

ACHIEVING EXCELLENCE THROUGH INFORMATION LITERACY AS PART OF INNOVATIVE CURRICULUM

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ABSTRACT

A great responsibility facing education today is to develop students with information literacy while pursuing their education and extend it further in their workplace. In order for today's students to excel in the 21st century, they must be able to acquire, evaluate, and use and present information effectively. They must become information literate workers, teachers, facilitators and coaches. Information literacy skills allow the problem solving, critical and creative thinking, decision making, and cooperative learning that prepare students for the challenges in society. Information literacy leads to skilful, responsible thinking that facilitates good judgement because it relies on criteria, is self-correcting and is sensitive to context. It helps growth of individuals through a number of methods, programmes and techniques. It would be useful if the educational incorporate these elements since the elementary stage so that by the time their reach the college and university level, they have acquired the reading and information skills much required in the current information and knowledge era.

Keywords: Information skills, information literacy, knowledge, knowledge culture, curriculum, critical thinking and higher education.

1. Introduction

The term information literacy (IL) is still evolving. According to Todd (2003), Information literate students are flexible, can adapt to change and are able to function independently and in groups. In the past it was much referred to the library skills, the skills that enable individuals to identify, find and utilize information. Recent advanced in technology and electronic information has incorporated it to include ICT skills. Studies have revealed a significant relationship between one's ability to find, utilize and interpret information and his/her ability to think critically. Advocates of education and other socio-psychological philosophers attempt to guide and prove the methodologies and the background, leading to the creation of critical thinking society. While literature indicates the strategy and training that can lead to information literacy, very little has been written on the ability of an individual to become more critical through the utilization of the right information of a wide range in nature. An individual begins to develop the information skills and the habit of being critical in his/her thinking during the educational years. However, it may otherwise relapse to the previous condition if this condition is not continued. Information literacy must, therefore, be well structured into the curriculum so that it can be developed and maintained and one way is through a systematic information skill programme. The need for information literacy is largely driven either by the desire for personal growth and advancement or by the rapidly changing social, political, economic, and technological environments of the increasing sophistication of the Malaysian society.

2. The Malaysian Educational System

The government is the vehicle and instrumental to bring about new changes. With the new educational policy inceptions of the numerous resolutions, it is seemingly clear of the government's support towards the new direction of inculcating a thinking society, giving impetus by various parties to implement these goals. Calls by various authorities up to the ministerial level for concerted effort towards achieving this goal has given nothing more than moral incentives. The implementations of thinking skill programme under the new curriculum (KBSR and KBSM) is an indication of the importance of information skills, besides other skills (study skill; manipulative skill; living skill; and problem-solving skill).

Essentially, the basic theoretical frameworks behind the acquisition of the much needed skills have something to do with the educational philosophy and system. In Malaysia the educational system needs to move towards innovative changes viz the k-economy where knowledge is perceived as a crucial element in development of individual and society. However, the government's proposed abolition of examinations *Ujian Pencapaian Sekolah Rendah (UPSR)*, and *Penilaian Menengah Rendah (PMR)* needs careful study, although most academicians agree that the *Sijil Pelajaran Malaysia (SPM)* should be continued in order to gauge students' academic performance prior to entering colleges and universities (*The Sun* June 22, 2010). The old concept of teacher, talk and board should change innovatively towards a more self-instructional learning concept where students are taught how to learn through wide readings and references in libraries.

In the old days the educational system and the learning process placed emphasis on dates of battles, animal classification, instead of 'a sense of history' or animal life and behavior. Teaching technique has changed with the increasing use of modern instructional devices. What has not been given emphasis though is information skills to enable students to work efficiently and to discover, inquire and increase their intellectual power. In other words, students should be well trained in the basic skills through reading a wide range of materials, not confined to text books and internet only. The chief business of education is to teach and train students to think, thus helping them to become creative, productive and critical.

3. Information Skills, Literacy and Information Society

Information skills are needed to help individual define the information task, locate sources and select data, process and present information and evaluate the task. (Information Skills in the School: An Introduction, NSW Department of Education (1989). Understanding and using information include the ability in asking questions selecting and evaluating information, combining information from different sources, presenting relevant information, selecting most relevant form of presentation, and evaluating the presentation. Within the same context, one needs to be able to apply certain information skills which include print, interpretive, visual and aural, and expressive skills.

The ability to communicate (orally or in writing) research results, findings, opinions: and to use technology as a communication device with confidence can be defined as technological skills. The ability to use hardware and software, where appropriate is to retrieve, process and present information. The above skills need to be applied, not only during the study years but also for lifelong learning. To make this possible, students require the skills to analyse and synthesise information in any form.

The advance of information technologies have invaded the society in all walk of life, especially in schools and libraries and this has some implications on children who would be the leaders of the future. The fact indicates the availability of information in abundance and beyond the limit of a library or a country. The accessibility of global information is now made possible and it is crucial that this is known and subsequently utilized. In an information society, it is the right of individual to get access to information in pursuits of higher quality of life. Therefore, information literacy is important in order to survive in the information era. Adequate and appropriate information provides opportunities for individuals to get the access which has increasingly depended on the availability of emerging technologies as means for creating, storing, and distributing, retrieving, and using information. Information is vital for all types of decision makings. The wise choice of information could provide great knowledge that could shape individuals to view problems critically and provide creative solutions, leading to new inventions, techniques, theories and ideas. Individuals should be able to retrieve, select, analyze and wisely use various sources of information (people, institution, information systems and literature).

People and citizen at large, especially those who most need the empowerment must be information literate to enable them to have learning experiences and promote these abilities. Minority and at-risk students, illiterate adults, people with English as a second language and economically disadvantaged people are among those most likely to lack access to the information that can improve their situations. The growing distress among executives discovers that the only thing as difficult and dangerous as managing a large enterprise with too little information is managing one with too much. Many companies do not know how to find and use such information effectively. Every time there is a lack of timely and accurate information, it is costly to businesses. Through the integration of process and content, today's learners will be better educated to live in a democratic society.

Malaysians are beginning to value quality of life and the pursuit of happiness. However, these goals are increasingly difficult to achieve because of the complexities of life in today's ICT dependent society. The cultural and educational opportunities available in an average community, for example, are often missed by people who lack the ability to keep well informed of such activities. Otherwise, lives of information illiterates are more likely than others to be narrowly focused on second-hand experiences of life through television. On the other hand, life is more interesting when one knows what is going on, what opportunities exist, and where alternatives to current practices can be discovered. All these are done through information.

Studies have indicated that information literacy could be acquired by most individuals; given there is encouragement from parents, friends, schools and other relevant systems (Huston, 1983). Within the context of knowledge spectrum, it has been recognized that in order for a person to be wise, think critically, and apply knowledge, one needs information and therefore information needs to be imparted from the source to the recipient. This implies that although information may exist in abundance, an individual has to use it in order to take advantage of its value on one hand and to be 'wise' on the other hand. Information skills are important for us to meet the present challenges that involve the expansion of learner's minds as well as the acquisition of knowledge and skills (Ungku Aziz, 1994). In Malaysia, the literacy rate (ability to read and write) is very high among the people but their IL is very low. It has proven that students, entering the universities, despite the high academic results have low literacy level, resulting in their inability to progress in the new academic environment which focuses among others, self-learning and research, contrary to the *teach, talk and board* techniques. Information is expanding at an exponential, unprecedented rate, and enormously rapid strides are being made in the technology for storing, organizing, and accessing the ever growing tidal wave of information. In addition to that, several factors need to be seriously addressed, including (a) their knowledge in information, information sources, organization and retrieval, utilization and presentation are still poor and this have been result of less emphasis given on IL in the past, (b) this problem is compounded by the fact that there still in existence of low literacy levels even among the academic staff, (c) the likelihood has been the tendency to plagiarize or in short, rampant practice of cut and paste syndrome, (d) the cultural and educational opportunities available in an average community, for example, are often missed by people who lack the ability to keep informed of such activities, (e) lives of information illiterates are more likely than others to be narrowly focused on second-hand experiences of life through television. (f) to take advantage of such benefits, people-as individuals and as a nation-must be information literate. When opinions are biased, negative, or inadequate for the needs at hand, many people are left helpless to improve the situation confronting them, and (f) to be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.

One underlying factor that affects the creation of an information literate society is the educational system and the library system beginning from the school level. Achievement of critical thinking may depend on the following components, regarded as important determinant of achieving information literacy as illustrated in Figure 1.

4. School Libraries and Resource Centre

There has been an evolutionary change in the educational philosophy and teaching/learning methods in the school curriculum. These changes are also reflected by the new roles of school libraries which have prompted various labels of media centre, learning resource centre, or school resource centre, replacing the conventional name of school library. Moreover, the multi-dimensional expansion of information media that are being integrated as learning materials has called for a transformation of the role of the school library and viz the school librarians. The term resource centre is nothing new but the development is slow and varies from school to school and essentially an urban school phenomenon. School librarians are expected to be proactive agents of change in the learning process, amidst the changing roles of the school library. Moreover, not all schools treat the new media as an integrated part of the library but as an additional facility. School library and media centre as an integral part of the school system can play an important role in the development of information literacy abilities among students. Two strategies can be employed, namely (a) paradigm shift

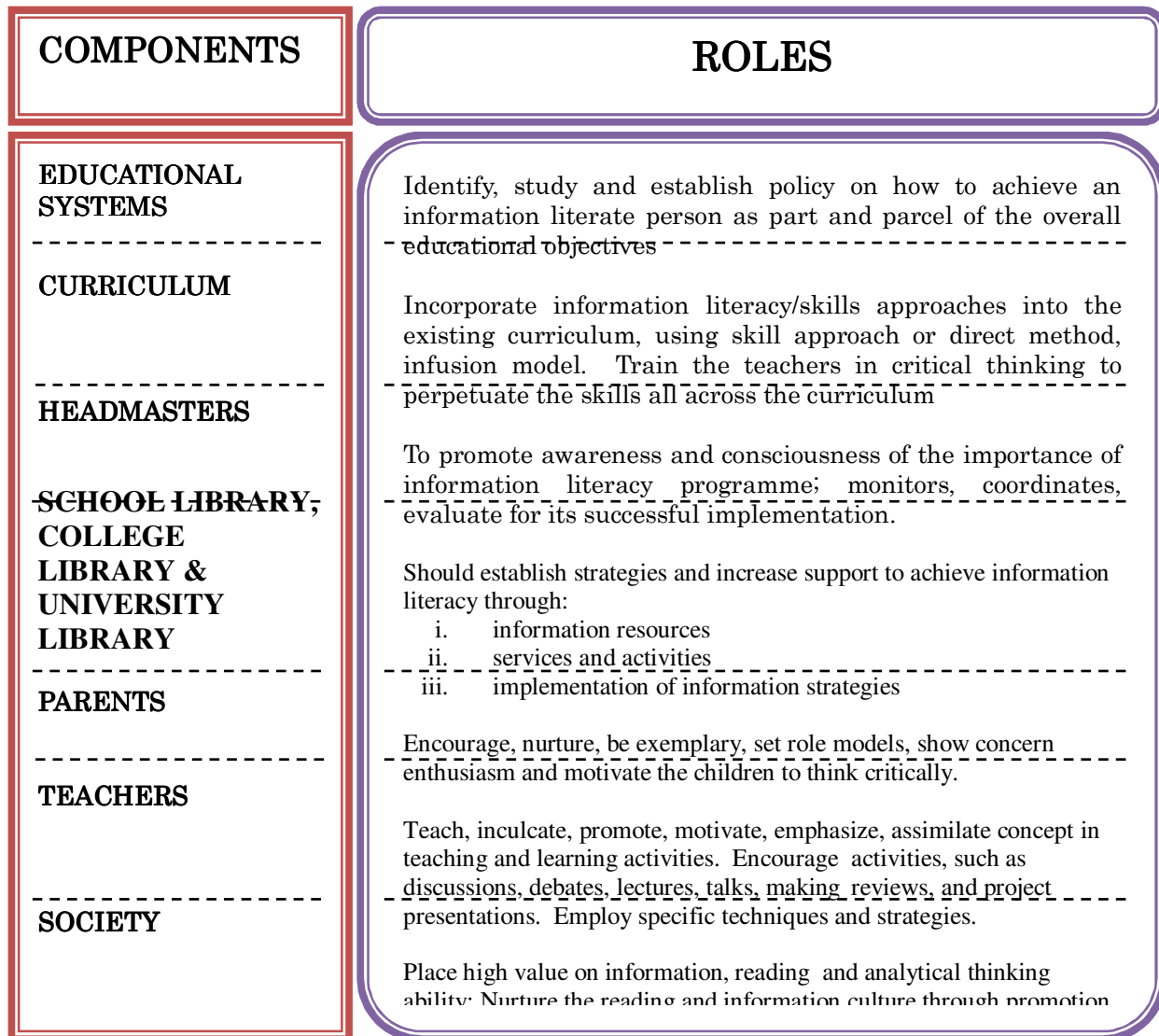


Figure 1. Components influencing a critical thinking society

in school libraries management - employment of professional librarians, supported by adequate staff and allocation, with physical facilities provided according to standard, and (b) information skills programme - ability to find, utilize, process, and present information. A number of research that have been done, including at the PhD level which indicated that there is a positive relationship between academic achievements, improved language, reading, quality school library media service (information skill programmes). This is because a good library media service could enhance the quality of education.

5. Teachers and Teachers Training

Despite the development of advanced instructional technologies, teachers remain the main resource in the educational system. This has bearings on the manner of training given at the teachers' training centres whereby prospective teachers should be given emphasis on the importance of nurturing information literacy, in addition to the cognitive input. Studies made by Friel (1995) suggested ways in which educators can provide learning experiences that will help prepare students,

regardless of their achievements levels, to access, evaluate, and use information. Teachers should try to increase the students' intellectual capability by teaching them how to learn, analyze, and evaluate information (and think for themselves). Teachers should also use interpersonal relationships with the learners and move according to individual pace. Huston (1983) noted that, "in a participant-centred classroom, student learners must feel encouraged to operate from their own domain of experience, rather than moving immediately into that of the educators' experience."

The school should be instrumental to the inculcation of reasoning and problems-solving skills. The two elements that should be the major objectives are "presenting information and developing thinking skills," and these major objectives must be represented in the management of school classrooms, curriculum, and testing programmes. The contents, goals and objectives of the schools and the time spent should not only lead to the quality education but also the learning outcomes that would ensure reading, information and critical thinking skills. The school programme should therefore be remodeled, stressing on the "higher-order cognitive concepts and strategies instructional learning and information skill approaches. Information leads to thinking and therefore reading should be continued and pursued during the post-educational periods. The information may cover different areas of interest as well as related to the career. It would not be a bad idea to have home libraries and also encourage the setting up of libraries at the office. Continuous education and training, attending conferences, seminars, and workshops are useful ways of keeping abreast with information on specific areas. An employee would undergo a full-fledge training as an on-going process and it is done in-service. It can be summarized that the two phases of the development of information skill, one during the educational years, and the other at the post-educational periods should constitute a life-long process in the individual intellectual development and critical thinking process.

The school library system should be client-centred, and support the cultivation of information literacy efforts. The introduction of systematic information skill and programme of critical thinking will require that the management/authorities recognize the importance of increasing the critical abilities in the short as well long terms. With some refinements, existing methods of information skill could be improved. For example, a research by Todd et al. (1992) at Marist Sisters' College, Woolwich managed to establish a school-wide commitment to the practice of integrating information skills into the curriculum at an evolutionary phase and facilitate this by collaborative planning and teaching. The findings revealed that information skills have a positive impact on the teaching process. Implementation of a broad-based programme of critical thinking in classrooms and libraries however is contingent upon the development of more sophisticated methods for adequately measuring the total output of the programmes. With the rapidly changing information formats, both librarians and users require on-going learning and thus making information skill necessary. In a primary school level, students should prepare themselves for higher learning and life after schools. Students should be given the opportunity to learn the appropriate skills at this level. However, Balakrishnan and Saad (1994) reported in their case study, that there was much evidence on the acceptance and application of educational technology at the school level than the traditional teacher-centered methods which focused mainly on delivering subject contents. There was no appropriate approach on information skills being done. Most of the teacher-learning activities were on the basis of stimulus-response bonds. The findings explained the students' inability to analyze, synthesize, evaluate and extrapolate as reported by the Malaysian Examination Council for STPM (Malaysian Higher School Certificate) 1992.

How to make information and libraries relevant to teaching and learning process and move towards the development of critical thinking in a person are always the desired objectives of our educational

system. However, steps and effort that have been taken must be consonant with these objectives. Information literacy programme should always be incorporated in the educational years and continued during the post-educational period.

Table 1. Information skill development

INFORMATION SKILL PROGRAMMES	PRIMARY YEARS	SECONDARY YEARS	TERTIARY YEARS
Library Orientation	Basic level	Mid-level	Advance level
Library Instruction (Library Services and Collections), Sources of Information	Basic level	Mid-level	Advance level
Bibliographic Instruction (Index, Abstracts, Reviews.	Basic level	Mid-level	Advance level
Information Technology Skills (IT), O CD-ROMs, Internet, etc.)	Basic level	Mid-level	Advance level
Term Paper Clinic, Research	Nil	Basic level	Advance level
Inculcation of Reading Skill/Habits Remedial Reading (Problems in reading) Presentation skill	Basic level	Mid-level	Advance level

The information literacy programmes will help increase the searching of information skills, including digital information of users and library users. In addition, it provides the picture of the importance of information to all member of the workforce. It also provides the exposure and effective instruction on how to access information, library and information services. The ability to effectively apply the skills that would enable students and library users to realize their potential as informed citizens. Another good point of such a good program is the ability to think critically and solve problems, to observe rights and responsibilities relating to the generation and flow of info and ideas, and to appreciate the value of literature in an educated society

Early in the career of an individual, he or she was expected to successfully study and digest a huge amount of information in order to become effective. As he/she become increasingly successful, he/she will need to digest huge number of documents; data and reports just to do his/her job, as well as assimilating all the information needed to keep up-to-date in the field. As illustrated in Table 1

some examples of specific information skill programmes that could be undertaken at different levels are Library Orientation, Library Instruction, Bibliographic Instruction, Library Skill (How to use the Library) and Information Skill Instruction/Information Literacy. In order to reinforce the above programmes, it is also crucial to provide the one-on-one instruction at all time (at the reference desk) as a form of reinforcement. The library and information skill course should also be included as part of the requirements in college and university curriculum.

Information and knowledge is regarded as a critical factor in today's k-economy because it can contribute significantly towards making individuals more analytical of their environment and their well beings. Inadequate information or information poor may lead to ignorance, obsolescence, bias, and prejudice which are the traits of an uncritical person. Such traits may pose a danger to the well-being of a society at large. Moreover, in current globalised world, it is the goal of the government to develop workers who are knowledge workers and this call for their ability to access, retrieve, use, repackage and utilise information and knowledge. It is therefore imperative that the education curriculum at all levels should include information skills programmes/course, with the objective of inculcating positive information and knowledge culture, not only to attain excellence but in preparation of the currently needed knowledge culture in the workplace. However, if professional librarians believe that they are part and parcel of the educational process, they should take advantage of their expertise and play a role that could help mould individuals into information literate persons.

6. Conclusion

An increased emphasis on information literacy and resource-based learning would manifest itself in a variety of ways at both the academic and school levels, depending upon the role and mission of the individual institution and the information environment of its community. Producing information literate society should begin as early as pre-school years. It will require that schools and colleges appreciate and integrate the concept of IL into their learning programmes and that they play a leadership role towards achieving this goal. Textbooks, workbooks, and lectures must yield to a learning process, based on the information resources available for learning and problem-solving throughout people's lifetimes, to learning experiences that build a lifelong habit of library use. Such a learning process would actively involve students in the process of knowing when they have a need for information, identifying information needed to address a given problem or issue. In fact, a number of universities, such as the University of Malaya have long introduced a compulsory credit course in IL. Today's student lives and learns in a world that has been radically altered by the ready availability of vast stores of information in a variety of formats. The learning process and the information search process mirror each other. Students actively seek to construct meaning from the sources they encounter and to create products that shape and communicate that meaning effectively. The new curriculum should offer the wider window of opportunity to connect learning with meaningful experiences. In collaboration with all classroom teachers, the library media specialist focuses on student involvement, activity and action. Teaching facts is a poor substitute for teaching people how to learn, i.e., giving them the skills to be able to locate, evaluate, and effectively use information for any given need.

It is therefore recommended that curriculum structure should not solely emphasize on textbooks but also other formats, such as AV, radio and TV programmes, and computer software. Students would be able to apply various information-handling skills, a reflection of life-long learning skills. Libraries and resource centers play a big role in meeting this goal, and should be well equipped with adequate budget, services and activities. Libraries which provide a significant public access point to such

information and usually at no cost must play a key role in preparing people for the demands of today's information society. Also, the objective of the library should be in line with that of the educational system, and the standard of school libraries system, that is to aspire for critical thinking patrons. The school library services should be managed by professional staff (just like the provision of one professional counselor to every 500 students) and adequate number of support staff. Meanwhile, the educational approach should emphasize on higher cognitive level, like analysis, synthesis, application and evaluation, not the lower level cognitive, such as memorization, remembering and understanding. Systematic information skills which facilitate critical thinking strategies appear to be most effective with students and should be imbued in the school/college curriculum. Research should be done, for example the experimental form on the effectiveness of the information literacy programmes. Curriculum should be structured to allow the use of information in the resource centre for learning and teaching discourse. Teachers' should inculcate information literacy through the support of the right information and knowledge. Students' assessment should not only be directed towards the examination but also presentation of their learning, such as projects and term papers. Professional librarians should actively be involved in nurturing the society at all levels the reading culture and research with the objective of promoting critical thinking. Teachers should work consistently with school librarians, media resource people, and instructional designers both within their schools and in their communities, to ensure that student projects and explorations are challenging, interesting, and productive learning experiences are achieved.

Information literacy is a survival skill in the information and knowledge age. Instead of drowning in the abundance of information that floods their lives, information literate people know how to find, evaluate, and use information effectively to solve a particular problem or make a decision-, whether the information they select comes from a computer, a book, a government agency, a film, or any number of other possible resources.

References

- Lipman, Mathew (1983). *Thinking in Education*. Montclair, New Jersey, USA. *Institute for Critical Thinking* Resource Publications.
- Hassan, H. (1994). "The Seeds of the Islamic Civilization," *Echo of Islam*, No. 133, September 1994: 10.
- Omar Mohd. Hashim (1990). "Towards Excellence in the 21st Century." in Free Teachers' Union (IFFTU) Regional Conference for Asia an the Pacific Region, Kuala Lumpur, 5 - 7 Novemeber 1990.
- Houston, M. M. (1983). "Rethinking Our Approach for Research Instruction," *Research Strategies*, 1(4), 1983:185:187.
- Information Skills in the School: An Introduction*. NSW: Department of Education (1989)
- Stibic, V. (1982). *Tools of the Minds: Techniques and Methods for Intellectual Work*. Amsterdam: North-Holland Publishing Company.
- Zevin, Jack (1993). *Managing Schools for Quality Learnings: The Encouragement of Critical Thinking in School Classrooms*. Malaysia: Institut Aminudddin Baki.
- Asiah Abu Samah (1992). *Progress and Development of Educational Technological Towards The 21st Century (Keynote Address)*. In Asia Pacific Educational Technology Convention: Malaysia

- Educational Technological Association at Universiti Sains Malaysia 25-28 June.
- Balakrishnan M., and Saad A.R. (1994). *Acceptance and application of educational technology at the school level*. Asian Educational Technology Convention at Hotel Seaview Langkawi Island, Kedah Malaysia. 7-11 August.
- Baumbach, D. (1995). The school library media specialist's role in instructional design: past, present and future. In G.Anglin (Ed.) *Instructional Technology past, present and future*.(pp.248-253).
- Bens, S. (1999). Technology and the changing role of the teacher-librarian. Retrieved Aug. 01, 2005 from the World Wide Web:http://www.sd43.bc.ca /libraryresources/lrc_tech.htm
- Cavil, P.(1999). *Information Power: Because student achievement is the bottom line*. Advocacy workbook.
- Donovan, M. Suzanne, John D. Bransford, and James , W. Pellegrino (eds.). (1999). *How People Learn: Bridging Research and Practice*. Washington, D.C.: National Academy Press.
- Eisenberg, M., Berkowitz, B. & Murray, J. (2000, November/December). Applying the big 6 skills and information literacy standards to Internet research. *Book Report, 19, 33*
- Friel, I.D.L., (1995)., The Information Research Process with Low –achieving Freshmen Using Kuhthau's Six-Stage Model and Intervention that Facilitate the Process (Carol C. Kuhthau). (Doctoral dissertation, University of Lowell. (1995). *Dissertation Abstract.A-56/05, p. 1566, November*.
- Kuhlthau, Carol C. (1995). The Process of Learning from information. *School Libraries Worldwide*, vol.1, no.1.
- Leedy, P.D. (1993). *Practical Research: Planning and Design*. New York: Macmillan.
- Lenox, Mary F.& Walker, Michael L.(1993).*Information Literacy in the Educational Process*.The Educational Forum, Vol.57, Spring.
- Marais, J.J. (1992). Evolution of information literacy as products of information education. *South African Journal of Library and Information Science*, 60(2): 75-79.
- Moore, P. and Trebilcock, M. (2003). *The School Library Team: What Does it do to Influence Teaching and Learning?* Monograph no.2, Auckland: Auckland College of Education.
- Taylor, Terry.(2007). *100% Information Literacy Success*. New York: Delmar Cengage Learning
- Todd, R.J.et al., (1992). The Power of Information Literacy: Unity of Education and Resources for the 21st Century. *Paper presented at the Annual Meeting of School Librarianship,21st*, Belfast, Northern Ireland. United Kingdom, July 19-24..
- Todd, R. (2001). *Transitions for Preferred Futures of School Libraries Knowledge Space, not Information Place Connections, not Collections Actions, not Position Evidence, not Advocacy*. Retrieved Aug. 01, 2005 from the World Wide Web:<http://www.iasl-slo.org/virtualpaper2001.html>
- Todd, R.(2003). *Learning in the Information Age. School Opportunities, Outcomes and Options*. Retrieved Aug. 01, 2005 from the World Wide Web: <http://www.iasl-slo.org/conference2003-virtualpap.html>
- Ungku Aziz Aziz, (1994). *Human Resource Development: The Education and Training Aspect, in Malaysia's Vision 2020*, edited and Introduction by Ahmad Sarji Abdul Hamid, Chief Secretary of the Government of Malaysia, Selangor: Pelanduk Publications
- Ziauddin Sadar. (1979). *Islam Outline of a Classification Scheme*. London: Clive Bingley.