Original Research Article

The Essence of Information: Information Literacy among College Students

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Abstract

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The process of finding and applying knowledge has become more complex today than before. With the current advancement in scientific inquiry and information technology, there is a great need for college students to obtain and use information literacy skills. The college learning experience exposes them to a lot of information that gives them insight into different perspectives thereby assisting them to develop their cognitive skills. It is expected that through this exposure, students will develop their information literacy competencies because they are always learning and practicing what they learn. However, are students able to make out what information is required to solve problems or answer inquiries? Are they able to locate, critically analyze and appropriately apply the information they have sourced to answer topic questions? This paper evaluates the information literacy level of college students by closely examining texts and studies done by scholars of information literacy. The study will include a systematic review of the literature and the analysis of a study conducted by Project Information Literacy (PIL) on college students, regarding information literacy. The study of the literature revealed students' ability to find relevant information, evaluate and use it is limited. The results indicated below average information literacy among the interviewed students. The reason for this was that students were not being trained much after the initial orientation of information literacy at the beginning of their college education. The results indicated a need to integrate information literacy techniques into college curriculum for the development of students' learning process and in order to equip them with the skills to research in an academic setting.

Keywords: Information Literacy, College, Library, Skills, Research

INTRODUCTION

Information is the most vital component of any form of academia. Many students in colleges have used the library as the primary source of information in the past. Librarians have been the most reliable source of assistance for students with information literacy challenges. However, the world is becoming progressively digital and students today are more reliant on electronic sources of information than the library (Kumah, 2015). Studies by the Environics Research Group (2001) define the use of the internet and show that 98% of interviewed college students used internet sources for their academic work, with 63% using it averagely once in a month and 48% using it to do their assignment at home. Through the use of the electronic book sources, searching for information is not only fast and less tedious, but it is also convenient as information can be accessed at any time where libraries today give students access to electric sources of scholarly materials.

Hence it is of importance for students to determine which information is relevant to the issues under study.

Haipeng (2007) argued that while the wide range of information now available from the internet made research study easier, it also made research work for students confusing and their study less reliable. According to Haipeng (2007), most students were not able to confidently source relevant information for their study. Many tended source information without being able to analyze its value. Thus only students who could find, analyze and utilize information appropriately had a profound understanding of their studies and properly used the knowledge acquired in their careers later in life. To rid the uncertainty of the authenticity and reliability of the information that students retrieve in the course of their studies, college students should have well-founded information literacy skills that will enable them to confidently conduct their research.

Problem Statement

During their learning, it is inevitable for students to seek information from additional secondary sources. The increase in the use of the internet exposes students to a varied range of information. Some sources are valid while some are not reliable for scholarly studies. Additionally, most students do not have the required skills to filter through the numerous amount of knowledge for the relevant information. Therefore, students end up with a variety of information that may not necessarily address the problem they are researching. Hence the probability that their studies become unreliable and unauthentic. Lance, Rodney, and Hamilton-Pennell (2000) have argued that such students graduate from college without the grasp of proper knowledge and this is reflected in the low output and less productivity in their careers compared to students who have high levels of information literacy. In response to this problem, Lance, Rodney, and Hamilton-Pennell (2005) suggested the use of class group visit to the library which leads to better research studies as students try to follow information literacy instructions assigned to them. Lance et al. (2005) also recommended close collaboration of college students and librarians as such interactions help students to acquire and incorporate information literacy skills in their studies as well as develop their cognitive and critical thinking skills. Increased collaboration between educators and librarians can also improve students'academic achievement. Working with library media specialists will inspire college teachers to develop lessons that teach information literacy through scheduling class visits to the library with the goal of maximizing the use of instructional services of the librarian, online information sources, and books.

The Objectives of the Research

The aim of this study is:
1. To acknowledge the relevance of information literacy in college curricula
2. To determine college students' level of information literacy
3. To find out whether students acquire information from authentic sources and whether they apply the information ethically
4. To identify factors that inhibit students' access to information literacy skills

Research Questions Guiding the Study

The study aims at addressing the following research questions:
1. Why is the level of information literacy among college students' low?
2. Do students use the retrieved information ethically?
3. How can information literacy be improved in colleges?

Justification of the Study

This study will help to increase awareness of the relevance of information literacy not only among college students but among everyone which is very important in this information age. However, information literacy will be beneficial to college students in that it will help them perform better in carrying out research and develop their problem-solving and cognitive skills that will better assist them to navigate through other life as well as professional challenges. This study will also motivate universities to include information literacy in the curriculum as a way of improving the learning abilities of the students. It will also help colleges to set up programs that allow close collaboration between librarians and educators who will facilitate e-learning on information literacy when students are undertaking online research. Additionally, colleges will have an insight of some of the challenges that inhibit information literacy and formulate ways to handle these challenges at the faculty as well as college level.

Literature review

According to O'Sullivan (2002), people have different levels of information literacy. While some people show poor performance in information literacy, others perform exemplary. One of the factors that O'Sullivan (2002) has cited as a cause to this difference is the kind of studies that students take while they are in school, and the job they take on after college. Some disciplines such as information science make students more information

literate than others due to exposure to various information and a compelling need to decipher through information before regrouping the information and creating sense out of it. Other disciplines, however, do not seem to have a compelling need towards addressing the issue of information literacy. This puts many graduating students into a disadvantaged position as they approach the job market. Lack of information literacy skills attributes to low worker performance on information literacy. Low worker performance is an indication of poor learning and lack of mastery of knowledge earned in school. RPCC (2009), has identified three levels of learning. In the first level, it is expected of a student to acquire knowledge that they will use to build a foundation of knowledge that will help them to develop themselves at all levels of life. Graduates should be able to use the information they acquired in school in contribution to progress at any professional level in future on the second level. On the third level, students should use the knowledge acquired to make critical decisions and judgment to better serve the community and society they live in. Ultimately the learning process for any student should serve to improve the student's life at all levels. As such O'Sullivan (2002) urged businesses and learning institutions to include information literacy under the worker/ student training program as this would give the issue the attention it requires.

Paul Zukowski introduced the theory of information literacy (Behrens, 1994). According to Zukowski, information literacy involves learning skills and techniques of using varied primary as well as secondary information tools in formulating solutions to problems (Bruce, 1997). According to Seaman (2001), 100% of the population in the United States of America was literate. Only 17% of the people, however, could be considered as information literate.

There are various definitions that have been formulated to express the concept of information literacy. According to RPCC (2009), information literacy has three major dimensions; the skills, responsibility, and effectiveness. An individual can naturally exude information literacy through the skills they employ in accessing the required information. An individual's ability to fairly, constructively and responsibly use information shows the individual's level of understanding of the importance of upholding ethical practices in research. The individual appreciates the efforts of the information gatherers, and so he or she uses the acquired information responsibly making certain to acknowledge them through the use of proper citations.

The third element is the effectiveness of the individual's use of information literacy in academic as well as life situations. It entails the individual's ability to retrieve, evaluate and appropriately apply the information acquired. It is the third dimension that RPCC (2009) has used to lay out the process of information literacy:

information location, evaluation and the use of information. Locating information involves the definition of the question or problem, the search for the relevant information and finally obtaining the information. The second level involves analyzing the appropriateness of the information, its credibility and its level of bias. The third level is based on how the individual use the information and the acquired knowledge to solve the problem, how s/he evaluates the performance and reevaluates his/her performance when the results are not satisfactory.

According to the American Library Association, information literacy is a combination of skills which assist an individual to recognize the need for additional information, find the information, evaluate its relevance and use it to solve problems (American Library Association, 2000). Campbell (2004) conquered with this definition by outlining the steps followed by students with information literacy skills in their research process: recognition of the need for information, the location and evaluation and finally, ethical application of the information acquired. Lin (2010) also conceptualized information literacy as the ability to identify the need for additional information, locate it, organize it, evaluate its relevance and manipulate it effectively by applying it in situations where it was needed.

Similarly, Hepworth and Walton (2009) defined information literacy as being in possession of a set of abilities that helps an individual to use senses to critically evaluate knowledge and fully participate in learning to gain as much from the broadening landscape of information and also contribute to its development. Finally, Bruce (2011) conceptualized information literacy as the aptitude of an individual to work effectively in a society that is flooded with information.

From these definitions, therefore, we can deduce that information literacy emphasizes informed retrieval and selection of data from the numerous sources. It requires an individual to care more about the quality of the information retrieved than the quantity. Also of importance is the authenticity and the reliability of the information being sought. Information literacy requires an individual to have cognitive, critical thinking and searching skills for them to locate the required information. Information literacy should be applied every time the situations call for it. Of importance also is the ability of an individual to store information in an organized manner. Catts (2005) has argued that an individual's capacity to store information properly shows how well that individual can retrieve, and effectively and ethically use it. The aim of information literacy education is to help individuals to continuously build on the body of knowledge by identifying the relevant information, molding it to solve a problem and communicating it through the right channels taking caution not to infringe on the rights of others.

Information literacy is key to the advancement of student's learning capability. It is important for institutions of higher learning to construct frameworks for helping students to learn how to work successfully not only in their academics but also in their careers later in life. Students have to learn how to keep abreast with changing technology for them to acquire the right knowledge. Early exposure and practice of information literacy will create a culture that will be carried on and used later in the future. Catts (2005) noted that not only would the individual be able to work independently, but also the credibility of their work would grow.

Andretta (2006) identified some of the challenges that hindered students from being information literate. One of the challenges was that many universities were reluctant to adopt an integrated information literacy program at the degree level besides the module level. Andretta (2006) attributed this reluctance to the misconception of information literacy as a body of knowledge to be obtained from somewhere else. Hence university institutions were not obliged to offer this education to students. Instead, they encouraged students to abreast themselves with IT skills. This problem was further deepened by the reluctance of faculty staff, librarians and students to cooperate. To overcome this challenge Andretta (2006) proposed the introduction of an integrated information literacy module, the introduction of Personal Development Portfolio to assess the individual strength and weakness of students and the introduction of sessions teaching on ways of preventing plagiarism. While it may be argued that some universities have adopted these strategies, both Shapiro and Hughes (1996) andAndretta (2006) have argued that integration of information literacy is only limited to modules rather than being integrated as degree program and adopted into the curriculum and as a teaching policy. Hence as incorporating it into the curriculum gives an opportunity for all students to be information literate.

The other problem is the assumption that advocating for information literacy is the preserve of the librarians. The drive for information literacy as Andretta (2006) has argued should come from educators because students today prefer to use electronic sources over the library, so they may not access the assistance of the librarian during their research work. As opposed to the general assumption, faculty staff more than librarians can actively be involved in information literacy education. Lin (2010) has further added that it is essential for these students to be trained on information literacy during their first year of school because information literacy is the foundation of future learning.

Andretta (2006) gave an example of successful collaboration between library attendants, college students, and professors using a study conducted at the University of Dar-e-Salam in Tanzania. The program involved the administration of an intensive seven-day information literacy training for students. The students were engaged in a participatory learning process to give them a real experience of the information literacy skill application. The study showed that students who had undergone the training showed a more effective application of information literacy skills than students who had not. The training had improved the student's strategizing and cognitive skills. Additionally, Andretta (2006) argued that the training on information literacy helped these students to address challenges in the society as well. This research shows how empowerment promotes information literacy among students and the skills acquired not only help them to conduct their studies properly, but also advance their ability to solve non-academic problems as well.

Virkus (2003) noted that information literacy added to the competence of an individual to work in a dynamic environment whose terrain of operation is rugged. Virkus (2003) further added that information literate could handle abstract work processes, make proper judgments and carry out responsibilities within the stipulated standards of work and time. Their complex cognitive skills encompassed self-regulation abilities, problem-solving, organization and qualitative reasoning skills. Virkus (2003) argued that such individuals had well developed interpersonal skills and positive attitude that gave them an added advantage of the ability to work with others of different complex behaviors. Information literate people's knowledge structure is highly integrated, and as such, they are more productive in both social and professional life.

As mentioned in the above discussion, information literacy involves the acquisition of a set of complex skills for deciphering information and reconstructing it into new knowledge that solves a particular problem. While one requires training to training to acquire these skills, it is important to note that it requires practice to master them. For this reason, developing a culture of applying information literacy skills is essential. According to Breivik (2000), information literacy is also a process that should regularly be followed during learning. These processes vary according to the model of information literacy being used.

There are several models of information literacy that have been developed to guide students while conducting any scientific research in a systematic manner. This study will focus on two models: the Big6 Skills Model, the Information Search Process model and the Seven Pillars Model for Information Literacy.

The Big6 Skills Model

Michael Eisenberg developed this model in 1990. This model guides students when they are conducting research. According to Eisenberg, Lowe, and Spitzer
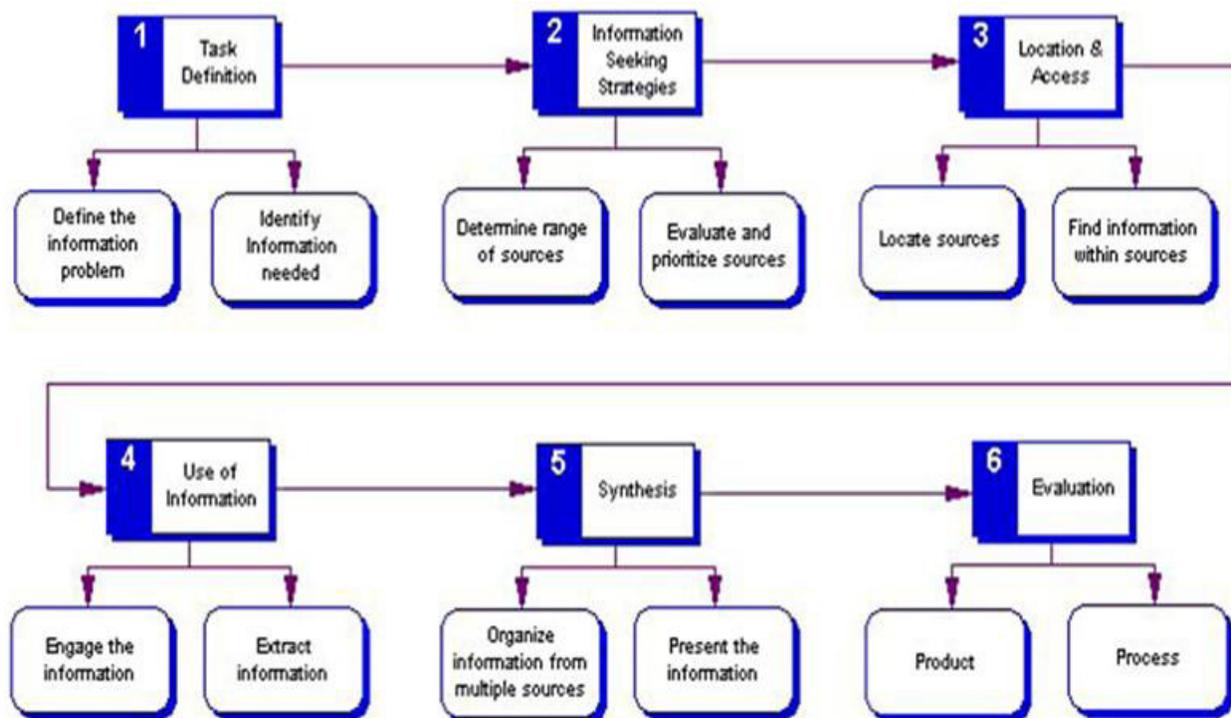
Figure 1. The Big Six Information Skills (Breivik, 2000)

(2004), this model has helped students to bring all information to focus and solve the problem of flooding information. The process involves six stages: Defining the task, employing strategies to seek information, locating and accessing information, application of the information, the synthesis of this information and the evaluation of the findings of the study. Each stage is divided into two sub-stages as shown in Figure 1 above.

The first stage requires students to have a clear understanding of the problem under study. Then they must proceed to identify information that will be relevant to the study. Students must then formulate the hypothesis and identify the research questions which will enable them to answer the question under study.

The second stage involves the identification of possible sources for the identified information after which the student evaluates the most suitable sources to use before deciding how many will be adequate for the study.

In the locating, accessing and information application stage students must extract the relevant information from the chosen sources by listening, reading or watching videos highlighting or noting down the important points before summarizing. In the information synthesis stage, students must use the sourced information to formulate answers to the research questions.
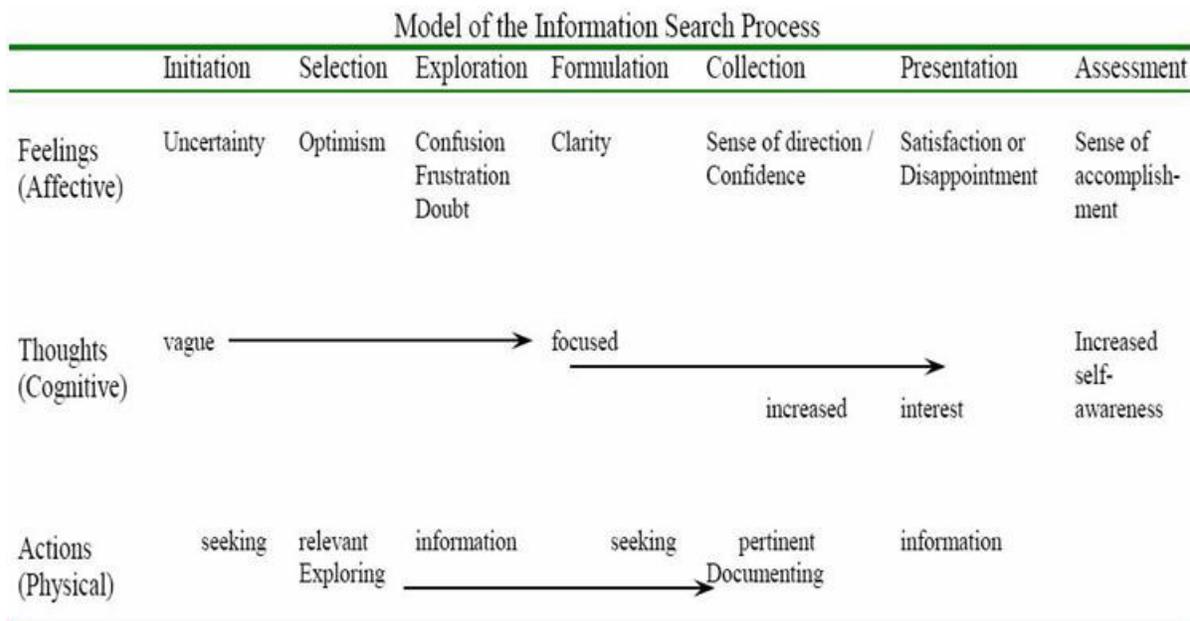
The final stage is the evaluation stage where students must go over the product analysis where their work has adequately answered the study question. Eisenberg et al. (2004) have highlighted that students cannot proceed to

the first step before exclusively finishing the one before it. The model also allows students to retrace their steps and correct or add information to the research if they are not satisfied.

The Information Search Process

This model was developed by Kuhlthau, and it serves as a tool to examine and understand the researcher's point of view (Breivik, 2000). Kuhlthau (2008) identified three major phases of experience that students go through; the affective stage, which involves the student's feelings and reactions towards the problem, the cognitive stage which involved what the student thought of the project and the physical action stage. Figure 2

This model explains the feelings thoughts and actions of the students as they undergo the six stages of carrying out any research. At the initiation stage, students' feel uncertain about their ability to carry out the research successfully, their thoughts are vague, and most of their actions at this stage involve seeking information required to answer the question. In the selection stage of the research process, they begin to be optimistic because their understanding of the problem is a little clearer. At this level, they continually explore the information available to decide which one best suits the research. At the exploration stage, students get confused and frustrated, but as they approach the formulation stage,

Model of the Information Search Process							
	Initiation	Selection	Exploration	Formulation	Collection	Presentation	Assessment
Feelings (Affective)	Uncertainty	Optimism	Confusion Frustration Doubt	Clarity	Sense of direction / Confidence	Satisfaction or Disappointment	Sense of accomplish-ment
Thoughts (Cognitive)	vague	→		focused	increased	interest	Increased self-awareness
Actions (Physical)	seeking	relevant Exploring	information	seeking	pertinent Documenting	information	

Figure 2. The Information Search Process (Breivik, 2000).

clarity begins to settle in. At the synthesis of information stage, students begin to have a sense of direction and confidence to make the final report of their findings. Their interest also rapidly increases at this stage where they are satisfied and feel content with their accomplishment.

Critics argue that this model is descriptive because it only indicates what is believed to occur in students' mind as they interact with information. Both Kuhlthau (2008) and Breivik (1998) noted that most students experience uncertainty as they research the early stages. However, as they proceeded and got a grip on the concept, they tended to be more confident in their work.

The Seven Pillars Model for Information Literacy-Society of College

This model was established by the Society of College, National and University Libraries in 1999. Figure 3

This model was proposed by Christine Bruce to relate phenomena in information literacy practices. This model identifies seven aspects of information literacy that are related. The first face is the information technology conception. Christine Bruce closely associated information literacy with information technology and library literacy. An individual who may not be conversant with information technology may also lack the required information literacy skills for carrying out research. An individual with IT skills could identify the needed information and establish the ability to retrieve information. If individuals trying to access information do

not have information technology skills, then it is likely that retrieving information will be a difficult task for them.

The second face of information literacy is the information sources conception. In this face, if individuals cannot locate the sources of information, it will be difficult for them to assess information independently. It will also be difficult for them to access information that is from authentic sources and so the credibility of their work could be at stake (Catts, 2005). The third face of the seven pillar model is the information process conception. Bruce acknowledged that for every task given for execution, there should be a plan of action or a strategy of executing the task.

The fourth face requires an individual to have a strategy for locating, retrieving, evaluating and applying the retrieved information. Then an individual has to have control of the information retrieved in the information control conception face. This is done by engaging the brain in relating the information acquired before to the information retrieved at the moment and the problem whose solution the individual seeks to find. Establishing this relationship also requires the individual to have control over stored information either in notes or electronically. In the fifth face, in the knowledge construction conception, the individual is expected to build up a base of knowledge that s/he can use to analyze and evaluate the relationship between the assigned task and the information obtained. The aptitude of the student to view each information uniquely from the vast amount of information shows the individual's level of information literacy. In this face, the individual incorporates his or her perspective and ideas into the
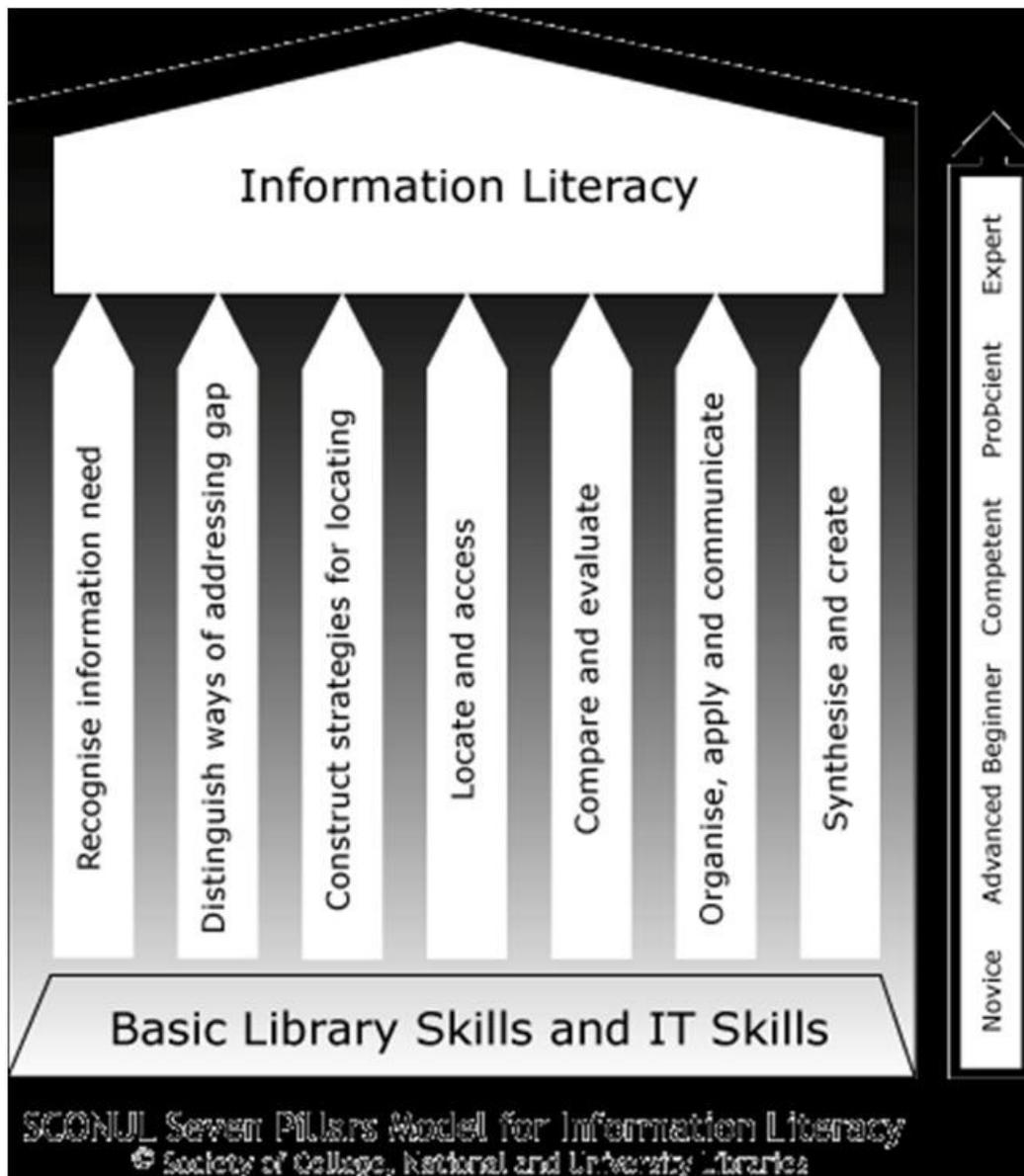
Figure 3. The seven Pillar Model (Breivik, 2000)

acquired knowledge during the critical analysis of the data.

The next stage is knowledge extension conception. According to Bruce, using information involved drawing intuition and creative insights to work and create novel solutions to problems. At this stage, the focus is not on building the knowledge base but rather to extend the knowledge base to include knowledge gained through past individual experiences. The conception stage is what distinguishes between the works of different individuals since they experience life differently.

The last face of the model is wisdom conception. An information literate person exudes responsibility when using the gained knowledge or information. This face involves the application of morals to ensure that the information gained is used in a way that benefits society. Bruce (1997) concluded by stating that information literacy involved experience and required many skills that enabled any individual to understand and make distinctions between the relevant information and the information that was not applicable to the situation at hand.

METHODOLOGY

This study was a qualitative research that involved a close examination of research conducted by Project

Information Literacy (PIL) on information literacy. It also involves the analysis of the findings and interpretation of the results from which conclusions are drawn (Alison, 2013). The findings of the Project Information Literacy research are based on six studies which investigated how the 11,000 college students from the US searched, evaluated and applied the knowledge retrieved for their course work addressing the challenges that arose while they researched their academic work.

FINDINGS

Most of the students surveyed in this study reported to have troubleunderstanding and defining the study question or problem (Alison, 2013). Only twenty percent of the students reported getting started on projects or assignment without difficulty. Most of the students reported having difficulty understanding what the research assignment required them to do. They were frustrated by the open-ended questions to which they could not find answers.

The research also found out that most students used Google, Wikipedia, course books and library sources to find information for their assignment (Alison, 2013). These students also reported using the same research strategy and research sources repeatedly. The research, for instance, showed that ninety percent of the students relied on online library databases such as JSTOR and EBSCO. They reported having widely used these sources of information because they believed in their credibility.

The study also indicated that most students do not often use the library or consult the librarian (Alison, 2013). Eighty percent of the participants recorded to rarely seek the assistance of librarians to define their research queries or to find sources for their research work. It was also found out from the study that most of the training on information literacy was done in the first year of college where students were taught how to use online scholarly sources of information. After that, the students reported not have undergone any other information literacy training. Few of the students reported having sought assistance from their educators as they advanced their education in college. However, half of the students reported to seek the assistance of their instructors for the evaluation of their work. Over half of the participants also sought assistance from their friends and relatives while evaluating their complete work.

The study also indicated that half of the participants developed a working outline that was ported from high school to college using light technology such as their smartphones and laptop computers (Alison, 2013). Only less percent of the participants were reported to be heavy technology users. Only about forty percent of participants accessed library facilities such as computers, printers while only less than ten percent use library catalogs.

Additionally, the research also found out that most recent graduates reported lack of social skills for conducting team research in the workplace (Alison, 2013). The research by PIL also indicated that most of the employees hired from college relied on their computers and especially Google to search solutions for work-related problems.

DISCUSSION OF THE FINDINGS

One of the ways of educating students on information literacy is by orienting them on the use of the library. Library orientation helps students to know how to use library resources. Librarians familiarize them with the numerous sections of the library, educate them on using scholarly information sources as well as show them how to use the bibliography. This research shows that over fifty percent of college students are oriented on library use during the first year of their study. Research shows that after the first year students do not undergo any other program offering information literacy education. Hence there is a great possibility of students forgetting what they are taught. The system of one-time orientation does not encourage the culture of information literacy especially when students are undertaking research. According to Dadzie (2007), the Cape Coast Library offered information retrieval course for first-year college students. Dadzie (2007) argued that this was a more effective strategy of promoting information literacy among students than the one-time orientation. Dennis (2004) explained that the reason why some students do not attend the library orientation is that colleges do not place much emphasis on the program. In addition, he argued that the time allocated for the orientation is too short for all students to understand all the concepts of information literacy adequately.

The results indicated that the number of students who could derive meaning from the topic and identify the information needed to address the problem was high (nearly 65%). This could be due to the ease of identification of the critical concepts most of which were expressed in exact words on the topic questions. As such, it is easy to formulate a search statement from the topic question. 35% of students who could not identify the needed information did not have the skills required to develop the keywords from the topic questions (Alison, 2013). This could be attributed to their lack of practice in research work and basic information literacy skills. Thus, students can get confused and frustrated at this stage leading to the incoherent borrowing of phrases that do not present a good flow of ideas (Kuhlthau, 2008). As such, most of the work shows lack of originality and personal conceptualization of the issues as Bruce (1997) explained.

Information literate students can identify the need for

additional information and the keywords that will guide their information search. They begin by formulating a thesis statement and coming up with questions that will guide the study towards answering the question. They are also able to correctly identify where the information they need will be sourced from, beginning with a broad search to increase their familiarity with the topic before narrowing it to the required information (ALA, 2000). Campbell (2004) noted that the ability to identify the need for information to locate, retrieve and use it, should not be applied for each situation that arises so as the students can master the information literacy skills.

After identifying which information will address the topic question, students should proceed by selecting a research strategy or a plan that will guide their search and location of relevant documents. In as much as most students were able to identify the information required most were not able to carry out a scientific research afterward because they could not employ a definite research strategy. Hence they were not able to locate the required information from the right sources. The research also shows that most students could not find peer-reviewed articles, did not know how to use the catalog and had little knowledge of how the Boolean operates (Alison, 2013). The results also indicate that most student could not confidently use citations to locate journal articles from the internet. This could be attributed to the low information literacy training offered to students. It could also be attributed to the weak culture of information literacy practices in college. Most of the student who could not correctly locate the needed information did not seek the assistance of a librarian. It is most probable that they used their judgment to undertake the research.

Also noted from the research was that while most students knew the proper use of the biography, journal, books and the dictionary, very few knew how to use the almanac, periodical index, and the encyclopedia. This may be due to the infrequent use of the encyclopedia, almanac and the periodical index.

How students evaluated the information that they retrieved was a valid measure for determining their level of information literacy. Students who were found to have high information literacy levels were able to critically articulate the topic question and apply a well laid out criteria for evaluating the information obtained from sources. They were also able to read from several sources and compare the information to evaluate the validity, typicality, accuracy, and relevance of information. According to ALA (2000), information literates were able to evaluate the validity of the sources as well, only using and citing from sources that had been peer-reviewed. Students who had low levels of information were not able to sieve through the much information found on the internet and the library. Their quality of work was relatively poor, and the flow was incoherent because the load of information confused them. Their lack of skill to retrieve the right information and evaluate it appropriately made their work unreliable. While some may not have had training on information literacy skills. Some and de Jager (2005) found that such students use the internet sources without evaluating their reliability or the relevance of the retrieved information.

Another significant indicator of information literacy is the proper use of information retrieved from both the library and the internet. Students who were evaluated as information literates and who were able to appropriately cite the sources of their extracted information demonstrate high levels of plagiarism awareness and copyrights, fair use and intellectual property laws. According to Doyle (1992), ethical use of information has been found to promote good citizenship; therefore, college students should be trained on information literacy to groom them to be good citizens in the future. The research indicated that a considerable number of students in college could not understand the social, economic or legal implications of unethical information use.

From this discussion, it is evident that most students do not have information literacy skills which they should essentially have. Apart from identifying the concepts in the topic questions, most students lack the skills to research in a scientific manner. Their inability to use catalogs and Boolean operators at an age where the use of the internet is increasingly becoming common in research conduction is quite alarming, and their inability to handle information ethically may devalue the integrity of research undertaking.

CONCLUSION

More than ever before, the world today needs information literacy because of the growing amount of information from the internet. This information is in various forms, and multiple sources and people need to be able to identify, compare and differentiate through the maze of information. For this reason, it is essential for people to be trained on information literacy from a tender age for fear that information overwhelms them. Information literacy not only equips students with skills that enable them to research, but it also helps them to solve other problems in life as well as their duty in their future careers. While there are efforts to increase the level of information literacy, colleges should work towards integrating it at the college level and introducing it as a compulsory unit in every faculty. This will give all students a chance to learn these skills and learn how to apply them appropriately. This way, information will not control people. People will manage the information.

RECOMMENDATIONS

Information literacy is critical in the process of learning and intellectual development. In light of the findings of the research, this paper makes the following recommendations:

1- Library orientation should be included in the curriculum and should be made compulsory for all first-year college students.

2- The information literacy training should be conducted severally, and teachers and librarians should work together to come up with programs that will improve the interaction between students and their trainers as well as develop a culture scientifically carrying out research.

3- Every department in college should have a compulsory course on research methods.

4- Colleges should employ more librarian and ICT experts to train students on research skills while using internet sources.

REFERENCES

ALA (2000). "Information literacy competency standards for higher education." Chicago, IL. Retrieved from http://www.ala.org/acrl/sites /ala.org.acrl/files/content/standards/standards.pdf.

Alison J(2013) *Project Information Literacy: What Can Be Learned about the Information-Seeking Behavior of Today's College Students?* Indianapolis

Andretta S (2006). "Information literacy: challenges of implementation." Innovation in Teaching and Learning in Information and Computer Sciences, 5:1, 1-6

Behrens SJ (1994). "A conceptual analysis and historical overview of information literacy." College and Research Libraries, 55(4), 309-322.

Breivik P (1998). *Student learning in the information age.* Phoenix, AZ: Oryx Press.

Breivik P (2000). *Foreword in Information literacy around the world,* edited by Bruce C, and Candy P. New South Wales, Victoria: Charles Strut University Press.

Bruce C (2011). *Faculty-Librarian partnerships in Australian higher education: Critical dimensions.*Reference Services Review, 29(2), 106-116.

Bruce CS (1997). *The relational approach: a new model for information literacy.* The New Review of Information and Library Research, 3, 122.

CampbellS (2004). "Defining Information Literacy in the 21st Century." World Library

Catts R (2005). *Confirming the relational model of information literacy.* The International Information and Library Review 37, 19-24.

Dadzie PS (2007). *Information Literacy: assessing the readiness of Ghanaian universities.*

Eisenberg MB, Lowe CA, Spitzer, KL (2004). "Information literacy: Essential skills for the information age." Westport, CT: Libraries Unlimited.

Environics Research Group (2001). *Young Canadians in a Wired World: The Students' View* (Report prepared for the Media Awareness Network and the Government of Canada. 2001). Retrieved from: http://www.cfc-efc.ca/docs/mnet/00002_en.htm#active.

February 2011.

Haipeng L (2007). *Information Literacy and Librarian-Faculty Collaboration: A Model for Success.* Chinese Librarianship: an International Electronic Journal, vol 24.

Higher Education. Retrieved from: http://www.ala.org/acrl/ilconstan.html. Retrieved on the 15

Kuhlthau CC (2008). "From information to meaning: Confronting challenges of the twenty-first century." 66-73.

Kumah CK (2015). *A comparative study of the use of the library and the internet as sources of information by graduate students in the University of Ghana.*

Lance KC, Rodney MJ, Hamilton-Pennell C (2000). *Measuring up to standards: The impact of school library programs & information literacy in Pennsylvania schools.* Retrieved from ERIC database.

Lance KC, Rodney MJ, Hamilton-Pennell C (2005). "Powerful libraries make powerful learners: The Illinois study." Illinois School Library Media Association. Retrieved from http://www.islma.org/pdf /ILStudy2.pdf

Lin P (2010). "Information literacy barriers: language use and social structure." Library Hi

O'Sullivan C(2002). Is *Information Literacy Relevant in the Real World*? Reference Services Review 30, no. 1: 7-14.

RPCC (2009). "Knowledge is power: Improving students' information literacy skills." Retrieved from: http://www.rpcc.edu

Seaman NH (2001). *Information Literacy: A Study of Freshman Students' Perceptions, with Recommendations*. Blacksburg, Virginia.

Shapiro JJ, Hughes SK (1996). *Information literacy as a liberal art: Enlightenment proposals for a new curriculum.*Educom Review, 3(21), 1-6.

Some NG, De Jager N (2005). "The role of academic libraries in the enhancement of

Tech." Vol. 28 No. 4, pp. 548-568.

Virkus S (2003). *Information Literacy in Europe: A literature review.* Information Research, 8(4). Retrieved November 15, 2011, from http://www.informationr.net/ir/8-4/paper159.html://www.uls.unesco.org/library/Documents/wp08_InfoLit_en.pdf. Retrieved on 15th March 2011.