Evaluating Information Skill in Secondary School Students as a Contributor in Competency Based Education

Amna Yousaf[*] and Mumtaz Akhter[**]

Abstract

Information skill is known as a metacognitive ability. It is considered as an ability to understand the need of information, ways and sources to attain that information. It is considered to be a mandatory attribute for young learners now a days. In this era of goal oriented education, students are expected to learn this kind of skill to compete in challenging professional life. In Pakistan, competency based curriculum had been introduced and implemented in 2007. Students were assumed to be equipped with this modern skill. Major purpose of this study was to evaluate this skill in secondary school students. Instrument used for the purpose of data collection was adapted from Information literacy skills continuum, kindergarten-grade12 (1998). Data were collected from the secondary school students of science, arts and computer science. Collected data was analyzed through SPSS by using descriptive statistics. Results of the study showed that students were fully aware of information skill and they showed capability to use it.

Keywords: Information skill, Competency based curriculum, Metacognitive ability

[*]PhD Scholar, Institute of Education and Research, University of the Punjab, Lahore.
Email: amnayousaf94@yahoo.com
[**] Professor, IER, University of the Punjab, Lahore. Email: drmumtazakhter@hotmail.com

Introduction

Information skill is an evolving idea to be learned from last two decades. It is considered as a prerequisite for most important attributes e.g., critical thinking, problem solving and scientific literacy. In its early period, this skill has been taught as library instruction but now it has become a key component of teaching and learning. While defining information skill researchers have commonly used terms of; information seeking, being aware of information sources, capability to evaluate and select information, aware of media usage, authenticity of information, information ethics, effective communication of information etc. (Dunlap & Lowenthal, 2011).

Defining in simple words information skill isa rational structure for identifying, finding, understanding, evaluating and using information. It comprises on shaping the nature and degree of desired information, retrieving information efficiently and competently, assessing critically information and information sources, integrating particular information with the already known information/knowledge, using information efficiently to complete a specific task, understanding the legal and ethical issues of the use of information and information media (Claxton & Carr, 2004).

Information skill is considered an essential skill for preparing individuals for life. It is more than library instruction (Marcum, 2002). This definition extends its circle from teaching and learning towards life skill.

Presidential Committee on information skill of American Library Association (ALA), in 1980, issued a report highlighting the demands and requirements of the information age. Committee further proposed that it is need of time to bring reforms in our teaching learning process. This is needed to empower students with the skill which may give meaning to students' learning. Development of this skill will enable students to pursue knowledge independently even outside the classroom setting. These reforms will bring a drastic change into the classrooms. According to the report, developing such skill among students will make classrooms and learning more interactive and meaningful (ALA, 1980).

According to Eisenberg and Berkowitz (1990), information skill is a type of skill needed to know and access information, but also applying that information for problem solving. When student encounters a problem which is different from the situations he has dealt already, this indicates that student required new information to solve the problem. Many researchers have analyzed the students' behavior and skill regarding information use e.g. (Kuhlthau, 1993; Marchionini, 1989; Oliver & Perzylo, 1994; Perzylo & Oliver, 1992; Small & Ferreira, 1994; Stripling & Pitts, 1988; Yang, 1997).

It has remained a focus of researchers to study students' behavior when they are required to solve any information-based problem. They summarized six ways to address the problem in hand, those ways are: defining, identifying, finding, evaluating, organizing and using.

1. Defining- knowing
2. Locating- identifying the required information
3. Assessing- finding the related information
4. Evaluating- judging the information according to the requirement
5. Organizing- arranging the information to make it ready to use
6. Use- communication the information in an appropriate way

The six behaviours/levels of information skill according to the Big Six Information Skills (Eisenberg & Berkowitz, 1990) are broadly divided into three competencies, known as information competencies, which are:

1. Access to the information- this includes knowing about the information and identifying the information or information resources.
2. Analysis of the information- assessing the credibility or authenticity of the information and judging that information according to the set criterion.
3. Usage of information- this includes the organization of the information according to the need and audiences, ethics of information use and ways to communicate the information.

Information skill is regarded as much more than a technological competence or on-line research. It inspires critical thinking and expression of that thinking in the perspective of the progressively wide amounts of information now accessible on multiple technologies. Today students need the skill that can enable them not only to access and navigate the information but also select reliable and appropriate information to think critically and independently. If students can access and understand the information it becomes easy to create their own ideas and use these ideas to excel in their upcoming academic career and eventually to their professions (Dunlap & Lowenthal, 2011).

Growing trend of independent learning or distance learning has made learning information skill more crucial to be part of this growing era. As internet and other information technologies increased the amount of information, it has become more crucial for the learners to know and develop the ability to find out right and authentic information (Adler, 1999).

Competency Based Education and Information Skill

Main idea behind competency based education is training individuals (students) who not only know things but they are also able to do required jobs in an efficient manner. This refers towards more functional and practical aspect of teaching learning process. According to this idea education and curriculum is to empower individuals to get hold of their education and training. They are able to access and deal with knowledge and skills outside the formal settings of the classrooms. Currently implemented curriculum in Pakistan is also focusing on certain competencies. For example, core competencies till secondary school level are focused to develop:

- Critical thinking
- Problem solving
- Logical reasoning
- Scientific literacy

These competencies are expected to give students a life skill and an attribute of independent and lifelong learning (National curriculum Pakistan, 2007).

Objectives of the Study

Objectives of the study were to:

- Evaluate the information skill in secondary school students.
- Explore information skill of the secondary school students from different fields of study (science, arts, computer science).

Methodology

The present study was quantitative and survey research. The study was focused to measure information skill of students studying at secondary school level. This study also concentrated on the students studying at different fields of study e.g. science, arts, computer science.

Population

Students studying in public sector schools at secondary level in the Lahore district were population of the study.

Sample and Sampling

Two secondary schools, one girls' school and one boys' school, from Lahore district were randomly selected. From each school one section of 9th class and one section of 10th class from arts, science, computer science were selected randomly.

Instrument of the study

Instrument of the study was adapted constructed on Information literacy skills continuum, kindergarten-grade12 (1998) based on nine information skill standards. Questionnaire consisted of 22 statements measuring six levels of information skill. Those levels included knowing/defining, locating, selecting, organizing, presenting, and evaluating the information skill.

Data collection

Data were collected from 400 secondary school students both male and female studying in science, arts and computer science.

Data Analysis

To evaluate the information skill of secondary school students, collected data were analyzed by using descriptive statistics through Statistical Packages for Social Sciences (SPSS). Results were as follows:

Table 1

Gender and field of study Cross table

Gender		Field of study			Total
		Science	Arts	CS	
	male	60	60	80	200
		30%	30%	40%	100%
	female	60	60	80	200
		30%	30%	40%	100%
Total		120	120	160	400
		30%	30%	40%	100%

Table 1 indicates the number and percentage of students participated in the survey from different fields of study. 30% males from science, 30% from arts and 40% from computer science has participated in the survey. Total number of female students was science 30%, arts 30% and computer science 40%.

Table 2
Evaluation of Information skill (IS) of secondary school students

Sr no.	Levels of IS	N	Mean	SD
1	Defining	400	3.8875	.92709
2	Locating	400	4.4000	.46186
3	Selecting	400	4.4475	.61903
4	Organizing	400	4.5200	.54447
5	Presenting	400	4.3742	.61291
6	Evaluating	400	4.4483	.55104

Table 2 shows that students are, most of the time, able to define, fist level of information skill (IS), the problem as it is obvious from the results (M=3.8875, SD=.92709). They think they are always able to locate the (M=4.4000, SD=.46186) information related to the defined problem. Students are very good in choosing relevant information as it is clear from the mean (M=4.4475, SD=.61903). When it comes to organize the information in a logical manner (M=4.5200, SD=54447) students are always able to organize information very well. They can also present information in a suitable way (M=4.3742, SD=.61291). Students claimed that they can evaluate the worth of the information to judge either they have achieved certain target or not (M=4.4483, SD=.55104).

Table 3
Information skill and Gender

Variable	Mean	t-value	Sig.
Defining		.215	.830
Males	3.88		
Females	3.90		
Locating		.757	.449
Males	4.42		
Females	4.38		
Selecting		.727	.469
Males	4.43		
Females	4.47		
Organizing		.061	.951
Males	4.52		
Females	4.52		
Presenting		.136	.892
Males	4.37		
Females	4.38		
Assessing		.181	.856
Males	4.44		
Females	4.45		

Table 3 shows difference of Information skill level in gender. It was explored by using independent sample t-test. At level one of information skill, defining value t=.215 with the significance value p=.830, second level of information skill locating t=.757 with the p=.449, third level of information skill selecting t=.727 with p=.469, fourth level of IS organizing t=.061 at p=.951, fifth level presenting t=.136 at p=.892 and sixth level of information skill assessing t=.181 at p=.856 are not according to the criterion p=.05. This means there is no statistically significant difference in the information skill of male and female students.

Table 4

Information skill and field of study

Variable	Mean	F-value	Sig
Defining		1.497	.225
Science	4.00		
Arts	3.87		
Computer science	3.81		
Locating		1.524	.219
Science	4.43		
Arts	4.44		
Computer science	4.35		
Selecting		7.700	.001
Science	4.27		
Arts	4.55		
Computer science	4.51		
Organizing		6.743	.001
Science	4.37		
Arts	4.59		
Computer science	4.58		
Presenting		5.755	.003
Science	4.29		
Arts	4.29		
Computer science	4.50		
Assessing		3.814	.023
Science	4.38		
Arts	4.56		
Computer science	4.42		

Table 4 indicates the results of difference in information skills of different areas of study (science, arts, computer science). One way ANOVA was applied to find out the difference in the levels of information skill of the students studying in different field of study. In level one defining (f=1.497, p=.225) and second level locating (f=1.524, p=.219) is not according to the set criteria (p=.05) of significance which means there is no significant difference between the skill of the students in various study programmes. At level three selecting (f=7.700, p=.001) fourth level organizing (f=6.743, p=.001) fifth level presenting (f=5.755, p=.003) and sixth level assessing (f=3.814, p=.023) are less than the set criteria p=.05 which means there is statistically significant difference in these levels of information skills of the students in different areas of study.

Discussion and conclusions

Results of the study indicate that students are well aware of the information skill. They also have the knowledge of the ways of finding information. Critical analysis of results highlights the major issue that students are weak at defining or knowing the problem or task they are given. They feel it difficult to understand the nature of task. All other levels of information skill depend on this first step. If student cannot understand the task/ problem accurately then there are chances they would be unable to fulfill the task as it is required (Dunlap & Lowenthal, 2011).

There was found no difference of information skills in males and females. This result is also confirmed in some previous studies (Hargittai, 2002; Whitmire, 2001). Rehman and Mohammad (2001) did not find any significant difference of students' information skills and their gender.

There was found significant difference in levels of information skill of students on the basis of area of study. Students studying computer science and arts had better information skills than the students in science subjects. Tahir, Mahmood and Shafique (2010) confirmed that students of ICT male more use of technology and online resources as compared to the students of other fields of study.

Furthermore, it is clear from the study teaching and learning of information skill can be helpful to attain those competency standards, as mentioned in curriculum, more easily. Equipping students with such kind of skill will enhance the chances of developing individuals as more competent professionals. It will also nourish independent learning or more popularly known self-learning.

Overall results prove that secondary school students do have information skill. They need training and guidance to use this skill for constructing knowledge and extending meanings from the acquired knowledge. They should also be offered such courses which can help to enhance their skills. On the other hand teachers should also be trained in this regard. Trained teachers who understand this skill themselves better are in good position to teach these skills.

The study focused on evaluation of information skill of secondary school students only. Results revealed that inculcating this skill in curriculum can enhance students' learning. Teachers and policy makers can review curriculum and should consider addressing this skill explicitly in curriculum. For example, teachers might not teach information skill directly but they can assign tasks and assignments to make them learn. This activity can also help students to know how to avoid plagiarism etc. An experimental study can be helpful in this regard. Furthermore, various strategies can be adopted to develop and assess information skill, for instance, one-on-one interactive lessons, online sessions and encouraging the use of e-libraries. Such strategies can help students in learning and managing information.

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