



## Full Length Research Paper

# Assessment of Iranian academic staff in use of INLM: A preliminary study

Jalaleddin H Hamissi<sup>1\*</sup>, Haleh Rajabi<sup>2</sup> and Shahrzad Gholami<sup>3</sup>

<sup>1</sup>Associate Professor in periodontics and Preventive Dentistry, College of Dentistry, Qazvin University of Medical Sciences, Qazvin, Iran.

<sup>2</sup>College of Public Health, Qazvin University of Medical Sciences, Qazvin, Iran.

<sup>3</sup>PhD student in knowledge and information science, Al Zahra University, Tehran, Iran.

### Abstract

Digital libraries are complex systems that including a set of electronic resources and its related technical capabilities for creating and using information. This study aims to understand the current knowledge, attitude and skills of academic staff of the Qazvin University of Medical Sciences, Qazvin, Iran with respect to information attitude and satisfaction in use of INLM\*. A questionnaire approach was used for this purpose. The results were analyzed descriptively. Questionnaires were distributed among members of Faculty of Qazvin University of Medical Sciences Qazvin, Iran about attitude, satisfaction and use of digital Iranian National Library of Medicine (INLM). All members accessed to computers and the Internet network at the University. Academic members from different faculties were asked to complete a questionnaire presented to them in 2010-11 academic year. The data were collected from 100 users. The majority of the participants (51.3%) were male and the remaining (46.2%) were female and (2.6%) did not mention their age. With the age range of 25 to 59 years old with mean 42 years old. The majority of the participants, 54.5% had average awareness of the digital library; through a training course at the University (71.1%), in addition, 45.5% of participants used the INLM sometimes and 56.2 % of their satisfaction rate was average. Among the users, 56.4% had not problem with searching in INLM. There was significant difference between male and female on use of digital library. Academic centers of the twenty-first century have to reinvent themselves in response to new technology such as digital libraries because the use of electronic databases, digitized formats, and interactive media have important role in the changes of learning and teaching. Despite of performing this study one year after establishing this digital library and lack of knowledge of users, most of them have an overall positive perspective because they understood many outstanding privileges including more easy and quick access to the huge amounts of up to dated electronic resources especially in usage of E-journals and saving their time and money. In addition, more than half of users evaluated the essential accessing equipments in average rate; therefore, the necessity for a combination of wireless and hard-wired infrastructure, upgraded computer systems and high printing capability is felt.

**Keywords:** Academic staff, Computer, Digital library, Education, INLM.

**INLM:** Iranian National Digital Library of Medicine

## INTRODUCTION

In current years, the library and information services

sector has undergone major changes in terms of collection, organization and services. Modern libraries are dynamic information systems which have the power to reach out to its users without the restrictions of geographical boundaries as never before. Rapid advances in information and communication technologies

\*Corresponding Author Email: [jhamissi@qums.ac.ir](mailto:jhamissi@qums.ac.ir),  
[jhamissi@gmail.com](mailto:jhamissi@gmail.com); Contact: +989121812543

have transformed the nature, content, format and even concept of libraries. Thus the development of digital libraries can be traced to the integration of technology with traditional library tools to meet the ever increasing information needs of the user community. Today, libraries across the world are fast moving to the 'digital' mode. However, the development of digital libraries requires huge investment in terms of money, manpower, technology, etc. Therefore it is necessary that time-bound evaluations are carried-out to ensure that the digital libraries are meeting the objectives for which they are established. However the basic purpose of evaluation should be helping to the decision making process (Jose, 2007). Based on various studies, there are different perspectives about digital libraries, together with competing visions and associated definitions, come from several communities that are involved in digital library work. We are intent here on two communities: research and practice.

Community-based research mostly in computer science that places more emphasis more on access to and retrieval of the digital content of digital libraries while relatively society, mainly includes in librarianship and information science and pay more attention to the digital collection and service on the basic of the digital collection (Saracevic and Dalbello, 2001). Despite of abundant concepts, the Digital Library Federation (DLF) has presented a full explanation: "Digital libraries organizations that provide resources, including the specialized staff, to select, structure, intellectual access to, interpret, distribute, preserve the integrity of, and ensure the perseverance over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities (Liu, 2005). Based on different definitions of DL, it seems this kind of libraries have obvious advantages rather than traditional libraries. Some of the most significant beneficial features can be as follow: Powerful search capabilities, makes it much easier to find what users are looking for. Primarily, this is much easier than searching through card catalogs or physically searching for the materials in a library. With easy navigation through materials, patrons can navigate to specific sections of documents with ease, such as specific chapters, references, graphics or charts, as well as doing searches for specific words or phrases within the documents, making the decision process much easier.

Facility of updating and correcting materials causes that adding or updating the content become as easy as literally opening the file and making the appropriate changes. Ease of referencing; make it possible that each document is stored in the system; no reference was used during the creation of the document list. If the reference system is available, it will be available for downloading or viewing.

Easy access to the latest and perhaps most interesting is the use of a digital library system. All materials are

available at anytime of the day and there are no limits to how many people can see one document at a time (Sean, 2004). With regard to these facts that traditional focus of digital library research has been on the technological development, there is now a call for user-oriented research.

According to the need of this kind of researches, the study aims to understand the current knowledge, attitude and skills of academic staff of the Qazvin University of Medical Sciences with respect to information attitude and satisfaction in use of INLM. A questionnaire approach was used for this purpose. The results were analyzed descriptively and According to the investigation of authors, this study has been performed for the first time in English language. INLM is "Iranian National Digital Library of Medicine" that has been established in 2008 by the Ministry of Health and Medical Education, with the purpose of simple and one step access to the most up-to-date English language resources of medical information in the world anywhere and at any time for teachers, researchers and medical sciences students in 42 Iranian medical sciences universities and some medical research centers. Accessing to INLM is possible in [www.inlm.org](http://www.inlm.org) The content of INLM including: More than 5000 valid medical Journals, 150 important reference books of MD Consult, 20,000,000 scientific Papers abstract in the most creditable databases. 2,000,000 Doctoral and Master dissertations, more than 100,000 medical images, about 300 courses of Continuous Medical Education (CME), also access to Online valid Clinics of North America journals, Medical Protocols, skills and medical procedures in Multi Media format, the most advanced Evidence Based Medicine resources (EBM) (such as Wiley Cochrane Library) and access to some important medical atlases are most substantial resources. Membership and use of this library for mentioned users are free of charge and each user can achieve their requested information readily, through applying of DL advanced technologies, including Link Technology and Integrated Digital Library and Federated Search. Federated search allows the applicants to search multiple online databases with a single query and saves time and provides reasonable results quickly. One of the best features of INLM is the possibility to gain access to the resources from home and other countries in addition of the university campus by receiving confirmed username and password, which are offered by administrator of INLM. The subject area of INLM includes 14 main topics consist of Biological Science, Chemistry, Dentistry, Health, Library and Information Sciences, Medicine, Nursing, Pharmaceutical Science, Psychology Sciences and 158 sub-topics. The other positive characteristic of INLM is the Journal Ranking System which is according to ISI-JCR database from highest to the lowest level. Background: Many countries all around the world are planning significant initiatives for researching, organizing and administrating digital

libraries, but the United States is a pioneer government for funding multi million dollars for scientific research and development of digital libraries in the last decade. For example, in the U.S, digital library researches are guided and even distinct through the projects supported by Digital Library Initiatives (DLI). The Initiatives are funded by a consortium of government agencies under the leadership of the National Science Foundation (NSF). DLI-1 (1994-1998, ~\$23 million), funded by three agencies, involved six large projects including Project Alexandria (University of California, Santa Barbara), Info media (Carnegie Mellon University), Stanford Digital Library (Stanford), Digital Library Initiative (University of Illinois), Digital Library Project (University of California, Berkeley), and Digital Library Project (University of Michigan).

DLI-2 (1999-2003, ~\$55 million), funded by eight agencies, involves some 60 large and small projects. A major leader in the U.S. for practical developments is the Library of Congress through several projects, such as the American Memory Project, funded by public and private funds (Finkemeier, 2002). Besides establishment of various national digital library projects in the United States, the Government has contributed in many international initiatives including the most two enormous digital library foundations including "World Digital Library(WDL)" (Available on <http://www.wdl.org/>) and "The Universal Digital Library(UDL) : A million book collection" (Available on <http://www.ulib.org/ULIBAboutUs.htm>). The WDL was proposed by a librarian of Congress, James H. Billington and it launched to the international public in April 2009, free of charge and in the multilingual format, significant primary materials from countries and cultures around the world. Secondly, the UDL is under construction with partnership of India, China and Egypt with a mission for creating a free-to-read and searchable collection of one million books, available to everyone through Internet and there is an expectation that within 10 years the collection will grow to 10 Million books.

The European Library is a free service that offers right of entry to the resources of the 48 national libraries of Europe in 35 languages. Resources can be both digital (books, posters, maps, sound recordings, videos, etc.) and bibliographical. Quality and reliability are guaranteed by the 48 collaborating national libraries of Europe and all EU countries are now members of the European Library service (Available on [http://www.theeuropeanlibrary.org/portal/organisation/about\\_us/aboutus\\_en.html](http://www.theeuropeanlibrary.org/portal/organisation/about_us/aboutus_en.html)). Europeana: Europeana.eu is funded by the European Commission and the member states; it is about ideas and inspiration. It links users to 6 million digital items including different types of images, Texts-books, Sounds and Videos-films. Some of these are world famous; others are hidden treasures from Europe's.

European digital library: EDL project was a Targeted Project funded by the European Commission under the e contentplus Program within the area of Cultural content and scientific/scholarly content. It was coordinated by the German National Library (Available on: <http://www.theeuropeanlibrary.org/portal/organisation/cooperation/archive/edlproject/about.php>). Regarding to all advancement in this subject area, during the last decade, special journal issues on digital libraries began to appear, related conferences and workshops were held (ACM Conference on Digital Libraries, Research and Advanced Technology for Digital Libraries: European Conferences, IEEE ADL) and currently, digital library is one of the most popular fields of study in different universities. Methods and Materials: The descriptive study that reported here, aimed to discover attitude, satisfaction and use of Iranian National Digital Library of Medicine (INLM) among members of Faculty of Qazvin University of Medical Sciences, Qazvin, Iran in 2010-11 academic year, by using of a standard questionnaire (Sean, 2004,) that was distributed randomly among 100 academic staff members with different degrees including MSc and PhD from four faculties, Medicine, Dentistry, Nursing and Midwifery, and Health Sciences, with varied range of disciplines. The users accessed to computer and the Internet network at the university campus. Before starting this survey, all the participants had gained basic awareness about INLM through different methods including participating in a training course at the university (a non volunteer course with focus on practical and theoretical features of INLM), individual study and experiment and specific course. The most noticeable questions were about: The level of users' knowledge, the methods of learning about INLM, the registration process, the way of gaining access to INLM (from the campus or outside the campus), the frequency of visiting INLM, the evaluation of search function such as reasons of finding unexpected results, the most visited section of INLM, offering suggestions for improvement of INLM. The data were analyzed descriptively by the SPSS/win12.

## RESULTS

The data of the survey were collected from 100 members of academic staff. The majority of the participants (51.3%) were male and the remaining (46.2%) were female and 2.5% did not mention their gender, with the age range of 25 to 59 years old with mean 42 years old and the majority of the respondents were in 40 and 45 age groups which represented 7.7 % and 10.3 % the responses respectively. There was significant difference between male and female on use of INLM. More than half of the participants (54.5%) had average level of awareness and 27.3 % had good awareness, and 71.1 % gain this knowledge through taking part in a training

**Table 1.** The way of gaining knowledge about INLM

		Frequency	Percentage	Valid percentage	Cumulative percentage
<b>Valid</b>	<b>A university course</b>	54	69.2	71.1	71.1
	<b>Individual study</b>	19	24.4	25.0	96.1
	<b>A specific course</b>	3	3.8	3.9	100.0
	<b>Total</b>	76	97.4	100.0	
<b>Missing</b>	<b>System</b>	2	2.6		
<b>Total</b>		78	100.0		

**Table 2.** The satisfaction rate with the search function section

		Frequency	Percentage	Valid percentage	Cumulative percentage
<b>Valid</b>	<b>Poor</b>	9	11.5	12.3	12.3
	<b>Average</b>	41	52.6	56.2	68.5
	<b>Good</b>	21	26.9	28.8	97.3
	<b>Excellent</b>	2	2.6	2.7	100.0
	<b>Total</b>	73	93.6	100.0	
<b>Missing</b>	<b>System</b>	5	6.4		
<b>Total</b>		78	100.0		

course at the university (A non volunteer course with focus on practical and theoretical features of INLM) (Table 1). Frequency percent valid percent Cumulative percent Valid Missing Total

A university course Individual studies a specific course Total System 54 19 3 76 2 78 69.2 24.4 3.8 97.4 2.6 71.1 25.0 3.9 100.0 71.1 96.1 100.0 Table 1: The way of gaining knowledge about INLM 78.9 % had not problem in registration process. 77.9 % gained access to INLM from the campus than outside the campus. (Home), less than half of the users (48.1 %) sometimes visit the INLM website and 45.5% used the section of searching function, sometimes for finding articles and 27.3% of them utilized it often. 56.2 % mentioned that, the satisfaction rate of this section was average. (Table 2). Some statistically significant relationships were observed during analyzing data, between the way of gaining knowledge about INLM and the rate of users 'satisfaction about search function section. A group of users who gain this knowledge through taking part in a training course at the university (A non volunteer course with focus on practical and theoretical features of INLM) was more satisfied of search function. ( $\chi^2 = 17.62$ ,  $df = 2$ ,  $P = 0.0001$ ).

Frequency percent suitable percent growing percent missing System Valid poor Average Good Excellent Total 9 41 21 2 73 5 78 11.5 52.6 26.9 2.6 93.6 6.4 100.0 12.3 56.2 28.8 2.7 100.0 12.3 68.5 97.3 100.0 Total Table 2: The satisfaction rate of search function section 42.7 % of respondents stated that, their accessibility to full text articles was in average rate and it seems there is a relationship between the level of usage from the search function and the level of accessibility to full text articles. The group of participants who utilized the search function

often, access to more full text resources, among the users 56.4% had not problem with searching in INLM. 63% of users expressed that the correlation between the results of the search function and their expected results was good and almost the same percentage of users (60%) had not problem with the section of search function. The most important reasons of finding unexpected results by 53.1% of participants mentioned, using unsuitable searching methods, the reason of 25% was, using unsuitable keywords and 21.9% expressed the search function is difficult (Figure 1). Figure 1: Reasons of finding unexpected results With regard to the preferred sections of INLM, two parts which were used mainly, were E-Journals (71%) and databases (30%) (Figure 2). Figure 2: The usage of different sections of INLM 52% evaluated the essential equipments (computers, printing capability and the Internet network) for using the INLM in average level. The most of participants (90.8 %) did not have problem with monolingual (English language) feature of INLM. 68% of users utilized INLM for research purposes and 32 % used it for instructional aims (Teaching to students). In open ended questions, many suggestions were recommended by respondents. 22.6 % believed that the reasonable solution for improving quality of INLM can be holding more training courses, and the second concept that mentioned by 19.4 % of them was, providing more full text resources. In addition, a suggestion for improving different sections according to their discipline was, providing more full text resources especially E-Journals. Finally, the most significant benefits of using INLM had been mentioned, quick and simple accessing to up to date information that causes to save time and money.

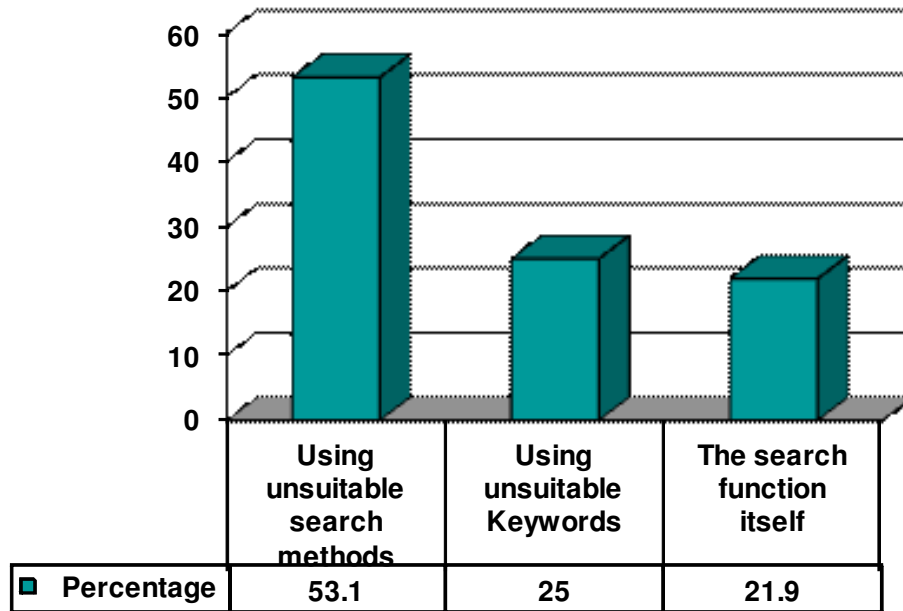


Figure 1. Reasons for finding unexpected results

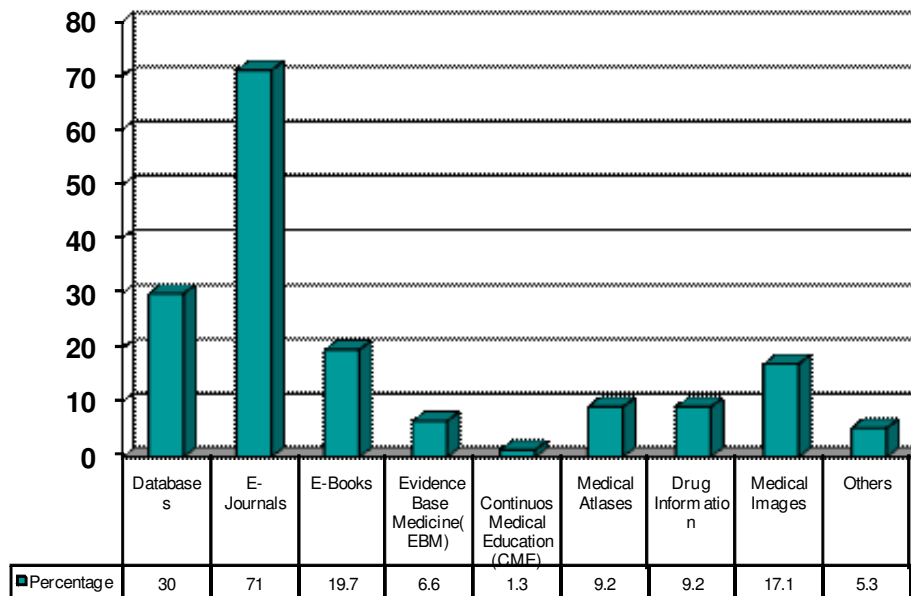


Figure 2. The usage of different sections of INLM

## DISCUSSION

Recently, according to establishment of huge numbers of digital libraries in the developed and developing countries, many studies have been performed about assessing the level of usage and knowledge of the patrons in the professional literature. Now, with enormous growth in scientific information and resources, digital libraries become changed into more specialized organizations. Although the extensive facilities of this kind

of libraries including E- books, E-Journals, images, maps and, etc. are effective resources but categorizing and including all of them in entire fields of science may cause some difficulties for users. In 2004, Harley et al. conducted a survey on staff members and instructors at California universities in the humanities and social sciences, to learn about their use of digital resources in teaching and to some extent the rest of their professional lives. During their research, they found when conducting a series of focus groups, the faculty members and

instructors, though users of a wide variety of digital resources did not understand the formalized concept of a "collection" or "digital library". Their results suggest that faculty use a variety of these resources both to help improve their students' learning and as primary sources materials in their teaching and suggest that educational digital libraries whose goal is to promote innovation in teaching and learning still face quite a few challenges in achieving this goal.

Findings reveal that faculty members and instructors tend to prefer educational digital libraries as places to stay current on new developments in their field and to seek information for their scholarly or professional development as a teacher.

The result of this study proved that, digital libraries can be one of the most up-to-date educational resources for instructing students in universities. (Harley, 2004 cited by McMartin et al.) (9). In 2008, Hilary Grierson et al. They performed two studies which carried out to examine they uses students and academic staff of the 'LauLima' Digital Library, in the situation of the 3rd year Integrating Design Project Class.

The key purpose of the 'LauLima' System is to present both academic staff and students with admittance to high value learning objects to progress the efficiency of design engineering education at the point of need.

All through Study 1 and Study 2, users' interactions with the LDL were logged by the system, and a short questionnaire with both closed and open-ended questions seeking analysis, was used to evaluate the use of the LDL. The 'LauLima' actively logs showed an increase in use from Study 1 to Study 2 and the significant contributing factor to the use is the number of resources in the digital library and the most important perspectives of students and academic staffs were as follows: Based on the viewpoint of students the LDL was a good producer of new ideas and provided a source of quality material related to specific classes, and the measured quality of the LD, and faculty believed that LDL reusable resources for the classroom / training project and LDL are useful resources to generate reflection and provide a good example (Grierson et al., 2008). In 2007, Antony Jose et al. investigated the digital library in Management Development Institute (MDI) which was evaluated in mid-2005. The objective of the DL was to provide a single window access to various online resources and services offered by the library. The DL architecture involved a host of hardware and software.

There are about 1000 users of the DL consisting of faculty, research scholars, post-graduate students, and participants of short-term training programs. 85% of the users access the DLC on Institute of MDI. The remaining 15% of off-campus access the server via VPN. Instead, the study of patterns of different groups were such as faculties, researchers, etc. and the results of the assessment provided useful insights into patterns of this group. Some interesting findings of the study have the

low level of knowledge about the various resources available on the DL, and preferred to use the same resource again and again rather than sources of similar nature. The results of the evaluation were used in: Collection development policy, DLC user interface re-design and education of users (Jose, 2007). In this study, the main objective was investigating attitude and knowledge of faculty members of Qazvin University of Medical Sciences and the level of their usage and satisfaction with respect to the advantages of digital libraries and recommending some solutions for increasing awareness and using. The results of the study show that, despite of novelty in design and some weak points of INLM and lack of awareness of users, most of them have an overall positive concept and they preferred to use the electronic resources rather than printed because they found out many beneficial aspects DL including, saving time and money, accessibility in anywhere and at any time and powerful search capabilities. The most proportion of users (more than 70%) got familiar with INLM through participating into a training course in the university and used it inside the campus and it proves that, it was the most effective learning method. More than half of them had not problem with search function and finding their expected results in addition, E-Journals, Databases and E-Books were the most popular sources that were used and research purpose was more significant rather than educational aim (Teaching to students). Base on the results, the essential equipments for using the INLM including computers, the Internet network and printer were evaluated in average rate. With respect to the results, It is a crystal clear fact that, for establishing and increasing the usage of a digital library, applying different types of equipments are necessary and the most important factors including, strong hardware infrastructure, well-organized software, collecting creditable resources, upgraded computers, printing and scanning devices and the internet and intranet networks. Regarding the results, in addition of applying all these equipments, one of the most remarkable elements for increasing accessibility and usage of digital libraries is, setting up various academic training courses such as regular workshops, well-designed curriculum, providing practicable informative systems about the structure and new collections of DL. The main groups of instructors can be library and information science experts, but the results of many studies have shown that, despite holding different training programs, the level of awareness and usage was positive but not very considerable. Therefore, based on these results some suggestions are recommended. Setting up variety of continual exam-base programs with encouraging theme can be an efficient solution for growing the rate of awareness and usefulness. This course can be held in this manner: after setting up the training course, the level of knowledge and usage has to evaluate by a theoretical and practical exam and if

participants pass it successfully, a creditable certification Will offer them that means they are ready for using the DL, but if they do not pass it, they will be introducing for taking part in a new course and after passing the exam, achieve their certification. Moreover, the other useful solution is making more specialized some sections in INLM such as Continuous Medical Education (CME) and encouraging and conducting users to take part in this distance learning courses.

## CONCLUSION

Academic centers of the twenty-first century have to reinvent themselves in response to new technology such as digital libraries because the use of electronic databases, digitized formats, and interactive media plays a key role in changes of learning and teaching methods. In this paper we focused on the level of awareness and usage of INLM among faculty members of Qazvin University of Medical Sciences and surveyed the effective factors that influenced on their usage. Despite of performing this study one year after establishing this digital library and also lack of knowledge of the users, most of them have an overall positive perspective because they understood many outstanding privileges including very easy and quick access to the huge numbers of up-to-date electronic resources especially in usage of E-journals and saving their time and money. In addition, more than half of users evaluated the essential accessing equipments in average rate; therefore, the necessity for a combination of wireless and hard-wired infrastructure, upgraded computer systems, high printing capability and also educational courses is felt. With respect to this need, now, many extra programs with more comprehensive and effective theme are setting up in university campus for making progress in the level of awareness and usage.

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