for information.

Teachers’ awareness and usage of the educational sites show that they are familiar with those sources. For them to rate the sites as “effective” indicate high level of success in its usage as well as search skills. According to Eisenberg & Bersowitz (1987), the ability of teachers to judge the effectiveness and efficiency of the search process is the final step in acquiring the skills in information literacy. The fifth pillar in the SCONUL model

(EVALUATE), deal with how information literate teachers can critically appraise and evaluate sources and the information gathered from different sources. Since teachers from both schools can rate the effectiveness of the sources, they satisfy the requirement for the fifth pillar. There may be differences in their level of knowledge and use of information sources but that notwithstanding the findings gives evidence that most teachers were aware of the information sources available to them, even though they might be using the information resources in varying degrees and for different purposes.

5.4 Extent of training in information literacy

Even though majority of the teachers from both schools claimed their school does not organize formal Internet training for teachers, the Heads indicated otherwise. It was discovered that, training organized was not general and that it was done only for a section of the teaching staff. Generally, the schools did not organize library skills training for teachers as well. The reasons the Heads gave largely showed that they did not see the need for it.

To this effect Merchant and Hepworth (2002) indicated that there should be training and guidance for teachers in IL development. They stated in their study that much attention should be placed on information literacy skills during teacher training education. IT literacy and library literacy form a major part of information literacy. It is important that for teachers who wield a lot of influence in the life of students can be of immense benefit to students if they can transfer relevant knowledge as well as information literacy skills to them.

An interaction with the Heads of the two selected schools revealed that the schools have no policies that guide teachers training in IL. In view of this Bruce (2004) indicated that

there must be international and national policies and guidelines for teacher education in IL, and the organization of information literacy programs for schools to support staff development. Teachers from both schools in an interaction confirmed that they had no formal training in IL in their various Colleges of Education which confirms Lavery and Reed's (2006) study which reported that teachers usually enter the teaching field without the necessary information literacy skills, knowledge and competence that is expected of them.

For this reason, Moore (2002) recommended that training programs for teachers in IL should start right from Colleges of Education. Therefore, schools with interest in lifelong learning, according to Bryce and Withers (2003) should also have a strong interest in information literacy development for teachers.

It is obvious that the Heads do not share in this view as some believe that it is the role of the Universities to teach information literacy. Flockton, Crooks and White (2006) are of the view that the ideology and goals of information literacy are not extensively understood, supported or practiced by the teaching profession and this is confirmed by the Head teachers' assertions.

In their view, Merchant and Hepworth (2002) stated that there should be training and guidance for teachers on how to incorporate information skills into their teaching and this involves the collaborative efforts of academics, staff developers, learning advisers, librarians and administrators (Peacock, 2001).

The outcome of this study brings to bear that most teachers are information literate as a results of their personal interest which is in line with the findings of Merchant and Hepworth's (2002) study which found out that most teachers were information literate as

a result of their personal interest but not because of any formal training. Some teachers from both schools in an interaction affirmed that even though they have had information literacy courses at their various Universities, they learnt IL for examination purposes because due to the large number of students in a class, lecturers were not able to teach practical aspects of using the library and the Internet.

Despite teachers' understanding and use of IL, they need some sort of formal training on library and Internet skills in order to be more proactive in finding and using information for teaching. Todd R. (2003) confirms this in their study that teachers who have adequate training in information literacy are very effective. Also Togia et al. (2014) commend teacher training opportunities, on-the-job training and guidance in IL training for teachers. Cass (2004) in support of this idea stated that all classroom teachers need professional development in IL.

An interaction with the Head teachers from both schools indicated that qualified librarians manage their school library's and these librarians can be very effective in training teachers in IL, Todd R. (2003) said that in IL training for teachers trained school library staff yields a positive outcome. Peacock (2001) suggests IL training for teachers should be a collaborative effort of academics, staff developers, learning advisers, librarians and administrators. Also Heads of the two selected schools and the teachers themselves must be made to understand the essence of IL training programs for teachers in this era of information explosion, Sekyere (2008) stated that successful training depends on teacher preparedness. Bawden and Robinson's (2002) study revealed that professional development in IL for teachers enabled them to inculcate IL skills into students.

5.5 Strategies teachers employ to find information

In determining the strategies teachers employed to find information, teachers' strategy for identifying up-to-date information was looking up for sources that provided updates, edited or revised materials and taking note of creation of the information. Most Mfantsipim teachers watched out for sources that provided update (28.9%), while Wesley Girls (34.0%) watched out for edited or revised materials to be sure they were up-to-date. In checking the accuracy of information, both Mfantsipim (37.5%) and Wesley Girls (39.0%) teachers verified by referring to credible sources most.

Of the ways of checking accuracy, knowledge of the subject and sources was least considered by both schools. They also checked if the work is by an authority in the subject area or written for a scholarly community to be sure if the information is scholarly or not.

The finding of this study confirms Anunobi and Udem's (2015) study which revealed that students knew where to locate information, understood how to evaluate and utilize information.

In the fourth pillar of the SCONUL model (GATHER), information literate teachers should possess the knowledge of searching techniques to find information; this determines to some extent their IL skills. From the research findings, teachers from both schools had different strategies for assessing up-to-date information and checking the accuracy of information. The strategies used by teachers in both schools for checking scholarly materials show high application of pillar three in the SCONUL model.

Most teachers from both schools indicated they acknowledged the sources they used. As to why they acknowledged the sources, most of them indicated "to prevent plagiarism".

While some teachers from Mfantsipim (20.7%) chose the moral reason (“it is the right thing to do”), some teachers from Wesley Girls (21.0%) did it for copyright sake. These reasons all conform to the ethical basis for acknowledging sources. Reasons for non-acknowledgement of sources by teachers were the fact they were not sure of what to do and were not aware it was the right thing to do. The frequency difference in acknowledgement and non-acknowledgement is high in both schools indicating a relatively high conformity level to ethical standards.

Pillar six (MANAGE) looks at how to organize and manage information professionally and ethically. Most of the teachers from both schools through their response demonstrated their ability to meet requirements for academic integrity and therefore satisfy the requirements for pillar six of the model.

Most teachers from both schools gave similar responses on how they used new information stating that they blended new information with existing ones for teaching. Following after “I blend information for teaching”, Mfantsipim (61.5%) and Wesley Girls (62.5%) was “I summarize new information, for teaching”, Mfantsipim (26.6%) and Wesley Girls (32.5%). Pillar 7 (PRESENT) states that the information literate teacher should be able to blend research results and create new knowledge in their teaching. They should also be able to summarize the results of a search. Teachers from both schools on the whole satisfied this requirement. As (1.8%) of teachers in Mfantsipim did not blend or summarize information for teaching, none from Wesley Girls did same. Overall, Wesley Girls demonstrated superiority in this regard.

An overall assessment on the level of awareness and strategies falls in line with Doyles (1992) attributes of an IL person, where an IL person is aware of potential sources of

information and accesses these different sources of information to solve problems. As asserted by SCONUL (2011), information literate persons are able to locate, use and manage information effectively.

The findings of the study contradict a similar study by Williams and Wavell (2006) on teachers' conceptions of IL. Williams and Wavell found out that most teachers were not aware of the various sources of information that were available to them. It is clear from the findings that the teachers from both schools were aware of various information sources and were using different strategies to find information sources to satisfy different information needs.

The findings of the study bring to light that teachers from both schools confidently use different strategies to find information which contrasts with Duke and Asher's (2012) study which revealed that students experience anxiety and confusion in their quest for informational resources for academic work. Even though teachers from the two selected schools generally do have any formal training in IL, many of them possess moderate level of IL.

5.6 Role of information literacy in teaching

Teachers' views on the role of IL were looked into. The findings of the study revealed how teachers used and handled information found from library and Internet resources. The interview responses gathered from the Head teachers brought to light that teachers used the schools Internet and libraries' resources to find information to supplement teaching. This is in line with Herring's (2006) findings which established that teachers

had a range of understanding about the importance of information literacy skills in their teaching.

Teachers gave their reasons for using the library and Internet to satisfy their information needs, (44.0%) and (43.3%) of teachers from Mfantsipim and Wesley Girls respectively stated that they used library materials to supplement their teaching notes and to keep abreast with current information in their subject area, Mfantsipim (33.6%) and Wesley Girls(33.3%). Other teachers also made mention that they use the library to make lesson notes, thus (20.0%) from Mfantsipim and (23.4%) from Wesley Girls. This concurs with the findings of Merchant and Hepworth's (2002) study.

The study established that teachers in preparing for their teaching activities used the library to develop materials for teaching and also seek clarity and make teaching notes on a topic or subject to be taught. However, (47.7%) teachers from Mfantsipim who did not use the library mostly claimed the materials there were not relevant for teaching. Wesley Girls (38.5%) teachers on the other hand mostly were not interested in using library materials.

Access to materials in the library, according to majority of the teachers from both schools, was through their own effort and search skills, (48.8%) from Mfantsipim and (53.1%) from Wesley Girls. A considerable number also used the help of a library staff, (32.9%) from Mfantsipim and (38.8%) from Wesley Girls. Teachers from Mfantsipim seek help from Library Assistants more than teachers from Wesley Girls. On how often they obtained information from the library's resources, less than half of the respondents, (35.0%) from Mfantsipim and (46.4%) from Wesley Girls indicated "occasionally", these

findings is no different from a study conducted by Johnson (2000), in Kogi state, Nigeria in which he concluded that secondary school teachers did not find the materials in their libraries relevant. This goes to confirm why they obtained information “occasionally” from the library.

With the introduction to the use of the Internet, teachers from both schools learnt the use of Internet by themselves, (66.5%) from Mfantsipim as against (66.7%) from Wesley Girls. (15.2%) teachers from Mfantsipim and (14.7%) from Wesley Girls indicated that they were taught how to use the Internet by friends. Only few from both schools, (1.3%) from Wesley Girls and (4.8%) from Mfantsipim though relatively higher in Mfantsipim, had no training at all in Internet usage.

For respondents who knew how to use the Internet, most of them used it for the purposes of researching for current materials to update their notes for teaching, (35.5%) from Mfantsipim and (36.6%) from Wesley Girls. This represents the fact that, most teachers from Wesley Girls research materials for teaching from the Internet as compared to teachers from Mfantsipim. On the frequency of use, most of the teachers indicated “mostly”, with (57.4%) from Mfantsipim and (49.3%) from Wesley Girls. Comparing this with teachers’ use of the library, it is obvious they preferred electronic sources to print sources. This is in agreement with Herring’s (2006) study which discovered that teachers had preference for electronic sources of information over print sources. The above discussion satisfies SCONUL’s pillar two (SCOPE). The findings disagree with Miller and Murillo’s (2012) which indicated that students often struggle with finding informational resources for learning.

5.7 Barriers against the development of information literacy skills among teachers

Several reasons were alluded to as mitigating the development of information literacy in both schools. Lack of facilities (27.4%) featured the most as the barrier to training and library skills in Mfantshipim followed by lack of trained personnel (14.4%) and time constraints (13.7%, as the results of the packed nature of the schools time table). Wesley girls, however, did not have “lack of facilities” as the major barrier but rather time constraint (20.6%), interrupted power supply (15.9%) and lack of funds (15%). The Head teachers also confirmed the barriers that the teachers indicated and added that teachers themselves are not prepared for the training.

Stockham and Collins (2010) noted that most teachers think that the curriculum is loaded and teachers have tight time tables; since IL is not captured in the curriculum, it is not necessary. This is evident in the reasons that the teachers gave. Bruce’s (2004) indicates that there is the need for institutional policies to institute and sustain information literacy education programs to promote staff development and curriculum initiatives. Policy formulation is one sure way to ensure that the necessary tools and facilities are made available for development of information literacy.

In suggesting ways by which information literacy training could be carried out in their schools, most teachers from Mfantshipim suggested that facilities be made available, vacation and mid-term periods be used and training made compulsory. Other suggestions made included training done departmentally, use of resource persons in training and teachers made aware of importance of training.

Teachers from Wesley Girls also suggested vacation and mid-terms for training, availability of facilities, making training compulsory, awareness creation and use of

resource persons. Policy formulation, which Bruce (2004), believes should be instituted to guide teacher education in IL, will be the sure way to factor the suggestions and concerns of teachers for successful implementation. IL training involves the collaborative efforts of academics, staff developers, learning advisers, librarians and administrators (Peacock, 2001). A successful IL training therefore will require the efforts and support of all stakeholders. Teacher preparedness is also a key to consider.



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CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the summary, conclusion and recommendations of the study. The summary presents a brief description of the study. The conclusion touches on the salient issues found out in the study and based on the findings, the recommendations made. The study examined the level of information literacy among teachers in second cycle institutions in the Cape Coast Metropolis. Two schools were selected for the study: Mfantsipim School and Wesley Girls High School.

The study set out to determine the level of awareness of information literacy among teachers in both schools; to ascertain the extent of training in information literacy skills organized for teachers in both schools; to determine the strategies teachers in both schools employ to find and use information from print and electronic resources; to assess teachers' views in both schools on the role of information literacy in their teaching activities; and to ascertain the barriers that is mitigating the development of information literacy skills among teachers in both schools.

To achieve these objectives, all the teachers from both schools were selected to participate in the study. The Head teachers of the two selected schools were included in the study. In all, there were 179 participants – 4 Heads of schools, 102 teachers from Mfantsipim School and 73 from Wesley Girls High School.

6.2 Summary of findings

From the study, the following findings were made, based on the objectives.

6.2.1 Level of awareness

From the study, majority of the respondents were between the ages of 30 – 40 years (48% for Mfantsipim and 38.4% for Wesley Girls), (99% and 94.5% for Mfantsipim and Wesley Girls respectively) were University graduates and had taught for at least two years (91.1% and 87.7% for Mfantsipim and Wesley Girls respectively). It was considered that these demographic factors put them in a good position to respond to a study of this nature. Almost all the teachers (99.4%) acknowledged they had an information need which is the basic requirement for IL development.

Concerning their level of awareness of information, it was found out that teachers sought information mostly from Internet (35.1% and 35.0% respectively) and textbooks (32.7% and 31.7% respectively) and had a high preference for the Internet compared to other sources (62.9% and 70.5% respectively) for different views on a subject (27.9% for Mfantsipim) and quick access (33.9% for Wesley Girls). They sought information usually for the purpose of keeping abreast with current information in their subject areas (32.7%) for Mfantsipim and updating their lesson notes (32.3%) for Wesley Girls.

Teachers were aware and used a of number of educational sites including Education World (32.3% and 33.3% respectively) and Science spot (23.4% and 19.7% respectively). They were also aware of a number of search engines and used some of them especially Google (57.1% from Mfantsipim and 36.5% form Wesley Girls respectively) to find information for teaching. Most of the respondents ranked the educational sites “effective”

(51.3% from Mfantshipim and 66.7% from Wesley Girls respectively) and Google “Very effective” (30.3% from Mfantshipim and 22.2% from Wesley Girls respectively).

6.2.2 Extent of training in IL

In examining the extent of training in IL, no formal training was organized for teachers in both schools on Internet skills (67.0% and 49.3% respectively) and library skills (88.9% and 87.2% for both schools respectively). The Heads of Wesley Girls however indicated some training of some sort had been organized in the past while the Heads of Mfantshipim also indicated that some sort of training was organized for some teachers, with those in mathematics and physics department benefiting. For teachers who had indicated that they had had some training before, it is believed they might belong to the category who had had long years of service in the school.

6.2.3 Strategies teachers employ to find information

Even though the findings of the study indicated that the two selected schools did not organize any formal training in IL for teachers, teachers from both schools to some extent possessed some level of IL skills and employed various strategies to find information from the library and Internet to support their teaching notes.

In investigating the strategies teachers used for finding information in print and electronic sources, the following findings were recorded; most teachers from Mfantshipim looked out for materials with updates (40.4%), checked for accuracy by referring to credible sources (37.5%), looked out for scholarly materials which were authored by authorities in the field (48.2%), acknowledged sources used usually to avoid plagiarism (37.8%), and blended information obtained with existing notes for teaching (61.5%). Most of the

teachers from Wesley Girls on the other hand checked the currency of information by using the edition or when the material was revised (38.5%); verified accuracy by referring to credible sources (39%); checked if material was scholarly by looking at authority in the subject area (56.3%); acknowledged sources used to prevent plagiarism (45.3%); and used information sourced by blending them with existing ones in teaching (62.3%).

6.2.4 Role of literacy in teaching

From the study, most of the teachers from both schools used the library for the purpose of obtaining information to supplement teaching notes. However, the major barriers that affected their use of the library were the fact that for Mfantsipim materials available in the library were not relevant for teaching (47.7%). For Wesley Girls, their preference for electronic materials affected their interest in the use of library materials (38.5%).

For respondents who used the library, majority of them (48.8% and 53.1% for both Mfantsipim and Wesley Girls) knew how to search materials on their own but obtained information “occasionally”, obviously because of lack of relevant materials. Most of the teachers from both schools learnt to use the Internet on their own, used it “mostly” to research in order to update their notes (36.0%).

6.2.5 Barriers against the development of information literacy skills among teachers

Lack of facilities (27.4%) was named among a host of others as the major barrier by Mfantsipim school teachers while time constraints (20.6%) was named by Wesley Girls High school teachers as the major barrier affecting training of teachers in IL skills. To help overcome these barriers, teachers from Wesley Girls suggested IL training should be organized during school vacations and mid-terms and should be part of the curriculum

(22.4%). Mfantsipim School teachers, however, suggested provision of library materials and Internet access on campus. Others also suggested that IL training be made compulsory for all teachers.

6.3 Conclusion

SCONUL's seven pillars of information literacy was appropriate and consistent and clearly mapped out the level of IL in teachers from both schools. Teachers from Mfantsipim Boy's school and Wesley Girls High school possess information literacy knowledge which is exhibited in their understanding of when and why information is needed, where to locate it, how to evaluate it, how to use and communicate it ethically to support their teaching activities.

It can be concluded that teachers from both schools possess moderate levels of information literacy skills. No wonder these two selected schools are among the category 'A' schools in the Cape Coast metropolis. However there is the need for some form of continuous professional training in IL for teachers in order to enhance the information literacy skills of the teachers. There should be institutional and national policies that will guide such training for teachers.

6.4 Proposed IL model for teachers in second cycle institutions in Ghana

The study found out that, teachers from both schools possessed moderate level of IL skills despite several challenges and constraints that inhibited their development in IL. Based on the findings of the study, the researcher proposes a revised model of SCONUL to suit the Ghanaian context. Considering the various challenges and constraints that inhibit teachers IL training in the two selected schools, teachers attaining an "expert user"

level of the SCONUL model will be a tall order. That notwithstanding, there should be a starting point in teachers IL training. To make training straightforward and effective, five basic levels of an information literate person is teased out of the seven pillars of SCONUL (1999) model by the researcher to train teachers in Ghanaian second cycle institutions. Teachers in these institutions will be trained to attain the level of a “novice user” which is the base level of the SCONUL model. That is, being competent in using basic information skills to find and use information for teaching since teachers at this level of searching for information to teach secondary school students do not involve in vigorous research that demands a high level of IL skills. The SCONUL model has it that an individual can develop IL skills concurrently; but the proposed model requires that teachers develop IL skills in a linear order and in a systematic way. That is being competent in level 1, which is “information need” through to the “application of knowledge” which is level 5. The revised model also requires that if teachers are not able to achieve the necessary competence in IL after going through all the levels then, there should be retraining. In that, IL development cannot be achieved over night but with time and practice over a period of time, the competency will develop. This is pertinent because, training in IL is virtually non-existent in Ghanaian schools and therefore a systematic approach to developing IL skills need to be adopted. The proposed model is simple, straightforward and different from the SCONUL model. The proposed model will also be useful in the training of other staffs in Second cycle institutions.

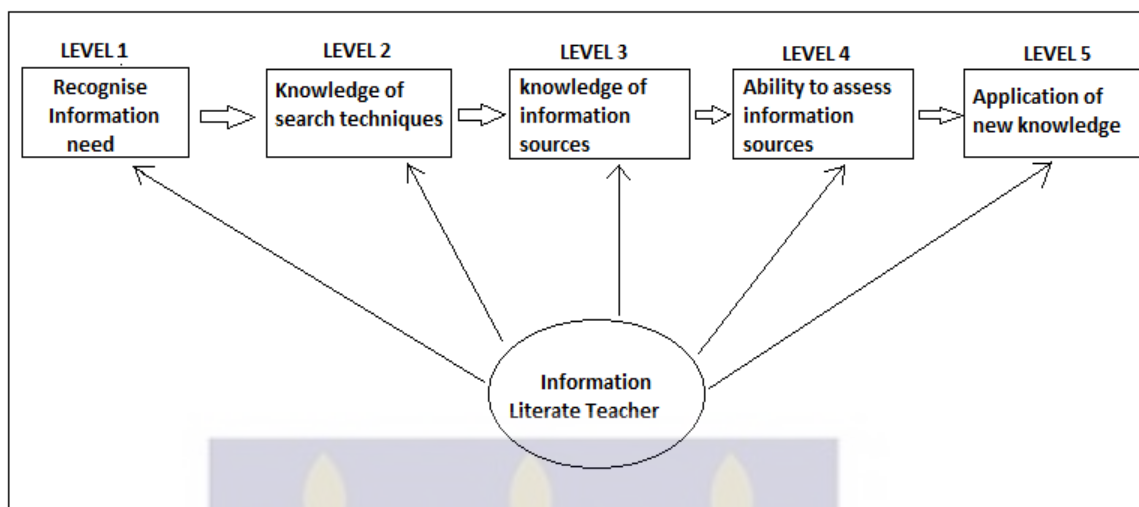


Fig 5.1: Tachie-Donkor's IL Model for second cycle institutions in Ghana

The proposed model requires that the information literate teacher:

1 Recognizes information need (LEVEL 1)

This is fundamental to IL development. Information need is instigated by a gap in knowledge. New knowledge is created everyday and the ability to recognize a gap in one's knowledge in the subject area, especially for teachers, is important. In preparing lesson notes for teaching, teachers should be able to capture all relevant information in their subject areas. This requires being aware of the existing gaps and filling them appropriately.

2 Has knowledge of search techniques (LEVEL 2)

This is the ability of the information literate teacher to find information using basic search skills and strategies from information sources.

3 Has knowledge of information sources (LEVEL 3)

There are several sources of information in different forms available to teachers. However, to access these information sources, teachers must know their sources of information with regards to their subject areas and how to locate them.

4 Has the ability to assess information sources (LEVEL 4)

Locating the sources is not enough. Information literate teachers should be able to evaluate the authenticity of these sources as well as the information accessed.

5 Applies new knowledge (LEVEL 5)

The consequence of seeking information is to satisfy the need that prompted its acquisition. The information literate teacher should therefore have the ability to acquire relevant information that fills the gap in his/her subject areas and repackage the information in a manner that will meet the cognitive level of the students.

6.5 Recommendations

The study revealed that in the two selected schools teachers had no training in IL, library materials were irrelevant to teacher's informational needs and there was unstable Internet connection on the various campuses. Based on the findings of this study, the following recommendations were made;

1. There should be in-service training on IL skills for secondary school teachers by Ghana Education Service, since currently what is offered to teachers is on computer training which a minor aspect of IL.

2. The government and Heads of schools should provide relevant library materials and stable Internet facilities for Ghanaian secondary schools since these are the relevant tools needed for IL development. There should be a strict usage of students' library user fee in that direction.
3. IL needs to be incorporated into the curriculum for colleges of education & senior high schools by Ghana Education Service.
4. The Ministry of Education must provide a national and institutional policy on IL development which will guide training and sustainability in Colleges of Education and Secondary Schools in Ghana as advocated by Bruce (2004).
5. Ghanaian teachers IL training should be a collaborative effort of teachers, school librarians and administrators as Peacock, (2001) said.
6. Heads of institutions should ensure that training is held during periods when teachers are available and willing to participate.
7. Above all, Heads of institutions should make IL training programs compulsory for all teachers in secondary schools.
8. The researcher recommends Tachie-Donkor's IL Model, a revised version of SCONUL (1999) model as an appropriate model for IL training in secondary schools in Ghana.

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APENDIX A

UNIVERSITY OF GHANA

DEPARTMENT OF INFORMATION STUDIES

Dear Sir/Madam,

I am Miss Gloria Tachie –Donkor, a graduate student of the University of Ghana pursuing a Master of philosophy in Information Studies degree. I am conducting a research in *information literacy among teachers in second cycle institutions in the Cape Coast metropolis*. I will be grateful if you could spare a moment to respond to the following questions to enable me have a fair view on the topic.

Important Note: The information you 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.

Yours sincerely,

Gloria Tachie-Donkor.

Please tick as appropriate [].

SECTION A: BIOGRAPHICAL INFORMATION

1. Please indicate your gender.

- a. Male [] b. Female []

2. Please indicate your age.

- a. 20- 30 yrs [] b. 30- 40 yrs [] c. 40- 50 yrs [] d. 50 and above []

3. What is your maximum level of education?

- a. University Graduate [] b. Diploma holder [] c. Post secondary [] d. Cert A []

4. What subject(s) do you teach?

Please specify.....

5. How long have you been teaching?

- a. Less than 2 years [] b. 2-5 years [] c. 6-9 years [] d. 10 years and over []

SECTION B: LEVEL OF AWARENESS OF IL

6. Do teachers need information?

- a. Yes [] b. No []

7. What do teachers require information for? (Please tick all that apply)

a. Update lesson notes for teaching b. Entertainment c. Acquire new knowledge in subject area

d. To keep abreast with current information in subject area.

8. From which sources do you get relevant information for teaching?

- a. Text books b. Internet c. Old notes d. Library e. Other.....



SECTION C: EXTENT OF TRAINING IN IL SKILLS ORGANISED FOR TEACHERS

9. How were you introduced to the use of the Internet?

- a. I was taught by a friend
- b. Training was organized by the school
- c. I learnt it myself
- d. I have no training at all

10. Does your school organize any formal training on Internet skills for teachers?

- a. Yes
- b. No
- c. Sometimes

11. Does your school organize any formal training on library skills for teachers?

- a. Yes
- b. No
- c. Sometimes

SECTION D: STRATEGIES TEACHERS EMPLOY TO SOURCE FOR INFORMATION

12. Which of the following sources of information do you prefer?

- a. Library
- b. Internet
- c. Books bought from bookshops
- d. Other.....

13. Why would you select one source over the other?

- a. For faster information
- b. For current information
- c. For large amount of information
- d. For different views on the same subject
- e. Other.....

14. Why do you find some sources particularly useful?

- a. Availability
- b. Currency
- c. Informative
- d. Relevant

15. What challenges do you encounter in using information from these sources?

- a. Information scattered in too many sources
- b. I don't know searching skills and search strategies
- c. Difficulty in getting scholarly materials
- c. Too much information available

- d. Irregular Internet access
- e. Sometimes the Internet is slow
- f. Irregular power supply

g. Other Please specify.....

16. Which of these educational sites are you aware of?

- a. THE SCIENCE SPOT
- b. VOCATIONAL INFORMATION CENTER

- c. EDUCATION WORLD
- d. MUSIC THEORY

- e. USOE – FINE ARTS SECONDARY
- f. BIZED

- g. SMITHSONIAN EDUCATION
- h. NSTA

- i. TEACHING PROCEDURAL AND TECHNICAL SKILLS
- j. BIOED

k. Others please specify.....

17. Which of them do you get information for teaching?

- a. THE SCIENCE SPOT
- b. VOCATIONAL INFORMATION CENTER

- c. EDUCATION WORLD
- d. MUSIC THEORY

- e. USOE – FINE ARTS SECONDARY
- f. BIZED

g. SMITHSONIAN EDUCATION

h. NSTA

i. TEACHING PROCEDURAL AND TECHNICAL SKILLS

j. Others please specify.....

18. If you don't use any, please indicate why?

a. I am not aware of these educational sites b. Internet access on campus is erratic c. I don't know how to access the educational sites

d. Other reasons (Please indicate)
.....
.....
.....

19. How effective are these educational sites in satisfying your teaching needs?

a. Very effective b. Effective c. Somehow effective d. Not effective

20. Which of these search engines are you aware of?

a. Google b. Google scholar c. Yahoo
d. Ask e. Bing
f. Other (s) (please specify).....

21. Which of them do you normally use to search for information for your teaching activities?

a. Google b. Google scholar c. Yahoo
d. Ask e. Bing
f. Other(s) (please specify).....
.....

22. How would you rate their effectiveness in retrieving information to meet your teaching needs?

	Very effective	Effective	Somewhat effective	Not effective
Google				
Google Scholar				
Yahoo				
Ask				
Bing				

23. Do you get up to date information from the library and Internet for your teaching activities?

- a. Yes b. No c. Sometimes

24. If your answer is YES, how do you know it is up to date? Tick as many as are applicable.

- a. There is a date stating when the document was originally created
 b. It is obvious when the source was last updated, edited or revised
 c. Most sources indicate materials update

d. Other please specify.....

25. How would you know that particular information is accurate? Tick as many as applicable

- a. The source should be part of an edited publication
- b. Accurate information can be verified through reference to credible sources
- c. The authenticity of the information created is indicated
- d. I already know about the subject and their sources

26. How can you tell that particular information is scholarly or not? Tick as many as applicable

- a. The work is by an authority in the subject area
- b. The work is written for a scholarly community
- c. It is written by a colleague
- d. It is found on the Internet

e. Can't tell

f. Other please
specify.....

27. Do you acknowledge the sources of information you use? (Eg. books, websites, government publications etc)

- a. Yes b. No c. Sometimes

28. If yes, why?

a. It is the right thing to do b. Prevent plagiarism c. For academic integrity e. To conform with copy rights issues

29. If no, why?

a. I am not aware it's the right thing to do b. I don't know about plagiarism c. I am not aware of academic integrity e. I am not sure

30. How do you include new information from libraries and Internet into your teaching?

a. I summarize new information for teaching b. Just give new information to students as it is c. I blend different information for teaching d. I do none of the above

SECTION E: ROLE OF INFORMATION LITERACY

31. Do you use the school libraries resources?

a. Yes b. No

32. If yes, for what purpose(s). Tick as many as apply

a. To look for information to supplement teaching notes

b. To keep abreast with current information in subject areas

d. To make lesson notes

e. Other.....

33. If no, what are your reasons? Tick as many as apply

- a. Opening hour's not favorable b. Materials available are not relevant for teaching
- c. Not familiar with the search processes. d. I am not interested in searching library materials
34. How do you access the information in the library?
- a. Through the assistance of a library staff b. Through friends who know how to use the library c. I usually find what I want but with frustration d. I know how to search for library materials
35. How often do you get information from the school libraries resources?
- a. Very often b. Often c. Occasionally d. Sometimes e. Never
36. Do you use the Internet?
- a. Yes b. No
37. Do you use information on the Internet more than the library for teaching?
- a. Yes b. No
38. What do you use the Internet for?
- a. Research current materials for updating notes for teaching b. To get needed information for teaching c. Entertainment d. Communicate with friends
39. Do you always get the information you need from the Internet?
- a. Sometimes b. Always c. Mostly d. Not at all

40. How often do you use the Internet?

- a. Most often
- b. Often
- c. Not at all

SECTION F: BARRIERS THAT MITIGATE THE TRAINING AND DEVELOPMENT

41. What are some of the barriers that mitigate the training in library skills and Internet skills in your school?

a.....

.....

.....

b.....

.....

.....

c.....

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42. Suggestions or comments on how training in library skills and Internet skills should

be carried out in your school

a.....

.....

b.....

c.....

THANK YOU



APENDIX B

UNIVERSITY OF GHANA

DEPARTMENT OF INFORMATION STUDIES

INTERVIEW SCHEDULE FOR THE HEADMASTER/HEADMISTRESS AND THE ASSISTANT HEADS OF THE TWO SELECTED SCHOOLS.

This is a research project carried out with the approval of the Department of Information Studies. The objective of the research is to bring to light the information literacy levels of teachers in second cycle institutions in the Cape Coast metropolis.

Information literacy is the ability of someone to be able to recognize when information is needed and show competence to locate, evaluate and utilize the needed information effectively and efficiently.

SECTION A: BIO-DATA

1. Please what is your position/rank?

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.....

2. How many years have you been on the said position in question 1?

.....

3. Do you teach?

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.....
.....

SECTION C: LIBRARY AND INTERNET FACILITIES AVAILABLE TO TEACHERS

9. Does the school have Internet facilities and an ICT centre for teachers?

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10. How resourced is the ICT centre? Eg. WIFI

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11. Does the school have a library?

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12. What materials does the school have in the library for teachers?

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13. Do your teachers use the school library's resources to support their teaching?

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14. If yes, how do your teachers access information in the library?

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15. If no, why do you think your teachers don't use the school library's resources to support their teaching?

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16. Do your teachers use the Internet in the school to support teaching?

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17. In your view, how do the school library resources and Internet facilities help teachers in their teaching?

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SECTION D: EXTENT OF TRAINING IN IL SKILLS ORGANIZED FOR TEACHERS

18. Does the school organize any formal training on Internet skills for teachers?

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19. If No, why?

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.....

20. Does the school organize any formal training on library skills for teachers?

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21. If No why?

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22. If yes, where is this training organized?

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23. Which teachers benefit from this training?

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24. Who facilitates this training?

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25. What facilities and materials are used for the training?

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.....

26. How is the training carried out?

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27. How long does the training last?

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.....

28. How frequent is the training?

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SECTION E: STRATEGIES TEACHERS EMPLOY TO LOOK FOR INFORMATION

30. Which sources of information do you think your teachers prefer?

- a. Library materials b. Internet resources

29. Why?

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30. Do you think your teachers get up to date information from the library and Internet for their teaching activities?

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31. How do you know?

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32. Do you think your teachers acknowledge the sources of information they use for their teaching activities? (Eg. books, websites, government publications etc)

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.....

.....

33. In your view, how do your teachers include new information from libraries and Internet into their teaching?

.....
.....
.....
.....

36. Which educational sites do you think your teachers are aware of, access and use to support their teaching?

- a. THE SCIENCE SPOT CENTER
- b. VOCATIONAL INFORMATION CENTER
- c. EDUCATION WORLD
- d. MUSIC THEORY
- e. USOE – FINE ARTS SECONDARY
- f. BIZED
- g. SMITHSONIAN EDUCATION
- h. NSTA
- i. TEACHING PROCEDURAL AND TECHNICAL SKILLS
- j. BIOED
- k. Others please specify.....

37. What challenges do you think your teachers will encounter when using information from these sources?

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SECTION F: BARRIERS THAT MITIGATE THE TRAINING AND DEVELOPMENT OF IL

38. What are some of the barriers that mitigate the training in library skills and Internet skills in your school?

.....

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.....

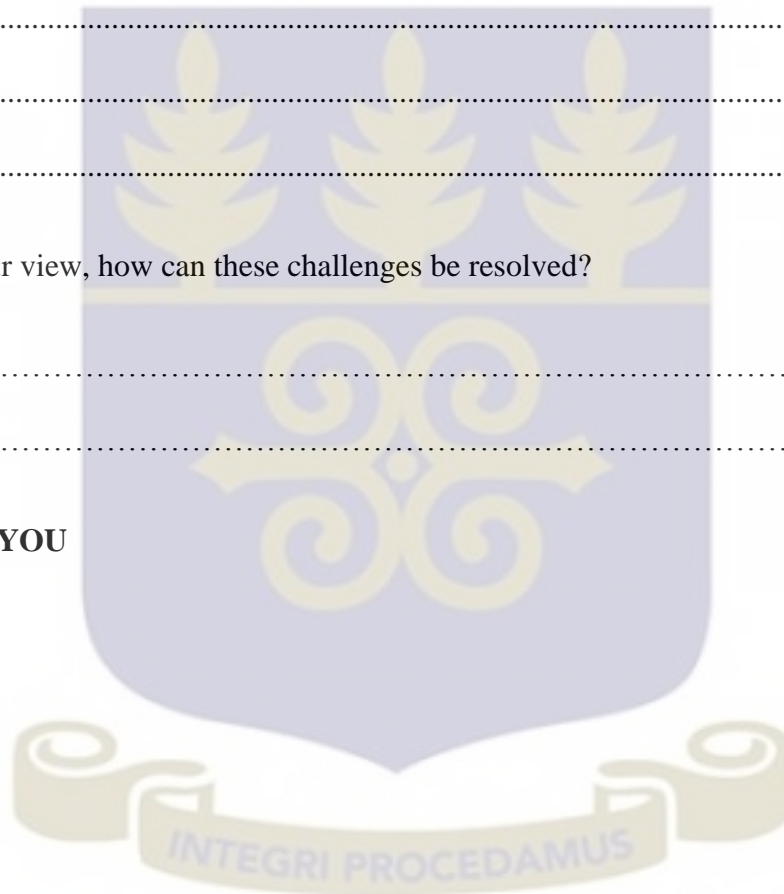
.....

39. In your view, how can these challenges be resolved?

.....

.....

THANK YOU



APPENDIX C



UNIVERSITY OF GHANA
DEPARTMENT OF INFORMATION STUDIES
SCHOOL OF INFORMATION AND COMMUNICATION STUDIES

Ref. No.:

13 January, 2015

The Headmistress
Wesley Girl's High School
Cape Coast

Dear Sir,

**LETTER OF INTRODUCTION
GLORIA TACHIE DONKOR**

This is to introduce to you Gloria Tachie Donkor, MPhil. student of the Department of Information Studies. Gloria is expected to submit work on her thesis as part of the requirements for her Mphil. programme. She is researching on the topic: **Information Literacy among Teachers in Second Cycle Institutions in the Cape Coast Metropolis.**

We would appreciate any support you can give her.

Yours faithfully,

DR. PERPETUA DADZIE
(HEAD OF DEPARTMENT)



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APPENDIX D

