**CHAPTER NO: 3**

**RESEARCH DESIGN AND METHODOLOGY**

**3.1 Introduction**

This study presents the procedure used in different stages of the study i.e. literature review, designing of data collection instrument, collection of the data, data analysis and interpretation.

Technologies are changing rapidly and attracting million of peoples towards using these in all walks of life. Since the inception, Web 2.0 tools are gaining popularity among students and library professionals and becoming a central topic in our information world. This study aims to investigate the application status of web 2.0 technology in HEC recognized Public and Private Sector Universities / Degree Awarding Institutes of Pakistan. This study also explores whether librarians whose main work focuses on information are familiar with the new technological innovations and whether they use different Web 2.0 applications. Researcher also explores in this study to what extent students use web 2.0 tools both in everyday life and in relation to their studies.

* 1. **Literature Review**

A comprehensive review of the relevant literature was made in order to understand the research problem in the first phase. Web 2.0 technology related studies were comprehensively reviewed to understand different theories of Web 2.0 technology, usage and nature of Web 2.0 technology, applications in libraries, and findings of these relevant studies. To meet the scope of the study, different searching terms related to the topic and its parameters were used for literature search in published and unpublished forms. Search engine such as Google, Yahoo, Alta Vista, and Answers.com were used. In order to find the relevant material from different databases like Emerald, Science Direct, ERIC, LISA, LISTA, ASLIB, and Ebsco were thoroughly surveyed to consult peer reviewed journals, articles, proceedings, reposts etc. It helped in developing the research instrument for collecting data.

* 1. **Research Methodology**

The content analysis research method was employed to explore the status of web 2.0 tools in HEC recognized Public and Private Sector Universities / Degree Awarding Institutes of Pakistan. Content analysis is a research tool used to determine the presence of certain words or concepts within texts or sets of texts. Content analysis is a methodology in the social sciences for studying the content of communication (Tripathi and Kumar, 2010). Based on the review of the literature a checklist was developed for collection of data. The checkpoints used for this evaluative study were given by [Nguyen (2008)](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6WGP-50S8C41-1&_user=3414960&_coverDate=09%2F30%2F2010&_alid=1471134777&_rdoc=2&_orig=search&_origin=search&_zone=rslt_list_item&_cdi=6828&_st=13&_docanchor=&view=c&_ct=7803&_acct=C000060478&_version=1&_urlVersion=0&_userid=3414960&searchtype=a&_fmt=full&_pii=S1057231710000445&_issn=10572317&md5=50014a41c84a8404ffa238e2c65cd1c6" \l "bib40) for evaluating various web 2.0 tools. Additional checkpoints were arrived at after visiting and browsing the various sites. The investigation of Web 2.0 technology covers Blog, RSS feeds, IM (Instant Messaging), Wikis, Podcast / Vodcast, Facebook, Twitter, LinkedIn, and YouTube. The contents of library websites were surveyed in September to November 2011 and following procedure was adopted to collect data.

1. Get a list of HEC recognized Public and Private Sector Universities / Degree Awarding Institutes of Pakistan with their web site addresses from HEC web site ([www.hec.gov.pk](http://www.hec.gov.pk)).
2. Access all web sites of HEC recognized Public and Private Sector Universities / Degree Awarding Institutes of Pakistan to identify the existence of web 2.0 tools.
3. To check the availability of Web 2.0 tools (Blog, RSS feeds, IM (Instant Messaging), Wikis, Podcast / Vodcast, Facebook, Twitter, LinkedIn, and YouTube) binary numbers (1 for Yes and 0 for no) were used to mention the availability or non-availability of respective web 2.0 tools on the list of HEC recognized Public and Private Sector Universities / Degree Awarding Institutes of Pakistan.
4. To check the availability of Web 2.0 tools, all pages of web sites were browsed. Browsed home pages, sub pages and links such as “news”, “resources”, “directories”, etc. to check the availability of Blog, RSS feeds, IM, Wikis, Podcast / Vodcast, Facebook, Twitter, LinkedIn, and YouTube.
5. “Search” function of the web sites was used to find the Web 2.0 tools. Key words were used for finding Web 2.0 tools such as “blog”, “library blog”, “RSS”, “instant messaging”, “chat”, “wiki”, “podcast”, “Vodcast”, “facebook”, “twitter”, “linkedIn”, and “YouTube”.

This study also based on questionnaire survey to explore the usage of web 2.0 tools by library professionals and students. A questionnaire containing both open and close ended questions was distributed among library professionals and the students. “The survey based research methodology is most appropriate when investigators do not have direct access to subjects of the survey and/or the size of the sample is large”. (Tripathi and Kumar, 2010). Both these factors were applicable in the present study. The method of convenience sampling was used in this study. The part of the population that is close to the hands of the investigator is selected. According to Tripathi and Kumar (2010) the method of convenience sampling is based on the non-probabilistic sampling technique, where subjects are selected in an unstructured manner from the population frame. The part of the population that is close to the hands of the investigators is selected. This sampling method is often used during preliminary research efforts to get a gross estimate of the results, without incurring the cost of time required to select a random sample.

* + 1. **Population of the Study**

This study consisted of two types of population. First, in order to investigate the applications of web 2.0, the population of the study consist of HEC recognized Public and Private Sector Universities / Degree Awarding Institutes of Pakistan. Second, to investigate the usage of web 2.0 tools by library professionals and students, HEC recognized Business / IT and General universities are selected. Details of both populations are as under:-

**3.3.1.1 Applications of Web 2.0 Tools**

The population, for investigating applications status of web 2.0, consisted of HEC recognized Public and Private Sector Universities / Degree Awarding Institutes of Pakistan. List of HEC recognized Public and Private Sector Universities / Degree Awarding Institutes of Pakistan are attached as Appendix “A” with their location and website addresses. Detail of total 135 Public and Private universities / degree awarding institutes of Pakistan are as under:

Table 1

*Public Sector Universities / Degree Awarding Institutes*

|  |  |
| --- | --- |
| Public Sector Universities / Degree Awarding Institutes | Quantity |
| Chartered by the Government of Pakistan | 21 |
| Chartered by Government of the Punjab | 18 |
| Chartered by Government of Sindh | 13 |
| Chartered by Government of Khyber Pakhtoonkhwa | 15 |
| Chartered by Government of Balochistan | 05 |
| Chartered by Government of Azad Jammu & Kashmir | 02 |

Table 2

*Private Sector Universities / Degree Awarding Institutes*

|  |  |
| --- | --- |
| Private Sector Universities / Degree Awarding Institutes | Quantity |
| Chartered by the Government of Pakistan | 05 |
| Chartered by Government of the Punjab | 20 |
| Chartered by Government of Sindh | 23 |
| Chartered by Government of Khyber Pakhtoonkhwa | 10 |
| Chartered by Government of Balochistan | 01 |
| Chartered by Government of Azad Jammu & Kashmir | 02 |

Table 3

*Summary of Public and Private Sector Universities / Degree Awarding Institutes of Pakistan*

|  |  |
| --- | --- |
| Summary | Quantity |
| Public Sector Universities / Degree Awarding Institutes | 74 |
| Private Sector Universities / Degree Awarding Institutes | 61 |
| Total | 135 |

**3.3.1.2 Usage of Web 2.0 Tools**

To investigate the usage of web 2.0 tools by library professionals and students, HEC recognized Business / IT and General universities are selected for this study (List of HEC recognized Business / IT and General universities are attached as Appendix “B”). Universities situated at Punjab and Capital is only selected to investigate the usage of Web 2.0 tools by library professionals and students of these universities.

Table 4

*Business / IT and General Universities Situated at Punjab and Capital*

|  |
| --- |
| Business / IT and General Universities Situated at Punjab and Capital |
| University of the Punjab, Lahore |
| Government College Lahore University,  Lahore |
| Lahore University of Management Sciences (LUMS), Lahore |
| Lahore School of Economics, Lahore |
| Lahore College for Women University, Lahore |
| Quaid-i-Azam University (QAU), Islamabad |
| International Islamic University, Islamabad |
| [Bahria University, Islamabad](http://www.hec.gov.pk/new/QualityAssurance/Univ_ranking/Ranking_univ_Bu_Islamabad.htm) |
| [National University of Modern Languages, Islamabad](http://www.hec.gov.pk/new/QualityAssurance/Univ_ranking/Ranking_univ_NUML_Islamabadi.htm) |
| Fatima Jinnah Women University, Rawalpindi |
| Bahauddin Zakariya University, Multan |
| Islamia University, Bahawalpur |

**3.3.2 Development of Instrument**

Various studies on the related topic were comprehensive reviewed and their instruments were critically examined and then a structured and comprehensive questionnaire was designed according to the need and relevance of the topic. Perceptions with respect to usage and applications of Web 2.0 technologies were determined by using five-point Likert type scale. Additionally, space was also provided to get suggestions about the usage of Web 2.0 technologies in the libraries.

**3.3.3 Evaluating the Research Instrument**

After the questionnaire development it was sent to the four experts (having research experience and sufficient knowledge about Web 2.0 technologies) for its evaluation. Appendix “C” shows their names. The experts suggested some changes and the changes were made accordingly

**3.3.4 Pilot Study**

A pilot study was conducted to evaluate the questionnaire. A pilot study is used to pre-test the specific research instrument. Questionnaire was sent to the 15 library professionals working in Bahauddin Zakaria University, Multan. Results of the pilot study revealed that few statements that were not clear to the library professionals in the questionnaire. An effort was made to restructure the questionnaire in an understandable manner for the library professionals.

* 1. **Data Collection Procedure**

The investigation of Web 2.0 technology covers Blog, RSS feeds, IM (Instant Messaging), Wikis, Podcast / Vodcast, Facebook, Twitter, LinkedIn, and YouTube. The contents of library websites were surveyed in September to November 2011. Total 138 HEC recognized Public and Private Sector Universities / Degree Awarding Institutes of Pakistan were surveyed.

To investigate the usage of Web 2.0 tools, questionnaires containing both open and close ended questions were distributed among library professionals and the students. At the first stage, pilot study was conducted on 15 library professionals and 30 students to check the validity of the survey instrument. After some changes the questionnaire was finalized. At the second stage, 125 questionnaires were distributed to library professionals and 480 questionnaires were distributed to students. All questionnaires were personally distributed to library professionals and students at HEC recognized Business / IT and General Universities. The researcher visited to the individuals in their institutions, universities and offices to complete the data collection process. Although the process of data collection from a far flung location is often expensive and time consuming. Anyhow, the researcher personally collected the questionnaire from all respondents. On the third stage, some pending questionnaires were received through postal services and one questionnaire received via e-mail.

* 1. **Response Rate**

Total 125 out of 138 HEC recognized Public and Private Sector Universities / Degree Awarding Institutes of Pakistan were accessed. The accessed rate was 90.6 per cent. Total 125 questionnaires were distributed to the library professionals, whereas 105 library professionals responded the survey. Thus the response rate was 84 per cent. Total 480 questionnaires were distributed to the students, whereas 385 students responded the survey. Thus the response rate was 80 per cent.

* 1. **Data Analysis**

Based on data collected from the checklist, statistical techniques were used to analyze data. The checklist was converted in to Microsoft Excel spreadsheets. Each checkpoint in the checklist was assigned a value either 1 or 0 (yes or no answers). These values were input directly in a spreadsheet and then the “SUM” function of Excel was used to calculate the overall weightings of Web 2.0 technologies in the libraries. Data collected from library professionals and students were analyzed with the Statistical Package for the Social Sciences (SPSS, Version-17). Descriptive statistics i.e. frequencies, percentages, mean, median, mode, and standard deviation values were used to measure the variables. Five point scale adopted to get the weighted values and rank order.

**3.7 Summary of Findings, Conclusions and Recommendations**

At the end of dissertation, the summary of findings regarding research questions, conclusions and recommendations of the study are presented. Contribution to knowledge and topic for future studies are also given at the end of fifth chapter.

**CHAPTER NO: 4**

**DATA ANALYSIS AND INTERPRETATION**

**4.1 Introduction**

The previous chapters presented the, background of the study, statement of the problem, objectives and methodological procedures adopted to design, distribute and collect the survey instrument for this study.

The purpose of the study was to identify Web 2.0 tools that are applied in University libraries of Pakistan and determine whether library professionals and users utilize such web 2.0 functionalities. To achieve objectives of the study, researcher investigated that: How Pakistani universities are effectively applying Web 2.0 tools and expanding their services via Web 2.0 facilities? Whether library professionals are familiar with Web 2.0 technologies and using Web 2.0 tools for providing effective library services to library users? What should be the purpose of using Web 2.0 tools and how Web 2.0 tools should be useful for library services? Whether library professionals have ICT skills and ready to study Web 2.0 tools in future? And Whether university students are using Web 2.0 tools for both formal and informal types of learning?

In order to find the answers to research questions of the study, the collected data were analyzed using Statistical Package for the Social Sciences (SPSS-17). The results presented through frequencies, percentages, mean, media, mode and standard deviation values. The interpretation of the data was done on the form of tables, graphs, and text, etc.

**4.2 Web 2.0 Applications in Pakistan**

Table 1

*Frequency Distribution of Web 2.0 Tools in HEC Public and Private Sector Universities/Degree Awarding Institutes*

|  |  |  |
| --- | --- | --- |
| Respondents | Frequency | Percent |
| Blog | 7 | 5.6 |
| RSS feeds | 15 | 12 |
| Instant Messaging | 97 | 77.6 |
| Wikis | 0 | 0 |
| Podcast / Vodcast | 1 | 0.8 |
| Facebook | 39 | 31.2 |
| Twitter | 22 | 17.6 |
| LinkedIn | 9 | 7.2 |
| YouTube | 9 | 7.2 |

Total 125 out of 138 websites of HEC recognized Public and Private Sector Universities / Degree Awarding Institutes of Pakistan were working during the survey period and thirteen universities websites were not working during survey (The full survey is available in Appendix “D”). Many libraries provided links to Web 2.0 applications on their home pages. Instant Messaging was found to be the most popular tool. Libraries were providing reference and information services through IM. The second most popular application was social networking. Thirty nine universities had a presence on Facebook. Twenty two universities were using Twitter. Twitter “allows users to share their thoughts instantly with everyone in its network, as long as entries are 140 characters or less. The word limit forces authors to compress and summarize their thoughts. Fifteen universities were having RSS feeds. Nine were having LinkedIn and YouTube. Seven universities were having their own Blog. Only one university was having Podcast. Not a single university was having Wikis. Results indicated that a less number of universities were having Web 2.0 applications.

**4.3 Data Analysis; Use of Web 2.0 Tools by Library Professionals**

Table 2

*Frequency Distribution of Respondents' Gender*

|  |  |  |
| --- | --- | --- |
| Respondents | Frequency | Percent |
| Male | 72 | 68.6 |
| Female | 33 | 31.4 |
| Total | 105 | 100.0 |

Respondents’ profile (Table 2) shows that total of the 105 respondents, 72 (68.6%) were male and 33 (31.4%) were female. The results show that majority of male library professionals were working in university libraries of Pakistan.

Table 3

*Frequency Distribution of Respondents' Experience and Designation*

|  |  |  |
| --- | --- | --- |
| Experience and Designation | Frequency | Percent |
| Experience 0 to 5 Years | 35 | 33.3 |
| 6 to 10 Years | 36 | 34.3 |
| 11 to 15 Years | 17 | 16.2 |
| 16 to 20 Years | 6 | 5.7 |
| 21 and above | 11 | 10.5 |
| Designation Chief Librarian | 1 | 1.0 |
| Manager Libraries | 1 | 1.0 |
| Deputy Chief Librarian | 3 | 2.9 |
| Deputy Librarian | 4 | 3.8 |
| Sr. Librarian | 9 | 8.6 |
| Librarian | 51 | 48.6 |
| Assistant Librarian | 26 | 24.8 |
| Assistant Manager | 2 | 1.9 |
| Cataloguer / Classifier | 1 | 1.0 |
| Library Assistant | 5 | 4.8 |
| Periodical Assistant | 2 | 1.9 |

In response to experience (Table 3), the results show that more than half respondents (71) fell in the category 0-10 year’s experience, 17 in 11-15 years, 6 in 16-20 years, while 11 had the experience of 21 and above. The results show that majority of the respondents working as Librarian 51 (48.6%) and Assistant Librarian 26 (24.8%). The analysis across the designation exposes that mainstream of the library professionals were serving as Librarians / Assistant librarians. The respondents working on the Para-professionals positions named as Cataloguer / Classifier / Library Assistant / Periodical Assistant were small in number. The respondents working on the management positions named as Chief Librarian / Manager Libraries / Deputy Chief Librarians / Deputy Librarians were also small in number. The data analysis of experience and designation shows that majority of the mid career respondents were using Web 2.0 technologies as compare to senior level positions.

Figure 1

*Frequency Distribution Chart of Respondents' Use of Web 2.0 Technologies*

As shown in Figure 1, the findings reveal that majority of the library professionals use web 2.0 technologies. 99 (94.3%) respondents out of 105 use different applications of web 2.0 technologies. An interesting observation is that due to unawareness about the nature and uses of Web 2.0 technologies some library professionals, 5.7% indicated no use of Web 2.0 technologies.

Figure 2

*Respondents' Use of Internet*

As shown in Figure 2, majority of the library professionals (69 out of 99) use internet daily. 15 respondents were using internet twice or thrice in a week, 10 were using internet weekly. Less number of respondents were using internet fortnightly. Only one respondent was using internet monthly and rarely respectively.

Figure 3

*Respondents' Spend Time on Internet*

As shown in Figure 3, results show that 51 per cent respondents spend 1-2 hours daily on internet, 20 per cent were 2-4 hours daily on internet, 14 per cent were 4-6 hours, 13 per cent were 6-8 hours and 2 per cent were spending more than 8 hours on internet daily. This result indicated that 49 per cent respondents spending more than 2 hours daily on internet, 29 per cent spending more than 4 hours daily, and 15 per cent respondents spending more than 6 hours daily on internet for different purposes. The data analysis of internet using frequency and spending time per day shows that library professionals are familiar with the usage of internet as they spending daily some time on internet using.

Table 4

*Descriptive Statistics about the Usage Frequency of Different Web 2.0 Tools by the Respondents*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Web 2.0 Tools | Mean | Median | Mode | Std. Deviation |
| Google | 4.45 | 5.00 | 5 | .961 |
| Email Yahoo mail Gmail etc | 4.30 | 5.00 | 5 | 1.216 |
| Google Scholar | 3.90 | 4.00 | 5 | 1.425 |
| Face book | 3.82 | 4.00 | 5 | 1.155 |
| Instant Messaging | 3.56 | 4.00 | 4a | 1.364 |
| YouTube | 3.54 | 4.00 | 4 | 1.223 |
| Google Bookmark | 3.03 | 3.00 | 1 | 1.625 |
| Yahoo Bookmark | 2.82 | 3.00 | 1 | 1.612 |
| Blogger | 2.51 | 2.00 | 1 | 1.388 |
| Twitter | 2.42 | 2.00 | 1 | 1.519 |
| Library Thing | 2.35 | 2.00 | 1 | 1.431 |
| Wikis | 2.29 | 2.00 | 1 | 1.479 |
| MySpace | 2.02 | 1.00 | 1 | 1.270 |
| LinkedIn | 1.99 | 1.00 | 1 | 1.274 |
| Flicker | 1.98 | 1.00 | 1 | 1.229 |
| RSS Feeds | 1.91 | 1.00 | 1 | 1.185 |
| Del icio us | 1.73 | 1.00 | 1 | 1.219 |
| Word press | 1.72 | 1.00 | 1 | 1.088 |
| Friendster | 1.56 | 1.00 | 1 | .992 |
| Cite like | 1.56 | 1.00 | 1 | 1.032 |
| Podcast | 1.55 | 1.00 | 1 | .982 |
| Orkut | 1.53 | 1.00 | 1 | 1.024 |

a. Multiple modes exist. The smallest value is shown.

(5=Always, 4=Frequently, 3=Some Times, 2=Rarely, 1=Never)

It is evident from the results as shown in Table 4 that majority of web 2.0 tools were not used by library professionals as Mode indicated the usage values of web 2.0 tools. A less number of frequently used web 2.0 tools were Google, Email Yahoo mail Gmail etc, Google Scholar, Face book, Instant Messaging, and YouTube (Mean values are 4.45, 4.30, 3.90, 3.82, 3.56 and 3.54 respectively). Some others were used by library professionals sometimes: Google Bookmark, Yahoo Bookmark, and Blogger (Mean values are 3.03, 2.82 and 2.51 respectively). Some Web 2.0 tools were rarely used by library professionals like Twitter, Library Thing, Wikis, MySpace, LinkedIn, Flicker, RSS Feeds, Del icio us, Word press, Friendster, Cite like, Podcast, and Orkut (their mean values are: 2.42, 2.35, 2.29, 2.02, 1.99, 1.98, 1.91, 1.73, 1.72, 1.56, 1.56, 1.55, and 1.53 respectively).

Table 5

*Frequency Distribution of Respondents’ Use of Facebook*

|  |  |  |
| --- | --- | --- |
| Use of Facebook | Frequency | Percent |
| Always | 36 | 34.3 |
| Frequently | 25 | 23.8 |
| Some Times | 28 | 26.7 |
| Rarely | 4 | 3.8 |
| Never | 6 | 5.7 |
| Total | 99 | 94.3 |
| Not Using Web 2.0 | 6 | 5.7 |
| Total | 105 | 100.0 |

As shown in Table 5, majority of respondents (36 out of 105, 34.3%) were always using Facebook. 23.8 per cent respondents were frequently using Facebook. 28 out of 105 (26.7%) respondents were using Facebook sometimes. A less number of respondents (3.8%) were rarely using Facebook and 6 respondents (5.7%) were never use Facebook. 6 respondents out of 105 (5.7%) were not using Web 2.0 tools. Results indicated that Facebook is a popular social networking site and library professionals were using frequently.

Table 6

*Frequency Distribution of Respondents’ Use of MySpace*

|  |  |  |
| --- | --- | --- |
| Use of MySpace | Frequency | Percent |
| Always | 4 | 3.8 |
| Frequently | 13 | 12.4 |
| Some Times | 17 | 16.2 |
| Rarely | 12 | 11.4 |
| Never | 53 | 50.5 |
| Total | 99 | 94.3 |
| Not Using Web 2.0 | 6 | 5.7 |
| Total | 105 | 100.0 |

As shown in Table 6, half of the respondents (53 out of 105, 50.5%) never use MySpace. Only 4 respondents (3.8%) always use MySpace, 12 (11.4%) were using rarely, 17

(16.2%) were using sometimes. Only 13 respondents (12.4%) were frequently using MySpace. 6 respondents out of 105 (5.7%) were not using Web 2.0 tools. Results reveal that MySpace in not a popular social networking site in library professionals.

Table 7

*Frequency Distribution of Respondents’ Use of OrKut*

|  |  |  |
| --- | --- | --- |
| Use of Orkut | Frequency | Percent |
| Always | 3 | 2.9 |
| Frequently | 5 | 4.8 |
| Some Times | 6 | 5.7 |
| Rarely | 13 | 12.4 |
| Never | 72 | 68.6 |
| Total | 99 | 94.3 |
| Not Using Web 2.0 | 6 | 5.7 |
| Total | 105 | 100.0 |

As shown in Table 7, more than half of the respondents (72 out of 105, 68.6%) never use Orkut. Only 3 respondents (2.9%) always use Orkut, 13 (12.4%) were using rarely, 6 (5.7%) were using sometimes. Only 5 respondents (4.8%) were frequently using Orkut. 6 respondents out of 105 (5.7%) were not using Web 2.0 tools. Results reveal that majority of respondents were not using Orkut, a less number of respondents were using.

Table 8

*Frequency Distribution of Respondents’ Use of YouTube*

|  |  |  |
| --- | --- | --- |
| Use of YouTube | Frequency | Percent |
| Always | 21 | 20.0 |
| Frequently | 40 | 38.1 |
| Some Times | 20 | 19.0 |
| Rarely | 7 | 6.7 |
| Never | 11 | 10.5 |
| Total | 99 | 94.3 |
| Not Using Web 2.0 | 6 | 5.7 |
| Total | 105 | 100.0 |

As shown in Table 8, majority of respondents using YouTube. 40 out of 105 respondents (38.1%) frequently using YouTube. 20.0 per cent respondents were always using YouTube. 20 respondents (19.0%) out of 105 were using YouTube sometimes. A less number of respondents (6.7%) were rarely using YouTube and 11 respondents (10.5%) were never use YouTube. 6 respondents out of 105 (5.7%) were not using Web 2.0 tools. Results indicated that library professionals were frequently using YouTube.

Table 27

*Descriptive Statistics about the Purpose of Using Web 2.0 Tools by the Respondents*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Purpose of Using Web 2.0 Tools | Mean | Median | Mode | Std. Deviation |
| For research or study | 4.36 | 4.00 | 5 | .721 |
| To develop relationship between library and users | 4.30 | 4.00 | 5 | .735 |
| Inform users about new library activities | 4.30 | 4.00 | 4a | .762 |
| Knowledge sharing and transferring | 4.30 | 4.00 | 5 | .775 |
| To promote library product and services | 4.27 | 4.00 | 4a | .780 |
| For sharing resources | 4.22 | 4.00 | 4 | .736 |
| Library delivers services to users via the university library website | 4.20 | 4.00 | 5 | .915 |
| Disseminate knowledge to library users as users required new electronic modes | 4.16 | 4.00 | 4 | .854 |
| For a variety of knowledge management | 4.14 | 4.00 | 5 | .881 |
| Discuss issues | 4.08 | 4.00 | 4 | .900 |
| Enable users to share ideas | 4.08 | 4.00 | 4 | .877 |
| To engage the library in two way communication and knowledge exchange | 4.06 | 4.00 | 4 | .818 |
| Share problems | 4.02 | 4.00 | 4 | .795 |
| For finding social contacts | 3.99 | 4.00 | 4 | .974 |
| Finding communities with common interests | 3.97 | 4.00 | 4 | .814 |
| For entertainment | 3.72 | 4.00 | 4 | 1.079 |

a. Multiple modes exist. The smallest value is shown.

(5=Strongly Agree, 4=Agree, 3=Agree to Some Extent, 2=Disagree, 1=Strongly Disagree)

As shown in Table 27, the respondents were asked to mention the purpose of using web 2.0 tools in libraries. It was found that all were agree (as median value shows 2.00) to use Web 2.0 tools for research or study, developing relationship between library and users, Inform users about new library activities, Knowledge sharing and transferring, promoting library product and services, sharing resources, delivering services to users via the university library website, Disseminating knowledge to library users as users required new electronic modes, variety of knowledge management, Discussing issues, Enabling users to share ideas, engaging the library in two way communication and knowledge exchange, Share problems, finding social contacts, finding communities with common interests, and For entertainment (Mean values are: 4.36, 4.30, 4.30, 4.30, 4.27, 4.22, 4.20, 4.16, 4.14, 4.08, 4.08, 4.06, 4.02, 3.99, 3.97, 3.72 and 2.28 respectively).

Table 28

*Descriptive Statistics by the Respondents’ about How the Web 2.0 is Useful for Library?*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| How Web 2.0 is Useful for Library | Mean | Median | Mode | Std. Deviation |
| Useful for referring library users to related sources | 4.31 | 4.00 | 4 | .600 |
| Effective for organizing library resources | 4.27 | 4.00 | 4 | .712 |
| To inform the new and updated information of library | 4.27 | 4.00 | 4 | .682 |
| Good opportunity for the promotion of library services | 4.23 | 4.00 | 4 | .754 |
| Library gets feedback from users about its services | 4.18 | 4.00 | 5 | .885 |
| Provides opportunity for interaction between library and society | 4.17 | 4.00 | 4 | .743 |
| Provides user friendly environment | 4.16 | 4.00 | 4 | .752 |
| Library can understand users trends and interests | 4.15 | 4.00 | 4 | .813 |
| Library has convenience to deliver services | 4.14 | 4.00 | 4a | .845 |
| Cooperating behavior of librarians with users | 4.12 | 4.00 | 4 | .799 |
| It helps encouraging community participation in library tasks | 4.07 | 4.00 | 4 | .848 |
| Useful for creating comprehensive users profile | 4.07 | 4.00 | 4 | .746 |
| Library provides welcoming atmosphere | 4.03 | 4.00 | 4 | .788 |
| Library involves users in service development | 3.94 | 4.00 | 4 | .767 |
| Library staff analyses and respond to users complaints | 3.93 | 4.00 | 4 | .759 |
| Eases the burden of librarians and users | 3.84 | 4.00 | 4 | .877 |

a. Multiple modes exist. The smallest value is shown.

(5=Strongly Agree, 4=Agree, 3=Agree to Some Extent, 2=Disagree, 1=Strongly Disagree)

As shown in Table 28, the respondents were asked to mention How the Web 2.0 is useful for library. It was found that all were agree (as median value shows 4.00) that Web 2.0 is useful for referring library users to related sources, Effective for organizing library resources, To inform the new and updated information of library, Good opportunity for the promotion of library services, Library gets feedback from users about its services, Provides opportunity for interaction between library and society, Provides user friendly environment, Library can understand users trends and interests, Library has convenience to deliver services, Cooperating behavior of librarians with users, It helps encouraging community participation in library tasks, Useful for creating comprehensive users profile, Library provides welcoming atmosphere, Library involves users in service development, Library staff analyses and respond to users complaints, and Eases the burden of librarians and users (mean values are: 4.31, 4.27, 4.27, 4.23, 4.18, 4.17, 4.16, 4.15, 4.14, 4.12, 4.07, 4.07, 4.03, 3.94, 3.93, and 3.84 respectively).

Table 29

*Descriptive Statistics about the Use of Blog by the Respondents*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use of Blog by Library Professionals | Mean | Median | Mode | Std. Deviation |
| Read Blog | 2.87 | 3.00 | 1 | 1.496 |
| Add posts to Blog | 2.33 | 2.00 | 1 | 1.378 |
| Read library Blog for library news events | 2.82 | 3.00 | 1 | 1.561 |
| Read archival entries of Blog | 2.28 | 2.00 | 1 | 1.317 |
| Read library Blog for new books | 2.37 | 2.00 | 1 | 1.433 |

(5=Daily, 4=Twice/Thrice a Week, 3=Weekly, 2=Monthly, 1=Never)

The results as shown in Table 29, frequency of Web 2.0 technologies use shows that the respondents were reading Blog on weekly basis (mean values is 2.87). Respondents were adding posts to Blog, reading library Blog for new events, reading archival entries of Blog and reading library Blog for new books on monthly basis (mean values are: 2.33, 2.82, 2.28, and 2.37 respectively). The mode value, 1.00, of all the statements showed that the respondents were less interested towards using of Blog in the libraries.

Table 30

*Descriptive Statistics about the Use of RSS feeds by the Respondents*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use of RSS feeds by Library Professionals | Mean | Median | Mode | Std. Deviation |
| Use RSS feeds for general news | 2.25 | 2.00 | 1 | 1.373 |
| Use RSS feeds for library news and events | 2.17 | 1.00 | 1 | 1.422 |
| Use RSS feeds for blog entries | 2.13 | 1.00 | 1 | 1.368 |
| Use RSS feeds for new and updated information on university website | 2.34 | 2.00 | 1 | 1.540 |

(5=Daily, 4=Twice/Thrice a Week, 3=Weekly, 2=Monthly, 1=Never)

The results as shown in Table 30, frequency of Web 2.0 technologies use shows that the respondents were using RSS feeds on Monthly basis for general news, for library news and events, for Blog entries, for new and updated information on university website (mean values are: 2.25, 2.17, 2.13, and 2.34 respectively). The mode value, 1.00, of all the statements showed that the respondents were not interested towards using RSS feeds and not familiar with the nature and use of RSS feeds.

Table 37

*Descriptive Statistics about the Purpose of Blog Use*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Purpose of Blog Use | Mean | Median | Mode | Std. Deviation |
| Publicizing library news and events | 4.36 | 4.00 | 5 | .662 |
| Library services | 4.22 | 4.00 | 4 | .763 |
| New books or Book reviews or Book discussions | 4.32 | 4.00 | 4 | .652 |
| Comments | 3.98 | 4.00 | 4 | 1.059 |

(5=Strongly Agree, 4=Agree, 3=Agree to Some Extent, 2=Disagree, 1=Strongly Disagree)

The results as shown in Table 37, all respondents were agree as the median value, 4.0, showed that the library Blog should have the purpose of publicizing library news and events, provide library services, publicizing new books or book reviews or book discussions, and comments (mean values are: 4.36, 4.22, 4.32, and 3.98 respectively).

Table 38

*Descriptive Statistics about the Features of Blog*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Features of Blog | Mean | Median | Mode | Std. Deviation |
| Adequacy of instructions on how to use blogs | 3.82 | 4.00 | 4 | 1.014 |
| Library designs its own blogs | 3.88 | 4.00 | 4 | 1.003 |
| Library uses RSS to feed blogs entries | 3.74 | 4.00 | 4 | 1.016 |
| Link to the library home page | 4.05 | 4.00 | 4 | .919 |
| There are dates and times of postings | 3.98 | 4.00 | 4 | .808 |
| There are archives for the blogs | 3.87 | 4.00 | 4 | .965 |
| Entries are searchable by keywords | 3.99 | 4.00 | 4 | .863 |

(5=Strongly Agree, 4=Agree, 3=Agree to Some Extent, 2=Disagree, 1=Strongly Disagree)

The results as shown in Table 38, all respondents were agree as the mean and median value, 4.0, showed that the library Blog should have the features: Adequacy of instructions on how to use Blogs, Library designs its own Blogs, Library uses RSS to feed Blogs entries, Link to the library home page, There are dates and times of postings, There are archives for the Blogs, and Entries are searchable by keywords (mean values are: 3.82, 3.88, 3.74, 4.05, 3.98, 3.87 and 3.99 respectively). Results of Table 37 and Table 38 reveals that library professionals were agree about the purpose and features of library Blog which indicated that use of library Blog will be helpful for providing library services.

Table 39

*Descriptive Statistics about the Purpose of RSS feeds*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Purpose of RSS feeds | Mean | Median | Mode | Std. Deviation |
| Library or university news and events | 4.23 | 4.00 | 4 | .793 |
| New books or New e journals | 4.13 | 4.00 | 4 | .933 |
| Subject information | 4.13 | 4.00 | 4 | .829 |

(5=Strongly Agree, 4=Agree, 3=Agree to Some Extent, 2=Disagree, 1=Strongly Disagree)

The results as shown in Table 39, all respondents were agree as the mean and median value, 4.0, showed that the RSS feeds should have the purpose of updating with library or university news and events, for new books or new e journals, and about subject information (mean values are: 4.23, 4.13, and 4.13 respectively).

Table 40

*Descriptive Statistics about the Features of RSS feeds*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Features of RSS feeds | Mean | Median | Mode | Std. Deviation |
| Adequacy of instructions on how to use RSS | 3.98 | 4.00 | 4 | .845 |
| Provide links to download RSS readers | 4.01 | 4.00 | 4 | .863 |
| Library builds its own RSS readers | 3.78 | 4.00 | 4 | 1.084 |
| News is classified into topics | 3.96 | 4.00 | 4 | .824 |

(5=Strongly Agree, 4=Agree, 3=Agree to Some Extent, 2=Disagree, 1=Strongly Disagree)

The results as shown in Table 40, all respondents were agree as the mean and median value, 4.0, showed that the RSS feeds should have the features: Adequacy of instructions on how to use RSS feeds, Provide links to download RSS readers, Library builds its own RSS readers, and News is classified into topics (mean values are: 3.98, 4.01, 3.78 and 3.96 respectively). Results of Table 39 and Table 40 reveal that library professionals were agree about the purpose and features of RSS feeds which indicated that use of RSS feeds will be helpful for providing library services.

Table 45

*Descriptive Statistics about the Skill Level of the Respondents*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Skill Level of Respondents’ | Mean | Median | Mode | Std. Deviation |
| Computer software and hardware | 1.37 | 1.00 | 1 | .559 |
| Microsoft Office | 1.79 | 2.00 | 2 | .689 |
| Internet browsing / searching techniques | 1.71 | 2.00 | 1a | .703 |
| Web 2.0 applications | 1.19 | 1.00 | 1 | .441 |

a. Multiple modes exist. The smallest value is shown

(1=Low, 2=Average, 3=High)

The results as shown in Table 45, majority of respondents’ skill level about computer software and hardware were low as median and mode value 1.0 and mean value is 1.37. Majority of respondents’ skill level about Microsoft Office was on average level as mean value is 1.79, mean and median value 2.0 indicated that most of the respondents know about the usage of Microsoft Office. As results showed that respondents skill level about internet browsing / searching techniques were on average level as mean value is 1.71. Majority of respondents’ skill level about using web 2.0 applications were low as results showed the mean value is 1.19, mode and median is 1.0. Results reveal that respondents were have sufficient knowledge about Microsoft Office and internet browsing but the respondents were not have sufficient knowledge about computer hardware and software and also they were also do not have knowledge about Web 2.0 applications.

Table 46

*Descriptive Statistics about the Use of Web 2.0 in Future by Respondents*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Web 2.0 Applications | Mean | Median | Mode | Std. Deviation |
| Web 2 | 4.32 | 4.00 | 4 | .596 |
| Library 2 | 4.30 | 4.00 | 4 | .590 |
| Content sharing | 4.09 | 4.00 | 4 | .539 |
| Blogs | 4.27 | 4.00 | 4 | .576 |
| Wikis | 3.83 | 4.00 | 4 | .579 |
| RSS | 4.28 | 4.00 | 4 | .580 |
| Social networks | 4.00 | 4.00 | 4 | .572 |
| Instant messaging | 3.87 | 4.00 | 4 | .520 |

(1=Not Important at All, 2=Not Important, 3=Somewhat Important, 4=Important, 5=Very Important)

In this question respondents were asked about the study of web 2.0 applications in future. It is evident from the results as shown in Table 46 that almost all respondents were agreed that web 2.0 applications are important as Median and Mode values indicated that respondents were considered the importance of web 2.0 applications. Respondents were ready in future to know about Web 2.0, Library 2.0, content sharing, Blogs, Wikis, RSS feeds, Social Networking, and Instant Messaging (Mean values are: 4.32, .30, 4.09, 4.27, 3.83, 4.28, 4.0, and 3.87 respectively).

Table 47

*Descriptive Statistics about the Respondents Attitude Toward Learning Web 2.0*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attitude Toward Learning Web 2.0 | Mean | Median | Mode | Std. Deviation |
| I am ready to study new subjects relating to Web2.0 | 3.98 | 4.00 | 4 | .620 |
| I am ready to devote a lot of time to mastering Web 2.0 principles | 4.02 | 4.00 | 4 | .519 |
| Web 2.0 interests me a lot | 4.21 | 4.00 | 4 | .689 |
| I am ready to make many efforts to master this subject | 4.02 | 4.00 | 4 | .554 |
| I understand Web 2 is very important | 4.06 | 4.00 | 4 | .586 |
| I will be very happy to know this subject in depth | 4.31 | 4.00 | 4a | .684 |

a. Multiple modes exist. The smallest value is shown

(5=Strongly Agree, 4=Agree, 3=Agree to Some Extent, 2=Disagree, 1=Strongly Disagree)

In this question, respondents were asked about the attitude towards learning Web 2.0. It is evident from the results as shown in Table 47 that almost all respondents were agree to study new subjects relating to Web 2.0, respondents’ were ready to devote a lot of time to mastering Web 2.0 principles, Web 2.0 interests respondents a lot, respondents were ready to make many efforts to master this subject, respondents were understanding that Web 2.0 is very important, and respondents will be very happy to know this subject in depth (mean values are: 3.98, 4.02, 4.21, 4.02, 4.06, and 4.31 respectively). Median and Mode value 4.0 indicated that respondents were agree to understand Web 2.0 applications.

Figure 4

*Respondents' Training Needs about Web 2.0 Technology*

It is evident from the results as shown in Figure 4 that 100 out of 105 (95.2%) respondents were ready to get training for using Web 2.0 technologies in libraries. Only 5 respondents were fully known about the usage of Web 2.0 tools and they do not have further required training.