

# Awareness level of research methodology of the faculty members and students: A critical study as a first step to information literacy

**Shesh Mishra**

Banasthali University

Rajasthan – 304022.

Email : shesh2709@gmail.com

## ABSTRACT

*The purpose of this paper is to report the results of a study of assessment of awareness level of research methodology among the higher education groups. During 2009-2010 surveyed the faculty members (FM), research scholars (RS) and post graduating students (PG) of Banasthali Vidyapith (BV) and University of Rajasthan (UR) through self administered questionnaire. The paper finds that the assessment method had real strengths especially in terms of validity. It was also economical and efficient. Higher education institutions knew what they were expected to do and where they needed to put in effort. The assessment method has been carried out once with faculty members, research scholars and post graduating students of above mentioned universities, so the findings can only be regarded as interim. Institution can include research methodology in the syllabus in those faculties where research methodology is not in curriculum. There is a shortage of publications that report the results of the use of faculties for the assessment of information literacy.*

**Keywords:** Information literacy (IL), Assessment, Higher education, Research methodology.

**Library of Congress Classification Number:** Z699

## 1. INTRODUCTION

The abundance of information requires education in retrieving, sorting and using information, not only in relation to the needs of students but also as in relation to the huge investments made by libraries in databases, electronic journals and advances library systems. To foster the educational role of the library the training and motivation of its "human capital" are crucial for success. The challenges are many: lack of national policy, lack of visibility at the policy making level, lack of awareness of research methodology, divided worlds of universities and libraries and lack of appropriate continuing education are some of the problems facing by academic libraries. The explosion of information has created serious implications to the academic and in the society in general, thereby changing the directions of most libraries around the world. This new information environment has created emerging challenges to libraries and information centers as well as to individuals wherein they must be information literate or must possess the necessary information skills in order to access the proliferating information and guarantee their survival in the information age.

Transferring new knowledge created through research into teaching is a primary task in any higher education institution. In India, this area has gained a wider attention with the growing emphasis on student learning approaches, quality assurance procedures and research funding mechanisms. The link between research and teaching is not automatic. Thus, it needs to be formally created in higher education departments in order to achieve a productive relationship and to manage research activities of university staff with their teaching duties.

Over the past decade, new dynamics have emerged in each of the key domains of higher education, research and innovation (HERI), which are the integrated base for the Forum's activities. In higher education, these include: (i) demand; (ii) diversification of provision; (iii) changing lifelong learning needs; and (iv) growing communication and information technology (CIT) usage and enhanced

networking and social engagement, both with the economic sector and with the community at large. In scientific research, the tension between basic and applied research is the core issue, thus linking to the “think global, act local” challenge.

Today, systems of knowledge production cover a vast range of entities *inter alia* universities, public laboratories, research centres and think-tanks run by policy and civil society groups, industry and the private sector, and the military complex.

## 2.0 HIGHER EDUCATION, RESEARCH AND INNOVATION: THE KEY AXIS

The research function of academia remains a prime source of knowledge and innovation at national, regional and international levels. Yet, over the past decade, most industrialized states have been obliged to address the double challenge of providing wider access to postsecondary education and training and ensuring adequate investment in high-level research. This is proving to be a delicate balancing act, which hinges on visionary policies and a more diversified funding base.

Governments pursue reforms to build world-class systems of higher education, which assure quality in both research and teaching. In contrast, the term “World-Class University” tends to denote research-oriented institutions, although this should also recognize those who achieve excellence through innovative approaches to learning. For universities wishing to enhance their research reputations, the challenges continue to grow. Today, some twenty-two of the world’s elite twenty-five research universities (known as “Super RUs”) are located in one country, the United States of America (USA).

### 2.1 MAJOR CHALLENGES FOR RESEARCH

Current issues facing the research function and its environment include equity; quality; relevance; ownership; and international networking. An ever-growing number of nations of varying size have now given priority to developing their knowledge base through higher education, research and innovation, and to commit the necessary resources to this goal. Success stories are becoming more common in all regions, and they are characterized by specific indicators: Innovative policies in higher education and research and in Science, Technology and Innovation (STI). They will to improve and profile the necessary infrastructure, including universities. Efforts to train and retain and attract highly-skilled human capital (HC). Increased levels of investment in research and higher education<sup>1</sup>.

### 2.2 RESEARCH METHODOLOGY

Research is an essential and powerful tool in leading towards progress. A significant research leads to progress in some fields of life. From the very creation of human habitation on the earth man is curious to know more and more. So the mysteries of nature could not be left back. He tried his best to make those mysteries into notice. He wanted to establish truths by applying his cause and effect method. Advancement is the sole nature of human activity. So he devoted his time in Education to make his research progressive. It is the age of science and technology. It is possible due to the advancement in the field of education. Each year new products, new facts, new concepts, new ways of doing things come into our lives due to ever-increasing significant research in the physical, the biological as well as social and psychological fields.

Research, actually we mean:

1. Research is an attitude of inquiry. It is not a mere theorising but an attempt to elicit facts.
  2. Research is a systematic and scholarly application of the scientific method. As we use tools and techniques and follow steps in scientific method we must follow the same steps and procedures in research.
  3. Research is essentially a state of mind—a friendly, welcoming attitude towards change.
- For the modification of traditional steps and procedures research helps in proving new ideas, new techniques for new evolutions. It is a refined and systematic technique for obtaining a more adequate solution of a problem.

So every letter of the term "RESEARCH" has a special and dignified meaning which stands as:

R—Rational way of thinking.

E—Expert and Exhaustive Treatment.

S—Search for solution.

E—Exactness.

A—Analytical Analysis of Adequate Data.

R—Relationships of Facts.

C—Careful recording, Critical observation, Constructive attitude and Condensed and compactly stated generalizations.

H—Honesty and hard work in all aspects of the treatment of data<sup>2</sup>.

### 3.0 INFORMATION LITERACY

Information literacy combines skills or competencies that together make for effective use of information. As the professional body responsible for the information profession, CILIP (Chartered Institute of Library and Information Professionals) sees a need to define the term in a way that is understandable by all information-using communities in the UK. In an era of lifelong learning, this effectively means that information literacy has relevance for all ages from primary school to senior citizens. The concept of "Information Literacy" was first introduced in 1974 by Paul Zurkowsky, President of Information Industry Association<sup>3</sup>. Information literate people understand more than how to find information, they understand its limitations and the need to examine how they use information, and they understand how to manage and communicate information. Information literacy is an essential and discrete dexterity – everyone relies on information every day. Perhaps one important point that can be drawn out, and which it is useful to emphasize here, is that Information Literacy is about information in all forms. Information may come from another person, from a paper-based magazine or book, report or newspaper, from a digital source such as a database, a search engine or a e-book accessed through a computer, or it may come from any other form of media: film, video, DVD, radio, television, etc. The term has now flourished and throughout the literature, one comes across various definitions, alternative terminologies, explanations and clarifications for information literacy<sup>4</sup>.

However, according to (Mutch,1997) the use of the term information literacy, generated by both computing and library science literature, is found wanting because it does not fully address the skills associated with the process of knowledge creation. In his view information literacy must be placed above computer literacy because, whereas the latter focuses on the ability to use computer, the former is strongly linked to lifelong learning<sup>5</sup>.

(Candy,2002) recognizes the difficulties when comparing information literacy to ICT literacy in an effort to identify distinguishing features between these two concepts. He argues that from the perspective of skills requirements, those needed to access and retrieve information are completely different from the competence required in assessing the information. However, a degree of overlap between these two processes occurs because 'information in the digital environment is at least partly an artifact of the technology itself'. By this he means that the unpredictable nature of web pages, for example, is intrinsically linked to the knowledge of web technology and has impact on the skills needed to assess the reliability of such a source. He concludes that 'the evaluation of information in the digital environment is a challenging matter, and one that cannot readily divorced from the technological competence of the enquirer'<sup>6</sup>. (Kirk,2002) by contrast, asserts that the nature of information literacy is multifaceted and that this concept only be defined by placing other forms of illiteracies , including tool literacy, resource literacy, social-structural literacy, research and publishing literacy, as its subcategories<sup>7</sup>.

(Moore,2002) acknowledges that the interpretation of information literacy varies considerably, from the attainment of computer literacy to the development of library skills, and it also includes the control of information and the establishment of knowledge construction. To counteract this multitudes of perspectives, she proposes of broader description and defines information literacy as the 'mastery of

the processes of being informed'. Bruce(2002) argues that information literacy education supports deep learning based on the learner centred approach, which gives the opportunity 'to transform dependent learners into independent, self-directed, lifelong learners'. Paul(1992) in an insightful paper on critical thinking, explains that this approach entails developing an independent, lifelong learning attitude through the distinction of this type of high-order thinking from low-order rote learning, and stresses that "High-order learning multiplies comprehension and insight; low-order rote memorization multiplies misunderstanding and prejudice. High-order learning stimulates and empowers, whereas low-order learning discourages and limit the learner. Although very little instruction is deliberately aimed at lower-order learning, that type of learning most often emerges [and] few students understand what it means to think analytically through the content of a subject; few use critical thinking as a tool for acquiring knowledge [and as a result students] end their schooling with a jumble of fragmentary opinions, rigidly understood procedures, and undisciplined beliefs. They have gained little knowledge or insight. They are at best trained, not educated, not critical thinkers or persons. As a result, their adaptability, their capacity to learn on the job and in their personal and civic lives, is severely limited. Their ability to mature intellectually and morally, and their capacity and motivation to learn, are stunted. Further, Paul elaborates on the process required to become a critical thinker by promoting the use of investigation to gain long-lasting knowledge. This investigative process includes: the evaluation of an initial problem or question; the assessment and understanding of the purpose or goal of the problem set; consideration of the frame of reference or points of view underpinning the investigation; review of the assumptions made when engaging with the question; the evaluation of core concepts and ideas involved and of the principles or theories underpinning these; the critical assessment of evidence used to support the interpretations and claims and arrived at by this process and any implications generated by them.

Bawden and Robinson(2002) quote a similar approach, illustrated by the work of Gibson and Meade, to describe critical thinking within the context of information literacy. Like Paul, they refer to this term as 'a disciplined process' and identified comparable stages required to engage with critical thinking in the course of an investigation, although the emphasis here is focused on the knowledge-spiral element of this process of research. The stages identified include...asking informed questions; posing problems in various ways before attempting to solve them; examining assumptions; solving ill-structured, messy, 'real-world' problems; evaluating sources of information; assessing the quality of one's own thinking and problem solving. In practice the capacity for critical thinking is normally associated with the advanced level of the learning spectrum and with research methods, modules or dissertation work, where the emphasis on the development of independent research skills<sup>8</sup>.

#### 4.0 METHODOLOGY

The survey instrument designed by the authors as outlined above served as the primary method of data collection for this study. The survey method was chosen because of its ease of distribution and the facility with which response data could be retrieved and analyzed. It also enabled the authors to ask specific questions relevant to this study. Authors has personally distributed printed questionnaire to the faculty members, research scholars and post graduating students. Some questionnaire also sent through e-mails. In order to analyze the survey data, the authors created a database using Excel software. The creation of a database allowed the authors to sort the data along a number of axes as well as to conduct appropriate statistical tests on the data. Statistics is mathematical technique or a process of arranging, analyzing and interrelating numerical data obtained in any quantitative research. It is a tool of measurement and evaluating.

The statistical techniques used for the analysis of the obtained data were percentage and Chi-Square Test.

4.1 ANALYSIS

The purpose of the study was to assess the level of awareness of research methodology as a part of IL of FM, RS and PG students of BV and UR. Information Literacy is necessary to support successful implementation of teaching/learning in higher education institutions.

The analysis begins with profiles of the FM, RS and PG students of both the universities. Following the group profiles are the results from the investigation that address the research questions. The focus of the study was on describing the levels of awareness of research methodology to facilitating the initiation of information literacy programs to support higher education practice and enhance other learning strategies.

It is helpful to understand the structure and organization of the results. The focus is first on the demographic data and profiles of each of the three Higher Education Groups (FM, RS, PG) participating in the study. The profile of each group is presented as a part of the demographic description. Table 4.0 displays the demographic data represented by frequency and/or percent of each of the three Higher Education Groups.

4.2 DATA COLLECTION AND MANAGEMENT

Seven Hundred and Ninety Five questionnaires were distributed personally during the days between February 5, 2009 and December 22, 2009, to assure that all data were collected within the same timeframe. All data collected were returned to the researcher by December 22, 2009. The data were coded, analyzed, and entered into a Microsoft Excel spreadsheet program for maintenance and manipulation by the researcher.

Population Sample

Table 4.0

		University of Rajasthan																							
		106																							
Sta	Faculty Member				Research Scholars				Post Graduate Student																
	42				22				42																
Fac.	AH	SS	PA	FM	AH	SS	PA	FM	AH	SS	PA	FM													
	5	10	14	13	6	3	10	3	8	24	3	7													
Gen	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F									
	3	2	7	3	7	7	1	12	4	2	0	3	8	2	1	2	5	3	7	17	2	1	1	6	
		Banasthali Vidyapith																							
		201																							
Sta	Faculty Member				Research Scholars				Post Graduate Student																
	46				48				107																
Fac.	AH	SS	PA	FM	AH	SS	PA	FM	AH	SS	PA	FM													
	5	5	23	13	10	14	18	6	24	44	23	1	6												
Gen	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F									
	1	4	0	5	3	2	1	1	0	1	4	1	0	1	0	6	0	2	4	0	4	0	2	0	1

4.3 DESCRIPTION OF EACH STUDY GROUP

Two Hundred and forty One (241) self-administered questionnaires were distributed to FM of BV, and UR. The faculty surveyed Eighty-Eight or 37% responded to the questionnaire. The faculty surveyed were 53% (n=46) BV and 47% (n=42) UR. Faculty surveyed for gender-wise were 74% (n=65) female and 26% (n=23) male. Faculty surveyed for qualification were 35% (n=31) Post-Graduate, 59%

(n=52) Ph.D. and 6% (n=5) others. Faculty members surveyed for faculty-wise were 10% (n=10) Arts & Humanities (A&H), 34% (n=15) Social Sciences (SS), 42% (n=37) Pure & Applied Sciences (P&A) and 14% (n=26) Fine Arts & Music (F&M).

One Hundred and Sixty Eight (168) self-administered questionnaires were distributed to RS of both the universities. The RS surveyed seventy or 42% responded to the questionnaire. The research scholars surveyed were 24% (n=17) (4 BV + 13 UR) male and 76% (n=53) (44 BV + 9 UR) female. RS surveyed for faculty-wise were 23% (n=16) (10 BV + 6 UR) A & H, 25% (n=17) (14 BV + 3 UR) SS, 40% (n=28) (18 BV + 10 UR) P&A and 13% (n=9) (6 BV + 3 UR) F&M. The RS surveyed for university-wise were 69% (n=48) BV and 31% (n=22) UR.

Three hundred and eighty six (386) self-administered questionnaires were distributed to PG students of both the universities. The PG students surveys one hundred and forty nine or (39%) responded to the questionnaire. The post graduating students surveyed gender-wise were 90% (n=134) female and 10% (n=15) male. The PG students surveyed university-wise were 28% or n = 42 UR and 72% or n = 107 BV. The post graduate students surveyed faculty-wise were 21% or (n=32) A&H, 46% (n=68) SS, 17% (n=26) P&A and 15% (n=23) F&M.

The analysis and interpretation of the collected data has done in three ways:

- Status-wise or Designation-wise i.e. Among the FM, RS and PG Students.
- University-wise i.e. Between BV and UR.
- Faculty-wise i.e. Among the A&H, SS, P&A and F&M.

#### 4.4 AWARENESS OF RESEARCH METHODOLOGY

**Objective:** To study in the context of the awareness of the research methodology among the users.

##### 4.4.1 STATUS-WISE

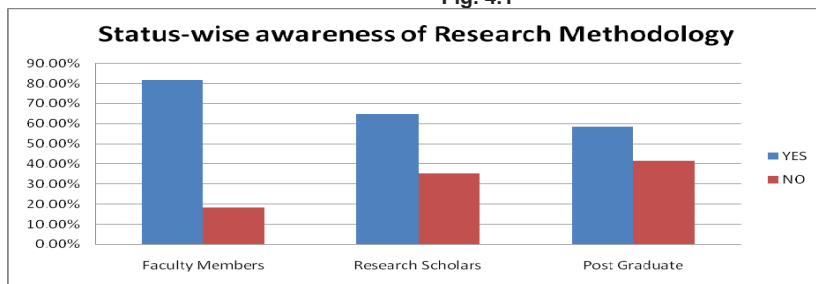
**Status-wise awareness of Research Methodology Table 4.1**

	YES	NO	Chi-square Test
Faculty Members	81.87%	18.12%	df = 2 χ <sup>2</sup> Tab = 5.991 χ <sup>2</sup> Cal = 15.623 p Value = 0.00040512
Research Scholars	64.77%	35.22%	
Post Graduate Students	58.57%	41.43%	

All educational groups surveyed for research course. Table 4.1 shows the percent distribution of awareness of research methodology among three groups status-wise. 81.87% FM, 64.77% RS and 58.57% PG students reported that a research course was a part of their curricula.

Table 4.1 also shows the Chi-square test for independence of attributes at 5% level of significance. The value of  $\chi^2$  calculated is greater than  $\chi^2$  tabulated and the degree of freedom (df) is 2. The value of p shows statistically significant ( $p \leq 0.05$ ). This implies that there is a significant variation among the users as far as the awareness of the research methodology. It means the variation in the context of research methodology is affected by the status of the users. Hence, the attributes are dependent. Figure 4.1 shows the bar diagram of awareness of research methodology among the users status-wise.

Fig. 4.1



4.4.2 UNIVERSITY-WISE

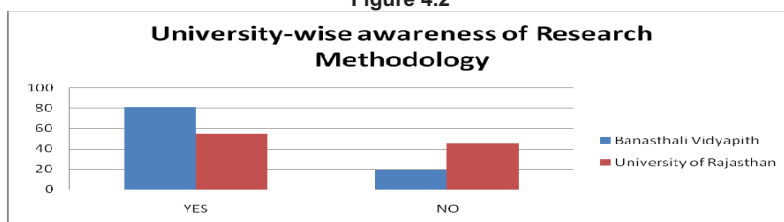
Table 4.2 shows the percent distribution of awareness of research methodology between BV and UR. 80.59% (n=162) BV and 54.71% (n=58) UR users reported that a research course was a part of their curricula. Table 4.2 also shows the Chi-square test for independence of attributes at 5% level of significance. The value of  $\chi^2$  calculated is greater than  $\chi^2$  tabulated and the degree of freedom (df) is 1. The value of p shows statistically significant ( $p \leq 0.05$ ). This implies that there is significant variation between both the universities. It means awareness of research methodology varies between the universities significantly. Figure 4.2 shows the bar diagram of awareness of research methodology university-wise.

University-wise awareness of Research Methodology

Table 4.2

	YES	NO	Chi-square Test
Banasthali Vidyapith	80.59	19.40	df = 1 $\chi^2$ Tab = 3.841 $\chi^2$ Cal = 22.889 p Value = 1.71625E-06
University of Rajasthan	54.71	45.28	

Figure 4.2



4.4.3 FACULTY-WISE

Faculty-wise awareness of Research Methodology

Table 4.3

	YES	NO	Chi-square Test
Arts & Humanities	89.65%	10.34%	df = 3 $\chi^2$ Tab = 7.815 $\chi^2$ Cal = 21.788 p Value = 7.22197E-05
Social Sciences	77.00%	23.00%	
Pure & Applied Sciences	56.04%	43.95%	
Fine Arts & Music	68.96%	31.03%	

Figure 4.3

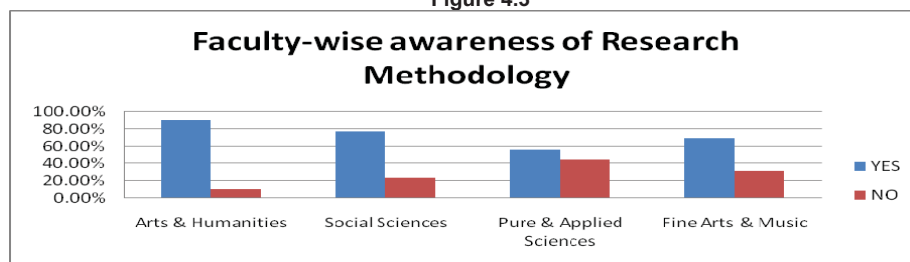


Table 4.3 shows the awareness of research methodology among the surveyed four faculty groups. Faculty of A&H were maximum aware, while P&A were least aware with the research methodology. Table 4.3 also shows the Chi-square test for independence of attributes at 5% level of significance. The value of Chi-square calculated is greater than Chi-square tabulated and the degree of freedom is 3. The value of p shows statistically significant ( $p \leq 0.05$ ). This implies that there is a significant variation among the faculties in context of awareness of researcher methodology. It means awareness of research methodology among the four faculties varies significantly. Figure 4.3 shows the bar diagram of awareness of research methodology faculty-wise.

### 5.0 CONCLUSION

It is found that faculty members were maximum aware of research methodology, research scholars were average and post graduating students were least. Users of Banasthali Vidyapith were more aware of the research methodology in compare to users of University of Rajasthan. Users of Arts & Humanities were maximum aware of the research methodology, second were users of Social Sciences, third were Fine Arts & Music and last & least were users of Pure & Applied Sciences.

### 6.0 DISCUSSIONS

There is need of inclusion of research methodology paper specially P&A stream in PG level. Before summing up I strongly feel the need of implementing the information literacy program in both the universities with the help of librarian and concerning faculty members.

### 7.0 REFERENCES

1. <http://unesdoc.unesco.org/images/0018/001830/183071e.pdf> (Accessed on March 03, 2012)
2. [http://www.psychsa.com/uploads/sub\\_sub\\_cont/](http://www.psychsa.com/uploads/sub_sub_cont/) (Accessed on March 02, 2012)
3. <http://www.educause.edu/pub/er/review/reviewarticles/31231.html> (Accessed on January 18, 2012)
4. <http://www.cilip.org.uk/professionalguidance/ethics/> (Accessed on January 18, 2010)
5. Mutch, A. (1997) 'Information literacy: an exploration', International Journal of Information Management, 17 (5): 377-86.
6. Candy, P.C. 'Information Literacy and Lifelong Learning', White Paper prepared for UNESCO, the US National Commission on Libraries and Information Science, and the National Forum on Information Literacy, for use at the Information Literacy, Meetings of the Experts, Prague: The Czech Republic, pp. 1-17.
7. <http://www.ala.org/acrl/nili/whatis.html> Accessed on December 16, 2009)
8. Andretta, Susie(2005). Information literacy: a practitioner's guide. Oxford: Chandos Publishing, P. 12-14.

**8.0 NOTES**

- Rader, Hannalore B. (2002). Information literacy 1973-2002: a selected literature review. *Library Trends*, 51(2), 242-261 Available at: [http://muse.jhu.edu/journals/library\\_trends/v057/57.2.salo.pdf](http://muse.jhu.edu/journals/library_trends/v057/57.2.salo.pdf) (Accessed on 13 March, 2008)
- Khanna, J.K. and Khurana, S. (2007). *Hand book of research methodology*. Agra: Y. K. Publishers.
- Eisenberg, M. B. and Berkowitz, R. E. (1990). *Information Problem Solving, the Big Six Approach to Library and Information Skills Instruction*. Norwood, NJ: Ablex. Available at: <http://www.big6.com/kids/site/?p=586> (Accessed on (Accessed on 27 November, 2009)
- Foddy, W. (1993). *Constructing questions for interviews and questionnaires: Theory and practice in social research*. Cambridge, UK: Cambridge University Press.
- Joyce, M. Z. and Tallman, J. I. (1997). *Making the writing and research Connection with their I-Search process*. New York: Neal Schuman.
- Bruce, Christine. (1997). *Seven Faces Of Information Literacy In Higher Education*. Brisbane: QUT Available at: <http://sky.fit.qut.au/~bruce/inflit/faces/faces1.htm> (. Accessed on 1 April 2009)
- American Library Association. (2001). *ACRL Best Practices Initiatives: Characteristics of Programs of Information Literacy that Illustrate Best Practices, Working Edition*. Chicago: ALA. Available at: <http://www.ala.org/acrl/nili/criteria.html> (Accessed on 6 May 2009)