

**INFORMATION LITERACY AMONG SECONDARY SCHOOL
STUDENTS AT FULLY RESIDENTIAL SCHOOLS IN
KUALA LUMPUR**

NOR HASHIMAH BINTI HUSSAIN

**FACULTY OF COMPUTER SCIENCE AND INFORMATION
TECHNOLOGY UNIVERSITY OF MALAYA
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**DISSERTATION SUBMITTED IN FULFILMENT OF THE
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**FACULTY OF COMPUTER SCIENCE AND INFORMATION
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ABSTRACT

The research was undertaken to examine aspects of information literacy among secondary school students at fully residential schools in Kuala Lumpur. The focus of this study was on information literacy skills, problems associated with it, sources of information preferred by the students, programmes conducted at school resource centres and the need for information literacy from students and teachers perspective. The instruments for the study were two sets of questionnaires. The first set was distributed to 300 Form 1, 2 and 4 students from three residential schools in Kuala Lumpur. The study revealed that 81.7 % respondents had the skills to define their need for information, 74.7 % knew how to locate information by accessing the Net and 93.3% had the skills to look at the content when selecting for information. To organize and use information, respondents preferred to use paper based media and they used information by identifying important points and then arranging it for the task at hand. Mind-mapping method was chosen by 53.3% of the students for presentation. Electronic resources were chosen by 63% respondents to locate information and the problems that they faced were time constraint (52.7%) and unavailable resources (66.7%). The main reasons for choosing Internet was easier and faster to retrieve information. To select information, 6.7% stated they did not know how to choose the most accurate information. It was also found that there were very few programmes conducted in school resource centres regarding the use of materials for learning purpose. Finally, the need for information literacy from students perspectives revealed that selecting accurate information (65.3%) were deemed to be the most useful skills to them. The second set of questionnaires was distributed to the 15 teachers to probe the depth of the implementation of programmes in school resource center and the problems associated with conducting it. Findings shows constraints and lack of skills in organizing school resource centres.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

We live in an era of information abundance. With the development of a wide variety of technologies, the amount of information available to people at large is growing rapidly. Through different channels, the information is diffused in various forms, thus accelerating the speed of information growth (Kim, 2001). Schools as a place and education as a mean to disseminate and transmit information have to keep up with this development. The diverse forms of technology makes access to information easier and schools have to seize this opportunity in order to produce students who are socially, intellectually and academically adept. The application of the rapidly growing technology development in school can create an attractive, interactive and creative learning environment. To achieve this goal however, action must be taken systematically so that students can benefit from the information for learning purposes.

The information explosion has created a need to acquire a skill to access, organize and use information to a certain purpose in an accurate way. Information literacy is the ability to access, evaluate and use information from a variety of sources (Riedling, 1998). This skill is synonymous with learning purposes because it enables students to find information in addition to the textbook which is a basic guide for teachers and students. According to the Director General of Education of Malaysia, the text-book is written material that contains fact, knowledge and other information needed by a subject with the purpose of self development and mind-shaping for every student. The textbook not only focuses on exam-oriented aspects; the objectives are more than that (Abdul Rafie Mahat, 2002). Besides, by adding the supplementary resources, there will be a balance between

the teachers role and the students role by way of pedagogical approach. In the researcher's opinion, even though there are slight differences between approaches in the implementation of this skill, the main purpose is to train students in information access and retrieval, especially critical thinking strategies and to provide for the research the needs of a school education programme which is an apolitical and neutral one.

As education moves towards introducing project-work as soon as students enter secondary school, the need for information literacy is really demanding. Mendrinós (1994) emphasizes this by referring to the dramatic social changes, environmental challenges, scientific discoveries and research which necessitates a learning process that no longer focuses strictly on the pages of a textbook. He added that there is a variety of sources for information – books, periodicals, newspaper, online databases, CD-ROM and video laser discs, video tapes, television, satellite transmission, audio visual materials and telecommunications, to name just a few. The resource-based learning environment provides the means for students, teachers, administrators and community members in using diverse formats to satisfy their information quests.

1.1.1 INFORMATION LITERACY

The idea of information literacy emerging with the advent of information technology in the early 1970s, has grown, taken shape and strengthened to become recognized as the critical literacy for the 21st century. Sometimes interpreted as one of a number of literacies, information literacy is also described as the overarching literacy essential for 21st century living. Today, information literacy is inextricably associated with information practice and critical thinking in the information and communication technology environment (Bruce, 2002).

Various meanings have been created for information literacy. Lenox and Walker (1992) explain whether information comes from a computer, a book, a government agency, a film, a conversation, a poster or any number of possible sources, the concept of information literacy is the ability to dissect and understand what is seen on the page or the television screen, in posters, in pictures and other images as well as what is heard. Teaching information literacy means teaching students to sort, discriminate, to select and to analyze the array of message that are presented. Information literacy is a means of personal empowerment. It allows people to verify or refute expert opinion and to become the independent seekers of the truth.

Another definition of information literacy is : Information literate students are competent, independent learners. They know their information needs and are actively engaged in the world of ideas. They display confidence in their ability to solve problems and know what is relevant information. They manage technology tools to access information and to communicate. They operate comfortably in situations where there are multiple answers as well as those with no answer. They hold high standards of their works and create quality products. Information literate students are flexible, adept to change and are able to function independently and in groups (Colorado Department of Education, 1994).

Information literacy was identified by the American Library Association (ALA) as playing a fundamental role in the creation of the independent learner and the informed citizen. The literature consulted in preparation for the development of information literacy module confirmed that information literacy is used as an umbrella term that includes skills underpinning the fulfillment of information needs for the specific purposes. These skills range from information searching and handling abilities, which have traditionally been the domain of libraries in the guise of library induction to

Information Technology (IT) skills that allow the users to manipulate, store and present information, to evaluative and problem-solving skills that are needed to filter the large amount of information made available by on-line sources and to the assessment of information ethics within a wider social context (Andretta, 2001).

Based on these definitions, it is clear that information literacy has a great influence not only in the learning process, but also in the personal development of students so that they will be prepared for life as contributing citizens to the communities of the future. Hence, an information literate background is vital to ensure competency in academic fields and the development of our nation in the long run on a perpetual basis.

1.1.2 INFORMATION LITERACY AND EDUCATION

The educational process is closely related with information activities. It is a transmission of information between teacher and student and vice versa. The aim is to gain knowledge, skills and head towards positive attitudes. This effort should be followed by educating students to assess their own needs, plan a search strategy and use that particular information to fulfill the curriculum need. The need for training in the information handling and use of information has been expressed for many years, so too has the need for study and library skills. But most of the work being carried out was directed towards locating material, the process of identifying material on specific subjects or by specific authors from catalogues and subject indexes and then locating them on the library shelves. Thus, there were exercises designed to teach pupils the classification scheme, the “parts” of a book so that specific chapters or pages could be found and rules and procedures for borrowing and returning books. The concept of information and use were not explored (Irving, 1985).

This kind of approach resulted in poor performance in the usage and application of information. This negligence of emphasis on information literacy skills was also stressed by Moore (2000) who mentioned that educators have acknowledged that the skills which constitute information literacy are becoming crucial to every individual life. However, it is suggested by some (researchers) that students in general are not being equipped to meet those demands in the 1990s any better than those who were in the 1980s. In some schools, information literacy is enhancing learning but the information age has yet to reach others.

The unprecedented volume of information that is now available has generated a need for complex analytical skills to appropriately access this information in an efficient, meaningful way. Although much publicity in the mass media has been generated in the last few years regarding the perceived reduction in standards for traditional literacy (reading and writing) , the educational perspective requires a shift in paradigm to an information literacy focus. To achieve this goal in a meaningful way, educational institutions themselves must restructure the framework of their organizations to form learning communities, rather than institutions whose core function is dispensing information (Credaro, 1999).

Implementing information literacy skills requires an understanding of the learning process. To achieve this, an examination of various information literacy models that have appeared for over the past 20 years is needed. The process of learning is clearly illustrated by these models. Shown below is a list of some of the models :

- a- The Big Six Model (developed by Mike Eisenberg And Bob Berkowitz , 1988) (Lowe, 2000)
- b- Action Learning Model (developed by Gwen Gawith, 1983) (Bond, 1999)

- c- Loertscher's Information Literacy Model (known as Circular Model , developed by David V. Loertscher, 2000) (Loertscher, 2000)
- d- 3 Doors To Information Literacy Model (developed by Gwen Gawith, 2000) (Bond, 1999)
- e- The PLUS Model (developed by James E. Herring, 1996) (Bond, 1999)
- f- Nine Step Information Skills Model (developed by Ann Irving, 1985)
<http://virtualinquiry.com/inquiry/irving.htm>
- g- Research Cycle (developed by Jamie Mckenzie) (Mckenzie, 1999)
- h- The Seven Pillars (developed by Society of College, National and University Libraries, 1999) (Bond, 1999)
- i- Stripling and Pitts Research Process Model (developed by Stripling and Pitts, 1988) <http://virtualinquiry.com/inquiry/stripling.htm>
- j- The 8W's (developed by Annette Lamb and Larry Johnson, 1997)
<http://virtualinquiry.com/inquiry/ws.htm>
- k- Information Search Process (developed by Carol Kuhlthau, 1985)
<http://virtualinquiry.com/inquiry/isp.htm>
- l- The Alberta Model (developed by Alberta Education,) (Bond, 1999)

The purpose of listing down these models is to show the variety of models that has been developed and at the same time show that information literacy is an important skill in the learning process. An overview of these models shows that the steps involved in them propelled students towards research-process, resource-based learning student centered activity within problem solving perspectives.

Source : <http://questioning.org/rcycle.html> (Mckenzie, 1999)

This model is easier to apply because it guides the students to directly list down questions related to the research topic. This method is much more practical compared to other

models as it defines the broader and narrower term of the research problem. Guided by the questions, students can productively proceed to planning, gathering, sorting and sifting and synthesizing steps without fear of getting lost in any of these stages because the questions will always lead them to the right track. Another interesting point in this model is that there are several repetitions of the cycle / stages in order to handle a complex and demanding research questions. Furthermore, the evaluation stage that comes before reporting is an added bonus. This will ensure that by the presentation stage, students would have put their maximum efforts into their project work / assignment.

A common interpretation of the information literacy models in the field is to teach one of the published models to the students as they are sent to the library to do research. Library Media Specialists in many schools have adopted an information literacy model as the foundation of their instructional program, and numerous library skill lessons and books of ideas for teaching information literacy are based on teaching these models. In practical terms, teachers plan to teach students to master content. The Library Media Specialist hopes that during the learning experience students can master the process of learning (the research process or information literacy model) so that learning content become easier and more efficient (Loertscher, 2000).

1.1.3 INFORMATION LITERACY AMONG SCHOOL CHILDREN

Information literacy is a key competency for students at all stages of learning. The skills of information literacy are integral to learning across all curriculum areas. Information skills unlock a lifetime of independent learning. Developing successful information users is the responsibility of every teacher, but teacher librarians make a particularly vital contribution to the teaching and support of information skills programmes in schools. As information management specialists in schools, teacher librarians are able to link their knowledge of

information sources, library finding aids and procedures with their expertise in planning and teaching for effective skills development. A teacher-librarians' involvement in all curriculum phases (planning, implementing and evaluating) can help to ensure meaningful information literacy skills development for all students (Plowman, 1996).

Developing information literacy skills is a collaborative effort, incorporating various organizations, not only to school and teacher in particular, but also bigger organizations such as ministries, corporate sectors and learning foundations. The role of the Ministry of Education should not be only preparing rules and regulations, but also to find ways and means to foster this important skill among school students. The efforts that have been carried out so far have been supportive as exemplified by the implementation of the Smart School project, the revision of textbook to maintain the currency of the content, the distributions of computers to schools and teachers and introducing Information Technology as an elective subject for Form Four students.

In recent development in Malaysia, The Ministry of Science, Technology and the Environment allocated an amount of RM 180,000 in 2004 to support research in Higher Education, Institute and secondary schools, channeled through the Ministry of Education. Form Four and Five students can now get the sponsorship from the ministry as much as RM 5,000 as research expenditure. According to the Minister of Science, Technology and Environment, Datuk Seri Law Hieng Dieng, this allocation is an effort to encourage students to get involved in research and development (R&D) programmes at an earlier age (Maizurah Ismail, 2004).

This study hopes that the information literacy skills can be practiced to produce excellent students and to get a more holistic view about the benefits obtainable when information

literacy is the main focus in schools. According to the final report of the ALA presidential committee in information literacy, the following situation could be the possibility when information literacy is the central concern in a schools context . The school would be more interactive, because students, pursuing questions of personal interest, would be interacting with other students, with teachers, with a vast array of information resources, and the community at large. One would expect to find every student engaged in at least one open-ended, long term quest for an answer to a serious social, scientific, aesthetic or political problem. Students' quests would involve not only searching print, electronic and video data, but also interviewing people inside and outside schools. As a result, learning would be self- initiated. There would be more reading of original sources and more extended writing. Both students and teachers would be familiar with the intellectual and emotional demands of asking productive questions, gathering data of all kinds, reducing and synthesizing information and analyzing, interpreting and evaluating information in all its forms. In such an environment, teachers would be coaching and guiding students more and lecturing less. Students would have discovered that the classroom computer with its access to the libraries and databases of the world, is the better source of facts than they could ever hope to be. They would have come to see that their major importance lies in their capacity to arouse curiosity and guide it to a satisfactory conclusion, to ask the right questions at the right time, to stir debate and serious discussion and to be models themselves of thoughtful inquiry (Breivik, 1998).

1.2 STATEMENT OF PROBLEM

The amount of information increases at a tremendous rate everyday. Individuals should be taught how to seek the right information and put it into maximum use. With the advances in technology, various forms of information are easily accessed. The skill to retrieve this information will greatly enhance student learning process, such as understanding the

content of the subject and completing the task assigned to them in a speedy manner (Ambikapathi, 1999).

The chosen school for this study is a fully residential school where the students are selected for their excellent academic achievement. This school accepts the philosophy where education is regarded as a continuous effort to provide learning environment that is planned, controlled and complete in order to nurture and develop student potential towards excellence as well as the development of a balanced and responsible citizenry so as to meet religious, societal and national demands (Ministry of Education, 2005). There are 54 Fully Residential Schools in Malaysia, with three schools in Wilayah Persekutuan. One of the school offers lower and upper secondary classes and the remaining two offer upper secondary classes only. The admission to Form 1 and 2 are based on excellent results in UPSR (Ujian Penilaian Sekolah Rendah) while the Form 4 students are chosen from high achievers who achieved success in their PMR examination.

Secondary school students particularly in Kuala Lumpur are now trained to do research. They are assigned with project work, individually or in small groups starting from the beginning of secondary school. At PMR (Lower Secondary Assessment) and SPM (Malaysian Certificate of Education) level, project work for certain subjects will be assessed together with the written examination. What level of information literacy skills do students have and to what extent? What types of information literacy skills the students still need? Sources of information preferred by students and the role of teacher librarians and school resource centres will also be discussed as the mediator for information sources and library skills. This study aims to investigate these aspects of information literacy skills towards preparing students with positive attitudes that will motivate them to constantly quest for knowledge throughout life; in other words to prepare students for life-long

learning.

1.3 SCOPE

This study covers a sample of students in 3 boarding schools in Kuala Lumpur under the direct supervision of the Ministry of Education. All respondents are from Form One, Two and Four students who are not involved in the preparation for public examinations are selected.

The boarding schools are chosen as the students are those with excellent performance in public examinations such as UPSR (Primary School Assessment Test) and PMR (Lower Secondary Assessment) and are expected to be more responsive than those from normal schools and have greater interest in learning. They are also more disciplined and with their academic success, it's expected that they would show obvious impact from this study.

1.4 OBJECTIVES OF THE STUDY

The goal of this study was to investigate the skills and awareness of information literacy among secondary school students at boarding schools in Kuala Lumpur. The specific objectives were :

- (a) To assess the information literacy skills amongst students in selected boarding schools in Kuala Lumpur ;
- (b) To identify problems encountered by students in the boarding schools when seeking and using information needed for their assignments ;
- (c) To investigate the information sources primarily used by the students ;
- (d) To explore the role of school resource centres and teacher librarian in assisting students with information literacy skills ;

- (e) To identify the information literacy skills needed by students, from the students' and teachers' perspective

1.5 RESEARCH QUESTION

This study sought to answer questions regarding information literacy skills among secondary school students. The following specific questions formed the focus of the research :

- (a) What are the skills of information literacy that boarding school students already possess?
- (b) How do they locate and select their resources, and what are the problems they face regarding these two skills?
- (c) What are their major information sources, and why do they choose these sources?
- (d) What are the programmes conducted by the teacher librarian regarding information literacy skills in school resource centre?
- (e) What are the information literacy skills needed by students, based on students' and teachers' perspectives?

This study intends to identify the information literacy skills possessed by boarding school students. Next, it explores the specific important skills of information literacy skills that is locating and selecting skills. The data on sources of information preferred by the students would reflect the skills possessed upon using those sources. Programmes conducted at school resource centres and the skills needed by the students will be a completion to this study.

1.6 SIGNIFICANCE OF THE STUDY

The findings of this study may be useful to facilitate an understanding of the information literacy skills among secondary school students. It can provide librarians, information professionals and resource centre managers with the knowledge about information environment in schools. The findings can be used as a guide to school resource centres in planning the programmes of information literacy skills for the students. A comprehensive planning is needed for different level of students.

The investigation would also reveal the source of information preferred by the students. School resource centres can then fulfill their needs by providing sufficient and relevant materials. This can create more interest for students to use the school resource centre and at the same time motivate them to pay more attention to their study and project work. Finally, the research is useful to the teacher training division and the resource centre department in planning and preparing a more practical and comprehensive curriculum to further equip the teachers with the skills required to help students in mastering these important skills.

1.7 ASSUMPTIONS

This study is based on the assumption that students already have the basic knowledge in using school resource centres. In many schools in Kuala Lumpur, the library period is included in the class time-table. It is hoped that the students have been taught about the basic skills such as locating and selecting information in the library as the important place to derive information from. As for Form Four students, the skills should be more extensive in addition to the basic skills such as evaluating, retrieving and presenting information since they have undertaken and conducted many projects during the earlier years from Form One to Form Three.

The next assumption is based on the fact that boarding schools under study are implementing the Smart Schools curriculum. The smart school projects, implemented by the Ministry of Education was meant to fulfill the national needs of meeting the challenges of the information age and to fulfill national development goals especially with the emergence of MSC (Multimedia Super Corridor). Learning strategies implemented in smart schools comprise of three concepts which will propel students towards independent learning, a characteristic of information literate students. The three concepts are : self-accessed, self-paced and self directed. The table below gives a brief explanation of each concept :

Self-Accessed	Able to access information from various sources (books, journal, TV networking, etc) independent of the teacher
Self-Paced	The students is able to learn at his own pace without being held back by slower students or having to deal with material beyond his capability
Self-Directed	The students is allowed to explore topics of interest without being tied down to a a rigid curriculum

(Curriculum Development Centre, 1999)

1.8 DEFINITIONS OF TERMS

For the purpose of the study, specialized terms are defined as follows :

- a- **Information** is defined as knowledge derived from data. Information is the result of analysis, synthesis and evaluation based on available data. In another words, the data has been organised, structured, considered and communicated (Gosling and Hopgood, 1999)

- b- Information literacy** is defined as the ability of people to : i- know when they need information ii- find information iii- evaluate information iv- process information v- use of information to make appropriate decisions in their lives (Riedling, 1998).
- c- Information source / (resources)** is defined as locations where information or information carrying materials are stored and ready to be retrieved for use; places where information can be obtained through observations or people who are knowledgeable (Wee, 1999) A broad definition of a resource is any material which makes a positive contribution to the learning process. This covers everything from print resources, a collection of interactive video disks and a list of people whose expertise can be called on, to online databanks, CD-ROMS and reprographic and technical support (Kinnel, 1992).
- d- School Resource Centre** is defined as a systematically organized collection of information and purposefully selected books and non-books teaching-learning materials in particular, and information carrying materials in general, that are to be used to provide appropriate and timely information, programmes and services to pupils and teachers of the school and also to promote the culture of a reading society ready for life-long learning (Vias, 1992).
- e- Teacher librarians** are teachers with specific teaching commitments but who are allocated only a few hours per week to organize the school library (Herring, 1982). It is also described as a librarian who manages a school library and offers a library service to students and staff of a school (Mortimer, 2000).
- f- Residential School** – the term generally refers to any school at which students live in addition to attending classes (Wikipedia, 2005).

1.9 SUMMARY

This chapter serves as an introduction to this study. It gives an overview of information literacy. The relationship between education and information literacy together with information literacy among school children is also discussed. The chapter further stated the problem, the scope and the objective of the study. The research questions, the significance of the study and the assumptions are then presented. Finally, the definition of specialized terms used in this chapter are also provided.

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CHAPTER TWO

REVIEW OF LITERATURE

2.1 INTRODUCTION

The literature on information literacy is abundant and has developed alongside with the rapid growth of Information Communication Technology (ICT). This ICT development has influenced resource centres to have technology-based information, which in turn led to critical thinking that forms the basic foundation for information literacy.

The aim of this study was to find out information literacy skills among students in Form 1, 2 and 4 at boarding schools in Kuala Lumpur. Information seeking behaviour, sources of information used and preferred by the students, programmes conducted at school resource center and the need for information literacy were also identified.

To complete the study, a search for references was conducted by using a combination of research terms such as : information literacy, concept, education, school students, secondary school, models, information needs, information sources, information process, resource based learning, user education, teacher librarian and various combinations of these terms.

The reference sources covered databases subscribed by The University of Malaya Library (UML) such as Wilson Web, LISA, Emerald Intelligence, Proquest which then linked to articles from numerous electronic journals. The UML's online public access catalogue (OPAC) and Pendeta WebPac was used to search for the theses and the monographs. The Index Database (INDXDB) Malaysiana was used to search for conference papers presented in Malaysia or by Malaysians. Relevant articles were also obtained from citation

of individual articles and through the Internet.

The review is divided into seven main parts :

- (a) Concept of information literacy
- (b) Information literacy – the process
- (c) Information literacy among secondary school students
- (d) Information needs
- (e) Information sources used by school students
- (f) Instruction in library and information skills
- (g) The role of school resource center and teacher librarian

2.2 CONCEPT OF INFORMATION LITERACY

A hundred years ago when people said they were literate, it meant they could write their names and recite from a few simple texts. Even twenty years ago, literacy primarily referred to print formats such as books, magazines or newspapers. Historically, the needs of a society influenced the way in which a concept was interpreted. For example, the concept of literacy has evolved and broadened in scope to give meaning to the information needs of society of the time (Bishop, 2003).

The concept of information literacy which first appeared in the literature during the 1970s and which was comprehensively discussed in a major review paper (Behren, 1994) developed in response to the growing recognition that finding, selecting and using information was becoming increasingly complexed. During the 1980s this term gradually started to replace the concepts of user education and library skills, which essentially emphasized library as opposed to information usage (Behrens, 1993). Marcoux (1999) gives a more specific period on which integration between concept of information literacy

and library science occurred. According to her :

“...the concept of information literacy primarily became a part of library science world as an official goal and surfaced as part of the literature in 1989. Information literacy while conceived earlier, did not find its way into the library and / or education research until the late 1980s...” (Marcoux, 1999).

Information Literacy has come into its own in the Information Age. The impact of new technologies, the proliferation of networks, the societal divisions caused by inequities in access, the focus on student-centered learning and the push for accountability and results-based learning have created optimal condition for it to flourish. In the current environment, information literacy has become the connective tissue that binds students learning, faculty and teacher development, community partnerships and societal change. In 1988, American Library Association, the biggest library organisation had formed a Presidential Committee on Information Literacy to explore the social, educational, and economic effects of the information explosion. This group issued a report in 1989 offering a well-known definition of information literacy and making a number of recommendations (Hannesdottir, 2002). The report advocated the formation of a coalition of organizations dedicated to promoting information literacy namely as National Forum on Information Literacy (NFIL). The overarching purpose of the forum's meetings, under the leadership of Patricia Breivik is to advance the most expansive and compelling sense of information literacy by initiating conversations among member organizations, lending specific support for defined agendas and initiatives, and forging a common purpose among a large sector of educational, business, nonprofit, and governmental communities to improve the lives of all citizens. Therefore, NFIL serves as a clearinghouse for information, a support network for connecting diverse organizations and sustaining the information literacy agenda over time, and an incubator for ideas to promote information literacy nationally and internationally.

One notable NFIL success involves the support of information literacy standards developed by member organizations. For example, the forum supported AASL's Information Power standards and championed the Association of College and Research Libraries when it appointed a task force to develop the *Information Literacy Standards for Higher Education* (Gibson, 2004).

In 1998, American Association of School Librarian published "Information Power : Building Partnership For Learning" as a guide for School Library Media Specialist in helping students flourish in a learning community not limited by time, place, age, occupation or disciplinary borders. The guidelines of Information Power also explain the importance of collaboration – joining teachers and others to identify links Pillars Model in students information need, curricular content , learning outcomes and a variety of print and non-print resources (American Library Association, 2006). Among the guidelines are :

- a- The student who is information literate accesses information efficiently and effectively
Students know when to seek information beyond his or her personal knowledge, how to frame questions that will lead to the appropriate information and where to seek that information
- b- The student who is information literate evaluates information critically and competently – The student who is information literate weighs information carefully and wisely to determine its quality
- c- The student who is information literate uses information accurately and creatively
The student who is information literate manages information skillfully and effectively in a variety of contexts
- d- The student who is an independent learner is information literate and pursues information related to personal interests – The student who is an independent learner

applies the principles of information literacy to access, evaluate and use information issues and situations of personal interest

- e- The student who is an independent learner is information literate and appreciates literature and other creative expressions of information – The student who is an independent learner applies the principles of information literacy to access, evaluate, enjoy, value and create artistic products
- f- The student who is an independent learner is information literate and strives for excellence in information seeking and knowledge generation – The student who is an independent learner applies the principles of information literacy to evaluate and use his or her own information processes and products as well as those developed by others (American Association of School Librarians and Association for Educational Communications and Technology, 1998).

There are also standards for Information Literacy formulated in other states such as Australia and United Kingdom. Listed below is standards created in Australia by Council of Australian University Librarian :

- a- **Standard One** : The information literate person recognises the need for information and determines the nature and extent of the information needed
- b- **Standard Two** : The information literate person accesses needed information effectively and efficiently.
- c- **Standard Three** : The information literate person evaluated information and its sources critically and incorporates selected information into their knowledge base and value system
- d- **Standard Four** : The information literate person classifies, stores, manipulates and redrafts information collected or generated

- e- **Standard Five** : The information literate person expands, reframes or creates new knowledge by integrating prior knowledge and new understandings individually or as a member of a group
- f- **Standard Six** : The information literate person understands cultural, economic, legal, and social issues surrounding the use of information and accesses and uses information ethically, legally and respectfully
- g- **Standard Seven** : The information literate person recognizes that lifelong learning and participative citizenship requires information literacy

Information literacy standards is a 'living' document. It will alter to reflect the prevailing information and education environment (Council of Australian University Librarians, 2001).

Bishop (2003) added that the most common concepts in English-speaking countries seems to indicate similar characteristics for information literate person as being mentioned above.

Information literate people have the skills to :

- a- recognize the need for information
- b- identify and locate information sources
- c- access information in those sources
- d- evaluate the quality of information obtained
- e- organize and synthesize the information
- f- use the information effectively
- g- produce new information

Increasing attention to information literacy in recent years is partly the result of information overload, especially relating to the growth of digital information, which has even caused a new ailment called 'information fatigue syndrome' (IFS) (Wilson, 2001) and

partly because of the new focus on student learning in a lifelong learning context. It has also created a need for reconceptualisation of the roles and responsibilities of library and information professionals in a new learning environment (Virkus, 2003).

Although there has always been a need to find, evaluate and effectively use information, the abilities needed to do so have just grown larger, more complex and more important in the information and communication technology (ICT) environment. There is also a shift towards broader contexts, to connect information literacy with an active, effective and responsible citizenship supporting personal empowerment and an enriched life throughout the lifelong learning process (Hepworth, 2000a) and as an important factor in the corporate sector (Mutch, 2000b).

Across the world, educators in primary, secondary, tertiary and professional education contexts have been developing strategies and policies for designing learning opportunities that will enable learners to take advantage of the information and communication infrastructures available to them. Learning opportunities that enhance information literacy not only make use of information and communication infrastructures, but are designed to bring the information practices that are effective in professional, civic and personal life into the curriculum. Such opportunities make it possible for learners of all ages to experience the power of effective information practices. When reflection on learning to be information literate is combined with the experience of information literacy, students are helped to recognize the transferability of the process involved in every day life, community and workplace contexts. Reflecting on the concept of information literacy itself allows it to be more easily transferred to novel situations (Bruce, 2002).

The Fourth Conference on Information Literacy held in Adelaide, December 1999 organized by the University of South Australia Library with the ALIA Information Literacy Special Interest Group provided participants with the opportunity to consider concepts, challenges and conundrums presented by information literacy. A participant of the conference, Ross Todd, encourages delegates to reflect on the concept : charting the landscape and celebrating achievement; posit the conundrums; critiquing the present and identifying some current dilemmas; and focus on the challenges; constructing a future from rhetoric to reality and to make information literacy out of the educational arena into the wider social environmental spectrum (Booker D, 2000). Ross suggested that the real purpose of information literacy is not to assist students to pass exams and write brilliant assignments but rather to bring people and information together in a purposeful way so that they can achieve success in their everyday lives. Extending the concept of information literacy out of the education sector and defining it in terms of the dimensions of everyday life provided a major challenge for the delegates.

Another participant, Maureen Nimmon reexamining the concept of information literacy, her paper was underpinned by a very perceptive view of student learning. She encouraged the audience to be alert to the limitations of what can be done. By recognizing the range and complexity of the scope of skills, abilities, attitudes and knowledge that the information literate person needs, librarians can define their contribution to the development of the students information literacy more effectively (Booker D, 2000).

2.3 INFORMATION LITERACY SKILLS – THE PROCESS

Emphasis has grown in recent years on the development of information skills or information in schools, and this is reflected in the literature of education and of school librarianship where a large number of books and articles have been published on this topic.

A number of models of information skills have been developed and applied in schools, although there is a dearth of research studies that attempt systematically to evaluate the application of the models (Herring, 2002).

There are many information process models based on the pioneering work of The British Library in the 1970s. The most popular of these is the Big 6, although others are also well-known, particularly the work of Ann Irving (1985), Carol Kuhlthau (1985), Jamie McKenzie (1999), Judy Pitts and Barbara Stripling (1988) and variations by school districts and provincial / state department of educations around the world. The steps are similar for the students :

- a- What do I need to do ?
- b- Where can I go and when ?
- c- How can I get at what I want ?
- d- Which shall I use ?
- e- How shall I use them ?
- f- What should I make a record of ?
- g- Have I got the information I need ?
- h- How should I present it ?
- i- How have I done ?

Over time, the importance of framing essential questions and teaching synthesis, analysis and evaluation have been emphasized as well. Models have evolved as recursive rather than linear, with the best examples of implementation coming from school-wide efforts to identify local needs and agree to common approaches and consistency across grades and subject areas (Haycock, 2002). To have a better understanding of the information literacy process, the comparisons of several early models of information literacy is displayed on the next page.

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The McKenzie's model contains 7 steps :

- a- Questioning b- Planning c- Gathering d- Sorting and sifting
- e- Synthesizing f- Evaluating g- Reporting

Students begin by clarifying and mapping out the dimensions of the essential questions being explored. These questions will then guide subsequent research efforts. The next step will be to find pertinent and reliable information by thinking strategically about the best ways to find it which will help students to construct answers to these subsidiary questions. At this stage, the role of teacher-librarians, library media specialists or public librarians is needed to guide them to resources where best information resides. If the planning has been thoughtful and productive, students will proceed with the satisfying information sites swiftly efficiently, gathering only information that is relevant and useful. The more complex the research questions, the more important the sorting and sifting, providing the data supporting the next stage – synthesis. At this stage students move forward to a more systematic scanning and organizing of data. The next step is the synthesizing step, whereby in this process, the students arrange and rearrange the information fragments until patterns and some kind of picture begins to emerge. In the evaluating stage, students ask themselves if more research is needed before proceeding to the reporting stage. In the case of complex and demanding research questions, usually students complete several repetitions of the cycle since they do not know what they don't know when they first plan their research. Finally, reporting comes after several repetitions of the process (or the cycle) that creates sufficient insight.

The Research Cycle differs from some models in its very strong focus upon essential questions early in the process. The research cycle requires that students make up their own minds, create their own answers and show independence and judgements. Since students are actively revising and rethinking their research questions and plans throughout the

process, they are forced to cycle back repeatedly through the stages listed so that the more skill they develop, the less linear the process (Mckenzie, 1999).

Apart from this model, Information Literacy Standards For Students Learning will be using as a guidelines to show the relationship between the standards and the model choosen as can be seen below :

Standard 1 :The student who is information literate accesses information efficiently and effectively – Indicator 1 : Recognizes the need for information.

Mckenzie's Model : Questioning and Planning step. Indicates that students recognize the need for information by mapping out the dimensions of the essential question being explored. This will be followed by strategic planning to find pertinent and reliable information.

Standard 2 : The student who is information literate evaluates information critically and competently – Indicator 4 : Selects information appropriate to the problem or question at hand

Mckenzie's Model : Gathering, Sorting and Sifting step : Indicates that students determine accuracy, relevance and comprehensiveness of the information by gathering only information that is relevant and useful and move forward to a more systematic scanning and organizing of data.

Standard 3 : The student who is information literate uses information accurately and creatively – Indicator 1 : Organizes information for practical application

Mckenzie's Model : Synthesizing, Evaluating, Reporting step : Indicates that students organizes information for practical application by rearranging the information until some kind of picture emerge. Next, students evaluates whether more research is needed and finally proceed to reporting stage that comes after several repetition of the stages.

2.4 INFORMATION LITERACY AMONG SECONDARY SCHOOL STUDENTS

We read constantly that schools should be teaching children to think rather than memorize and repeat, and that thinking skills should transfer to the real world so that children become independent, productive members of adult society. Problem solving is the essence of thinking skills and if schools can provide the appropriate variety and frequency of problem solving engagement, then transfer (in keeping with individual student's capabilities) will be assured (Carey, 1998).

Expectations for student achievement for the 21st century are very similar whether it is framed as a goal, a skill, or expressed as a standard. Students are expected to perform competently on standardized tests for the selected basic subject areas, to possess basic communication skills, to have a basic set of skills on computers, and to know and understand how to use a variety of information tools (both printed and technological). All students and teachers in all classrooms and all areas of employment use information. Only one list of goals, skills and standard competencies is needed and it must be research based. It does not matter how much technology we have in our schools if the teachers do not know how to guide students in the ethical and practical use of the resource (Ark, 2000).

Standards-based education has the potential to offer a well-grounded basis for instruction because its foundation is careful analysis of those concepts and skills that students should know and be able to do. In this digital age, the need for students to access authentic and useful resources, as well as interpret and apply those findings, becomes of paramount importance. Realizing that need, the American Association of School Librarians (AASL) and the Association for Educational Communications and Technology (AECT) developed a set of information literacy standards for the students, published in *Information Power : Building Partnerships for Learning* (Farmer, 2001).

The first three categories, that is information literacy outlined three standards :

Standard 1 : The student who is information literate accesses information efficiently and effectively

Standard 2 : The student who is information literate evaluates information critically and competently

Standard 3 : The student who is information literate uses information accurately and creatively.

The standards are written at a general level so that library media specialists and others in individual states, districts and sites can tailor the statements to meet local needs. These educators are the ones who know their student populations; their role is to apply these general statements in light of the developmental, cultural and learning needs of all the students they serve (American Association of School Libraries, 1998). However, it is one thing to have standards and another to implement them. For the latter to occur, schoolwide commitment and action is needed. The following action research case study provides a model for such implementation:

Redwood High School in Lakspur, California, the site of the action research, is a suburban comprehensive high school that enjoys a strong academic record, a supportive community and the richness in resources provided by the library and the school. However, several faculty members and library staff noticed problems that students exhibited in accessing and evaluating information. Students research questions were sometimes vague and under developed; group work in the library was sometimes inefficient. Teachers notice a rise in students plagiarism; student voice their frustration through assignments. Therefore a Redwood Study Group (Research Strategies Study Group-RSSG) was established, co-chaired by the library media teacher and a science teacher. The group's goal was ambitious to improve student information literacy competence through :

- developing a repertoire of research strategies

- critically evaluating information
- synthesizing and sharing information in creative, meaningful ways
- incorporating technology into the literacy process

The library media teacher created a binder of research and professional readings on information literacy to which the group referred during and after the study. They developed a categorized “inventory” of information literacy skills based on AASL and other standards aligned with district outcomes.

After practicing information literacy skills according to the list, the findings are as follows :

- Assignments included clearer, explicit language about information literacy skills
- Assignments within the same course are uniform
- Students and teachers made great use of research guides
- Students asked higher-level questions when doing research
- Web site evaluation was taught explicitly in the freshman computer course, and practiced in that grade’s science and social studies assignments
- Attention was given to research processes along with research products
- Students completed research assignments and work was solid
- Reading skills improved
- Resources were cited routinely and accurately
- Less plagiarism was evident
- The library media teacher was involved throughout the research

process, including the assessment of research products

(Farmer, 2001).

Another example of students project is the Senior Project, conducted at high schools in California. This project allows students to self-select a topic, to study it in depth, and to produce a culminating exhibition, which is a vehicle for promoting information literacy in the high school. To succeed at their senior project, students must use an appropriate research process, formulate their own essential question; seek out and evaluate sources ; write about their experiences in a journal; and create, produce and evaluate the product and the process. No longer are rote memorization and fact regurgitation sufficient to graduate from high school. Schools across the country are adopting the Senior Project as a culminating exhibition to demonstrate learning. Teachers and administrators continue to refine the assessment process to include the evaluation of information literacy skills. Requiring an annotated bibliography for the senior project gives a teacher the opportunity to assess a students' ability to find, evaluate and use resources. During discussions with the teacher, the student explains why he or she chose to include specific sources and to exclude others (O'Grady, 1999).

Another action of research conducted towards high school students was to identify the reasons why they used the Internet, the approach they use on the internet, what they liked and disliked about using the technology and how they evaluated their own Internet use skills. The findings are as follows :

Why do they use the Internet ?

Students responded that they used the Internet for reasons like school projects, personal communication and entertainment. The fact that large numbers of students in that school use the Internet for research purposes reinforces the need for information literacy training

to help students understand the complexity of the world wide web and the cognitive processes involved in negotiating websites.

What approach they do most commonly use to find information on the Internet?

About seventy three percent of the students responded that they use search engines when conducting research for school related projects, while the rest use subject guides, online databases and preassigned URL addresses. This finding reinforces the need for librarian / media specialists and teachers to provide students with more instruction and guidance in the information problem-solving process.

What do they like about using the technology ?

Generally students in the sample feel satisfied with the Internet as their learning tool. Ninety three percent of students identified three factors contributing to their satisfaction in using the Internet : ease in use, speed in usage and the convenience the Internet provides in accessing information and the “depth” or the variety of information acquired.

What are they dislike about using the technology ?

The average students mentioned slow downloads, trouble in navigating websites and technical limitations as the constraints with interesting point where very few students noted authenticity of information, biased content and superficial information as constraints in using the Internet (O’Sullivan and Scott, 2000).

The above example of action research shows the information literacy initiatives carried out at high schools to help students in their learning process. Different cases were brought up by Foggett (2003) who had conducted a study in Australia with the aims to see if primary school students have assimilated the foundation required for information literacy and whether they are able to use these skills effectively. This case study examines how a cohort of primary school children utilize the specific information process, locating and selecting information. A number of data collection methods were used. These were brainstorming,

concept mapping, questionnaire and direct observations of those students' behaviour. The sample of participants were chosen from classes of year 4/5 students who are selected randomly, consisting of thirty students with an age range of nine to eleven years, twenty seven of whom were available to participate in the concept mapping exercises. Five pairs of teachers-arranged students were then randomly selected from the class list for direct observation, displaying individually a range of ages and abilities. Twenty seven students were available to answer the written questionnaire. The findings show that most of the participants had a basic understanding of what it means to locate and to select sources of information that will help them to answer their research question. Many of the answers and observed actions reflected learning objectives stated in both the government curriculum and document, which confirms that at least some of the students are effectively practicing the information skills of locating and selecting (Foggett, 2003). The purpose of using the primary school research in this review is to emphasize the importance of implementing the skill in the earlier phase of education. It will then be much easier for educators to strengthen this skills when the students move to secondary schools.

2.5 Information Literacy In Malaysia

The above example is among the scenario on information literacy being implemented in developed countries such as Australia and the United States based on their own standards. What is the scenario in a Malaysian context ?A research on training for teacher-librarians was conducted in Malaysia, part of it addressing the school library management in Malaysia by Yaacob and Samsuri (2003). In their observation, one of the main problems facing the students in Malaysia is the low information literacy level among them. This problem was caused by :

- a- Lack of information skills programme and library education given as part of academic programme in school

- b- Inadequate relevant reading materials such as outdated library collection and fiction based books. This type of books will not nurture students to research in depth in books apart from their main text and curriculum
- c- Teachers appointed to manage the libraries complained that they could not fully concentrate on the management and less so on the services, activities, library promotion and information skills program
- d- Teaching which emphasizes totally on text should be changed where teacher provides contents of the subjects, while the rest will be given to students as tasks to further find references from the whole spectrum of information materials
- e- Malaysia should also have a standard on information literacy, which should be introduced . It should be endorsed and promulgated by policy makers, educational institution professional and educational associations. Library Media Specialists have two fold teaching roles. They are teachers of students, facilitating the development of information literacy skills necessary for success in all content areas, and they are in-service trainer of teachers, keeping abreast of the latest information resources and technology.

The information literacy programmes should not only provide the skills needed to address the many faces of information literacy but also to fit them into the new knowledge based society (Yaacob and Samsuri, 2003).

Stager (2003) further stated that the obsession with the textbook is another indicator of even the most enlightened schools preoccupation with information rather than the construction of knowledge. The most noble and effective use of computers is for computing- not looking stuff up. This will require rethinking the nature for learning and teaching, not just adopting a new textbook. Breaking textbook addiction with primary sources and activities that engage every learner is cheaper, lighter and pay much higher

dividends (Stager, 2003).

2.6 INFORMATION NEEDS

Information needs is related to a range of categories of what reflecting the significant areas of citizen's experience. Educational reasons for information seeking were the most frequently cited both in the past and the predicted future. However, other reasons, such as work related and a general interest, were significant (Marcella and Baxter, 1999).

A research has been done by a British Academy-funded PhD study to consider information needs that implicates from school assignments which involved information seeking elements. Informants were drawn from six schools all located in a small town on England's north-east coast. The first three schools (catering for children from four to nine years of age), two middle schools (for nine to thirteen years old) and one high school (for youngsters between thirteen and eighteen). Findings show that where youngsters were allowed to investigate a topic of their choice and so determine their information needs for themselves, their decisions were influenced by the following factors :

- a- Personal Interest – this proved the most popular criterion, either for the pupil in the lower or higher phases
- b- Availability of information – the second most popular reason for nominating a certain subject lay in the fact that the pupil knew that relevant information could easily be obtained. Personal interest and information availability were widely quoted as factors affecting topic selection. Each of the three remaining reasons were articulated by just one information
- c- Perceived ease of topic
- d- Residual memory
- e- Advice

For most youngsters, topic selection was determined by one of the above factors although occasionally several contributed to the decision (Shenton and Dixon, 2004).

A study carried out in Canada, the United States and around the world have suggested that there are basic skills or competencies that the workers of today and tomorrow need in order to be proficient on the job and successful throughout their lives. One of the major competencies identified in all of these studies is the ability to manage information, or information literacy skills (Eaton and Treagold, 1999). Any definition of information needs includes the needs at present and a vision, or more likely a short to the medium term objective of improvements in areas (Boyd, 1996).

From July 9-13 1991, a White House Conference on Library and Information Services (WHCLIS) was held in Washington DC with the purpose to examine information needs of the 21st century. The conference will make recommendations to improve library and information services to enhance literacy, increased productivity and to strengthen democracy. The needs for information was illustrated in a letter from President Bush to all those involved in the preparation of the conference : *“...if the United States is to remain a global leader in the 21st century, we must keep pace with rapid advances in technology as well as with increasing trade commerce between nations . Our ability to stay ahead depends in large part in our ability to stay informed...”* (Lane, 1991).

The roles of and the needs for school libraries has changed. Libraries need to keep up with current information needs, while performing large-scale remediation on collection that has fallen behind (Anne Marie, 1994). Besides that, collecting data on information needs is essential for information concerns such as customer charters, charging for information and designing effective end-user systems (Nicholas, 1995).

The need for social information has six dimensions : (a). function (why people need information) (b). form (what kind of information people need) (c). clusters (what people need information about) (d). agents (who initiates the information activity) (e). users (how needs differ between different groups of people) and (f). mechanisms (which mechanisms can be used to meet information needs). These dimensions provide the basis for a model that can be used to analyze social information needs and the ways in which they are met (Moore, 2002).

2.7 INFORMATION SOURCES USED BY SCHOOL STUDENTS

In the UK, school libraries probably saw their highest point in the 1970s, with large numbers of school librarians housed in new buildings. Selective schools had always done this, but the alternative schools in selective systems, such as the secondary moderns, had very little in the way of library resources by comparisons. The rise of comprehensive schools in 1970s was in many cases the mechanism by which the better library facilities were made available to the children, but by the 1980s and 1990s spending on books was falling in real terms year by year. Libraries, in schools and in local communities, have adopted technology in a piecemeal way, but the initiative by the government have begun to see a role for library in education, with significant funding available to provide some equipments for libraries, to train librarians and to pay for the development of online content (Abbot, 2001).

Student learning is at the heart of the school library media field, and the question of how students learn with electronic information sources is one of the field's key research questions for the coming decade. While print and audiovisual resources are sure to remain important tools for learning in classrooms and library media centers, it is the interactive resources that hold the greatest promise for enabling students to engage meaningfully with

information and to use it as the basis for developing sophisticated understanding of the world in which they live. Learning with information is the authentic learning that is sought by all educators today, and fostering learning with information is the library media programs central contribution to student learning and achievement. Research that explores the student's learning with the emerging and still not fully-understood electronic resources that will provide the richest venue for their learning throughout their lives became the central focus in the field (Neuman, 2003).

The increasing reliance on electronic information sources is changing the access and usage of information services. The challenge is to reframe the notions of information service, as users move towards electronic information retrieval. This could mean a drastic revision to the way users and their needs are perceived. The challenge of creating users who are information literate is not as simple as it first appears and will require some significant reviews of the ways in which users and information workers relate (Debowski, 2000).

Information resources can be largely divided into two types, print and electronic. In the context of information literacy where it trained students to conduct a research process, it is closely related with the amount of information gathered. Which of these types of information give greater influence to students? An observation conducted by a librarian may guide us towards giving priorities to the type of resources which is more important. Julie Anderson, a library media specialist at Liberty High School, Renton, Washington has experience in guiding two classes at the beginning of research process with the ultimate goal of creating power point presentations (Anderson, 2001). Teacher A's class came in and listened to the librarian describing some good starting points in the school's print collection and reminding the students about the information-seeking strategies that have been taught before. Students then went immediately to the computers to log on to the

Internet. As she circulated through the library, she found many students hard at work-reading their email and other activities the Internet can provide (Anderson, 2001).

A different situation happened with Teacher B's class. Students came in, listened to the librarian give the same talk and went immediately to the reference books as mentioned. They took the books back to their tables and began taking notes. The difference is that Teacher A gave his class an assignment that described the final product expected, then let the students go. Teacher B, on the other hand, required her students to use the print materials before they went to work on their computers. Furthermore, they were required to take notes in their own hand writing, define 10 terms of their choice and come up with 10 questions they wanted to answer about their topic. On the second day of the research, when they were allowed to use electronic resources, these students were much more focused than the first group. She believed the approach used by Teacher B provides many benefits for students. First, taking notes in their own handwriting forces students to think about what they are reading and decide what is important to their topic in ways such as cutting, pasting and printing do not. Perhaps the most important benefit to using only print at the beginning is that students are more focused when they do use the electronic resources. Having completed some of their researches, they are aware of the information they still need and have more motivation to find it (Anderson, 2001).

Online information services and the Internet, as well as other electronic information sources have much to offer schools in terms of the currency of information available through them and opportunities for networking and sharing information. As a management tool, using these information search systems offers considerable savings in time and often in costs over the use of information from other sources. Most importantly, the computer-based information sources can play a part in helping students develop information skills.

Current curriculum theory draws heavily on ideas about resource-based learning, individualization of instruction and the need for all people to develop lifelong learning strategies to cope with a rapidly changing world (Clyde, 1999).

2.8 INSTRUCTION IN LIBRARY AND INFORMATION SKILLS

It is expected that instruction in information skills, formerly known as bibliographic instruction will be an important function of libraries in the information society (the most sensible meaning of which is a society in which new information and communications technologies is pervasive) (Duff, 1996). Yet, there are students who have received excellent instruction but still do not seem to know their way around a library. It is a familiar refrain : at every new school level, students often seem to have learned nothing during the level just prior. But if the librarians from those levels are queried about the content they teach, it's difficult to find fault. What happens between the levels? Do students loose that much knowledge every summer ? Why do so many students seem unable to apply what they've learned in the library setting to another library setting? The answers to these questions are not simple. Students forget because information literacy is not a set discrete, declarative skills that can be taught once and internalized by the learner, to be recalled and applied in a variety of situations. Individual skills may be acquired but are not easily transferable to new situations which created the disconnections between what students should know and what they actually do know. Like critical thinking skills, information literacy skills must be taught and practiced in multiple ways and in variety of settings over time. Because of the complexity of information in today's world and the variability of information problems students encounter, information literacy must be learn as a strategic tool rather than a tool of procedure. In other words, students will not be able to generalize from instruction that emphasizes which buttons to click. Instead, they need to be taught how to figure out for themselves, from one information system to another, which

button will give the information they need and which strategies will yield those results (Jacobson Harris, 2003).

Terms like ‘active learning’, ‘resource-based learning’ and ‘brain-based learning’ have a common basis in what can be considered a constructivist-cognitive revolution. This change in educational practise is not really a new ideas; its root can be traced to John Dewey or even to ancient philosophers. This revolution has been spawned by a gap between intention and accomplishment within the learning process, and is being fuelled by a growing understanding of how learning actually occurs (Warmkessel and Mccade , 2000).

The goal of the constructivist-cognitive movement is to help students comprehend how to learn independently, so they can continue the process for a lifetime. As most teachers likely accept this as a seminal goal of education, one might legitimately ask why this revolution is even necessary. The answers reflect the significant difference between the curriculum that students actually experience and the intentions of most teachers in presenting this curriculum to their students. Quite simply, the ultimate goals of the educational process are not always coming through to the students.

With this idea in mind, the authors designed, developed and team taught a graduate course in information literacy at Millersville University entitled “ Information Literacy : Creating Active Learners”, specifically aimed at practicing elementary and secondary school teachers and librarian. The methods focused on three major skills in information literacy :

(a) finding information (b) analyzing and interpreting information (c) putting information into practical use.

Using the methodologies of the constructivist-cognitive revolution, the team have sought to help students learn independently by serving in a facilitating role. There is little

lecturing, most of the class times is devoted to active learning techniques and collaborative research projects. Each assignment and class activity is clearly defined and include the goal and suggested procedures (Warmkessel and Mccade , 2000).

The participants have all been teachers or librarians. More represented middle schools and high schools than elementary schools, but the division between librarians and classroom teachers was nearly equal. This distribution allowed the instructors to address the strengths of each group. From the survey, the librarians tended to be more familiar with database searching and more comfortable with the idea of learning as a process, whereas the classroom teachers were more familiar with the specific subject matter and more comfortable with designing effective students and assignments. What the course has made clear is that teachers and librarians have much to learn from each other and that students gain the most when the two groups work together. At the elementary and secondary level, as in higher education, both groups can benefit from the educational changes that have resulted from recent technological innovations. Teachers can learn from librarians how to incorporate information resources to their classes; librarians can learn from teachers how to use pedagogical theories and techniques that are appropriate to resource-based learning. Whatever the scenario, students must be encouraged to explore a complete range of resources within the structure of information literacy (Warmkessel and Mccade , 2000).

The following is the example for instruction on library and information skills conducted at four schools in UK and USA. The resources used in this example are a mix between book and technology.

(a) Expert Witnesses Research Project – This project is conducted at Winona Middle School Minnesota, USA, examining current social issues. Participants of the project are 350 students from 8th grade students. Instruction is done in collaboration between library

media specialist and other teachers. The first step is by guiding students through the websites about cloning which is the broad topic of the project. The guidelines is by coaching the students to carefully look at the important part of the site which contains information on reproductive cloning. The second step is to guide students to more specific resources that is Expert Witnesses Class Project Page, the online catalog of school resources. A quick review of online catalog were given to avoid them from searching without thinking. The next stop, World Book Online Encyclopedia and the multitude of related web links, magazines articles, newspaper articles and back in time articles that World Book Online offers. Instructors discussed the significance of using web sites that have been selected by experts and editors and the efficiency of using these web sites compared to an open search on a topic that might yield thousands of hits, not all reliable. When setting down to work, students complete their task in the media center, a step to deter plagiarism or too much reliance on parents' help. Once the topics had been approved, the information process begins. As the research progresses, students cite the bibliographic information and record keypoints in the forms provided. Students ultimately found the forms helpful for organizing information for their final presentation and in knowing how to cite their sources. The final stage is the evaluation to the guidelines teachers had given, followed by the oral presentation using power point which is also plagiarism deterrent (Anderson, 2001).

(b) Grant, a teacher-librarian at La Jolla High School, California has designed a lesson for teaching high school students entitled "Using the web for research". The lesson used a generic approach to cover the essential skills high school students need in order to efficiently and successfully use the web as an information resource to complete a research project. The generic lesson approach proposes to teach information literacy skills specifically as they apply to using the web as an information resource. While subject specific examples must be used in teaching search strategies, the instructor can

easily explain that the search techniques and strategies being demonstrated applies to any subject and if planning time allows, he/she can easily change the few examples search terms to better suit the range of topics assigned for the particular class to whom this lesson will be taught. The experiment / action research was then carried out and the teachers shows a positive response towards this model (Grant, 2002).

(c) Infoquest - Infoquest is a program designed to meet the needs of active learners. It is a process-based program that easily correlates with local, state and national curriculum standards. Infoquest when properly administered, is a simple way to teach information literacy skills to all levels of students by stimulating interest in specific subject areas, helping students distinguish between types of resources, providing practice in critical-thinking skills as they evaluate those sources and assisting students in documenting their findings. Each week, a different question is posed on the school news broadcast and students have all week long to research the answer. Answers must include the source used and verification that it was researched. Younger students are given much more assistance, but all ages are encouraged to participate. Correct answers are announced the following week along with the new question. By the end of the school year, students who have been regular participants will have used nearly every type of print or digital resource available and will have developed a range of information literacy skills. Teachers who consistently ask recall-type questions that require a simple answer, do not motivate students to develop higher order thinking skills at all. Students should be encouraged to think, consider, analyze and wonder before answering a question. The most appealing Infoquest questions have a real-life application, which means the question is something students probably have little knowledge of but would be interested in knowing more about (Milam, 2003).

(d) Another sample of instruction was provided at Sherman Middle School by a librarian, who manages the Library Media Centre. This instruction which is focusing on

skills related to the use of electronic indexes with the aim to answer the question : How can electronic information access skills be effectively taught to young adolescents ? Specific answers to the questions posed for this study are as follows :

- * How can electronic information skills be taught when a limited number of Computers are available in the LMC?

These skills can only be taught to groups of students when every student or two students can be given immediate access to computer, thereby dramatically reducing the pupil-teacher ratio

- * Can students with impaired language arts skills (underachievers) learn and employ these skills and concepts ?

Yes. However instruction should be coupled with ongoing language arts instruction. Most of these students had difficulty conducting Boolean searches. They often stopped their library research when they found the sources of information, and they are reluctant to read or use the sources they found.

- * How should instruction in information skills be related to general classroom instructions?

Skills can be tied to regular classroom instruction by using examples of topics currently under study in the classroom or by prefacing a research project with skills instruction. Skills may then be reinforced during the research project.

- * Does formal instruction in information skills enhance student attitude toward the library (and behavior in the library) ?

Although the results of the attitude surveys were inconclusive, the librarian observation shows improved students behaviour and developed positive attitudes toward the library

- * What can be learnt from this study that may have broader application to teaching young adolescents ?

Teachers should carefully examine the effect of multigrade grouping on student

achievement. In this study, sixth-graders performed better when they were taught separately from seventh-graders. When the librarian taught six-graders separately from seventh graders, she was able to adjust the lesson for their cognitive level. This finding suggests that a year of physical and cognitive maturation, as well as previous school experience (in this case the LMC), may account for improved performance. Multi grade grouping may hinder academic achievement (Hildebrant Klais, 2001).

From the four examples of instruction, it can be concluded that :

- (a) subject teacher must collaborate with library media specialist in teaching information literacy skills. There also must be a guidance from these instructors when students navigate the web to carefully train them with locating and selecting skills.
- (b) Information literacy skills can be taught in an interesting , simple and yet in a very practical method. It can be practiced continuously throughout the year and gradually the skills can be developed among the students.
- (c) Teaching information literacy related with electronic information access is more effective by individualized programme and adequate access to computers .

It is not the intention of this research to explore the methods that can motivate students' learning. This is only a brief overview of a research that has been done. To date, most research on and development of instruction in this context has focused almost exclusively on content (information problem solving process and related skills) or student outcomes; little or no attention has been paid to presentation methods that motivate student learning. Although there has been some research on the effectiveness of specific motivational teaching methods and strategies in a classroom setting, there has been little research to date that examine the use of motivators in the unique context of library and information skills instruction. Among the significant one is research done by Small (1999) which shows that

the library media specialists teacher used significantly more extrinsic than intrinsic motivators.

2.9 THE ROLE OF SCHOOL RESOURCE CENTRES AND TEACHER LIBRARIAN

The modern school library media specialist must not only be proficient with the wide range of information technologies available today, but they must still be able to work with teachers to instill information literacy skills in their students. This will then lead to the school's instructional programmes in collaborating with library media program. Collaboration is an obvious facet of library media programmes, for nearly everything that the programmes offer must be in conjunction with other instructional programs (Baule, 1999). The school librarian, where they exist, or the teacher librarian has traditionally been responsible for teaching library skills in school libraries. Students on their own cannot appreciate the value of the library by mere instinct, and neither force nor compulsion will make them appreciate the value of the library unless library instruction is handled by a professional who is a specialist in the educational use of the library (Adeoti, 1997).

Many teachers however, may not readily recognize the instructional expertise that can be provided by their SLMS. In 1992, a study conducted with 458 elementary classroom teachers revealed that a statistically significant number of faculty who sought assistance with hypothetical instructional problems did not consult their school media specialists. They instead chose to seek assistance from peers who had a reputation as good teachers. Library media specialists were only consulted in academically successful elementary schools where intellectual sharing and collegial work arrangements were taught to be more prevalent. A strategy suggested in the study would consist of targeting teachers with strong instructional reputations for cooperative resource units. By clearly demonstrating to them

the positive learning aspects of a library-based learning resource unit, SLMSs would be able to count upon their support for future units and cooperation with other teachers (Craver, 1994).

Developing countries have a greater need for information which can be used to improve the socio-economic, political and cultural development of their countries and for such development to take place, their citizens must be adept at using the library. Users must be taught how to retrieve information and interpret it without any assistance. The task of the librarian or teacher librarian is to develop a programme of user education, incorporating the concepts and skills needed for handling information throughout a lifetime and integrating it with learning in the various subjects and with the students perceived needs. Where there are more materials available in any given subject area, students may not know which will be more suitable for their needs. The librarian or teacher librarian, therefore, being a professional, is in a position to teach students what to do in such situation (Adeoti, 1997).

School library media centers in the 21st century can, and should be hubs for increased student achievement and positive focussed school reform. Student's achievement involves skill development, knowledge acquisition, research analysis of ideas and results and of course integration of concepts and resources. This idea has been manifested at Cherry Creek High School(CCHS), Colorado where raising student achievement takes focus, intense , continual efforts founded in research, supported by the entire learning community and fostered through a climate conducive to inquiry, discovery and challenge.

The most effective and efficient ways to increase the students achievement and love of learning is to leverage the power that library media centers can have in this process. The CCHS study indicates that there are five essential elements of this power :

Access - At Creek, the school has been able to keep library open three hours each day after school ends and one night a week. Sessions are supervised by coaches and volunteer teachers and assistance for students is provided with any topic that is needed.

Data Driven – The CCHS librarians keep data on the use of materials. They know what materials and sources are used and for what purposes. They were then able to move the resources into an area that was leveraging student learning which can be accessed at home.

Integration of Technology - In CCHS, a massive number of computers are provided. Library resources are available throughout the school campus through a networked environment. A library resources webpages allow students, staff and community members to access from the school campus and home. The resource page has links to various online resources including specialized subject area databases. They also include links to numerous district online resources and myriad lists of statewide periodicals and many other helpful sites. Furthermore, the students and teachers can use the inter-library loan request system to borrow resources from all district schools, district resources and district professional libraries.

Connection between teachers – At CCHS when teachers design their research assignments, they do so in collaboration with a teaching librarian. When teachers bring groups of students to a laboratory or to the library, they do so in conjunction with work that has been planned with a librarian. When portable hubs of computers are taken to classrooms for students work, the lessons are planned with librarians. Numbers and incidence of various kinds of research and lessons are kept on file to help others in the planning process. Examples of successful assignments are available at any time and individual students often seek out librarians for assistance.

Advocacy - A commitment to information literacy must permeate the culture of the school. Upon entry to school at CCHS, expectations of the school are addressed by administrators and librarians who then introduce students to all services available through

the library media center. The sessions are mandatory and a core part of the orientation of the school (Smith, 2002).

What makes a strong school library programme ? The Library Power initiative, a ten-year \$45 million school improvement programme, list the following seven characteristic of a more fully adapted school media programme:

- a- Leadership from the school administration (both principals and vice-principals)
- b- Shared vision
- c- Professional development programme
- d- Ample planning opportunities
- e- Adequate support staff
- f- Complementary school reforms
- g- Community and strict advocacy (Hopkins and Zweizig, 1999).

According to Gallagher-Hayashi (2001) characteristics two to seven cannot exist without characteristic one that is leadership from the school administration to support a strong library programme.

Shared Vision – A shared vision of the school library programme should fall in line with the shared vision of the school as a whole; thus the vision needs to be reached through professionalism in service supported by the principals, teachers and other members of administration.

Professional Development Programme – In order for workshops and in-service to occur during the school year, the principal must provide time and opportunity, thus encouraging and/or requiring staff members to take part in school library programme-based professional development.

Ample planning opportunities – time for regular planning sessions between the teacher-librarian and teachers is essential and must be supported by the administration in order to integrate the school library programme into the curriculum.

Adequate Support Staff – By hiring sufficient technical staff, the principal allows the teacher-librarian to focus on student learning and classroom instruction, rather than clerical duties.

Complementary School Reform – Principals can choose to support school reforms that complement the school library program such as resource-based learning, critical thinking and cooperative teaching. By providing in-service, and by modeling the target reforms, the administration can encourage the teaching staff to reform and improve their instructional practices.

Community and District Advocacy – as the first line of communication between a school and the district staff, the principal is in an ideal position to foster advocacy at the district level.

The role of the principal is so critical to the development of school priorities, culture and resources that it would be fair to say the principal is the key factor in developing an effective and integrated school library programme. Effective principals developed the knowledge base to link collaborative programme planning and team teaching by classroom teachers and teacher librarians to other restructuring efforts in the school and in the districts. They integrate the teacher librarian and library resource center in instructional programmes, expect teacher / teacher librarian planning, encourage students use and establish with evaluation procedures (Haycock, 1999).

2.10 SUMMARY

This chapter reviewed the literature that has been done on information literacy. It began with a discussion on the concept of information literacy to have a better understanding of what is meant by information literacy. The information process based on chosen model were then discussed followed by a research on the skills possessed by students and the problems that they face in implementing information literacy skills in few developed countries and in a Malaysian context. The chapter further stated the information needs and information sources preferred by students to fulfill their needs. Instructions in library and information skills covers the instruction in library skills as the basic foundation in information literacy. Finally, the role of school resource center and teacher librarian is explained to enhance these skills among students.

The following are the main findings from the sources reviewed according to the sections and the relationship between the findings and the study is then presented.

(1) Concept of information literacy

Concept of information literacy started to develop and became part of the library science world in the 1980's. The rapid growth of ICT in the 1990's resulted in numerous efforts being done to establish the standards, models and characteristics of this important skill. In the education field, information literacy has been identified as the most important skill in the learning process. Ideas were then given to develop these skills not only in the learning process but in a wider social environment as well.

(2) Information Literacy – The Process

Numerous models appear in defining in detail the information process in the information literacy skill. Nine models have been chosen to serve as a brief comparison of steps in the process shows a different approach for each model. The chosen model, The Research Cycle follows the research process approach and it has its own strength to suit the

educational climate in our country.

(3) Information Literacy among Secondary School Students

From three action research studies carried out in United states and United Kingdom and one research carried out in Australia, the findings are :

- (a) There should be a standard that was referred to in assessing the present level of information literacy among students
- (b) There is no doubt that subject teacher and teacher librarian must work together to incorporate this skill across the curriculum and in the research process. Students gain the most when these two groups combine their efforts
- (c) With this skill, students can enhance the quality of the research conducted and the research product
- (d) This skill can also create independent students in dealing with their information quest and they can participate actively in the learning process.
- (e) Most of the students are interested to use the Internet while doing research for school related projects. Media teachers, specifically should guide students with information literacy skills to provide them with thinking skills while navigating websites and in problem solving process
- (f) Locating and selecting skills are important in helping students to answer their research questions

(4) Information Need

Studies carried out in developing countries and around the world shows that one of the major competencies identified in all these studies to be proficient in the job and to succeed through out their lives is the ability to manage information or have information literacy skills. It also shows that educational reasons proved to be significant reasons for information seeking.

(5) Information Sources Used by School Students

A combined use of the electronic and print or audio visual resource may give greater results for students' learning.

(6) Instruction in Library And Information Skills

From the studies reviewed, the findings are :

- (a) Teacher and librarians have much to learn from each other and that students benefited the most when these two groups work together
- (b) Instruction and guidance regarding search strategy should follow research project that was assigned to the students and it should be in practical form to make it easier for them to understand. It can be done by using subject specific examples, followed by a few examples to better suit the range of topics assigned
- (c) Teachers who consistently ask recall-type of questions that require a simple answer do not motivate students to develop higher order thinking skills. Students should be encouraged to think, consider, analyze and wonder before answering a question
- (d) While teaching information skills, teachers should carefully examine the effect of multigrade grouping on students achievement. Multigrade grouping may hinder academic achievement

(7) The Role of School Resource Centres And Teacher Librarians

Teacher librarians who are specialists in the educational use of the library must play their role to enhance awareness among students to appreciate the value of the library. At the same time, school resource centres must be the hubs to increase students' achievement which include the development of information literacy skills. The study reviewed shows that these five elements should be possessed by media center :

- (a) Easy access of the information regardless time
- (b) Data driven on the use of material
- (c) Integration of technology

- (d) Connection between teachers
- (e) Advocacy on the commitment of information literacy

2.11 RELATIONSHIP BETWEEN FINDINGS AND THIS STUDY

The main objective of this study is to identify information literacy skills among secondary school students. This is then explained by the first section under the concept of information literacy where it is the ability to find, evaluate and effectively use the information. The study then moves to explain the information process under the information literacy skills. By understanding this process, it will be easier to assess the skill of information literacy that students already possess. Few models were then chosen as comparisons and one model is adopted as a platform for the instrument when collecting data.

Next, the study moves to review on the information literacy among secondary school students. The finding then shows the effect of information literacy on students' research and the importance of locating and selecting under information process and these two skills relate specifically to this study. After the meaning and the process of information literacy has been identified, the study moves to discuss briefly on the information need with the aim to see the importance of information literacy in education and in the wider context of everyday life.

The next objective is on information sources used by these students and the findings show that the combination of sources will produce a greater effect on the students. The following section that is instruction in library and information skills is the extension of the need for information for educational purposes whereby the findings gives the idea on the various techniques of instructions to inculcate this skill among students. Finally, the role of school

resource centres and teacher librarians is vital because in the school environment , these two factors are the foundation to train students in the information skills programme.

University of Malaya

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

The purpose of this study was to investigate the skills and awareness of information literacy among secondary school students at fully residential schools in Kuala Lumpur.

The study examined five broad questions ; namely :

- a. What are the skills of information literacy that students already possess ?
- b. How do they locate and select their resources and what are the problems that they face regarding these two skills?
- c. What are their major information sources and why did they choose those sources ?
- d. What are the programmes conducted by the teacher librarian regarding information literacy skills in school resource center?
- e. What are the information literacy skills needed by students based on students and teacher's perspectives ?

This chapter describes the methodology used to conduct the study. Specifically, it is divided into six sections :

- f. Research design
- g. Research instrument
- h. Pre-test
- i. Population and sample
- j. Data collection procedure
- k. Data analysis

3.2 RESEARCH DESIGN

This is an empirical study employing a survey research method. Survey research captures a fleeting moment that is happening. By drawing conclusions from one transitory collection of data we may extrapolate about the state of affairs over a longer time period (Leedy and Ormrod, 2001). The data was obtained through questionnaires. This questionnaire survey method allows for a wider spread of samples. Survey research also allows generalizations for a wider spread of samples. Survey research allows generalizations to be made about the characteristics of the entire population being studied (Wee, 1999).

Six aspects of data were chosen to be included in the study :

- a-** Characteristics of students in the study
- b-** Skills of information literacy among the students
- c-** Locating and selecting information and the problems associated with it
- d-** Schools resource centre collection and the information sources used and preferred by students
- e-** The programmes conducted by teacher librarians and school resource centres to enhance the level of students skills
- f-** The need for information literacy from students and teachers perspectives

In this study, the level of information literacy of the respondents will be briefly identified using the standards developed by American Library Association at the various stages of the chosen model. This is meant to justify the relevance of the model and to establish in the analysis section at which level Information Literacy the respondents are at.

Level Of Information Literacy

Mckenzie's Model	Questioning , Planning
Standards – Basic	Gives examples of situations in which additional information is needed to resolve an information problem or question
Standards - Intermediate	When faced with an information problem or question determines whether additional information is needed resolve it
Standards – Advance	Assesses whether a range of information problems questions can be resolved based on one's own knowledge whether additional information is required

Mckenzie's Model	Gathering, Sorting and ifting
Standards- Basic	Recognizes information that is applicable to a specific , Information problems or questions
Standards – Intermediate	Analyzes information from a variety of sources to Determine its applicability to a specific information problem Or question
Standards – Advance	Integrates accurate, relevant and comprehensive information To resolve an information problem or question

Mckenzie's Model	Synthesizing, Evaluating, Reporting
Standards – Basic	Describe several ways to organize information – for example chronologically, topically and hierarchically
Standards – Intermediate	Organizes information in a different way according to the information problem or question at hand

Standards – Advance	Organizes an information product that presents different types of information in the most effective ways
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3.3 RESEARCH INSTRUMENT

Two survey instruments were used for this study :

Questionnaire A – a set of questionnaire for the students

Questionnaire B – a set of questions designed to obtain information on programmes conducted by teacher librarians / resource centres coordinators in school resource centers.

The questionnaires included close and open-ended statements, as well as scaled items.

Both sets of questionnaires were prepared in two language, English and Bahasa Melayu, mediums of instruction in all national secondary schools in Malaysia. The Malay version, which was translated by the researcher was verified by a panel of Bahasa Melayu teachers from the former school of the researcher to avoid discrepancy.

Questionnaire A (Appendix A) is divided into six sections :

Section A - Students' background characteristic

Section B – Information literacy skills

Section C – Locating and selecting information

Section D – Sources of information

Section E – Programmes conducted in school resource center

Section F – The need for information literacy from students perspectives

Section A contains five items pertaining to students' background characteristic. Items 1 and 2 are intended for investigating the age and gender differences respectively to indicate their choice of information sources. Items 3, 4 and 5 study the influence of academic

performance in English Language proficiency with regards to their ability to use online resources especially from the Internet.

Section B contains 17 items focusing on information literacy skills to investigate the extent of this skills among students. The questions in this section were designed based on research that has been done in the literature review. Items 6 to 18 were designed to find out how students defined their information need, the strategy they used to locate information, how they selected the accurate information, how they organized the selected information and methods preferred by them to present their assignments. Items 19-22 are basic library skills which forms the basic foundation for information literacy skills.

Section C contains six items and it measures specifically on information process under the broader term of information literacy skills that consists of six steps that is : defining, locating, selecting, organizing, presenting and assessing. However, based on the literature, this section will only be focusing on two of the process that is locating and selecting. A study has been done in an Australian primary school to measure the information literacy level among primary school children. This study will be an extension of that which will investigate the level among secondary school students. Item 23 and 24 investigate whether students know how to locate information in the library. Item 25 and 26 justify sources of information preferred while locating for information. Item 27 tries to figure out problems that students encounter while locating information for their assignments. Four scale choices of answers were given and the students have to write down the answer based on the statements given. Item 28 will try to figure out problems (if any) when students want to select the relevant information.

Section D measures the richness of the school's resource centre, the information sources as preferred by students and the use of school resource centres by them. Item 29 suggests the list of information sources for students to seek the general information they need. They have to mark those information sources that they consider most effective and that were used by them. Reasons for their choices were sought. Item 30 lists all the information sources that may be found in the school resource centre and they have to rank them according to their preference. Item 31 and 32 measure the use of the school resource centres by the respondents. The open-ended questions in item 33 gathers a list of information sources not available in the school resource centres but desired by the respondents. Information collected in this section would serve as an indicator to school administrators and resource centre coordinators on the type of information sources that are deemed useful by the students. Guided by this, collection policy for the school resource centre may be developed or revised. Item 34 investigates the respondents on their familiarity with school resource centres.

Section E deals with the programmes conducted in the school resource centres. The aim is to identify the contribution by teacher librarians and school resource centres in developing information literacy skills among students. Item 35 – 37 covers the programmes, the frequency and duration of the course. This is important because the school's resource centre plays an important role to ensure the skills can be transferred to the students. As stated in the Information Literacy Standards for Students Learning, the first category that is Information Literacy most directly related to the services provided by school library media programme.

Section F identifies the need for information literacy skills from students' perspectives. It tries to ensure the specific details and the skills still needed to enhance their learning

process. This section will then give clearer aspects of these skills among secondary school students.

Questionnaire B (Appendix B) is designed to obtain information on programmes conducted at school resource centres. This schedule of questions is to be completed by resource centre coordinators and teacher librarians. Item 1 is on the opening hour of the library. The opening hour will indicate its accessibility. Easy access at convenient hours will encourage usage.

Information on the richness of school resource center collection is obtained using item 2. Programmes conducted at the school resource centers are displayed through item 3. Items 4-11 survey in details about the programmes being conducted. Items 11-13 designed to sought teachers opinion on skills needed by students and which skills should be emphasized first. Finally, item 14 tried to figure out the suggestions from them on other programmes that can be conducted to enhance students ability in information literacy.

3.4 PRE-TEST

A pilot test was conducted to ascertain the clarity of the instrument. Fifteen Form One , Two and Four students were chosen to answer the questionnaire. All of them were given Questionnaire A in the Malay Language version. The participants were encouraged to clarify on unclear items. Modifications were made on several questions after studying the written responses from them. Questionnaire B was tested on four coordinators from four schools. Separate informal interviews with these personnel were held. They were encouraged to raise questions so that any vagueness could be eliminated. It was found that the coordinators encountered no difficulty in answering the questionnaires.

3.5 THE POPULATION AND SAMPLE

The research population of this study consisted of lower and upper secondary students, specifically Form 1, 2 and 4 students. The primary reason for the selection of this particular group is that these students are going to sit for their public examinations, namely Lower Secondary Evaluation (PMR) and Malaysian Certificate For Education (SPM) examinations in one or two years time respectively. Thus, their information literacy skill will be assessed with the hope that they will perform better in their examinations. Secondly, with the changes in pedagogical approach where project-work is emphasized, this skill is now considered vital to students' success. Furthermore, the move towards electronic resources with the high capacity of information requires students to have skills that help them to evaluate and choose the appropriate information in the right time due to their information need. The area chosen for this research was the Federal Territory of Kuala Lumpur. This locality was chosen because there are more boarding schools located here compared to other places where the average of boarding schools is only one or two. The three schools were chosen because these are the three fully residential schools in the area.

There are three boarding schools in Kuala Lumpur. Out of this, one boarding school only offers Form Four and Five classes. Thus, the population of this research was determined to be all the Form One, Two and Four students in these three schools. The list of schools is presented in Table 3.1

Table 3.1 List of Boarding Schools In Kuala Lumpur

No	Name of School
1.	Sekolah Menengah Sains Alam Shah
2.	Sekolah Menengah Sains Selangor
3.	Sekolah Menengah Sains Seri Puteri

3.6 DATA COLLECTION PROCEDURE

Prior to collecting data, approval must first be obtained from the Ministry of Education, under the Educational Planning and Research Division. Copies of the survey instrument together with the research proposal were sent for this purpose. Subsequent permission was then requested from the Federal Territory Education Department, Kuala Lumpur (Jabatan Pendidikan Wilayah Persekutuan) The Education Department will then endorse the list of schools identified for this study. The approval letters from the Ministry of Education and State Education Department were brought personally to the selected schools. Copies of the questionnaires in English and in the Malay Language were handed over to the respective schools for perusal. An appointment was made to administer the questionnaire.

An introductory explanation was given to the respondents to obtain valid responses. Personal explanation to respondents were also given. All questionnaires were administered by the researcher accompanied by a few teachers from those schools. The questionnaires were distributed and collected on the same day. The questionnaires for students were all given in the Malay Language version while the teachers were given the choice to answer either the English or the Malay version. The researcher scanned the responses with the help of the teachers as the questionnaires were returned. As such, the response rate is one hundred percent. At the same time, 15 teachers / teacher librarians of these schools were requested to complete Questionnaire B to obtain information on the collection of the school resource centres and the programmes conducted.

3.7 DATA ANALYSIS

The data collected was interpreted, classified and transferred to coding forms. Analysis was done using Statistical Package For Social Science (SPSS) Version 12.0 for Windows.

The types of data analysis which will be used is descriptive statistics. The analyzed data was then synthesized and presented in tables, figures and narrative form.

University of Malaya

CHAPTER FOUR

FINDINGS

4.1 INTRODUCTION

The main purpose of this study is to find out information literacy skills among Form 1, 2 and 4 students at three boarding schools in Kuala Lumpur. The information seeking behaviour, sources of information used, how it's used and preferred by the students, programmes conducted at school resource centres and the need for information literacy were also to be identified. In this chapter, the findings will be reported and the overall analysis, information obtained from personal communication is noted and integrated.

4.2 DATA ANALYSIS

In general terms, based on the response from the questionnaires distributed to Form 1,2 and 4 students at three boarding schools in Kuala Lumpur, it was discovered that students answered the questions posed and responded positively. Subsequently, the questionnaire forms were analysed to get the results. The findings are presented according to various sections.

4.3 STUDENTS BACKGROUND CHARACTERISTIC

A total of 300 respondents have answered and returned the questionnaires. The response rate was 100 percent. In the questionnaires, the respondents were asked about their backgrounds with questions regarding Forms (Item 1), gender (Item 2), UPSR (Ujian Penilaian Sekolah Rendah) and PMR (Penilaian Menengah Rendah) results (Item 3) and English Language grades (Item 4). From the total number of respondents that answered these questions, it was discovered that 52.7% of the respondents were male students while

47.3% of the respondents were female students. Distribution of forms covers Form One students (35.4%), Form Two students (31.3%) and Form Four students (33.3%) (Figure 4.1).

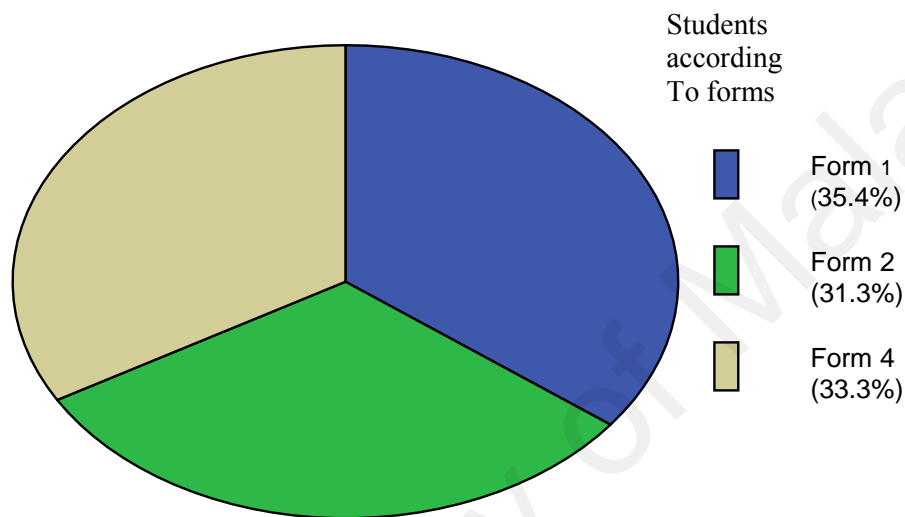


Figure 4.1 Distribution of Students According to Forms

In Section A, for achievement in public exams (Item 3 and 4), the researcher discovered that all Form One and Form Two students achieved 5A's in the UPSR (Ujian Penilaian Sekolah Rendah), while for the PMR (Penilaian Menengah Rendah) exam, the students had 9a's, 8A's and 7A's (See Figure 4.2).

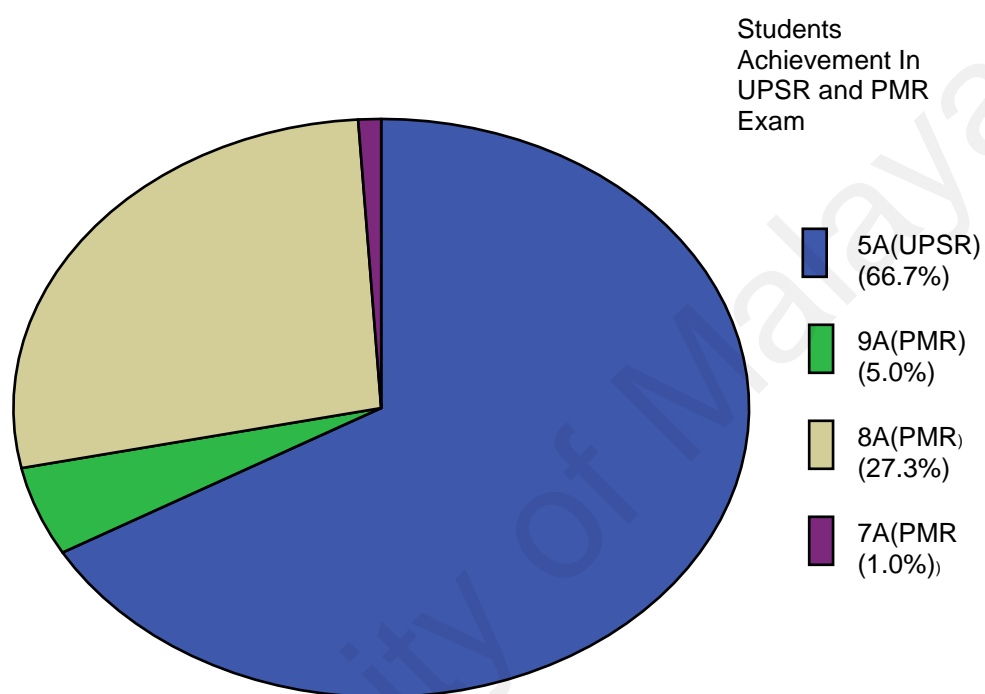


Figure 4.2 Students Achievement in UPSR and PMR Exams

For the achievement in the English Language subject (Item 5), it was found that all Form One and Two students obtained Grade A in this subject. For Form Four students, the results covered Grades A, B, C and D with the majority (97%) of these students obtaining Grade A as shown in Table 4.1

Table 4.1 English Language Grade Achievement of The Respondent

English Language Grade	Frequency	Percent
A (UPSR)	200	66.7
A (PMR)	97	32.4
B (PMR)	1	0.3
B (PMR)	1	0.3
C (PMR)	1	0.3
D (PMR)	1	0.3
Total	300	100

Based on the above results, it was assumed that all the respondents should not have problems in searching for information for sources in the English Language, especially the references from Internet.

4.4 INFORMATION LITERACY SKILLS

In this section, the first questions posed was on the students reaction when given assignments (Item 6). From the 300 respondents who answered this question, it was found that 81.7% respondents (245 students) stated that they would try to understand the assignment topics given first before attempting to look for information. This shows that students were motivated to be independent when fulfilling their information needs. For those who chose others, among the other reactions used were looking into the text-book (Table 4.2).

Table 4.2 Students Reaction When Given Assignments

Students Reaction	Frequency	Percent
Trying to understand the topic	245	81.7
Asking teachers for help	12	4.0
Asking friends for help	19	6.3
Going to School Resource Centre	13	4.3
Others	11	3.7
Total	300	100

The distributions of the students according to their form is displayed in Table 4.3 below :

Table 4.3 Students Reaction When Given Assignments – By Form

Students Reaction	Form 1		Form 2		Form 4	
	No	%	No	%	No	%
Trying to understand the topic	90	30.0	71	23.7	84	28.0
Asking teachers for help	4	1.4	4	1.3	4	1.3
Asking friends for help	2	0.6	10	3.3	7	2.3
Going to School Resource Center	4	1.3	5	1.7	4	1.3
Others	6	2.0	4	1.3	1	0.3
Total	106	35.4	94	31.3	100	33.3

The distribution according to forms clearly show that the lower and upper form students have the same attribute of being independent in fulfilling their needs for information. They are able to work through or verbalize their research topic. Consequently, in conducting the research, it was found that 73% respondent (219 students) list out questions (Item 7) regarding the topics given. (See Table 4.4). Table 4.5 shows that higher percentage of male respondents indicate listing out questions compared to female students..

Table 4.4 Listing Down Questions According to Assignment Topics

Listing Down Questions	Frequency	Percent
Yes	219	73.0
No	81	27.0
Total	300	100

Table 4.5 Listing Down Questions According to Assignment Topics
- By Gender

Listing Down Questions	Male		Female	
	No	%	No	%
Yes	123	41.0	96	32.0
No	49	16.4	32	10.6
Total	172	57.4	128	42.6

The subsequent questions posed were whether the respondents planned their activity whenever they wished to begin their research (Item 8). Answers received showed that 85% of the respondent (255 students) would plan their activity first before starting their research as shown in the Table 4.6. The majority of the Forms 1, 2 and 4 as well as in gender distribution stated that they planned their activity before starting their search as can be seen in Table 4.7 and 4.8.

Table 4.6 Planning Activity Before Starting Research

Planning Activity	Frequency	Percent
Yes	255	85
No	45	15
Total	300	100

Table 4.7 Planning Activity Before Starting Research – By Form

Planning Activity	Form1		Form 2		Form 4	
	No	%	No	%	No	%
Yes	81	27.0	82	27.3	92	30.7
No	25	8.4	12	4.0	8	2.6
Total	106	35.4	94	31.3	100	33.3

Table 4.8 Planning Activity Before Starting Research – By Gender

Planning Activity	Male		Female	
	No	%	No	%
Yes	140	46.7	115	38.4
No	32	10.6	13	4.3
Total	172	57.3	128	42.7

This finding suggest that students have a systematic approach in their quest for information. From the total number of respondents who chose to plan their activity (Item 8a) , 160 students (53.4%) note down their activity plan using a simple medium, notebooks as shown in Table 4.9.

Table 4.9 Noting Down Planning Activity

Noting Down Activity	Frequency	Percent
Using note book	160	53.4
Using Diary Planner	76	25.3
Using Note Card	43	14.3
Others	21	7.0
Total	300	100

Distributions of the forms shows slight differences in total number of students choosing note-book as their medium but male students in Table 4.10 were more interested to use this medium compare to female students.

Table 4.10 Noting Down Planning Activity – By Gender

Noting Down Activity	Male		Female	
	No	%	No	%
Using Note Cards	28	9.3	15	3.0
Using Note Books	90	30.0	70	23.3
Using Diary Planner	39	13.0	37	12.3
Others	15	5.0	6	2.0
Total	172	57.3	128	42.7

Research was also carried out to know which method the respondent felt was most effective to gather information for their assignments or project work (Item 9). Table 4.11 indicates that 74.7% of the respondent (224 students) felt that Internet was the most effective way to gather information for their learning purpose .

Table 4.11 The Most Effective Way in Gathering Information for Assignments

The Most Effective Way	Frequency	Percent
Using School Resource Centre	22	7.3
Using Other Libraries	9	3.0
Referring To Home Collection	13	4.3
Watching Educational TV Programme	0	0
Accessing The Internet	224	74.7
Asking People	24	8.0
Others	8	2.7
Total	300	100

From Table 4.12, it was found that male students were more interested with the Internet compared to female students.

Table 4.12 The Most Effective Way of Gathering Information for Assignments – By Gender

The Most Effective Way	Male		Female	
	No	%	No	%
Using School Resource Centre	11	3.7	11	3.7
Using Other Libraries	6	2.0	3	1.0
Referring To Home Collection	5	1.7	8	2.7
Watching Educational TV Programme	0	0	0	0
Accessing The Internet	131	43.6	94	31.3
Asking People	15	5.0	9	3.0
Others	4	1.3	3	1.0
Total	172	57.3	128	42.7

Pertaining to the questions on the methods they would use to get the information from school resource centres or the library (Item 10), Table 4.13 indicates that the Internet was still the main choice with 36.7% respondents (110 students) choosing access to the Internet as their option. This can be related with the question before whereby majority of the students felt that the Internet was the best method in getting information for their assignment.

Table 4.13 Method to Get Information in School Resource Centre

Methods To Get Information	Frequency	Percent
Using library catalogue	101	33.7
Accessing the Internet	110	36.7
Using magazine index	24	8.0
Using newspaper index	3	1.0
Asking teacher librarian	46	15.3
Others	16	5.3
Total	300	100

As can be seen in Table 4.14, when making records (note-taking) after obtaining the information needed (Item 11), many of the respondents chose to use A4 paper to record their findings, that is a total of 45.3% respondents (136 students). Results according to form showed that a majority of Form 2 and 4 students use A4 paper compared to Form 1 students. These findings showed that students preferred to use simple medium for taking notes compared to a more organized device. There is no major difference between the lower and upper secondary students regarding their method in organizing information.

Table 4.14 Taking Notes

Taking Notes	Frequency	Percent
Using A4 paper	136	45.3
Using diary planner	58	19.3
Using note-card	65	21.7
Others	41	13.7
Total	300	100

Subsequently, respondents were given six processes to choose the relevant information (Item 12). The obvious findings from Table 4.15 indicate that students prefer these processes when choosing the relevant information :

- a- Looking at the content
- b- Reading the topic for every chapter
- c- Looking at the pictures/ illustrations
- d- Full reading method

Table 4.15 Choosing Accurate Information

Process	Answer	Frequency	Percent
a- Looking at the content	Yes	280	93.3
b- Reading introduction	Yes	157	52.3
c- Reading the topic for every chapter	Yes	257	85.7
d- Referring to the index	Yes	189	63.0
e- Looking at the picture / illustrations	Yes	243	81.0
f- Different reading method			
i- Skimming	Yes	81	27.0
ii- Scanning	Yes	161	53.6
iii- Full reading	Yes	212	70.7
g- Using keyword	Yes	194	64.7

The results also show that there are still many students who have not acquired the important skills such as referring to the index, skimming and scanning reading materials

and also using keywords to find accurate information. All these skills will help the students to retrieve information faster, thus overcoming the problem of time constraint in their learning process.

After getting the required information, the following question (Item 13) focuses on the way respondents record the source of information found. As depicted in Table 4.16, the most preferred method is by writing it down in note books or memory cards. A cross tabulation table (4.17) shows the relationship in mediums used between note-taking and methods in recording the sources of information. It was found that students preferred to use simple paper-based mediums compared to a more-organized paper-based or electronic medium. The implication is, students could easily get confused or lose the information found if the research requires many resources.

Table 4.16 Methods in Recording Sources of Information

Recording Sources of Information	Frequency	Percent
Type it in computer and save it in personal folder	104	34.7
Write it down in note book or memory card	154	51.3
Write it down in diary planner	35	11.7
Others	7	2.3
Total	300	100

Table 4.17 Cross tabulation of Taking Notes Against Methods in Recording Sources of Information

		Methods in recording sources of information				Total
		Type it in computer and save it in personal folder	Write it down in note book or memory card	Write it down in diary planner	Others	
Taking Notes	Using A4 paper	104	32	0	0	136
	Using diary planner	0	58	0	0	58
	Using note-card	0	64	1	0	65
	Others	0	0	34	7	41
Total		104	154	35	7	300

While attempting to get answers to their information needs, students were then asked what was the most important factor that will influence them greatly (Item 14). A total of 134 students (44.6%) stated that the understandability of the information was the most important factor to them (Table 4.18). This was followed by the next question on the least important factors when choosing or seeking information (Item 15). A total of 68.7% respondent (206 students) said the cost it took as the least important factor while attempting to fulfill their information needs. (Table 4.19)

Table 4.18 Most Important Factors in Choosing Information

Most Important Factor	Frequency	Percent
The cost in money	5	1.7
The time it took	93	31.0
It is up-to-date	56	18.7
Understandability of the information	134	44.6
Others	12	4.0
Total	300	100

Table 4.19 Least Important Factor in Choosing Information

Least Important Factor	Frequency	Percent
The cost in money	206	68.7
The time it took	42	14.0
It is up-to-date	29	9.7
Understandibility of the information	14	4.6
Others	9	3.0
Total	300	100

Comparisons were then made to show that all these factors are inter-related between each other (Table 4.20). The data suggests that students were able to identify the important factors which would guide them to choose the relevant information.

Table 4.20 Crosstabulation of Comparisons Between Important Factors and Least Important Factor in Choosing Information

		Least important factor in choosing information					
		The cost in money	The time it took	It is up-to-date	Understandibility of the information	Others	Total
Important factors in choosing Information	The cost in money	5	0	0	0	0	5
	The time it took	93	0	0	0	0	93
	It is up-to-date	56	0	0	0	0	56
	Understandibility of the information	52	42	29	11	0	134
	Others	0	0	0	3	9	12
Total		206	42	29	14	9	300

With regards to the method utilised by students when using the information (Item 16), table 4.21 shows that a total of 152 respondents (50.7%) used the information by identifying the important points from the gathered information and arranging it.

Table 4.21 Methods in Using Information

Methods In Using Information	Frequency	Percent
Summarize the information and arrange it accordingly	47	15.7
Identifying important point and arrange it	152	50.7
Arranging answers based on the questions related to the topics	97	32.3
Others	4	1.3
Total	300	100

It can be inferred that in the process of using information, students preferred to identify important points from the information obtained and then arranging it, compared to arranging answers for questions related to the topic. Thus, it can be said that students could organize and synthesize information by identifying the important points compared to using questions as suggested by the model chosen.

After pin-pointing the methods in using the found information, respondents were then asked about the approach undertaken by them to ensure that the information they gained was sufficient (Item 17). Table 4.22 illustrates that 53.7% (161 students) of the respondents made the conclusion by observing at the information with which they could answer all of the question related to the topics. In relation to the earlier question where 219 students (73%) listed down questions regarding the topics given (Table 4.4), findings show that many students use questions to determine whether they had enough information, and only 32.3% used questions related to the assignment topics while using the information

Table 4.22 Methods in Deciding Having Enough Information

Deciding Having Enough Information	Frequency	Percent
By using multiple sources	52	17.3
By repeating information seeking process several times	70	23.3
Information that can answer all research questions	161	53.7
Others	17	5.7
Total	300	100

It was also found in this research that most of the respondents, a total of 160 students (53.3%) chose or were interested in presenting their task (Item 18) by using the mind-mapping method (Table 4.23). With regard to form and gender results shows that There were no major difference between choice of medium for their presentations.

Table 4.23 Presentation of Assignment

Presentation	Frequency	Percent
Using mind-map	160	53.3
Using flow chart	22	7.3
Using Power-Point Presentation	90	30.0
Others	28	9.4
Total	300	100

The next few questions focused on library skills which forms the basic foundation for information literacy skills. Respondents were then asked on how to write references for books, article from magazines, articles from newspapers and articles from the Internet (Item 19). One hundred and fifty two respondents (50.7%) stated that they knew how to write references for those sources and 146 respondent (48.7%) stated that they did not

know. There were two respondents who did not answer this question, thus the percentages in Table 4.24 were calculated based on actual response of 298 students.

Table 4.24 Writing References for Books and Article

Know How To Write references	Frequency	Percent
Yes	152	50.6
No	146	48.7
Total	298	99.3

As a continuance to the previous questions, respondents were then asked to give the five elements that must be included when writing references for books (Item 20). The elements were : author, title, publisher, year published and pages. An interesting discovery has been made where 216 respondents (72% students) were not able to give a definite answer, as shown in Table 4.25

Table 4.25 5 Elements to Write References for Books

Number of Elements	Frequency	Percent
Wrong Answer	216	72.0
1 element	12	4.0
2 elements	16	5.3
3 elements	21	7.0
4 elements	27	9.0
5 elements	8	2.7
Total	300	100

Distribution according to forms in Table 4.26 shows that Form Four students have the knowledge on how to write references for books compare to Form 1 and 2. Female students knew how to write references compared to male students (Table 4.27). This finding was different from the earlier results where 152 respondents said they knew how to write references for this source.

Table 4.26 Writing References for Books – By Form

	Form 1		Form 2		Form 4	
References	No	%	No	%	No	%
Know how to write references	13	4.3	11	3.6	60	20.0

Table 4.27 Writing References for Books – By Gender

	Male		Female	
References	No	%	No	%
Know how to write references	27	9.0	57	19.0

The next question was about book searching based on call number (Item 21). Sixty seven point three percent respondents (202 students) said that they did not know how to find books based on the call numbers. While only 31.7% respondents (95 students) stated that they knew how to find books based on their call number. There were 3 students who did not answer this question, thus the percentages in Table 4.32 were calculated based on the actual response of 297.

Table 4.28 Book Searching Based on Call Number

Know How To Use Call Number	Frequency	Percent
Yes	95	31.7
No	202	67.3
Total	297	99.0

With regard to the bibliography (Item 22), which has a close connection to references, an interesting finding has been identified. Table 4.29 shows that almost a majority of the students, that is 93.7% (281 students) cannot give an accurate answer on the meaning of bibliography. Form Four students beat Form One and Two students with 15 students able to give the answer to the meaning of bibliography (Table 4.30) while male students topped female students with the total number of 14 students who gave the right answer for the meaning of bibliography (Table 4.31). There is a relationship according to the forms where Form Four students were better than the other two form in their knowledge on how to write references and bibliographies. This is probably because Form Four students have had experience in completing project-work at PMR level.

Table 4.29 Knowledge on Bibliography

Knowledge On Bibliography	Frequency	Percent
Yes	19	6.3
No	281	93.7
Total	300	100

Table 4.30 Knowledge on Bibliography - By Form

Knowledge On Bibliography	Form 1		Form 2		Form 4	
	No	%	No	%	No	%
Yes	2	0.7	2	0.6	15	3.0

Table 4.31 Knowledge on Bibliography - By Gender

Knowledge On Bibliography	Male		Female	
	No	%	No	%
Yes	14	4.7	5	1.7

4.5 LOCATING AND SELECTING INFORMATION

In locating and selecting information in the library, the reference section seems to be a favourite section of the respondents to obtain source of information (Item 23). This has been proven with 169 respondents (56.3%) giving a positive response (Table 4.32). Fourteen percent of the respondents gave inaccurate answer whereby they did not mention the section in the library but the sample for sources of information such as books and magazines.

Table 4.32 Section in The Library Chosen by The Students to Get Source of Information

Sections In The Library	Frequency	Percentage
Reference Book Section	169	56.3
Computer	16	5.3
Counter	40	13.3
Call Number	17	5.7
Catalogue	15	5.0
Book Index	1	0.4
Inaccurate answer	42	14.0
Total	300	100

In this research, students were subsequently questioned whether they needed any assistance to look up for information in completing their tasks (Item 24). Answers in Table 4.33 show clearly that the information seeking skills is still lacking among students with 252 respondents (84%) clarified that they need assistance in finding information for their assignments. Only 16% respondent (48 students) stated that they needed no assistance

in looking up for information. A cross tabulation between the skill to use call number against assistance needed in searching for information (Table 4.34) can be related with previous findings on library skills where many of the students still did not possess knowledge on basic library skills. This findings suggest that teachers should guide the students on the techniques to search for information.

Table 4.33 Assistance in Searching Information for Assignments

Need Help	Frequency	Percent
Yes	252	84.0
No	48	16.0
Total	300	100

Table 4.34 Cross tabulation of Knowing How to Use The Call Number to Search for Information Against Needing Assistance in Searching Information for Assignments

		Need assistance in searching information for assignment		Total
		Yes	No	
Knowing how to use the call number to search for source of information	yes	95	0	95
	No	157	48	205
Total		252	48	300

With regard to the choice for the sources of (Item 25) as shown in Table 4.35, 63.3% of respondent (189 students) chose electronic resources as the most preferred sources. Lower forms, that is Form One and Two were more interested with electronic resources (Table

4.36) as well as male students (Table 4.37). Apart from the Internet, an interesting finding is that 5 Form Four students were interested with Audio Video (AV) material which indicated the awareness of a small group of upper form students who knew the benefits of AV material and at the same time indicate their wider use of sources of information.

Table 4.35 The Most Preferred Sources

Type of Resources	Frequency	Percent
Printed Sources	106	35.3
Electronic Sources	189	63.3
Audio Visual	5	1.7
Total	300	100

Table 4.36 The Most Preferred Sources - By Form

Type Of Resources	Form 1		Form 2		Form 4	
	No	%	No	%	No	%
Print Resources	45	15.0	21	7.0	40	13.3
Electronic Resources	61	20.3	73	24.3	55	18.3
Audio Visual Resources	-	-	-	-	5	1.7

Table 4.37 The Most Preferred Sources - By Gender

Type Of Resources	Male		Female	
	No	%	No	%
Print Resources	61	20.3	45	15.0
Electronic Resources	106	35.3	83	27.7
Audio Visual Resources	5	1.7	-	-

The implication from this finding is male students are more aware on the range of sources of information and there are still a small group of higher form students have the idea on benefits of audio video resources.

Reasons for the choice of every source of information was the next question (Item 26). The reasons for those resources is shown in the 3 tables below. Reasons for choosing printed and electronic sources were almost the same (Table 4.38 and Table 4.39); but there was one interesting reason for choosing printed sources. It was said to easier to keep and referred to again. Assumptions can be made that students have not actually mastered using the computer effectively because if they did, they would know that using the computer would be easier in keeping information and to refer to it again whenever needed. Reasons for choosing Audio Video sources have similiarity with the earlier sources that is easier and interesting (Table 4.40).

Table 4.38 Reasons for Choosing Printed Sources

Reasons	Frequency	Percent
Easy (to find, to understand, to obtain)	61	20.4
Cost and money saving	8	2.7
More information, more accurate and more Complete	19	6.4
Easier to look up for important point	5	1.7
Easier to keep, referred to again	7	2.3
Interesting, many illustration	2	0.7
Current information	2	0.6
No answer	2	0.6
Total	300	100

Table 4.39 Reasons for Choosing Electronic Resources

Reasons	Frequency	Percent
Easier, faster	116	38.7
Clear and accurate information	3	1.0
Interesting	9	3.0
More information, complete	30	10.0
Saving time and cost	17	5.7
Current	11	3.6
Others	3	1.0
Total	189	63.0

Table 4.40 Reasons for Choosing Audio Video

Reasons	Frequency	Percent
Easier	3	1.0
Modern	1	0.3
Interesting	1	0.4
Total	5	1.7

In completing their task, students were subsequently asked as to what extent they faced problems in searching for information to complete their task or the project works (Item 27). The results can be seen in Table 4.41.

Table 4.41 Problems Faced in Locating Information

Problems	Great Problem	Some Problem	Little Problem	No Problem
Knowing where to locate information	11 (3.7%)	47 (15.7%)	119 (39.6%)	123 (41.0%)
Knowing how to use index or other source which could lead to informatio	19 (6.3%)	56 (18.7%)	114 (38.0%)	111 (37.0%)
Locating up-to-date information	12 (4.0%)	78 (26.0%)	123 (41.0%)	87 (29%)
Having time to adequately locate information	47(15.7 %)	111 (37.0%)	99 (33.0%)	43 (14.3%)
Sources being unavailable / inaccessible	120 (40.0%)	80 (26.7%)	75 (25.0%)	25 (8.3%)
Understanding language used in computers	24 (8.0%)	62 (20.7%)	112 (37.3%)	102 (34.0%)

To choose information after obtaining all the information (Item 28), it was found that 82% respondents (246 students) stated that they did not encounter any problems in selecting information once they got the sources. For 18% respondents (54 students), they still encountered problems even after getting the information (Table 4.42). According to gender distribution , the percentage of male and female students that faced problems is almost equal.

Table 4.42 Problems in Selecting Information Once the Resources are Found

Problems In Selecting Information	Frequency	Percent
Yes	54	18
No	246	82
Total	300	100

On the other hand, for students who had stated that they encountered problems in selecting information, various reasons were given. Table 4.43 encompasses those reasons.

Table 4.43 Problems in Selecting Information

Having Problems	Frequency	Percent
Not knowing how to choose accurate information	20	6.7
Not knowing how to choose important points	5	1.7
Time constraints	2	0.7
Not knowing suitable sources	2	0.7
Lack of information	1	0.3
Contradictory information	4	1.3
Not understanding the contents of information	2	0.7
Difficulty in arranging information	2	0.7
Ensuring information is not redundant	1	0.3
Not knowing the validity of information	10	3.3
Choosing accurate information	2	0.6
No answer	3	1.0
Total	54	18.0

4.6 SOURCES OF INFORMATION

It was found that the Internet was the main source chosen by the students (Item 29) with 179 students (59.7% respondents) choosing that option (Table 4.44). All the questions earlier on which had Internet as an option, also shows that the Internet was the superior choice for most students, either it is for assignments, to get information from school resource centre, as a source of information preferred and to gather general information. The distribution according to gender shows the same pattern where male students were the most frequent respondents in choosing the Internet (Table 4.45).

Table 4.44 Sources For General Information

Sources	Frequency	Percent
Resource Centre	22	7.3
Other Library	21	7.0
Home Collection	5	1.7
Internet	179	59.7
Television	2	0.7
Asking Other People	20	6.7
Newspapers	44	14.7
Magazines	6	2.0
Others	1	0.3
Total	300	100

Table 4.45 Sources For General Information – by Gender

Gathering General Information	Male		Female	
	No	%	No	%
Internet	111	37.0	68	22.6

Reasons for choosing these type of sources for general information displayed in table below (4.46a-4.46h). The reasons for choosing the Internet were the same with the reasons for choosing electronic sources because it was easier and faster in retrieving information. The reasons for choosing printed sources was due to its easy availability and the fact that it contains a lot of general information. The main reasons for choosing other libraries were due to it having more books, better facilities and that it was more interesting.

Table 4.46 Reasons for Choosing Those Sources

Table 4.46a Reasons for Choosing School Resource Centre

Reasons	Frequency	Percent
Existence of the reference sources	4	1.3
Easy to visit	4	1.3
A lot of information	8	2.7
More accurate	1	0.3
No answer	5	1.7
Total	22	7.3

Table 4.46b Reasons for Choosing Other Library

Reasons	Frequency	Percent
More books and facilities	5	1.7
Easier to get information and more organize	1	0.3
More information, more interesting	8	2.7
Knowledge centers	1	0.3
Cost saving	1	0.3
No answer	5	1.7
Total	21	7.0

Table 4.46c Reasons for Choosing Home Collections

Reasons	Frequency	Percent
Easier	4	1.3
No answer	1	0.4
Total	5	1.7

Table 4.46d Reasons for Choosing the Internet

Reasons	Frequency	Percent
Easy access, prompt	55	18.4
More information, details, varieties	39	13.0
More current and accurate information	19	6.3
Time saving	7	2.3
Confirming with current trend	3	1.0
A lot of general information on the Internet	3	1.0
Interested with computer skills	1	0.3
No answers	52	17.3
Total	172	59.7

Table 4.46e Reasons for Choosing the Television

Reasons	Frequency	Percent
Easier to use, complete fact	1	0.3
No answers	1	0.4
Total	2	0.7

Table 4.46f Reasons for Choosing to Ask Other People

Reasons	Frequency	Percent
Can get accurate information	3	1.0
Much easier	4	1.3
Due to others having better knowledge	4	1.3
Due to human beings ability to explain Clearly	2	0.7
No answers	7	2.4
Total	20	6.7

Table 4.46g Reasons for Choosing Newspapers

Reasons	Frequency	Percent
Easier, faster and more brief	3	1.0
Contains a lot of general information	8	2.7
Contains current news	17	5.7
General reading material	3	1.0
No answers	13	4.3
Total	44	14.7

Table 4.46h Reasons for Choosing Magazines

Reasons	Frequency	Percent
Easy, available and easily understood	2	0.7
A lot of general information	1	0.3
Magazines article suitable for all age group	1	0.3
No answers	2	0.7
Total	6	2.0

As for the source of information in the library or resource centres that was preferred to by students (Item 30), from 9 choices given, only six sources exist in the library or resource centres of those schools. From those six resources, the Internet was still the most preferred sources followed by reference books, newspapers, text-books, magazines and pamphlets. The breakdown in the percentages and the total number of students are portrayed in the table below (4.47) followed by a bar-chart to represent the table.

Table 4.47 Sources of Information Preferred by Students

Type of Sources	Frequency	Percent
Internet	175	58.3
Reference Book	83	27.7
Newspapers	16	5.3
Textbooks	11	3.7
Magazines	8	2.7
Pamphlets	7	2.3
Total	300	100

Sources of Information Preferred by Students

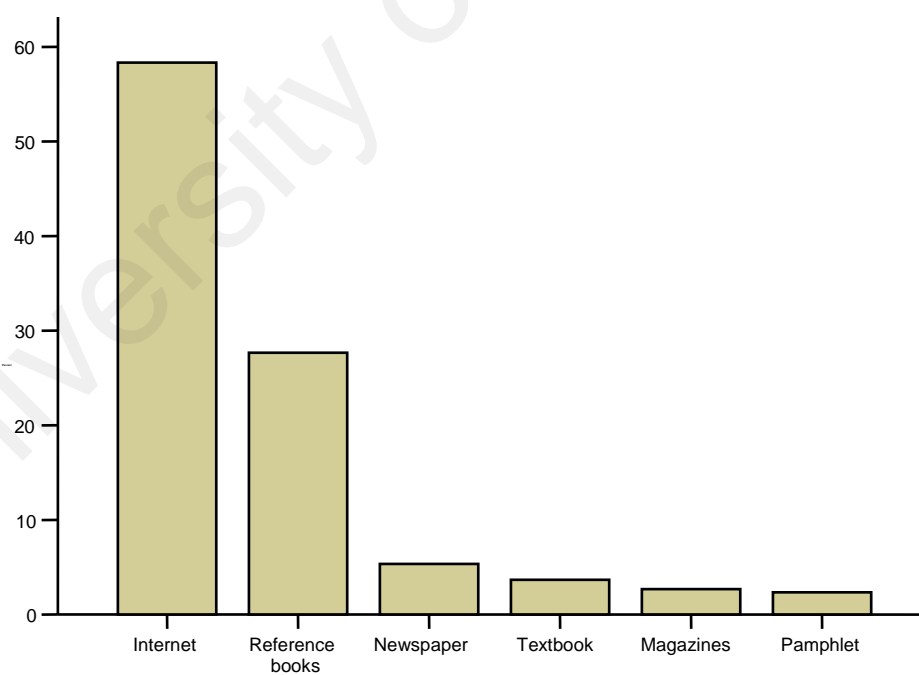


Figure 4.3 Sources of Information Preferred by Students

This research also revealed that a total of 37.3% respondents (112 students) visited the library/school resource centres once a week (Item 31). Other frequencies are as follows : 2-3 times a week, once a month, 2-3 times per month, not fixed, brought by subject teacher and the school librarian. There are also 2 respondents who stated that they did not visit the library/school resource centres as shown in Table 4.48.

Table 4.48 Frequencies of Visiting School Resource Centre

Visiting School Resource Centre	Frequency	Percent
Everyday	35	11.7
Two-Three times a week	53	17.7
Once a week	112	37.3
Les than once a week	40	13.3
Does not visit	2	0.7
Others	58	19.3
Total	300	100

Respondents were further questioned as to their usual purpose of visiting school resource centre (Item 32). They were asked to give three answers, but a portion of them gave only one / two answers. The results can be seen in Table 4.49 below.

Table 4.49 Usual Purpose of Visiting School Resource Centre

Purpose	Frequency	Percent
To use reference books / red spot books	159	24.4
To borrow / to return books	145	22.3
To read newspapers	39	6.0
Brought by subject teacher	166	25.5
For self study	135	20.7
To access the Internet	7	1.1
Total	651	100

Table 4.50 Usual Purpose of Visiting School Resource Centre – By Form

	Form 1		Form 2		Form 4	
Normal Purposes	No	%	No	%	No	%
To use reference books/ red spot books	84	28.0	45	15.0	48	16.0
To borrow/return books	49	16.3	34	11.3	61	20.3
To read newspapers	20	6.6	10	3.3	9	3.0
Brought by subject teacher	81	27.0	62	20.6	27	9.0
For self study	54	18.0	42	14.0	53	17.6
To access the Internet	17	5.6	5	1.6	8	2.6

According to the distribution of forms, the normal purpose of visiting school resource centres show that Form One, Two and Four students visit school resource centres mainly because they want to use reference / red-spot books, they were brought by subject teachers and to borrow and return books respectively (Table 4.50)

With regard to the sources of information which were required by the respondents at school resource centres (Item 33), findings are displayed in Table 4.51 below. Twelve point seven percent respondents requested for Audio Visual material to be provided in school resource centres and these results strengthen the earlier findings on the awareness of students who knew the benefits of AV material.

Table 4.51 Sources of Information Needed in the School Resource Center

Sources	Frequency	Percent
Computers	31	10.3
Audio Video Materials	38	12.7
Internet	56	18.7
Books	68	22.6
Pamphlets	4	1.3
Newspapers	12	4.0
Magazines	20	6.7
Multimedia Resources	8	2.7
Catalogue	16	5.3
Not Related	4	1.3
No Demand	26	8.7
No Answers	17	5.7
Total	300	100

Table 4.52 Cross tabulation of Source of Information Requested in the School Resource Centres Against The Most Preferred Sources

		The most preferred sources			Total
		Printed sources	Electronic sources	Audio visual sources	
Source of information requested in the school resource centre	Computer	0	31	0	31
	Audio Video material	0	0	38	38
	Internet	0	56	0	56
	Books	68	0	0	68
	Pamphlet	4	0	0	4
	Newspaper	12	0	0	12
	Magazines	20	0	0	20
	Multimedia resources	0	8	0	8
	Catalogue	16	0	0	16
	Not related	4	0	0	4
	No request	26	0	0	26
	No answer	12	0	5	17
		106	189	5	300

A cross-tabulation of source of information requested in the school resource centres against the most preferred sources (Table 4.52) suggests that the most requested sources were books and access to the Internet. Distribution according to form (Table 4.53) show an interesting point where Form Four students were the most frequent respondents who requested for the Internet whereas for books, the total number of respondents was almost equal. This is most probably because the schools where the Form Four students were in were new schools (re-operating this year) and the facilities are still in progress. There are Internet facilities which are available in Form Four schools but it is not in the school resource centre. In one school, Internet facility is provided by the computer club of the school, however, the schedule for this club is still unorganized. In the third school, Internet access is provided in the school cooperation and students have to pay for it.

Table 4.53 Sources of Information Requested in the School Resource Centre – By Form

Sources Requested	Form 1		Form 2		Form 4	
	No	%	No	%	No	%
Books	24	8.0	21	7.0	23	7.6
Internet	7	2.3	8	2.6	41	13.6

As regards to a sample of sources of information in the library (Item 34), 163 respondents (54.3%) stated books as a sample in the library (Table 4.54).

Table 4.54 Sample of Sources of Information in the Library

Sources of Information	Frequency	Percent
Books	163	54.3
Internet	33	11.0
Computer	13	4.3
Magazines	15	5.0
Newspaper	20	6.7
Not Related	56	18.7
Total	300	100

Form One students were the most frequent respondents who stated books as a sample of sources of information in a library together with male students giving the same answer. Respondents are still tied down by books as a source of information and not many students expand their perspective towards other sources such as magazines and newspapers.

4.7 PROGRAMMES CONDUCTED AT SCHOOL RESOURCE CENTRES

In this survey, from conversations with teacher librarians and from the responses from the respondents, it was found that there is only very few programmes conducted by teacher librarians regarding the use of school resource centre materials or information searching skills especially to complete assignments or project work (Item 35, 36, 37). Furthermore, programmes that are conducted by school resource centre coordinators or teacher librarians were only for school librarians. The listed programmes in Table 4.55 were normally carried out by the subject teacher in the school resource centre. For the non-related programmes, students were confused with some programmes that were done in the library regarding the reading programmes such as NILAM.

Table 4.55 Programmes Conducted on Locating and Using Information in the School Resource Centre

Programmes	Frequency	Percent
No programme	131	43.7
Not related	142	47.3
Related programme	27	9.0
Total	300	100

Table 4.56 display the list of the related programmes provided by the school library together with the frequency of the programmes.

Table 4.56 Programmes Conducted at School Resource Centre

Programmes	Frequency	Percent
Locating and collecting information	5	1.7
Locating information on subject taught by teacher	2	0.7
Using or introducing reference books	2	0.7
Writing down every information needed	1	0.3
The use of Internet and printed material	2	0.6
Self-study programmes	2	0.7
Searching information for home work	1	0.3
Reading of reference books programme	3	1.0
Searching for information from the book provided	2	0.7
Collecting information by using the facilities In the resource center to the optimum	1	0.3
Searching for the relevant books	1	0.3
Reference programmes for searching information	1	0.3
Working in groups to collect data and information from the library	1	0.3
Encouragement of reading programmes	1	0.3
Library orientation (task defining to librarian)	2	0.6
Total	27	9.0

It can be concluded that not many programmes regarding searching skills were conducted by teacher librarians in school resource centres.

4.8 THE NEED FOR INFORMATION LITERACY

In this section, students were queried on assignments which required information which cannot be found in the text books, whereby the need for information literacy arose (Item 38). As can be seen in Table 4.57, a total of 197 respondents (65.3%) stated that they received assignments which required them to search for information on their own. The remaining 103 respondents (34.3%) stated that they were not given those types of assignments.

Table 4.57 Having Assignments That Needs Information Not Found in Their Textbook

Having Assignments	Frequency	Percent
Yes	197	65.3
No	103	34.7
Total	300	100

In connection with this, for students who received those types of assignments, the list of subjects are shown in Table 4.58 in the following page.

Table 4.58 Subjects

Subject	Frequency	Percent
History	73	24.3
Geography	26	8.7
Geography/ History	7	2.3
English Language/ Science	1	0.3
English Language	11	3.7
Science	15	5.0
Geography/ History / Science	3	1.0
History/Science	2	0.7
Bahasa Melayu, Mathematics, Science, Geography	2	0.7
Physics	14	4.7
Chemistry	1	0.3
Biology / Physics	11	3.7
Biology/ History	2	0.7
Biology	2	0.7
Biology/ History / Islamic Studies	1	0.3
Islamic Studies	2	0.7
Bahasa Melayu	1	0.3
Music	1	0.3
History/ Mathematic	1	0.3
Did not write any subject	21	7.0
Total	300	100

From Table 4.58, it is clear that History and Geography are the most frequent subject stated by the respondents (Item 38a). History and geography are the subjects which have project work as part of students evaluation in the PMR. Thus, training should be given to students to ensure they are able to do the project work during the examination year. As for Form Four students, the subjects that were most frequently stated are science subjects such as Biology, Chemistry and Physics which have project work and will be assessed in SPM.

Distributions of forms in Table 4.59 shows that Form 1 and Form 2 are the most frequent respondents in having assignments that need information not found in textbooks and this is practical because they have to go through the same process during their examination year.

Table 4.59 Having Assignments That Need Information Not Found in Text-Books – By Form

Having Assignments	Form 1		Form 2		Form 4	
	No	%	No	%	No	%
Yes	72	24	71	23.6	54	18

Subsequently, the students were questioned on whether they encountered any problems in completing the assignment/project work given (Item 39). One hundred and eighty five students (61.7%) stated that they did not encounter problems, while 115 students (38.3%) stated that they had encountered some problem in completing the task given to them (Table 4.60)

Table 4.60 Problems in Completing Assignment

Problems	Frequency	Percent
Yes	115	38.3
No	185	61.7
Total	300	100

For those who stated that they encountered problems, the following (Table 4.61) are the problems.

Table 4.61 Problems in Completing Assignments – Detailed

Problems	Frequency	Percent
Insufficient time	46	15.3
Difficulty in understanding the need for assignment	5	1.7
Project work topics were not included in the syllabus	1	0.3
Did not know how to begin their assignments	2	0.7
Difficulties in getting information / not enough sources	44	14.7
Did not know how to choose relevant information	1	0.3
Not enough facilities in school	11	3.7
Information required sometimes too much	1	0.3
Lack of explanation from teachers	2	0.7
Did not state the problems	2	0.7
Total	115	38.3

From the table, it is clear that the major problems were :

a- Not enough time

b- Very hard to get the information / not enough sources

These two problems can be related again to an earlier question on problems faced in locating information. In that question, students stated that they had problems regarding time to adequately locate information and more importantly the problem of sources being unavailable and inaccessible. Distribution according to forms in Table 4.69 shows that the lower forms that is Form One and Two together with male students (Table 4.70) encountered problems in completing their assignments.

Table 4.62 Problems in Completing Assignments – by Form

Problems In Completing Assignments	Form 1		Form 2		Form 4	
	No	%	No	%	No	%
Yes	72	24	71	23.6	54	18

Table 4.63 Problems in Completing Assignments – by Gender

Problems In Completing Assignments	Male		Female	
	No	%	No	%
Yes	73	24.3	43	14.3

In pursuance to the above question, the subsequent questions were on problems in finding resources for assignments (Item 40). Table 4.64 indicates that 85 students (28.3%) were still having problems in finding resources for information.

Table 4.64 Problems in Finding Sources Of Information

Problems In Finding Sources	Frequency	Percent
Yes	85	28.3
No	215	71.7
Total	300	100

For those who encountered problems in finding sources of information, the table in the next page (Table 4.65) illustrates respondents' problems.

Table 4.65 Problems in Finding Sources of Information - Detailed

Problems	Frequency	Percent
Difficulty in finding sources of information / insufficient resources	43	14.3
Insufficient facilities to find sources of information	10	3.3
Lack of time	11	3.7
Need to find references from various places	4	1.3
Information not available from the text books	1	0.3
Inaccurate information	2	0.7
Difficulty in searching for the latest information	3	1.0
Difficulty in understanding the languages used by the computer	1	0.3
Did not know the best way to get sources of information	5	1.7
Information overload-difficult to choose	2	0.7
No answer	3	1.0
Total	85	28.3

From this table (4.65), it again shows a clear relationship between this question and the earlier discussion. Not enough resources (14.3%), not enough facilities (3.3%) and lack of time (3.7%) were the problems students encountered in finding and locating information.

The last question posed concerned information literacy skills, which was still needed by students in their learning process (Item 41). The respondents' reaction for this question varied; beginning from those who chose only one answer to those who chose all the skills listed. Table (4.66) displays the student's choice :

Table 4.66 Information Literacy Skills

Skills	Frequency	Percent
Defining the need for information	132	15.7
Locating sources of information	165	19.6
Selecting accurate information	196	23.3
Organizing information	118	14.0
Presenting information	88	10.5
Evaluating the whole process of information seeking	141	16.8
Total	840	100

Based on the results displayed in the table 4.66, selecting accurate information, locating the source of information and evaluating the process of information seeking were three skills considered most important respectively. This is supported by the form (Table 4.67) and gender (Table 4.68) distribution where the pattern shows that selecting and locating skills are frequently chosen by the students to help them in their learning process.

Table 4.67 Information Literacy Skills – by Form

	Form 1		Form 2		Form 4	
Information Literacy Skills	No	%	No	%	No	%
Defining the need for information	42	14.0	44	14.6	46	15.3
Locating sources of information	60	20.0	52	17.3	53	17.6
Selecting accurate information	71	23.6	60	20.0	65	21.6
Organizing information	50	16.6	35	11.6	33	11.0
Presenting information	31	10.3	25	8.3	32	10.6
Evaluating the whole process of Information seeking	47	15.6	51	17.0	43	14.3

Table 4.68 Information Literacy Skills – by Gender

Information Literacy Skills	Male		Female	
	No	%	No	%
Defining the need for information	85	28.3	47	15.6
Locating sources of information	100	33.3	52	17.3
Selecting accurate information	118	39.3	78	26.0
Organizing information	79	26.3	39	13.0
Presenting information	49	16.3	39	13.0
Evaluating the whole process of Information seeking	82	27.3	59	19.6

4.9 PROGRAMMES CONDUCTED AT SCHOOL RESOURCE CENTRES BY CO-ORDINATORS

Information on programmes which were conducted at School Resource Centre is obtainable through Questionnaires B (Appendix B). This questionnaire has been distributed to school resource centre coordinators and teacher librarians at the schools which are under study.

4.9.1. Opening Hours of the School Resource Centre (Item 1)

The opening hours of the school resource centre begin after school hours and ended at night. This included week ends. The aim of opening in the afternoons is because the library assistant can only come to the library during that time. However, one school began the operating hours in the morning. School resource centres should be open in the morning session, so that students would have more chances to visit school resource centres. A longer opening hour would be a boon to students as some teachers are unable to come to school due to attending courses elsewhere. With the resource centre open in the morning, students are able to go there when these teachers are absent.

4.9.2 School Resource Centres' Collections (Item 2)

School Resource Centres' collections consists of books (fiction and non-fiction) magazines, newspapers and also compact discs. Table 4.69 shows the total collection of materials of the three resource centres concerned.

Table 4.69 Resource Centers Collection

Type f Sources	Resource Center A	Resource Center B	Resource Center C
Fiction Books	500 volume	600 volume	6000 Volume
Non-Fiction Books	700 volume	800 volume	7000 Volume
Reference Books	600 volume	300 volume	1000 Volume
Magazines	1	2	12
Newspaper	3	2	7
CD-ROM	-	21	-
Others	-	-	-

4.9.3 Programmes Conducted at School Resource Centre (Item 3)

Based on the feedback received and through discussion with school resource centre teachers, not many programmes can be carried out due to various constraints.

Table 4.70 Programmes Conducted in School Resource Centres

Programme	Frequency
The use of catalogues	1
The use of specialized school resources	0
Reading guidance	0
Searching for library resources	1
Curriculum integration	2
Information skills based on mass media / electronic media	1

With regard to Table 4.70, an interesting feature was that in one of the schools, there is no card catalogue provided so students were not taught how to use the catalogue. This is a bane as cataloguing is the basic knowledge for information seeking and citing references.

4.9.4 Conducting The Programmes (Item 4)

Teachers who are involved in the Nilam Programme (a reading programme), like subject teachers, Head of subjects and teacher librarians are also involved in the organizations of other programmes. There are also officers from Pusat Sumber Pendidikan Negeri (State Educational Resource Center) who come to help teachers organize the resource centres.

4.9.5 Why Are Programmes Conducted (Item 5)

The reasons stated is because it is a fixed programme for the library and also a school programme. Other than that, among the reasons are because it is also a programme from the Department of Education itself.

4.9.6 Frequency of the programme (Item 6)

For schools that conduct curriculum integration and information skills based on mass media/electronic, media programmes, the frequency of the programme is every week. While for schools that conduct catalogue usage programmes, curriculum integration and seeking library resource programmes, the frequency of the programme is only once per year.

4.9.7 Problems In Conducting The Programme (Item 7)

Two of the schools involved are new schools; hence a lot of problems arose. The main problem is the lack of finances to prepare resource centre collections. As a new school, various needs for teaching-learning purpose are more basic and are given priority in the

allocation of funds. The second problem is time constraints where teachers in boarding schools must ensure students' academic excellence. For that reason, a lot of activity has to be done and this causes time constraints in monitoring library activities more frequently. The next problem is the lack of expertise in the organization of the resource centres itself. Teachers who are responsible in organizing the resource centre are usually new teachers that do not have the necessary background in organizing the resource centre, plus they do not have the opportunity to attend courses. For teachers who said that they did not encounter problems in conducting programmes, this was due to the programmes conducted is limited and still not enough to strengthen the skills needed by the students.

4.9.8 Student Division In The programme (Item 8)

There are two ways of dividing students in this programme. The first method is through the division based on class. The second method is the division through the English Language groups.

4.9.9 Students' Participation (Item 9)

Only students in established schools take part actively. In those two new schools, students do not actively participate, probably because of the environment of the resource centre itself that is not fully stocked and not fully organized.

4.9.10 Students Evaluation (Item 10)

For schools that conduct information skills activities based on electronic media, students are not evaluated formally. But they have to produce articles to be published in the library bulletin.

4.9.11 Students Achievement (Item 11)

Since the programmes are for school librarians, the achievement evaluated is from the way they conduct their duties in the library.

4.9.12 Information Literacy Skills Still Needed By The Students (Item 12)

Teachers' opinion on skills still needed by their students are selecting, organizing and presenting skills.

4.9.13 Guidance On Any Of The Skills (Item 13)

For schools that do not conduct these programmes, students are not given guidance regarding any of the skills. For schools that conduct programmes, students are given guidance about specific skills.

4.9.14 Skills To Be Taught First (Item 14)

Resource Centre teachers chose three skills to be taught first, that is; determining the need for information, locating sources of information and choosing suitable information.

4.9.15 Programmes That Should Be Conducted To Increase Information Literacy Skills (Item 15)

- a- Students should be trained on ethics in the library
- b- Teachers should be given courses regarding these skills, so that they will have the knowledge to guide their students while implementing it
- c- The usage of electronic media programmes should be enhanced and at the same time more facilities must be provided so that the student - computer ratio is equal.

4.10 SUMMARY

This chapter attempts to analyse information literacy skills among secondary school students at fully residential schools in Kuala Lumpur. The information process involved is based on the chosen model. From the level of Information Literacy mentioned in Chapter Three, the analysis was as follows :

Questioning – Represent by item number 6 and 7. From this study, 81.7 % respondent were motivated to fulfill their information need. 73% students list out questions regarding the topics given. It can be concluded that students are at the intermediate level of the skills.

Planning – Represent by item number 8 and 8a. From the study, 85% respondent would plan their activity first before starting the research. Thus, they are still at the intermediate level of the skills.

Gathering – represent by item number 9,10, 11,14, 15, 19, 20, 21, 22, 23, 27,29. Item 9 and 10 explained on how students gathers information. Item 11,13 is on noting behaviour, item 14 and 15 on attitudes when gathering information, item 19 to 22 on basic library skills and item 23, 24, 27,29 is on locating skills.74.7% of the respondent would choose Internet to gather information for assignments and would use the same resource to gather information from school resource centre. Since respondents English Language grade in public exam is good, it is assumed that they have no problems in accessing information from the net. However, noting behaviour (53.4% using note-book), library skills (31.7% knows how to use call number) an locating skills (84% need assissatnce in finding information) indicates that students are at the intermediate level of the skill.

Sorting and Sifting – Represent by item number 12. The highly ranking method was :

Looking at the content (93.3%), Reading topic for every chapter (85.7%) , Looking at the picture / illustration (81%) and Full reading method (70.7%). According to the standard. According to the standard, the skill are still basic since the listed methods are a basic skills in library searching skills.

Synthesizing – Represent by item number 13. 50.7% of the respondents used the information by identifying the important points from the gathered information and arranging it. According to the standard, students level are very basic since they didn't expand their scope to compare and contrast the information.

Evaluating – Represent by item number 17. 53.7% respondents choose information that can answer all research questions. This indicates that students are at the intermediate level of the standard since they can organize the information in different ways according to the information problem or question at hand.

Reporting – Represent by item number 18. 53.3% respondents choose to present the information by using mind-mapping method. Hence, the skills are still basic since the mind mapping methods can be in many formats (print / electronic).

Two most important steps in information literacy skills that is locating and selecting skills is also highlighted, followed by sources used, programmes conducted and the need for this skill from teachers and the students perspectives. It was found that students possessed the skill to define the need for information and to use the information once the resources were found. However, they faced problems to locate and select sources of information due to the lack of knowledge on basic library skills. While presenting for information, they do not have the expertise to use electronic devices as their medium. Regarding the problems that the students faced while locating for information, apart from library skills, findings showed that the major problems were caused by unavailable sources and time constraint. Next, sources of information that was preferred by the students that topped the lists were the Internet, newspapers and reference books. The main reason for choosing these sources were due to easy access and contained a lot of general information . There are very few programmes conducted at school resource centres due to various constraints and programmes listed were carried out by subject teachers.

Finally, the need for information literacy skills from students perspectives showed that selecting and locating skills are considered important and have been chosen by a majority of the students. At the same time, the need for these skills from the teachers' perspectives suggest that defining the need for information, locating and selecting skills are still needed by their students.

The following chapter discusses the detailed findings of this research in relation with the research question. Significance of the findings and its implication are then presented. Suggestions for further research are made and finally conclusion of the study is included.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND IMPLICATIONS

The final chapter presents a summary of the study, followed by the conclusions drawn from the findings and possible implications based on the findings. It also concludes with a discussion on directions for further research.

5.1 SUMMARY OF THE STUDY

This study was conducted with the intent to get a clear view on information literacy skills among secondary school students at boarding schools in Kuala Lumpur. Hence, the study focused on five research questions, namely :

- 1- What is the skill of information literacy that students already possessed ?
- 2- How do students locate and select the resources required and what are their problems regarding these two skills ?
- 3- What are their major information sources and why did they choose these sources ?
- 4- What are the programmes conducted by teacher librarians regarding information literacy skills in their school resource centres ?
- 5- What are the information literacy skills needed by students based on teachers' and students' perspectives ?

The purpose of this study was to gain some knowledge on : what extent this skill had been mastered by the students, locating and selecting skills while searching for relevant information, sources of information heavily used and preferred by students, programmes conducted at school resource centres to enhance this skill and the awareness towards this skill based on teachers' and students' perspectives.

This study employed a survey research method. Questionnaires were distributed to 300 students from 3 boarding schools in Kuala Lumpur. The subjects were Form 1, 2 and 4 students who are not involved in the exam years as restricted by Ministry of Education. The response rate reached up to 100% since these students were staying at the hostel and the researcher was able to supervise these students while they answered the questions.

5.2 SUMMARY OF THE FINDINGS

5.2.1 STUDENTS' BACKGROUND CHARACTERISTIC

In this section, findings showed that all the respondents possessed excellent academic background, either in UPSR and PMR exams or in the English Language. For the UPSR exam, 66.6% (200 respondents) achieved 5A's in the UPSR, while for PMR exam, the achievement covers 9a's, 8a's and 7a's. For the achievement in the English Language subject, all Form One and Two students obtained grade A in this subject. As for Form Four students, the results comprise of grades A,B,C and D whereby the majority of students obtained grade A (97%). Assumptions were then made that all the respondents would not encounter problems in searching for information using an English Language medium, especially reference from the Internet.

5.2.2 INFORMATION LITERACY SKILLS

Basically, students have a positive attitude when a task is given to them. Research findings revealed that they were motivated of being independent without too much dependence on other people, especially their teachers. This had been proven where 81.7% respondent (245 students) stated that they would try to understand the assignment topic given first before attempting to look up for information. Respondents also have a systematic approach in conducting researches where 73% (219 respondents) listed down questions regarding their assignment topic. As for planning the activity before starting their researches, 85% of

respondents (255 students) chose to plan their activity before starting to seek for information with gender and form distribution showing no major difference in planning their research activities.

Subsequently, research revealed that students were more interested in using paper-based mediums while noting down information, when recording sources of information as well as while presenting information compared to a more organized paper-based mediums or electronic medium. Two assumptions can be made here; that is whether there is a lack of expertise among students in using computer or insufficient computer facilities to be used by the students. While searching for information, the Internet was preferred to by the respondents. Findings indicate a high percentage (more than 70%) of respondents felt that accessing the Internet was the most effective way in gathering information for assignments. Male students showed consistency in their interest with the Internet compared to female students. The following questions on methods to get information in school resource centres strengthen this finding. Thirty six point seven percent of the students had chose access to the Internet as their preferred method of gaining information in school resource centres. Furthermore, findings also indicate that students lacked skills in using indexing as their tool to retrieve information and to choose relevant information. Other important skills that were neglected by the students were skimming and scanning skills and the usage of keywords to retrieve the information.

The most important factor for respondents while attempting to get information is the understandability of the information (44.6%). On the other hand, the cost it took to get information was the least important factor (68.7%). It can be concluded that students were able to identify their needs for information and gave priority to factors that helped them to achieve their goal.

While using information, the preferred method by the respondents was identifying important point compared to using questions related to the topic (50.7%). However, questions were used to decide that the information they gained was enough (53.7%). The method of using of questions while using the information should be introduced to the students to ensure that the use of information is accurate.

Basic library skills are not fully possessed by the students. 72% of students cannot give accurate elements when writing references for books, 67.3% of students do not know how to use call numbers when searching for books and 93.7% of students do not know the meaning of bibliography. An important finding is that Form Four students are the most frequent respondents (20.6%) who have the knowledge on the elements required when writing references and the meaning of bibliography. This is probably because Form Four students have more experience and exposure while completing project work during PMR level.

5.2.3 LOCATING AND SELECTING INFORMATION

While locating for information, students were still bound to book sections as their favourite section. Not many students expanded their search to newspapers or magazines sections (7%) , call number sections (5.7%) and book index sections (0.4%). The second answer for this question is by referring to the librarian at the counter to find the pertinent information (13.3%). The lack of library skills were assumed to be the main factor for these findings. The subsequent questions then strengthened this finding where 84% respondents clarified that they needed assistance in searching for information for their assignments.

The next question goes further to the problems faced in locating the information. The major problems that students faced when locating for information is time constraint and

unavailable resources. Meanwhile, in selecting such information once the resources were found, only 18% of students stated that they encountered problems to select information. Out of that 18%, 6.7% of them did not know how to choose the most accurate information needed.

5.2.4 SOURCES OF INFORMATION

With regard to the choice for sources of information, electronic sources were the most preferred sources by the students (63.0%). Distribution according to gender shows that 35.3% of male students were interested with electronic sources compared to 27.7% of female students. The most interesting findings is the existence of a small group of students who are aware of the benefits of Audio Video materials. Reasons for the choice of each source were then sought; each group of respondents had their own interpretation on the benefits of each of the source.

The next question on the sources of information preferred to by students for certain purposes showed that the Internet is superior among students. For example, to gather general information, results again revealed that this was a favourite source was chosen by 59.7% of students. An important finding from the gender distribution showed the same pattern where male students were more interested in the Internet compared to their female counterparts. The second source for general information chosen by the students was the newspaper with a 14.7% response. This showed that students had a sensitivity to newspapers as a source for general information. The following question clarified the reasons for choosing each of those sources. The reasons for choosing the Internet similar with the reasons for choosing electronic sources. It was easier and faster to retrieve than other sources.

The frequency of visiting school resource centres is once a week on average. This shows that the usage of school resource centres is still moderate among students(37.3%). The main reason why students visit school resource centres is because they are brought by their subject teachers (55.3%). This matter should be given attention or consideration by the coordinator and school administrators whereby if more books and facilities were provided the frequency of visiting the resource centres would be surely improved.. Furthermore, the lack of facilities is proven by findings that show that 22.6% students requested more books to be provided in the school resource center. Another interesting finding related to Audio Video material is that, 12.7% respondents requested that this source be made available in resource centres. This strengthens the earlier findings on the students awareness on the benefits of Audio Video material.

5.2.5 PROGRAMMES CONDUCTED AT THE SCHOOL RESOURCE CENTRES

According to the coordinator, very few programmes were conducted regarding the use of materials in school resource centres for the learning process or given tasks. However, this task has been taken over by subject teachers indirectly. Furthermore, programmes which were conducted regarding the locating and the usage of resources were limited to school librarians only to enable them perform their duties and in helping the other students to search for materials.

5.2.6 THE NEED FOR INFORMATION LITERACY

Findings show that more than 50% of students get assignments that require them to search for information out of text-book boundaries, with Geography and History as the most frequent subjects being given tasks of this sort. This is a good effort towards exposing the students towards project work in future examination years. However, the lack of information literacy skills, added by various constraints such as time and unavailable

sources cause problems to still exist for students in completing their tasks.

The subsequent question posed was on problems in completing assignments or project work given. 38.3% of respondents stated that they did encounter problems. Other respondents made it clear that the two most frequent problems were inadequate time and sources. This again related to earlier findings on locating information where inadequate time and inaccessible resources gave either some problem or great problems to the respondents.

Questions concerning information literacy skills that were required by students showed that selecting accurate information and locating sources of information were the major skills considered as important and deemed to be the most useful skill to the students. Selecting accurate information had an over whelming 65.3% from respondents whereas 55% of respondents felt that locating sources of information was the skill they needed.

5.2.7 PROGRAMMES CONDUCTED IN SCHOL RESOURCE CENTRE BY RESOURCE CENTRE CO-ORDINATOR

Programmes conducted at school resource centres were too limited because of various factors. The main factor was time constraint. In these schools, resource centre coordinators / teacher librarians are also subject teachers. Every teacher must ensure the excellence of the students' academic achievement. Thus, these teachers were not able to monitor the resource centres frequently. The second factor is the lack of experience and skills in the management of school resource centres. Resource Centre Coordinators and teacher librarians from two of the schools under study are new teachers who do not have any experience and qualifications in this field. They also do not have the chance to attend courses related to the management of resource centres. Whereas for teachers who have

spent quite a long time in this field stated that time constraints was still the main problem for them.

In conducting the programme, there is a cooperation between subject teachers, including the Head of the subject. What is more encouraging is that in one of the schools, there are officers from the State Educational Resource Centre coming to help the teachers in organizing the resource centre. This cooperation has to be widened and should be arranged systematically.

5.2.8 STUDENTS PARTICIPATION AND ACHIEVEMENT

Since the programmes are for school librarians, the achievement is evaluated from the way they conduct their duties in the library and their contribution to the library's bulletin board.

5.2.9 INFORMATION LITERACY SKILLS NEEDED BY THE STUDENTS FROM TEACHERS PERSPECTIVES

There were teachers who felt that all the skills are needed by the students, whereas some of them felt that the students only needed selecting , organizing and presenting skills.

5.3 DISCUSSION

In the course of this study, several other findings have also emerged beside those discussed in the previous section. It was seen that students preferred to use electronic resources and the reasons for choosing this type of resource was that it was easier, faster and there was complete information given. This agrees with the findings of O'Sullivan and Scott (2000) who reported that students identified three factors contributing to their satisfaction in using the Internet :- ease in use, speed in usage and the depth or the variety of information acquired. Another finding is regarding programmes conducted at school resource centres

that has connection with information literacy skills. It is found that only 9% students stated programmes that are related to this skill. Further more, these programmes are conducted by subject teachers, not by the library co-ordinators. Yet another obvious finding is the lack of library skills among the students. Only 28% of students knew how to write references for books, 31.7% knew how to search for books based on their call number, and only 16.3% of students know the meaning of bibliography. This again agrees with the findings of Shamsuri and Yaakob (2003) when elaborating on the reasons for low level of information literacy among Malaysian students. According to their research, this problem was caused by lack of information skills programmes and library education as part of academic programmes in school.

Findings also revealed time constraints as the main factor that hindered co-ordinators to monitor the library more frequently. This again agrees with finding of Yaakob and Shamsuri (2003) where from their research teachers appointed to manage the library complained that they could not fully concentrate on the management and less so on the services, activities, library promotion and information skill programmes. Findings revealed that while attempting to get answers for their information needs, students were asked what was the most important factor that would influence them greatly. Forty four point six percent of respondents (134 students) said that the understandability of the information was an the important factor to them. This findings agree with the findings of Shenton and Dixon (2004) when they conducted a PhD study to consider the information needs that emerged from school assignments. Findings showed that where respondents were allowed to investigate a topic of their choice and so determine their information needs, the understandability and availability of information was the second most popular reason for it. Findings also revealed that 32.3% of students arrange answers for questions related to the topic when they want to use the information, as suggested by the model chosen. This

finding agrees with the findings of Anderson (2001) which shows that it is more effective to use questions before students starts to locate and use the information compared to letting the students locate and use the information without any specific guidance. Findings also revealed that while locating for information, students encountered two major problems, that is; time constraints and inaccessible resources. The latter was chosen by 66.7% of students. This agrees with Smith (2002) where according to her, the most effective and efficient way to increase students' achievement and love of learning is to leverage the power that a Library Media Centre can have in this process. One of the essential elements of the power is easy access of the resources and the resource centre itself.

5.4 CONCLUSIONS FROM THE STUDY

It is shown from this study that in the process of information literacy, these respondents basically possessed the skills to recognize the need for information, to organize information and to present the information. However, the skill for locating and selecting information is quite limited since they do not have the knowledge on basic library skills. The study also revealed that students preferred to locate information by accessing the Internet followed by going to the school's resource centre. While selecting for information, students chose to look at the contents, reading the topic for every chapter, looking at the pictures or illustrations and using the full reading method. The problems that they faced concerning these two skills were time constraints, unavailable resources and not know how to choose accurate information from the resources found. Electronic sources, that is Internet has been proven to be the preferred source of information by the students. The reasons for choosing this type of source is because of its easy access and a lot of Information can be found in a short amount of time. There were no programmes conducted at resource centres because of the time constraints and the lack of training

regarding information literacy skills itself. However, the programmes are still being conducted concerning the use of resource center materials but has been taken over by subject teachers. Regarding information literacy skills that were still needed by the students, students acknowledge that they needed skills on locating information and selecting accurate information. While from the teachers' perspective, all the skills listed were still needed by the students.

5.5 IMPLICATIONS FROM THE STUDY

This study intended to find out more about information literacy skills at boarding schools in Kuala Lumpur. Through this study, it would be possible to gain some knowledge on the information literacy skills already possessed by the students, locating and selecting skills and the problems associated with it, sources of information preferred by the students, programmes conducted at school resource centre and the need for information literacy from students' and teachers' perspectives. The evidence derived from this investigation allowed confirmation of various anticipated results as well as answered a number of research questions. Based on the findings of this study, the following implication must be kept in mind.

The Education Department and the Ministry of Education must train the teachers to have the necessary skills of information literacy before teachers can guide students to master this important skill which can enhance their performance in the learning process. There is a need for the formulation of an information literacy standard applicable nationwide. By having a standard, objectives could be determined, and various programmes could be planned to implement these skills in a school environment. School administrators must lessen the workload for teacher librarians or coordinator to enable them to monitor the school resource centres better. There must be a standard policy for all the teacher librarians

so they have much more time to conduct various programmes for students regarding the use of school resource centres among the students. Besides that, the school administrators must also provide more facilities to the resource centres such as computers and internal facilities to the library to give more convenience to the students when they use the resource centre.

The Internet was preferred by the students. Teachers should guide the students while using the Internet so they do not waste their time surfing the Internet with unreliable hits. This can help students find more accurate information and indirectly can help them to master the locating and selecting skills which is important in the information seeking process.

Regarding the programmes in school resource centres, the State Educational Resource Centre must cooperate with coordinators to help them organize the programmes and at the same time train the teachers to better understand information literacy skills and to strengthen their knowledge on basic library skills to enable them to train students on these two skills. Besides that, they should also help teachers organize the resource centre properly to arouse students' interest to come to the resource centre for their learning purposes.

5.6 DIRECTIONS FOR FURTHER RESEARCH

As a result of the observations made in this study, the researcher would like to recommend a few suggestions for further research. Firstly, more studies need to be conducted on information literacy skills in more established fully residential schools. The scope of area should be widened in other states as well to have a clearer view on the implementations of these skills to the students. Two of the schools under study are new schools with inexperienced coordinators and library teachers, thus the holistic view is still ambiguous.

The programmes conducted at school resource centre in other boarding schools need to be investigated since these students have good academic background. Such good students can be trained to master these skills as long as the programmes are properly arranged for them. Besides this type of school, research can also be done at normal schools so that comparisons can be made for a more comprehensive improvement. The methodology applied to the next research should be changed to a qualitative approach to get an in-depth view of students' skills more accurately.

Secondly, follow up studies could focus on a higher level group of students. For example, graduate students in colleges, universities or in teacher training colleges. The following studies can give more focus on the information literacy skills among university students where a comparative picture can be obtained since all these students are already in a higher learning institute. A research on teachers training college graduates can give prognosis on the information literacy skills taught to the trainee before they were posted to schools.

Thirdly, findings on Audio Video materials which were chosen by a small group of students can lead to further study on the use of Audio Video materials in the teaching learning process for various subjects taught in schools. The availability of this type of resources can be studied because not many students chose this resource in this research. The content of Audio Video materials can be investigated to study the suitability of this material to be used by students because AV material is a very interesting source which can arouse students interest to search for more information.

Finally, the role of teachers and Principals in implementing these skills can also be a subject of research. How the principal co-operate with teachers to find ways and means to set a policy for resource centre coordinators or teacher librarians can be a matter to look into. By setting a standard policy, only then can the implementation of this skill be done.

This study, being a general one, provides a general knowledge about the need and the extent to which these skills have been mastered by boarding school students. More studies can be conducted to give more detailed exploration on these skills and all the related issues surrounding it. It is hoped that this study can contribute towards enhancing the quality of education in our country.

University of Malaya

APPENDIX A

QUESTIONNAIRE

University of Malaya

QUESTIONNAIRE A

Information Literacy among Secondary School Students At Boarding Schools, Kuala Lumpur.

Please answer all the questions honestly and without bias or fear. There is no right or wrong answer. Please answer all questions by placing a mark (/) in the box against the appropriate answer, or by writing the required information in the space provided.

Section A. Student's Background Characteristic.

1. Class : _____
2. Sex : ☐ Male ☐ Female
3. UPSR Result (Number of A, B,) _____
4. PMR Result (Number of A, B,) _____
5. Grade for English Language _____
(English Language Grade In UPSR / PMR)

Section B. Information Literacy Skills

6. If you were given an assignment or project work, which of the following would you do first ? (Mark one only)
 - ☐ Try to understand the topic
 - ☐ Ask teachers for help
 - ☐ Ask friends for help
 - ☐ Go to the School Resource Center / library
 - ☐ Others (Please State : _____)
7. Do you list down questions related to the assignment topic given ?
 - ☐ Yes ☐ No
8. When you want to start your research, do you plan your activity ?
 - ☐ Yes ☐ No (Skip question 8a)
- 8a. How do you plan your activity?
 - ☐ Using note-card
 - ☐ Using note books
 - ☐ Using diary planner
 - ☐ Others (Please State : _____)

9. In your opinion, which is the most efficient way of gathering information for your subject assignments or class projects ? (Mark one only)

- ☐ Going to the school resource center
- ☐ Going to other library
- ☐ Referring to your home collection
- ☐ Watching educational TV programmes
- ☐ Accessing the internet
- ☐ Asking people
- ☐ Others (Please State : _____)

10. Which of the following method will you use in getting the information for your project

work in the school resource center / library ? (Mark one only)

- ☐ Using library catalog
- ☐ Accessing the internet
- ☐ Using magazines index
- ☐ Using newspaper index
- ☐ Asking teacher librarian
- ☐ Others (Please state : _____)

11. Once you have found the information needed, what medium do you use in taking notes?

(Mark one only)

- ☐ Using A4 paper
- ☐ Using diary planner
- ☐ Using note-cards
- ☐ Others (Please state : _____)

12. Which of the following process would you choose to gather relevant information ?

Mark answers that apply to you.

Process	Yes	No
1. Looking at the table of content		
2. Reading the introduction / abstract		
3. Reading the topic for every chapter		
4. Referring to the index		
5. Looking at the illustration		
6. Different reading method due to the need :		
Skimming		
Scanning		
Full Reading		
7. Using keywords		

13. After getting the sources of information needed, how would you record the findings ?

(Mark one only)

- ☐ Type it in computer and save it in personal folder
- ☐ Write it down in a notebook / memory card
- ☐ Write it in diary planner
- ☐ Others (Please state : _____)

14. In attempting to get an answer to your information needs, which of the following items

was most important to you ? (Mark one only)

- ☐ The cost in money
- ☐ The time it took
- ☐ It's up-to-dateness
- ☐ The understandability of the information
- ☐ Others (Please state : _____)

15. In attempting to get an answer to your information needs, which of the following

items was least important to you ? (Mark one only)

- ☐ The cost in money
- ☐ The time it took
- ☐ It's up-to-dateness

- ☐ The understandability of the information
- ☐ Others (Please state : _____)

16. Once you have selected the information needed, how would you use them ?

- ☐ Summarize the information and arrange it accordingly
- ☐ Identify important points and arrange it
- ☐ Arrange the information according to the answers for questions related to the topic
- ☐ Others (Please state : _____)

17. How would you determine that you have enough information that you need ?
(Mark one only)

- ☐ By using multiple sources
- ☐ Repeating the information searching process several times
- ☐ Information that can answer all the research question
- ☐ Others (Please state : _____)

18. Which method would you like to present your assignment ?

- ☐ Using mind mapping
- ☐ Using flow charts
- ☐ Using power point presentations
- ☐ Others (Please state : _____)

19 Do you know how to write a reference for a book, magazines articles, newspaper articles and article from the Internet ?

- ☐ Yes ☐ No

20. When you write a reference for a book, what five pieces of information should you include ?

a- _____
c- _____
e- _____

b- _____
d- _____

21. Do you know how to find books according to the call number?

- ☐ Yes ☐ No

22. Briefly explain what you understand about bibliography.

Section C. Locating and Selecting Information

23. Where in the library did you look first for source of information for your assignment ?

24. Did you need to ask for help to find information for your assignment ?

25. What sources of information did you prefer to use? (Mark one only)

- ☐ Print materials (books, magazines articles, newspapers articles, encyclopedias)
- ☐ Electronic resources (internet, database collection, CD-ROM)
- ☐ Audio video materials (television, cassette, videos)

26. Why did you chose this information source ?

27. While locating information for doing your assignments would you indicate to what extent you encountered problem ? Write down A, B, C or D in the space provided.

A. Great Problem B. Some Problem C. Little Problem D. No Problem

* Knowing where to locate information _____

* Knowing how to use indexes or other source, which could lead to information _____

* Locating up to date information _____

* Having time to adequately locate information _____

* Sources being unavailable and / inaccessible _____

* Understanding language used in computers _____

28. Do you have problems in selecting resources for information once found ?

☐ Yes (Please state : _____)

☐ No

Section D. Sources of Information

29. In your opinion which is the most efficient way of gathering general information ?

☐ Going to school resource center

☐ Going to other libraries

☐ Check your home collection

☐ Accessing the internet

☐ Watching TV

☐ Asking people

☐ Reading newspaper

☐ Reading magazines

☐ Others (Please specify : _____)

Please state your reason : _____

30. The following are the facilities normally can be found in school resource center

Rank them by placing (1) to the one you are most likely to approach in the box provided and the biggest number to the one that you are likely to avoid. If the facility is not available, please mark with a cross.

☐ Reference books

☐ Radio

☐ Textbooks

☐ TV

☐ Magazines

☐ Materials in CD-ROM format

☐ Pamphlets

☐ Internet

☐ Newspaper

☐ Others (Please specify : _____)

31. How often do you visit your school resource center / library ?
- ☐ Everyday
 - ☐ Once a week
 - ☐ Less than once a week
 - ☐ I do not visit the school resource center / library
 - ☐ Other frequency (Please state : _____)
32. Your usual purposes of visiting school resource center is : (mark three that apply to you ?
- ☐ To use reference /red spotted books
 - ☐ To borrow / return books
 - ☐ To read news paper
 - ☐ To read magazines
 - ☐ Brought by teacher for lessons
 - ☐ For self study
 - ☐ To access internet
 - ☐ I do not visit school resource center / library (Please state reason : _____)
 - ☐ Others (Please state : _____)
33. What other information sources would you like your school resource center to provide ?
- _____
34. Give one example of a source of information in the library ?
- _____

Section E. Programmes Conducted In School Resource Center

35. What are the programmes regarding locating and using the material at school resource center / library (especially in completing subject assignment or project work) conducted by teacher librarian ?
- _____

36. How frequent is the programme ?

- | | |
|--|---|
| <input type="checkbox"/> Every week | <input type="checkbox"/> Once per semester |
| <input type="checkbox"/> Once a month | <input type="checkbox"/> Twice per semester |
| <input type="checkbox"/> Twice a month | <input type="checkbox"/> Once per annum |

37. How long is the duration of the programme ?

- | | |
|---|--|
| <input type="checkbox"/> One hour per session | <input type="checkbox"/> Three hour per session |
| <input type="checkbox"/> Two hour per session | <input type="checkbox"/> Others (Please state: _____) |

Section F. The Need For Information Literacy

38. In the last five months, have you been given assignments that require information not found in your textbooks ?

- ☐ Yes ☐ No (skip question 38a)

38a. Name the subject : _____

39. Do you have problems in completing assignments / project work given to you ?

- ☐ Yes (Please state : _____)
☐ No

40. Do you have problems in finding resources for your assignments / project

work given to you ?

- ☐ Yes (Please state : _____)
☐ No

41. Which of this information skills you still need in your learning process and to complete a given task ? You can choose more than one.

- ☐ Defining the need for information
- ☐ Locating information
- ☐ Selecting information
- ☐ Organizing information
- ☐ Presenting information
- ☐ Assessing the process of getting information

QUESTIONNAIRE B

Information Literacy Among Secondary School Students At Boarding Schools, Kuala Lumpur

To Obtain Information On Programmes Conducted In School Resource

1. Opening hours of SRC :

Monday – Friday : _____

Saturday : _____

2. SRC collection :

a- Fiction books : _____ volumes

b- Non-Fiction books : _____ volumes

c- Reference books : _____ volumes

d- Magazines / Periodicals : _____ titles

e- Newspaper : _____ titles

f- CD-ROMS : _____ titles

g- Others (Audio Visual Materials, etc) : _____ titles

3. What are the programmes currently conducted in school resource center ? Please mark appropriate box.

Programmes	Yes	No
a- Use of catalogue		
b- Locating library resources		
c- Use of specific library resources		
d- Reading guidance programme		
e- Curriculum integrated programme		
f- Mass media based information skills programme		

Others (Please specify) : _____

4. Who conducted the programme ?

☐ Teacher librarian

☐ Teacher librarian and subject teacher

☐ Teacher librarian and Senior Assistant 1 (PK 1)

☐ Others (Please Specify : _____)

5. Why are these programmes conducted ?
- ☐ As a permanent activity for school resource center
 - ☐ Demands from the teachers
 - ☐ Demands from the students
 - ☐ Demands from the parents
 - ☐ Demands from the administrator
 - ☐ Others (Please Specify : _____)
6. How frequent is the programme ?
- ☐ Once a month
 - ☐ Once per semester
 - ☐ Twice per semester
 - ☐ Once per year
 - ☐ Others (Please Specify : _____)
7. Are there any problems faced in conducting these programmes ?
- ☐ Yes (Please specify : _____
_____)
 - ☐ No
8. How are the students divided in these programmes ?
- ☐ According to class
 - ☐ According to ability
 - ☐ According to ages
 - ☐ Others (Please Specify : _____)
9. Do the students participate actively in the programme ?
- ☐ Yes ☐ No
10. Do you evaluate students after this programme ?
- ☐ Yes ☐ No
11. How is the performance in terms of understanding ?
- ☐ Above 80%
 - ☐ 50-80%
 - ☐ Below 50%
 - ☐ Others : _____

12. Information Literacy is the information seeking process which consists of defining the need for information, locating sources of information, selecting relevant information, organizing information, presenting information and accessing the whole process of getting information. Which of these skills are still needed by the students ?
- ☐ Defining the need for information
 - ☐ Locating sources of information
 - ☐ Selecting relevant information
 - ☐ Organizing information
 - ☐ Presenting information
 - ☐ Assessing the whole process of getting information
13. Are the students given guidance regarding any of these skills ?
- ☐ Yes ☐ No
14. Which of these skills would be the most important to you to teach the students first?
- ☐ Defining the need for information
 - ☐ Locating sources of information
 - ☐ Selecting relevant information
 - ☐ Organizing information
 - ☐ Presenting information
 - ☐ Assessing the whole process of getting information
15. According to your experience in conducting programmes in your school resource center briefly explain what other programmes (other than item a-f in question 3) should be conducted to enhance students skills in information literacy ?

SOAL SELIDIK A

Literasi Maklumat Di Kalangan Pelajar-Pelajar Sekolah Menengah Di Sekolah-Sekolah Berasrama Penuh, Kuala Lumpur.

Sila jawab semua soalan dengan jujur tanpa rasa takut. Tidak ada jawapan yang betul atau salah. Sila jawab semua soalan dengan meletakkan tanda (/) di dalam kotak setentang dengan jawapan yang sesuai, atau dengan menulis maklumat yang diperlukan di dalam ruang yang disediakan.

Bahagian A : Ciri-Ciri Latar Belakang Pelajar

1. Kelas : _____
2. Jantina : ☐ Lelaki ☐ Perempuan
3. Keputusan UPSR (Bilangan A, B,) : _____
4. Keputusan PMR (Bilangan A, B,) : _____
5. Gred Untuk Bahasa Inggeris : _____
(Gred Bahasa Inggeris semasa UPSR / PMR)

Bahagian B. Kemahiran Literasi Maklumat

6. Sekiranya anda diberi tugas atau kerja kursus, yang manakah di antara berikut akan anda lakukan terlebih dahulu ? (Tandakan satu sahaja)
 - ☐ Cuba memahami tajuk tugas
 - ☐ Meminta pertolongan guru-guru
 - ☐ Meminta pertolongan rakan - rakan
 - ☐ Pergi ke pusat sumber sekolah atau perpustakaan
 - ☐ Lain-lain (Sila nyatakan : _____)
7. Adakah anda menyenaraikan soalan-soalan berkaitan tajuk tugas yang diberikan ?
 - ☐ Ya ☐ Tidak
8. Apabila anda ingin memulakan kajian anda, adakah anda merancang aktiviti anda ?
 - ☐ Ya ☐ Tidak (Abaikan soalan 8a)

8a. Bagaimanakah anda mencatatkan perancangan aktiviti anda ?

(Tandakan satu sahaja)

- ☐ Menggunakan kad nota
- ☐ Menggunakan buku nota
- ☐ Menggunakan diari perancangan
- ☐ Lain-lain (Sila nyatakan : _____)

9. Pada pendapat anda, yang manakah cara yang paling berkesan untuk mengumpulkan

maklumat bagi tugas atau kerja kursus ? (Sila tandakan satu sahaja)

- ☐ Pergi ke pusat sumber sekolah
- ☐ Pergi ke perpustakaan lain
- ☐ Menggunakan koleksi maklumat di rumah
- ☐ Menonton program tv pendidikan
- ☐ Mengakses internet
- ☐ Bertanya pada orang lain
- ☐ Lain-lain (Sila nyatakan : _____)

10. Yang manakah di antara berikut cara yang anda akan gunakan dalam mendapatkan maklumat untuk tugas anda di pusat sumber sekolah atau perpustakaan ?

(Tandakan satu sahaja)

- ☐ Menggunakan katalog perpustakaan
- ☐ Mengakses internet
- ☐ Menggunakan indeks majallah
- ☐ Menggunakan indeks suratkhbar
- ☐ Bertanya kepada guru perpustakaan
- ☐ Lain-lain (Sila nyatakan : _____)

11. Selepas memperolehi maklumat yang diperlukan, apakah cara yang anda gunakan untuk membuat catatn ?

- ☐ Menggunakan kertas A4
- ☐ Menggunakan diari perancangan
- ☐ Menggunakan kad nota
- ☐ Lain-lain (Sila nyatakan : _____)

12. Yang manakah di antara proses ini yang anda lakukan untuk memilih maklumat yang tepat. Tandakan jawapan yang berkaitan dengan anda.

Proses	Ya	Tidak
a. Melihat kepada isi kandungan		
b. Membaca pengenalan atau prakata		
c. Membaca tajuk bagi setiap bab		
d. Merujuk kepada indeks		
e. Melihat kepada gambar atau ilustrasi		
f. Kaedah bacaan yang berlainan mengikut keperluan		
Bacaan luncuran		
Bacaan imbasan		
Bacaan penuh		
g. Menggunakan kata kunci (keyword)		

13. Selepas memperolehi maklumat yang diperlukan, bagaimanakah caranya merekod maklumat tersebut ? (Tandakan satu sahaja)
- ☐ Menaipnya di dalam komputer dan menyimpannya di dalam folder persendirian
- ☐ Mencatatnya di dalam buku nota atau kad memori
- ☐ Mencatatnya di dalam diari perancangan
- ☐ Lain-lain (Sila nyatakan : _____)
14. Ketika berusaha untuk mendapat jawapan kepada keperluan maklumat anda, yang manakah di antara berikut merupakan perkara paling penting untuk anda ? (Tandakan satu sahaja)
- ☐ Kos kewangan
- ☐ Masa yang di ambil
- ☐ Maklumat yang terkini
- ☐ Maklumat yang mudah di fahami
- ☐ Lain-lain (Sila nyatakan : _____)

15. Dalam usaha untuk mendapatkan jawapan kepada keperluan maklumat anda, yang manakah di antara berikut merupakan perkara yang paling kurang penting bagi anda ?
- (Tandakan satu sahaja)
- ☐ Kos kewangan
 - ☐ Masa yang di ambil
 - ☐ Maklumat yang terkini
 - ☐ Maklumat yang mudah di fahami
 - ☐ Lain-lain (Sila nyatakan : _____)
16. Setelah anda memilih maklumat yang diperlukan, bagaimanakah cara anda menggunakannya ?
- ☐ Meringkaskan maklumat tersebut dan menyusunnya secara teratur
 - ☐ Mengenalpasti isi-isi penting dan menyusunnya
 - ☐ Menyusun maklumat tersebut mengikut jawapan kepada soalan – soalan yang berkaitan dengan tajuk tugas
 - ☐ Lain-lain (Sila nyatakan : _____)
17. Bagaimana anda menentukan anda telah mempunyai maklumat yang secukupnya yang anda perlukan ?
- ☐ Dengan menggunakan pelbagai sumber maklumat
 - ☐ Dengan mengulangi proses pencarian maklumat beberapa kali
 - ☐ Maklumat yang boleh menjawab semua soalan kajian
 - ☐ Lain-lain (Sila nyatakan : _____)
18. Yang manakah cara yang akan anda gunakan untuk membentangkan tugas anda ?
- ☐ Menggunakan peta minda
 - ☐ Menggunakan carta aliran
 - ☐ Menggunakan persembahan power point
 - ☐ Lain-lain (Sila nyatakan : _____)
19. Adakah anda tahu bagaimana untuk menulis rujukan untuk buku, artikel majallah, artikel suratkhbar dan artikel dari internet ?
- ☐ Ya
 - ☐ Tidak

20. Apabila anda menulis rujukan untuk buku, apakah lima perkara yang patut anda masukkan ?

a- _____

d- _____

b- _____

e- _____

c- _____

21. Adakah anda tahu cara untuk mencari buku berdasarkan nombor panggilan

☐ Ya

☐ Tidak

22. Terangkan secara ringkas apa yang anda faham tentang bibliografi ?

Bahagian C. Mencari Dan Memilih Maklumat

23. Di bahagian manakah di dalam perpustakaan tempat yang anda mula-mula akan pergi untuk mencari sumber maklumat bagi tugas anda ?

24. Adakah anda perlukan bantuan untuk mencari maklumat bagi tugas anda ?

☐ Ya

☐ Tidak

25. Apakah sumber-sumber maklumat yang anda lebih gemar gunakan ?(Pilih satu sahaja)

☐ Bahan-bahan bercetak (buku, artikel majallah, artikel suratkhbar , ensaiklopedia)

☐ Sumber-sumber eletronik (internet, pangkalan data, CD-ROM)

☐ Alat-alat pandang dengar (tv pendidkan, kaset, video)

26. Mengapakah anda memilih sumber maklumat jenis ini ?

27. Ketika mencari maklumat untuk menyiapkan tugas anda, bolehkah anda nyatakan sampai ke tahap mana anda berhadapan dengan masalah ? Tuliskan A, B, C atau D di dalam ruang yang disediakan.

A. Masalah besar B. Masalah sederhana

C. Sedikit masalah D. Tiada Masalah

* Mengetahui di mana untuk mencari maklumat _____

* Mengetahui bagaimana cara untuk menggunakan indeks atau lain-lain sumber yang boleh memandu ke arah maklumat _____

* Mencari maklumat terkini _____

* Mempunyai masa untuk mencari maklumat yang secukupnya _____

* Sumber maklumat sukar diperolehi dan / sukar untuk di akses _____

* Memahami bahasa yang digunakan di dalam komputer _____

28. Adakah anda menghadapi masalah dalam memilih sumber-sumber maklumat setelah maklumat tersebut diperolehi ?

☐ Ya (Sila nyatakan : _____)

☐ Tidak

Bahagian D. Sumber – Sumber Maklumat

29. Pada pendapat anda, yang manakah cara yang paling berkesan untuk mengumpulkan maklumat umum ? (Pilih satu sahaja)

☐ Pergi ke pusat sumber sekolah

☐ Pergi ke perpustakaan lain

☐ Menggunakan koleksi maklumat yang terdapat di rumah

☐ Mengakses internet

☐ Menonton tv

☐ Bertanya orang lain

☐ Membaca suratkhbar

☐ Membaca majalah

☐ Lain-lain (Sila nyatakan: _____)

Sila nyatakan sebab anda : _____

30. Berikut adalah kemudahan yang kebiasaannya boleh di dapati di pusat sumber sekolah. Susunkan kedudukan sumber maklumat tersebut dengan meletakkan (1) kepada sumber yang anda rasakan anda paling berminat untuk menggunakannya di dalam kotak yang disediakan dan nombor yang paling besar untuk sumber yang anda paling tidak berminat menggunakannya. Sekiranya kemudahan tersebut tidak ada, sila tandakan pangkah.

(Catatan : Pusat sumber yang di maksudkan merangkumi perpustakaan dan bilik multimedia).

- | | |
|---------------------------------------|---|
| <input type="checkbox"/> Buku rujukan | <input type="checkbox"/> Radio |
| <input type="checkbox"/> Buku teks | <input type="checkbox"/> TV |
| <input type="checkbox"/> Majalah | <input type="checkbox"/> Bahan-bahan dalam bentuk CD-ROM |
| <input type="checkbox"/> Pamflet | <input type="checkbox"/> Internet |
| <input type="checkbox"/> Suratkhabar | <input type="checkbox"/> Lain-lain (Sila nyatakan: _____) |

31. Berapa kerap anda melawat pusat sumber sekolah / perpustakaan ?

- ☐ Setiap hari
☐ Sekali seminggu
☐ Kurang dari sekali seminggu
☐ Saya tidak melawat pusat sumber sekolah / perpustakaan
☐ Kekerapan lain (Sila nyatakan : _____)

32. Tujuan kebiasaan anda pergi melawat pusat sumber sekolah adalah :

(Tandakan tiga yang berkaitan dengan anda)

- ☐ Untuk menggunakan buku rujukan / buku bertanda merah
☐ Untuk meminjam atau memulangkan buku
☐ Untuk membaca surat khabar
☐ Di bawa oleh guru untuk pelajaran
☐ Untuk belajar sendiri
☐ Untuk mengakses internet

- ☐ Saya tidak melawat pusat sumber sekolah / perpustakaan
- ☐ Saya tidak melawat pusat sumber sekolah / perpustakaan
- ☐ Lain-lain (Sila nyatakan : _____)

33. Apakah sumber-sumber maklumat yang lain yang anda mahu pusat sumber sekolah anda sediakan ?

34. Berikan satu contoh sumber maklumat yang terdapat di perpustakaan.

Bahagian E. Program-Program Di Pusat Sumber Sekolah

35. Apakah program-program yang berkaitan dengan pencarian dan penggunaan bahan di pusat sumber (terutamanya dalam menyiapkan tugas mata pelajaran atau kerja kursus) di jalankan oleh guru perpustakaan di pusat sumber sekolah ?

36. Bagaimanakah kekerapan program tersebut ?

- ☐ Dua kali sebulan
- ☐ Sekali sebulan
- ☐ Dua kali setiap semester
- ☐ Sekali setiap semester
- ☐ Kekerapan lain (Sila nyatakan : _____)

37. Berapa lamakah tempoh program tersebut ?

- ☐ Satu jam setiap sesi
- ☐ Dua jam setiap sesi
- ☐ Tiga jam setiap sesi
- ☐ Lain-lain (Sila nyatakan : _____)

Bahagian F. Keperluan Kepada Literasi Maklumat

38. Dalam lima bulan yang lepas, adakah anda diberi tugas yang memerlukan maklumat yang tidak terdapat di dalam buku teks ?

- ☐ Ya
- ☐ Tidak (Abaikan soalan 37a)

38a Namakan mata pelajaran tersebut : _____

39. Adakah anda menghadapi masalah dalam menyiapkan tugas tugas / kerja kursus yang di berikan kepada anda ?
- ☐ Ya (Sila nyatakan : _____)
- ☐ Tidak
40. Adakah anda menghadapi masalah dalam mencari sumber maklumat untuk tugas anda ?
- ☐ Ya (Sila nyatakan : _____)
- ☐ Tidak
41. Yang manakah di antara kemahiran maklumat berikut yang masih anda perlukan dalam proses pembelajaran anda, terutama di dalam menyiapkan tugas anda ? Anda boleh memilih lebih dari satu.
- ☐ Menentukan keperluan kepada maklumat
 - ☐ Mencari sumber-sumber maklumat
 - ☐ Memilih maklumat yang tepat
 - ☐ Menyusun maklumat
 - ☐ Mempersembahkan maklumat
 - ☐ Menilai keseluruhan proses pencarian maklumat

SOAL SELIDIK B

Literasi Maklumat Di Kalangan Pelajar-Pelajar Sekolah Menengah Di Sekolah-Sekolah Berasrama Penuh , Kuala Lumpur.

Untuk Mendapatkan Maklumat Tentang Program-Program Yang Di Jalankan Di Pusat Sumber Sekolah

1. Waktu Pembukaan Pusat Sumber Sekolah :

Isnin – Jumaat : _____

Sabtu : _____

2. Koleksi Pusat Sumber

a- Buku-Buku Fiksyen : _____ jilid

b- Buku-Buku Bukan Fiksyen : _____ jilid

c- Buku-Buku Rujukan : _____ jilid

d- Majallah / Majallah Berkala : _____ tajuk

e- Suratkhbar : _____ tajuk

f- CD-ROMS : _____ tajuk

g- Lain-lain (Bahan AudioVisual dan lain-lain) : _____ tajuk

3. Apakah program-program yang sedang di jalankan di pusat sumber sekolah anda? Sila tandakan kotak yang bersesuaian.

Y – Ya T – Tidak

Program	Y	T
a- Penggunaan Katalog		
b- Penggunaan Sumber Perpustakaan Yang Khusus		
c- Program Bacaan Berpandu / Panduan Membaca		
d- Mencari Sumber-Sumber Perpustakaan		
e- Program Integrasi Kurikulum		
f- Program Kemahiran Maklumat Berasaskan Media Massa		

Lain-lain (Sila Nyatakan) : _____

4. Siapakah yang mengendalikan program tersebut ?
- ☐ Guru Perpustakaan
 - ☐ Guru Perpustakaan dan Guru Matapelajaran
 - ☐ Guru Perpustakaan dan Penolong Kanan 1
 - ☐ Lain-lain (Sila Nyatakan : _____)
5. Kenapakah program ini di jalankan ?
- ☐ Sebagai aktiviti tetap pusat sumber sekolah
 - ☐ Permintaan dari guru-guru
 - ☐ Permintaan dari pelajar-pelajar
 - ☐ Permintaan dari ibu bapa
 - ☐ Permintaan dari pentadbir sekolah
 - ☐ Lain-lain (Sila Nyatakan : _____)
6. Bagaimanakah kekerapan program tersebut di adakan ?
- ☐ Sebulan sekali
 - ☐ Sekali setiap semester
 - ☐ Dua kali setiap semester
 - ☐ Sekali setahun
 - ☐ Lain-lain (Sila Nyatakan : _____)
7. Adakah anda menghadapi apa-apa masalah dalam menjalankan program ini ?
- ☐ Ya (Sila nyatakan : _____)
 - ☐ Tidak
8. Bagaimanakah pembahagian pelajar dalam program ini ?
- ☐ Berdasarkan kelas
 - ☐ Berdasarkan kemampuan
 - ☐ Berdasarkan umur
 - ☐ Lain-lain (Sila nyatakan : _____)
9. Adakah pelajar-pelajar mengambil bahagian secara aktif di dalam program ini ?
- ☐ Ya ☐ Tidak
10. Adakah anda menilai pelajar selepas program ini ?
- ☐ Ya (Pergi ke soalan 10a) ☐ Tidak

10a. Bagaimanakah pencapaian pelajar dari sudut kefahaman ?

- ☐ Melebihi 80%
- ☐ 50-80%
- ☐ Kurang dari 50%

11. Literasi Maklumat adalah process mendapatkan maklumat yang terdiri dari :

Menentukan keperluan maklumat, mencari sumber-sumber maklumat, memilih maklumat yang sesuai, menguruskan maklumat, mempersembahkan maklumat dan menilai keseluruhan proses mendapatkan maklumat. Yang manakah di antara

kemahiran ini yang masih diperlukan oleh pelajar ?

- ☐ Menentukan keperluan maklumat
- ☐ Mencari sumber-sumber maklumat
- ☐ Memilih maklumat yang sesuai
- ☐ Menguruskan maklumat
- ☐ Mempersembahkan maklumat
- ☐ Menilai keseluruhan proses mendapatkan maklumat

12. Adakah pelajar-pelajar di beri panduan tentang mana-mana dari kemahiran

- ☐ Ya (Pergi ke soalan 12a)
- ☐ Tidak

12a. Yang manakah di antara kemahiran-kemahiran ini yang anda rasakan paling penting untuk di ajar terlebih dahulu ?

- ☐ Menentukan keperluan maklumat
- ☐ Mencari sumber-sumber maklumat
- ☐ Memilih maklumat yang sesuai
- ☐ Menguruskan maklumat
- ☐ Mempersembahkan maklumat
- ☐ Menilai keseluruhan proses mendapatkan maklumat

13. Berdasarkan pengalaman anda di dalam mengendalikan program-program di pusat sumber sekolah, secara ringkas terangkan tentang program-program lain (selain dari item a-f di dalam soalan 3) patut di laksanakan untuk meningkatkan kemahiran pelajar di dalam literasi maklumat ?

University of Malaya

APPENDIX B

PERMISSION LETTER

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