E-Research and Problems of Scholars in Utilizing E-Resources

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Abstract

The scholars of various educational institutions utilize E-research not only to know the new realities but also to develop the skills of research through electronic resources. The study was a survey about the provision and the utilization of various E-resources to beginner research scholars. A purposive sample of 74 M.Phil. scholars was selected for the study. A questionnaire was used as a tool to acquire data. Results indicated that most of the scholars were with the provision of E-resources at home or their academia; however a few of them were lacking such resources. Scholars' perception for proficiency of E-resources was noted least in word processor, spread sheets, paint publishing software, Skype, Google, Twitter, Moodle and using the blogs. Lack of guidance, training, availability of time and reliability of electronic data were noted as a hindrances. Future recommendations that were proposed include provision of training in mobile learning (M-learning), access to E-libraries and inclusion of a new E-research course in the research curricula. There was no significant difference in the perception of scholars for their proficiency in view of their working status. However a significant difference in perception was noted in view of their gender.

Keywords: E-Research, E-interaction, E-learning, E-resources, Mobile learning, Web 2.0, Learning Management System

Introduction

Today's world has made tremendous advancements with the revolution of technology in every walk of life. These technological advancements have altered the features of current world in its various social, cultural, economic and educational aspects. Technology has impacted various cultures within regions and there is no eminent distance among regions. The field of education has a specific impact of technology in teaching and learning due to its abrupt shifts both in home and school environment. Modes of education have been changed from traditional to distance, online and informal education. The electronic revolution in higher education has changed the climate of learning from conventional to realistic and

lifelong. The concept of E-learning has overcome from the last a decade or more as the internet has surrounded the educational institutions. Electronic resources as defined by English dictionary with multiple lingual searches (Allwords.com) are "the Information (usually a file) which can be stored in the form of Electrical signals usually, but not necessarily on a Computer. In other words it also means the Information available on the internet".

Because the world is changing rapidly with the advancement and development of ICT, therefore educational institutions are aiming to adopt new methods in pedagogy, planning and management for their researches. Shukla & Mishra (2011) emphasized that the utilization of E resources at universities is essential as well as a crucial need of this century. Scholars of various fields interact and try to access the technology in order to make the literature valuable for their research since it is available online. They surf a variety of electronic journals, books, electronic libraries, thesis and documentaries etc. All such data help them to acquire latest literature and relevant information for their studies.

While explaining the concept of E-learning, Markus, Groenendijk & Enemark (2010) highlighted that E-learning is a learning process of interaction created with digitally delivered contents, network based services and tutoring support. In the same way it is called technology mediated learning through computers whether from distance or in a face to face class. It has changed the concept of learning from traditional education to ICT based flexible, individual and collaborative learning.

Internet is one of the major sources in E learning and research. It helps in surfing indexes, abstracts, catalogues, library browsing and research communication. Nearly 34% individuals use the internet as a priority to meet their academic needs. Many of the developing countries do not have good internet facilities. In Pakistan there are only a few libraries in the universities which are equipped with good internet facilities. Hence there is a deliberate need to change the infrastructure of Information Technology both at public and private sector universities. (Behra, Sethi & Maharana, 2010)

Universities at large are adopting the online and electronic courses for their classes. Guglielman (2010) stated that specified tools, educational software and web services are being utilized for this purpose. The main objective is to reduce the problems of access, interaction and discrimination in the use of technology.

According to Rathori, Hogan & Thaman (2011), despite of various developments in technology and tool, still there are certain challenges and issues in access to the tool, technology and experience with technology. These challenges come across with the use of different computer applications, internet applications and mobile technology used for learning. There are differences and contrasts among professionals of education in interface, experience and access to technology. All such factors are a source of impact on organizational and institutional structure of learning especially in research at higher education.

Universities face certain challenges and issues in utilizing the e resources at higher education. Mohammadzadesh, et al. (2012) described that educational institutions specially the universities are facing these problems. Professionals and students of research are facing restrictions. These problems arise in various contexts like provision of technology, problems of speed and connectivity, lack of incentives, executive obstacles and problems of software and hardware.

Structuring various contents of E-courses or development of E-learning module is another difficult task at universities in order to support both teachers and students. Contents, presentation format, orientation, navigation keys, menus and sub menus, illustration and development of glossary and key terms are very vital. Meyan & Aust (2005) has emphasized the Instructional Management Systems (IMS) at institutions both for faculty and senior students. Such type of systems reduces time, improves learning and easy to be used.

Huffaker (2003) described that E learning management system and its quick mode of delivery reduces costs, helps in organizing better classes and providing collaborative environment. E-learning course development is although very essential but it is another challenge to be overcome. Some of the issues in courseware could be the standardization of software and hardware, module development, scales at which contents would be delivered and the nature of virtual environment.

Egberongbe (2011) stated that a numerous students face problems in browsing, E-information, strategic planning, finance, consistency in training, access to computers and high cost of provision. Despite of these persistent problems E resources is productivity in the areas of learning, teaching and research.

Because the E-research involves global collaboration through a high level of computing with storage therefore complex problems would need to be solved through collaboration. Brin (2005) described that colleges and universities can establish the partnership for better access to bandwidth, infrastructure, consultancy, establishing digital libraries and partnership with other libraries for scholarly work.

Students face a number of problems in E learning interaction. Hassan & Abulibdeh (2011) stated the importance of E interaction among students. According to them interaction plays a key role in students satisfaction and perception in learning. They have given the E-interaction; the kinds like passive, limited, complex and real time. Similarly the interaction lies in the direction of student to student, student to instructor, student to content and student to interface. This interaction involves the learning by observation from other students through discussion and participation. Interaction may be synchronous, using websites, search engines or email. While in asynchronous technologies social networks, wikis, phone calls or blogs are utilized. The sole purposes are to improve the overall achievement of students.

Blended learning is an ongoing concept of learning. Markus, Groenendijk & Enemark (2010) stated that blended learning helps in combining face to face learning to other types of learning. Inclusion of audio video software has made learning more effective and interesting. Web 2.0 has also appeared as a new learning environment at higher education. Students of various departments not only get course information and content but they utilize pieces of information and learning contents by the modes like wikis, blogs , instant messages, telephone calls and the social networks like in the form of face book, twitter and LinkedIn, etc.

Statement of the Problem

Scholars of the various fields use E-resources for their researches. Novice scholars face a number of difficulties in availing various E-resources for their research studies. The present study was designed to know about the provision and utilization of E-resources to the research scholars at universities. Therefore the study was entitled "E-research and problems of scholars in utilizing e resources".

Objectives of the Study

The present study attempted to:

(1) Find out about the provision of various E-resources to the scholars.

(2) Know about perceptions of scholars for their skills in utilizing E resources.

(3) Know about the major hindrances of scholars in utilizing E resources.

(4) Differentiate perceptions of scholars about their skills in view of their gender.

(5) Differentiate perceptions of scholars about their skills in view of their working status.

Research Questions

In view of the problem under exploration following research questions were developed.

(1) To what extent the scholars have the provision of various E resources?

(2) What are the perceptions of scholars about their skills in utilizing various E resources?

(3) What are the hindrances of scholars in utilizing E resources?

(4) What are the suggestions of scholars to overcome the hindrances?

(5) What is the difference in perceptions of scholars for their skills in view of their gender and working status?

Significance of the Study

The present study will help us to find out the perceptions of scholars about their skills in availing the E resources to accomplish their researches. The study will help us to find the problems and issues of beginner scholars enrolled at universities in view of their persistent perceptions for their skills in utilizing various E resources. The study will help the professionals of E learning to take a heed attention of scholar's issues about various computer applications and internet. The study will help the newly enrolled scholars at the universities to solve out their issues on E learning and E research. The study will also help the professionals of Information Technology and E learning to devise the strategies for planning and training of computers and online electronic data available for their researches. The study will also be beneficial for policy makers and controlling authorities of higher education to develop the training for higher education institutions and introduce new methods of E research for their institutions. The study would also be beneficial in the context of subcontinent where the educational institutions especially the universities are far behind in provision of electronic resources.

Method

Participants of Research

Total population for the study was all the M.Phil. Scholars of social sciences at National University of Modern Languages (NUML), Islamabad Pakistan. Major research disciplines were Arabic, English, Mass communication, Urdu, Management science, Education, International relations and Islamic studies. Scholars from the M.Phil. disciplines only were the part of research. Both male and female scholars were included in the study. The study was delimited to the learner scholars enrolled at the campus from the last two semesters. There were total 110 M.Phil. scholars enrolled from the last two semesters (from Aug 2011 to Mar 2012) out of which only 74 were taken for the research. There was no consistency in presence of scholars at the university so an available strength of 74 was taken for the study. Demographic characteristics of the population of the study are as under (See Table 1 for demographic details of participants)

Table 1

Demographic Characteristics of participants (in Percentages)

Variable	N	Percentage
Gender		
Male	35	47
Female	39	53
Marital status		
Married	38	51
Single	36	49
Age		
21-25	28	37
26-30	25	34
31-35	10	14
36-40	08	11
41 Yrs or more	03	04
Years of teaching experience		
Having no experience	32	43
0-5	23	31
6-10	14	19
11-15	0	0

16-20	02	03
21 Yrs or more	03	04
Highest degree held		
Graduate or less	0	0
BS Houners	02	03
MA/MSc	72	97
Departments		
Economics	03	04
Education	15	20
Islamic studies	13	17
International Relation	08	11
English	33	45
Arabic	02	03

Selection of the Sample

Sample was drawn from a total of 110 MS/M.Phil. scholars. An available strength of 74 Scholars out of total M.Phil. scholars was selected for the study. Sample was purposive in nature because of scholar's research activities and irregularity of presence.. Inclusion of maximum numbers of scholars was ensured in selection of sample. It was 68% of all M.Phil scholars enrolled at university from the last two semesters.

Development of Instrument

An instrument was developed on the aspects of provision of E resources, amount of utilization of E resources, perceptions of scholars about their skills in E resources, hindrances in utilization and measures to overcome these issues. Questionnaire was based on five point Likert scale. First part of the questionnaire comprised demographic details of participants like age, gender, educational qualification, marital and working status. A cover letter with a short description of the study was also attached for easy responses. Questionnaire comprised 32 items. Items were distributed as 1-5 on provision of E resources to scholars, 6-21 on perceptions about skills, 22-26 on hindrances of scholars in E research and 27-31 for suggestions of scholars to overcome their E research obstacles. Last item was included for suggestions and feedback as an open ended item.

Validation of the tool

For purpose of validation and pretesting, instrument was piloted on a small sample of scholars prior to its administration on real sample. A Strength of 24 scholars was taken for validation of instrument. All these scholars were excluded from actual participants. Reliability coefficient Cronbach Alpha was calculated .84 which was significant for administration of tool to the selected sample. Tool was also examined in terms of face and content validity, necessary improvement were carried out to give the instrument its final shape. Validity and reliability was ensured for accuracy of data collection from the respondents.

Procedure of Study

Instrument was administered personally by the researcher on various department of the university. Students were approached personally by the researcher. Instrument was handed over right before commencement of their classes and it was collected after termination of their classes. Questionnaire was administered with introduction of researcher and purpose of the study. All social science departments were visited in separated timings in view of availability of maximum number of scholars in their respective class rooms. Response of the respondents while administration and collection of tool was favorable and sympathetic. It took about 3 days in administration and collection of the data in view of class.

Data Analysis

Data acquired from the scholars were analyzed in various aspects and objective of study. Data were analyzed, arranged, coded and decoded. Descriptive statistics were used to find out the means and standard deviation about different variables. T- test was used to analyze the data in order to find significant differences among male, female, working and non working scholars. Items of instrument were analyzed on five point likert scale. Last item was analyzed on qualitative aspects in order to know the feedback of scholars.

Results and Discussions

Results obtained from scholars were analyzed and arranged in a way so that meaningful results may be brought in view of objectives. All items were analyzed separately to achieve specific findings. Results were arranged separately for easy understating in view of objectives. (See Table 2 for provision of E resources to the scholars)

Table 2.

Provision of E resources to the scholars (With time)

Statement	I am not using%	0-2 Yrs%	3-5 Yrs%	6-8 Yrs	9-10 Yrs%	Mean	Std .Dev
1. How long have you been using computers?	1	24	20	11	43	3.702	1.289
2. How long have you been using the internet?	4	27	19	24	26	3.405	1.248
3. How long have you been with a PC or a laptop?	4	32	23	16	24	3.243	1.258
4. How long have you been with internet access at home or university	7	31	26	21	15	3.06	1.185
5. How long have you been using your cell for internet?	58	26	11	3	3	1.662	.969

Provision of Various E-resources to the Scholars

To achieve the first objective of the study items 1-5 were arranged and scholar were urged to answer about their provision of these resources to them. Statement 1 was aimed to know about the total period of usage of computer, maximum number of the scholars with 43% stated that they had been using computers from the last 10 years or more. Others scholars had an acceptable ratio of usage. Only 1 percent were not using computer. It showed that most of the scholars with maximum time duration had been using the computer as a source for their research and educational needs. In statement 2, scholars' usage of internet ratio was asked. Here maximum index of usage was 27% with the time duration from the 0-2 years. A ratio of 24% was with 6-8 years while 26% with 9-10 years or more duration. Only 4

% of the scholars were not utilizing the internet facility. It showed that maximum number of scholars had provision of internet. In statement 4 scholars provision of the internet at home or university was asked. A maximum ratio of 31% stated that they had provision of internet facility at home or university from the last 0-2 year duration. Similarly this ratio was decreasing as total time duration was increasing. Only 15% of the scholars were those who had the provision of internet at home or school from the last 9-10 years or more.

In the 5th statement scholars were asked how long they had been using the facility of internet phone. A large ratio of 58% was without its usage; only 26% of the scholars with short time duration of 0-2 years were using the cell phone for internet. Only 3% were those who were using the internet phone from the last 10 years or more.

Table 3

Scholar's perceptions about their skills in utilizing e resources

Statement	**Least%**	**Fair%**	**Good%**	**Very Good%**	**Excellent%**	**Mean**	**Std .Dev**
6. Word processor	15	28	32	10	15	2.810	1.246
7.Spreadsheets	32	31	24	05	07	2.22	1.165
8. Paint publishers software	34	22	28	11	5	2.324	1.206
9. Yahoo mail	8	5	32	24	30	3.621	1.201
10. Google mail	12	5	23	26	34	3.635	1.330
11. Hotmail	23	15	19	24	19	3.013	1.447
12.Online library searches	16	20	34	18	12	2.891	1.233
13. Books and article searches	12	12	39	22	15	3.148	1.189
14. Search engines (Google, MSN, Yahoo)	14	10	20	28	28	3.486	1.357
15. Skype	39	10	27	12	12	2.486	1.426
16. Google talk (G talk)	53	17	19	07	4	1.910	1.167
17. Yahoo voice	54	16	13	05	11	2.027	1.374

call							
18. Moodel	69	12	12	04	02	1.594	1.032
19. Face book	20	19	23	21	16	2.945	1.373
20. Twitter	58	17	15	04	05	1.810	1.666
21. Blogs (A personal web page for opinions, feelings)	62	16	14	05	03	1.702	1.069

Scholar's Perceptions about Their Skills in Utilizing E-resources

Item 6-21 were arranged to know the feelings of scholars in various internet resources which now a days are commonly used in research. These items included the areas of using different software, email resources, social networks and communications. Likert scale from least to excellent was based for these items. At item 6 most of the scholars with a ratio of 32% were agreed that they were good at using word processor which is mainly used in report writing. A quantity of 28% was with fair proficiency and only 15% were with excellent. Still a large number of scholars were not well adept in word processor. Item 7 was raised to know the perceptions in spreadsheets skills, like the Excel or SPSS (Statistical Package for Social Sciences) which is used for the purpose of data analysis. In this statement a major ratio with 32% least and 31% fair were noted. It showed that while using the spreadsheet scholars were not fully proficient. Mean and standard deviation were low enough at this stage. At statement 8 scholars ability to use paint publishers software was also too low, 34% were with least ratio, 28% good and only 05% were with excellent.

While in using the Yahoo mail at statement 9, most of the scholars had better perceptions for their skills in usage of Yahoo mail. Good, very good and excellent percentages were noted as 32%, 24% and 30% respectively. A few of scholars were not fully using the Yahoo mail service for personal communication. Level of proficiency in using Google mail was noted high with a significant mean and standard deviation; most of the scholars were with best skills in Google mail. Good to excellent ratio was 23%, 26% and 34% respectively. Hotmail as compared to other resources was less used with an acceptable ratio of 24% with rating of very good; however 23% of the scholars were with at least level.

At statement 12 scholars were urged to respond about their perceptions in using various online library resources. Highest index was 32% good and 18% very good, a quantity of 16 % was with least proficiency. In statement 13 books and article searches through internet was asked. In this statement 24% were with least and fair ratio, while 39% with a ratio of good feelings with a significant mean of 3.148. However, still a sufficient number of scholars were away from good level in book and library searches via internet. One statement about knowhow of different search engines for data search was solicited. In Google, MSN, Yahoo, etc., 28% with very good and 28% with excellent rate responded that they were very good at these search engines. A minor ratio of 14 and 10 were at least and fair level of proficiency.

At statement 15 the scholars perceptions in using Skype was noted too low as it is one of the most popular communicative source in internet. An index with 39% of the ratio was with the view that they had least proficiency, and 10% with fair, only 27% were good at Skype. Similarly in the Google talk a prominent ratio of 53% was with least, only a few of the scholars were skilled at Google talk. Mean and standard deviation were noted low enough also. Yahoo voice call proficiency was judged in statement 17, where 54% ratio was with least and 16% with fair proficiency, only a few of scholars were proficient in yahoo voice call. In statement 18 the perceptions in Moodle (a communicative teleconferencing way) were judged, at this statement the feelings were lowest with a percentage of 69% least and 12% fair. Mean was significantly lower with 1.594.

In statement 19 perceptions for the skills in usage of face book was asked, the proficiency was noted hardly satisfactory. An amount of 23% with good and 21% with very good stated that they were good at face book usage, a sufficient number of 20% and 19% were with least and fair levels. Twitter (a blogging source) was asked in statement 19 where the ratio was third lowest in all statement with 58% least and 17% fair skills. A few of them were with the good skills of twitter. In knowledge and usability about the different blogs (a personal website or web page on which an individual records opinions, links to other sites, etc. on a regular basis), the scholars perceptions were noted lowest. A large number with 62% least and 16% with fair were with the perceptions that they had no knowledge and requisite skills to use or avail blogs. The mean and standard deviation were lowest also in this regard.

Table 4

Problems of scholars in utilizing E resources

Statement	Strongly Agree%	Agree %	Neutral %	Disagree %	Strongly Disagree%	Mean	Std .Dev
22. I cannot utilize E resources due to my time constraints.	11	32	28	20	08	2.824	1.126
23. I cannot utilize E resources because of insufficient training	15	31	20	14	08	2.932	1.368
24. I am unable to utilize E resources because of their high costs.	16	40	29	07	07	2.500	1.075
25. I avoid using E resources because they are unreliable and unsecure for researches	23	47	22	04	04	2.189	.974
26. I do not use E resources in research because of their technical issue (Connectivity, speed, bandwidth & networking	20	45	24	07	04	2.297	1.003

Hindrances of Scholars in Utilizing E-resources

Item 22-26 were framed to get perceptions of scholars in different areas of hindrances confronted by the scholars. Time constraints being a major source of trouble in utilizing E resources was asked to the scholars, 20% agreed and 08% strongly agreed about this view, however still a large number were supporting the time as a major hindrance. Requisite training was also significantly responded in next item. A group of 15% strongly agreed and 31% agreed with this opinion. A number of 13 and 20 were against this view; it again indicated that the training was considered a major shortfall to avail E resources. I am unable to utilize E resources as they are cost effective to me. Scholars were asked to answer this statement in item 24 , scholars with a strength of 16% strongly agreed and 40% agreed responded that they had been entangled by this problems and financial limitations were the major problems for improving their skills. Twenty nine percent of the scholars remained neutral as overall. In statement 25 scholars gave opinion about the reliability and security of data due to security and reliability related issues of data. Scholars with 23% strongly agreed and 47% agreed with this view that one of the issue due to which they do not prefer electronic means of data in research is reliability and its authenticity. Only 22% remained neutral, hence scholars' opinion about this issue was strong.

In statement 26 scholars problems in technical areas were urged. The issues in technical area were noted as connectivity, speed, bandwidth, and networking etc. A larger majority with 20% agreed and 45% strongly agreed by responding technical issues a source of hurdle in availing the E resources.

Table 5

Suggestions of scholars in utilizing E resources

Statement	**Strongly Agree%**	**Agree %**	**Neutral %**	**Disagree %**	**Strongly Disagree%**	**Mean**	**Std .Dev**
27.Provision of extra training for E research at campus	38	49	12	01	0	4.229	.712
28.Provision of financial assistance to the scholars	32	53	10	04	0	4.121	.793
29.Students mutual	33	50	12	05	0	4.094	.813

consultation and coordination							
30.Provision of online and distance learning courses to scholars	31	47	16	05	0	4.040	.834
31.Inclusion of an E learning course into an existing M.Phil research curricula	38	41	15	04	01	4.081	.932

Suggestions of Scholars for Better Utilization of E-resources

Among last six items, five were based on the suggestions and feedback of scholars in order to resolve these issues. Last item was open ended and remained on the free opinion of respondents. In statement 27 students were asked if extra training provided to them at campus, whether they could improve and resolve their issues. A large number of scholars with 38% strongly agreed and 49% agreed that provision of training facilities for benefiting from E resources would be necessary. In statement 28 scholars were asked to respond whether provision of financial assistance can resolve their hindrances. A group of 32% strongly agreed and 53% agreed, the ratio was more significant as compared to the training facility. A minor ratio was neutral besides all that. In statement 29 Scholars favored the online and distance learning courses with significant ratio of 31% agreed and 47% strongly agreed, but it as compared to other provided options was not so strong. They did not favor the required needs of their training through online or distance learning. In the last item students responded about inclusion of an E learning course into their M.Phil. course curricula, at this statement 38% strongly agreed and 41% agreed by denoting the inclusion of E learning course into existing university course curricula. This ratio was less significant as compared to the ratio of provision of online courses to the students for betterment of their skills. Mean and standard deviation were noted strong about provision of extra training and financial assistance.

Suggestions of Scholars in Open-ended Item

Last item was kept open ended for the scholars to respond and provide feedback on the issues relevant to E research. It was analyzed on qualitative aspects in view of open suggestions. A reasonable strength of 19 scholars from total participants with a ratio of 25.67% responded in view of open ended question in a constructive feedback. Scholars suggested that either short time or interval based programs should be organized by the faculties and departments for research students. Some of the scholars highlighted the importance of separate section in IT (Information Technology) or relevant E learning department at campus to resolve such issues. Few of scholars also suggested the importance of an additional component in M.Phil. course work. A lot of scholars were with the views that major issue was the provision of cheap connectivity or internet and also the provision of computers either on compensation or on the basis of financial assistance. Some scholars suggested that university must made arrangement for the availability of online literature from the libraries of the world. Scholars also urged that right before commencement of classes some training should be arranged for better interaction of technology and easy access to computer and multimedia. Scholars were with the views that only sole and practical steps at the end of university can resolve these tribulations otherwise these issues will continue to be affecting the scholars who have little or minimum provision of technology especially the computers.

Difference between the Perceptions of Male and Female Scholars

In the light of desired objective an independent sample t-test was calculated to determine the significant difference at 0.05 levels for the perception of male and female scholars for the proficiency in utilizing E resources. Following results were achieved. (See Table 6)

Table 6

Differences in the perception of male and female scholars

	Group Statistics			
Gender	N	Mean	Std Dev	Std Error
Male	39	92.846	13.579	2.174

Female	35	86.914	15.643	2.644

Difference in the Perception of Male and Female Scholars

Table above shows the difference in the thoughts of both male and female scholars, there was a significant difference in the mean score of both the groups. Male scholars had more significant mean which was 92.846 while female scholars had significantly less mean score with the index of 86.914, hence difference between the two means was 5.932. To know the significant difference at 0.05 level calculated t value was 2.368 more than table value which meant $p > 0.05$ significant. It showed that there was a significant difference between the perceptions of male and female scholars about their skills in E resources.

Another t test to find out the significant difference of proficiency between working and non-working scholars was calculated. The purpose was to know whether working condition do affect the scholars' perception of competency in E research. Following were the details. (See Table 07)

Table 7

Differences in the perception of male and female scholars

	Group Statistics			
Gender	N	Mean	Std Dev	Std Error
Working	41	91.341	15.997	2.498
Non working	33	88.424	13.209	2.299

In the table above the mean difference was calculated between two groups of scholars, working and non-working. Calculated t value was 1.414 in view of table value at 0.05 levels was insignificant. It showed that there was no significant difference between the competency of working and non-working scholars. Mean difference calculated was 2.19 which were also insignificant.

Conclusion

After completion of the data analysis on the basis of the results researcher drew following conclusions.

In view of the scholars provision to different electronic resources maximum number of the scholars were using computers. From a total number of scholars, 43% were those who had been using the computer from the last 10 years or more, only 1 percent was without its use. Scholars with the usage period of 0-2 years were 27% while 6-8 were 24%. Provision of internet facility at home or university was 31% from the range of 0-2 year period while 15% were using from more than 10 years duration. From the last five years maximum numbers of scholars were with the provision of laptop or a Personal Computer. Being in the age of I phone or mobile learning at higher education, scholar's access to mobile internet technology was only a few percent, majority with 58% were without its usage. Availability and usage of this facility from the last two years was 8% only. It showed that this trend was not fully flourished among scholars. Scholars perception in availing the different software used in their research were too low. A quantity of 28% was still at least level. Similarly scholars proficiency in using spreadsheet was much low. A number of 32% were with least level of proficiency and 31% with fair proficiency. Scholars were not fully capable to use the paint publishers software as well, 34% scholars were with least level of skills.

Most of the scholars were very good in using different email resources like Yahoo, Google mail, and Hotmail, etc., 32% were good and 18% very good at using emails. Scholars using search engine were well proficient. However most of the scholars using the telephonic source of internet like Skype, Yahoo call and the Moodle were very low. A ratio of least proficiency was noted as 39% in Skype, 53% in Google talk, 54% in Yahoo voice call and 69% in Moodle. It all showed the reduced level of perception for their proficiency in mutual communication while research.

Scholars' adeptness in social communication like face book, twitter, and blogs was noted at the least ratio with 58% in twitter, and 67% in using blogs. Usability of face book was satisfactory to some extent.

Scholars' barriers and hurdles in using E resources were also noted, time was considered a significant factor in using these resources, having no training facility as hurdle was supported by 15% strongly agreed and 31% agreed. One of the known ratios of hurdles

was cost effectiveness of these resources, 16% strongly agreed while 40% agreed with this statement. Some scholars were with the perception that reliability and security of data though electronic resources was a hurdle. A group with a ratio of 23% strongly agreed and 47% agreed with the statement of reliability related issues. Technical issues like connectivity, speed, bandwidth and networking were noted as hindrances too, 45% agreed while 20% strongly agreed with this opinion and it was also noted a significant hurdle.

While suggesting for the betterment, easy access, usability, and control of the hurdles, scholars provided their suggestions besides. Scholars suggested short term programs, some of the scholars suggested E course in the form of a subject in M.Phil. course work. Scholars urged for provision or access to international libraries at the arrangement of university through online internet resources.

Scholars have difference in view of their perception for their proficiency by gender. Male scholars were noted as more proficient, similarly there was no significant difference in the f perception s of working and non-working scholars about their skills.

Limitation of the Study

The study under analysis was a case study on the research scholars of a university therefore results cannot be generalized on other universities or research scholars. However being a uniform culture and awareness of technologies in Pakistani universities, this study would have the implication of the results on the other research scholars of Pakistani universities at some scale.

Recommendations

In view of conclusion and discussion researcher reached at the following recommendations;

Provision of internet facility to the scholars at home or university may be supported with access to computers. Scholars may be encouraged to avail maximum facility of computers and internet with ensuring good provision of computer relevant aids and equipments. Both administrative and controlling authorities may have to take such measures in the higher education institutions. Importance and benefits of all such E resources may be conveyed to the scholars at the universities through motivation and media. Mobile learning (M learning) is one of the fast growing trends at higher education in view of student mutual

consultation on research activities. Scholars may require to be made aware of mobile learning in the system of education and research through electronic media or training at universities. Necessary training arrangement in the areas of software usage like word processor, spreadsheets, SPSS etc., may have to be carried out by the universities. Although students were capable of using various emails but still they were behind in the social networking like face book, twitter and using blogs for solution of research related problems. Scholars training in communication sources like Skype, Google talk, Yahoo call etc., will need additional training and support. Moodle is a latest trend and necessary at higher education, hence training may be conducted to use such teleconferencing at universities.

Universities in Pakistani culture should take practical steps in planning and conducting training programs either on short or long term basis. Including an additional E-learning subject in M.Phil. research curricula may overcome such hurdles. Higher education institutions have to take the measures with the support of IT departments to remove the issue of scholars like cost effectiveness, financial assistance, technical issues in computer, issues related to internet speed , connectivity , bandwidth , networking, and hardware software troubleshooting.

Guidance and counseling can satisfy the scholar's needs if provided on time and again basis by the research institutions. Guidance can overcome the problems in the security and reliability of data. In last the practical steps at the discretion of executive and controlling authorities of universities would be essential with true spirit. Such measures will yield positive outcomes in the shape of good research both for the research institutions and their scholars.

Education media is one of the powerful sources that can enhance the awareness of E learning, E research its needs and ongoing importance in higher education. Various conferences, seminars and workshops conducted on the importance and utilization of E resources and researches can further minimize the prevailing hindrances of research scholars in E-research.

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