

**Full Length Research**

# Reflection of Using Disruptive Web 2.0 Technology in LIS Education and Virtual Learning Environment: A Study

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Accepted 30 December 2016

The use of Web 2.0 tools are very helpful in constructing our ideas and develop a new vision to look at simple things in different possible and best ways. Web 2.0 Technology endorses the way in which teachers learn, browse information and communicate with students instantly. These tools facilitate distance learning, virtual online learning and e- learning which have transformed the way the teaching learning process a lot. It offers new and alternate modes of delivery and facilitates to reach new potential target groups. The present study attempted to assess familiarity of Web 2.0 and to determine the difficulties faced by LIS faculty while using and teaching Web 2.0 tools in LIS education in India. Survey method is adopted with the help of online structured questionnaire and designed keeping in view of the stated objectives comprising of several types of questions, dichotomous questions (yes/no), multiple choice questions and opinion-based questions. Findings revealed that 95.45% of participants learned through self-practice or through online tutorials.

**Keywords:** Web 2.0, LIS education, Virtual learning, India

**Cite This Article As:** Singha SC, Sen D, Sarmah M (2017). Reflection of Using Disruptive Web 2.0 Technology in LIS Education and Virtual Learning Environment: A Study. *Inter. J. Acad. Lib. Info. Sci.* 5(1): 8-18.

## INTRODUCTION

Web 2.0 Technology endorses the addition of e-learning/virtual learning into current university course curricula and encourages a shift in the direction of lifelong learning in higher education of Library Science Department. These tools through learner can acquire knowledge with much flexibility in the learning process and allow for easy publication, sharing of ideas, and make link to relevant resources to learner. Web 2.0 offers new opportunities to online self-learner and can support

innovative teaching methods and is related with ideas like groups of practice, syndicated content, learning as a creative activity, Peer-to-Peer (P2P) learning, creation of personal learning environments, and non-formal education. Web 2.0 tools can be used to advance Learning 2.0 policies that can develop student motivation, increase participation, facilitate learning and social skills, stimulate higher order cognitive skills, and increase self-directed learning.

In the present study, researcher attempt has been made to examine awareness and use of Web 2.0 tools in teaching and learning by LIS faculty. Further, the study intended to different encountered face by LIS faculty while using and teaching Web 2.0 tools in LIS students.

## SCOPE AND LIMITATION OF RESEARCH

Researcher covered only LIS faculty excluding any other discipline's teacher. LIS teachers were determined and searched with the help of SRFLIS website (<http://srflisindia.org/wp/?p=298> or <http://www.liseducation.in/listec.php>) created and designed by **Dr. K. P. Singh**, Assistant Professor, DLIS, Delhi University, and Delhi where LIS courses are offered. The present study encompasses full time, part time and guest faculty involved in real teaching theory and practical of the LIS education (BLISc, MLISc, M.Phil., Ph.D.) degree courses.

## RESEARCH OBJECTIVES

The present study was carried out to achieve the following major objectives:

- a) To identify and examine the different purposes for using Web 2.0 tools in teaching and learning by LIS faculty;
- b) To determine the different difficulties faced by LIS faculty while using and teaching Web 2.0 tools in LIS students;
- c) To find out the advantages/reflection of introducing Web 2.0 educations in LIS course curriculum;
- d) To know the reasons for not using Web 2.0 tools in teaching;
- e) To know from where respondents acquired Web 2.0 tools in teaching and learning;
- f) To identify whether there is any plan to have full course on;
- g) To examine in which area training is required by LIS faculty in teaching and learning.

## METHODOLOGY EMPLOYED

In order to complete the above set of research objectives, researcher adopted web based online questionnaire using with the support of Google doc. (<https://www.google.co.in/drive/>). The online questionnaire consisted two parts namely personal details and Web 2.0 education. In the first section, personal details like name, designation, gender, qualification, and experience in the present position. The second section, Web 2.0 education

such as aware of Web 2.0 tools, use of Web 2.0 tools, reasons for not using Web 2.0 tools in teaching, advantages/reflection of introducing Web 2.0 education in LIS Course Curriculum, purposes of using Web 2.0 Applications in teaching and learning, identifying the problems in teaching Web 2.0 Applications etc.

## PREVIOUS RESEARCH WORK ON WEB 2.0 EDUCATION

Many studies have been undertaken worldwide in the direction of particular theme but in Indian context a few. Researcher consults only those existing literatures which are relevant to Web 2.0 education, contributed by diverse expert's views. Some of significant articles are given below in this particular topic.

Bawden et al. (2007) made a study entitle on "*Towards curriculum 2.0: Library and information education for a Web 2.0 world.*" Author opined that introduction of Web 2.0 into teaching is, in most circumstances, best done incrementally, starting with particular courses or topics, and expanding on the basis of knowledge gained. Given the investment of effort into the development of e-learning systems in many academic departments, it seems very sensible to use this as a platform for development of the Web 2.0 LIS curriculum. Some degree of central planning is desirable, as is evaluation of the success of use of Web 2.0 features in teaching, as experience is gained. The full range of Web 2.0 features should be covered in the curriculum, as it is difficult to predict which will be of importance for LIS practice. It seems certain that some will be, and their successful incorporation into the LIS curriculum – both as things to learn about, and as tools to learn with – is an important task.

Garoufallou and Charitopoulou (2012) made a research entitle on "*Web 2.0 in library and information science education: the Greek case*", which revealed that most of the students are aware of the majority of Web 2.0 tools. Thus, they are willing to attend training concerning Web 2.0 because they believe this will enrich their knowledge on the subject. Blogs and Wikis are the first choices of the tools they would like to learn about. Students believe that computer scientists are more qualified to teach Web 2.0 tools, while some respond that cooperation between librarians and computer scientists will do benefit for the profession. As advantages of using Web 2.0 they named acquiring new knowledge and facilitation with the assignments. The faculty staff has positive views introducing Web 2.0 tools in classes as a way of communicating with students but they feel that it is too early for these tools to play a learning role in LIS teaching.

Grosbeck (2009) conducted a study entitle on "*To use or not to use web 2.0 in higher education?*" discussed

that all the actors from the educational field (teachers, tutors, trainers, administrators, or those responsible for policies) would find the Web 2.0 technologies efficient and promising both for the educational process and for self-development. It is certain that, once engaged in using the Web 2.0 technologies they would discover it is worth the effort and they would enjoy its benefits.

Sawant (2012) conducted a survey on "*The study of the use of Web 2.0 tools in LIS education in India*", and pointed out that LIS teachers have a low level of familiarity regarding the use of Web 2.0. Most of the teachers use Web 2.0 for video sharing via you tube. Nearly half of teachers never used Wikis. The main problem in use of Web 2.0 in teaching was the lack of training programmes organized by universities and other institutions for teachers to use/teach Web 2.0 tools.

Shroff (2008) in a research entitled on "*E-Learning: Trends and opportunities for lis community*", emphasized that LIS students have to compete with students of other professions and to survive in the information industry, they have to be equipped with a curriculum which can make them function as competent information professionals. There is a strong need for continuing professional education and training in LIS field. The present LIS education system in India suggests that the quality improvement is essential and unavoidable, not only for its survival but also for facing the major changes and challenges of today and tomorrow. E-learning is beneficial to the LIS community in many areas as it offers opportunities for new learning to develop knowledge and skills in a wide range of areas, for growth in employment opportunities, for taking part in collaborative development, in developing new roles and responsibilities within the libraries and information centers, to work from home, to maintain a healthy life/work balance, in better information exchange, sharing of ideas and support within the LIS community, to work together and construct professional knowledge across different countries etc.

Tyagi and Kumar (2001) undertook case studies on "*Web 2.0 for teaching, learning and assessment in higher education: A case study of universities in Western Uttar Pradesh (India)*." Author suggests that administrators, who are interested in increasing the use of Web 2.0 in the classroom, should focus their attention, efforts, and investments on improving faculty attitude and enhance their perceived behavioral control of Web 2.0 use. More specifically, these efforts should focus on improving the perceived usefulness, ease of use, and compatibility (with current practices) of Web 2.0 applications, as well as improving faculty's self-efficacy with these emerging technological tools. Additionally, while these tools show pedagogical promise, "best practices" models are needed to further facilitate the adoption of these emerging technologies as tools for improving teaching and learning in higher education.

## DATA ANALYSIS AND INTERPRETATION

Analysed data are ordered systematically into different sections and interpretations are supported by table, figures etc. whenever necessary.

### Demographic Data

Table 1 disclosed in four sections such as gender wise distribution, qualification, designation and work experience in particular field. Out of 66 respondents, 51 (77%) of respondents are male and 15 (23%) of participants are female. Based on their qualification, the respondents are divided into four groups such as BLI Sc0 (0%), MLI Sc 9 (13.63%), M.Phil 9 (13.63%), Ph.D 48 (72.72%). Data are collected from groups such as Assistant Professor 45 (68.18%), Reader 6 (9.09), Associate Professor 6 (9.09%), and Professor 9 (13.63%). A majority of the respondents i.e., 24 (36.36%) used Web 2.0 tools for more than 16 years and above experience. The demographic details of the responses received are summarized in Table 1.

### Level of Awareness of Web 2.0 Tools

The respondents were requested to specify their awareness with concern to some statements as shown in Table 2. 66 (100%) of respondents were aware of Web 2.0 tools.

### Familiarity of Web 2.0 Tools

Participants were questioned to specify whether they familiar Web 2.0 tools. Figure 1 showed that majority of participant i.e., 100% were aware of Blog and Wiki, which 95.45% of participants were aware SNS such as Facebook, Linked In, Slidsshare, Academia.edu, Research gate, Google Plus, You Tube, and Twitter etc. A good number of the participants i.e., 90.9% participants showed their familiar about RSS, which was followed by IM with 81.82% participants. 72.72% of participants knew Mashupand 68.18% of participants were aware Podcast.

### Use Web 2.0 Tools

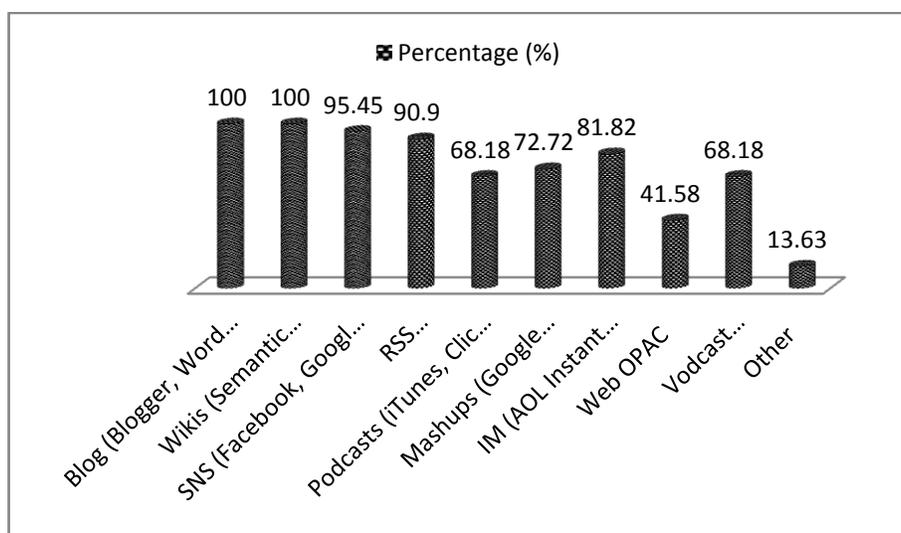
In order to determine the how many LIS faculties which Web 2.0 tools are used shown in Table 3.66 (100%) of respondents were used Web 2.0 tools for various purposes like online writing/editing/publishing and professional communication with others, bookmarking web pages and sharing with students etc.

**Table 1: Demographic Data**

| Description          | Frequency(N = 66) | Percentage (%) |
|----------------------|-------------------|----------------|
| <b>Gender</b>        |                   |                |
| Male                 | 51                | 77             |
| Female               | 15                | 23             |
| <b>Qualification</b> |                   |                |
| BLISc                | 0                 | 0              |
| MLISc                | 9                 | 13.63          |
| MPhil.               | 9                 | 13.63          |
| Ph.D                 | 48                | 72.72          |
| <b>Designation</b>   |                   |                |
| Assistant Professor  | 45                | 68.18          |
| Reader               | 6                 | 9.09           |
| Associate Professor  | 6                 | 9.09           |
| Professor            | 9                 | 13.63          |
| <b>Experience</b>    |                   |                |
| 1-5 Years            | 15                | 22.72          |
| 6-10 Years           | 9                 | 13.63          |
| 11-15 Years          | 6                 | 9.09           |
| 16 Years And Above   | 24                | 36.36          |

**Table 2: Level of Aware of Web 2.0 Tools**

| Aspects      | No. of Respondent (N = 66) | Percentage (%) |
|--------------|----------------------------|----------------|
| Yes          | 66                         | 100            |
| No           | 0                          | 0              |
| <b>Total</b> | <b>66</b>                  | <b>100</b>     |

**Figure 1: Familiarity Web 2.0 Tools**

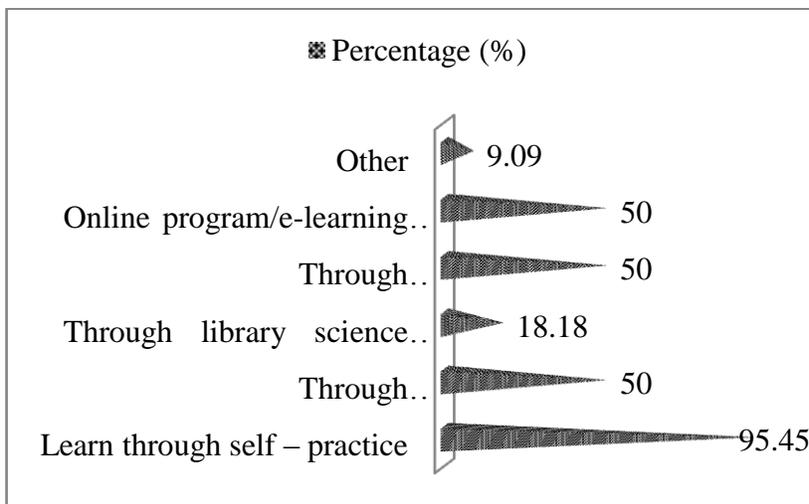
### Acquiring Skills to Learn

Participants were requested to mention the mode through

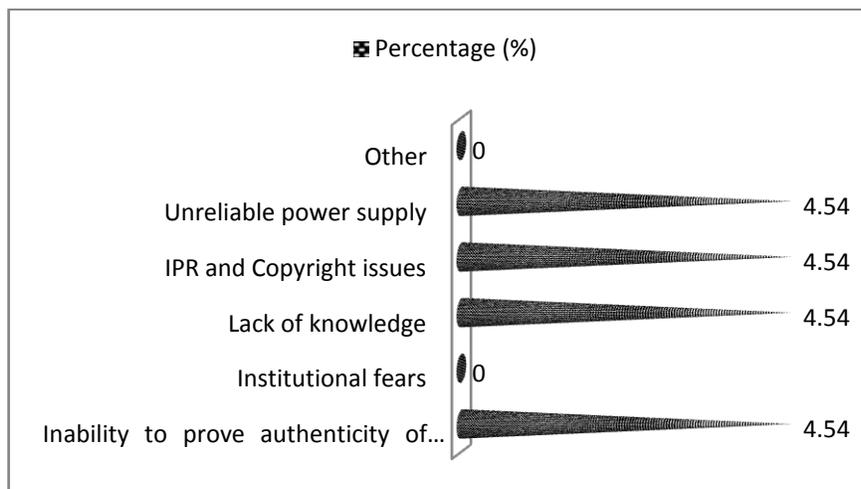
which they learnt the usage of Web 2.0 applications. Analysis of a data revealed that 95.45% of participants learned through self-practice or through online tutorials

**Table 3:** Use Web 2.0 Tools

| Aspects      | No. of Respondent (N = 66) | Percentage (%) |
|--------------|----------------------------|----------------|
| Yes          | 66                         | 100            |
| No           | 0                          | 0              |
| <b>Total</b> | 66                         | 100            |



**Figure 2:** Means of Acquiring Skills to Use of Web 2.0 Tools

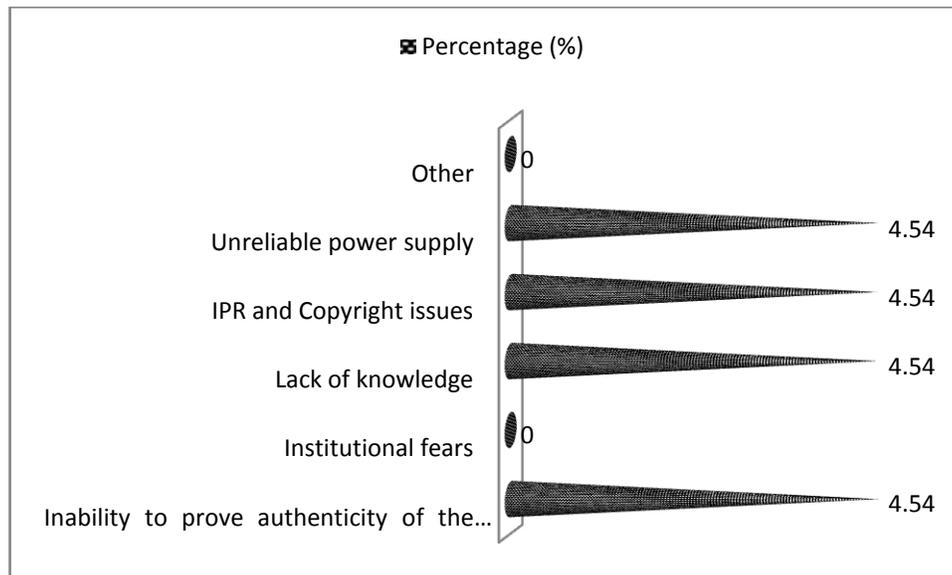


**Figure 3:** Reasons for Not Using Web 2.0 Tools in Teaching

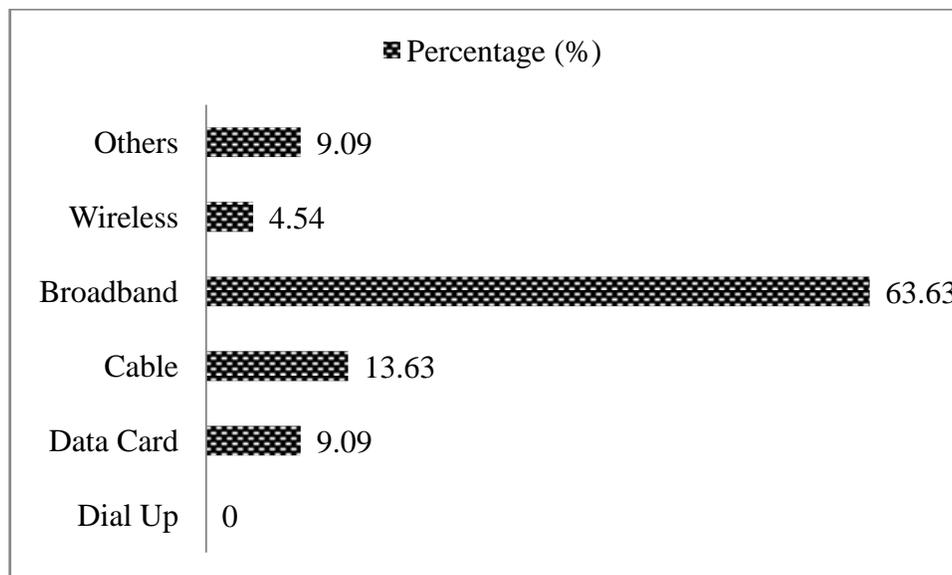
which was followed by online program/e-learning program, through workshop/training/induction/orientation/refresher course etc. and through friends/colleagues help with 50%. 18.18% of respondents learned from through library science departments and only 9.09% of respondents acquired knowledge from other mode. (Figure 2)

**Reasons for Not Using Web 2.0 Tools in Teaching**

In response to the question why respondents did not use Web 2.0 in teaching. Respondents answered in different ways (Figure 3). Most of respondents realised that inability to prove authenticity of the content, IPR and Copyright issues, irregular power supply and lack of knowledge.



**Figure 3:** Reasons for Not Using Web 2.0 Tools in Teaching



**Figure 4:** Type of Internet Connection Used for Web 2.0 Tools

#### Type of Internet Connection Used for Web 2.0 Tools

Respondents were questioned to indicate various devices available for connectivity and their responses are presented in Figure 4. Majority of respondent's i. e; 63.63% used Broadband connection, which was followed by cable with 13.63% respondents, while 9.09% of respondents using data card and other internet connection used. Only 4.54% of respondents used wireless for internet connection.

#### Preferred Place(S) to Access Internet

The respondents were requested different questions to probe the status of preferred place to access internet. Table 4 pointed out that the location from where the Internet was mostly accessed by the respondents. The majority of respondents i.e. 27 (40.9%) of respondents accessed the Internet in their University Library which was followed by, Home 24 (36.36%), Department 12 (18.18%).

**Table 4:** Preferred Place(S) to Access Internet

| Preferred Place(S) | No. of Respondent (N = 66) | Percentage (%) |
|--------------------|----------------------------|----------------|
| Home               | 24                         | 36.36          |
| Cyber Café         | 0                          | 0              |
| University Library | 27                         | 40.9           |
| Department         | 12                         | 18.18          |
| Others             | 0                          | 0              |

**Table 5:** Devices Used for Accessing Web 2.0

| Devices         | No. of Respondent (N = 66) | Percentage (%) |
|-----------------|----------------------------|----------------|
| Desktop         | 27                         | 40.9           |
| Laptop          | 36                         | 54.54          |
| Notebook/Tablet | 0                          | 0              |
| Mobile          | 0                          | 0              |

**Table 6:** Advantages/Reflection of Introducing Web 2.0 Education

| Advantages/Reflection of introducing Web 2.0 education   | No. of Respondent (N =66) | Percentage (%) |
|--|---------------------------|----------------|
| Supports to simplify/reduce routine and repetitive tasks   | 42                        | 63.63          |
| Facilitate new and innovative modes of learning (multiple modes of interaction – (a) synchronous, differentiated | 66                        | 100            |
| Content, interactive learning materials)   | 48                        | 72.72          |
| Makes flexibility of time, place, pace   | 42                        | 63.63          |
| Facilitate teacher's opportunities to spend more time on the creation of lessons in a new and challenging way    | 39                        | 59.09          |

### Devices Access Web 2.0 Tools

Generally, desktops, laptop, notebook etc. are devices used for accessing Web 2.0 tools. It is revealed from Table 5 that a large number of majority i. e; 36 (54.54%) of participants utilize laptop while only 27 (40.9%) of responded response that they use desktop for accessing Web 2.0 tools for teaching purpose.

### Advantages/Reflection of Introducing Web 2.0 Education

Respondents were asked to indicate whether introducing Web 2.0 education in LIS virtual learning and teaching. Majority of respondents i. e; 66 (100%) thought that

facilitate new and innovative modes of learning, which was followed by content, interactive learning materials with 48 (72.72%) respondents. A few respondents i.e., 42 (63.63%) opined supports to simplify/reduce routine and repetitive tasks and makes flexibility of time, place, pace. 39 (59.09%) of respondents realized that facilitate teacher's opportunities to spend more time on the creation of lessons in a new and challenging way.

### Purposes of Using Web 2.0 Applications

Respondents were requested to mention their view regarding the purposes of using Web 2.0 Applications. Table 7 disclosed that 57 (86.36%) of the respondents used the Web 2.0 Applications for online

**Table 7:** Purposes of Using Web 2.0 Applications

| Purposes of Using Web 2.0 Applications                     | No. of Respondent (N = 66) | Percentage (%) |
|--|----------------------------|----------------|
| Bookmarking web pages and sharing with students            | 45                         | 68.18          |
| Online writing/editing/publishing using Wikipedia/Blog/SNS | 57                         | 86.36          |
| Sharing of photographs/videos                              | 36                         | 54.54          |
| Sharing presentation on Slide Share                        | 42                         | 63.63          |
| Creating blogs/contributing to blogs                       | 42                         | 63.63          |
| Professional communication with others                     | 57                         | 86.36          |
| Never used it  | 0                          | 0              |
| Other  | 6                          | 9.09           |

**Table 8:** Constraints in Teaching Web 2.0

| Problems in Teaching Web 2.0 Applications  | No. of Respondent (N =66) | Percentage (%) |
|--|---------------------------|----------------|
| Student's limitations with ICT skills  | 39                        | 59.09          |
| Lack of content in local language  | 15                        | 22.72          |
| Already overloaded with core library science teaching so no time to add on Web 2.0 tools | 15                        | 22.72          |
| Web 2.0 is a very recent phenomenon that underlies continuous change and transformation  | 12                        | 18.18          |
| Problems of identity, trust, reputation and privacy                                      | 12                        | 18.18          |
| Lack of infrastructure   | 24                        | 36.36          |
| Lack of maintenance of computers and security issues                                     | 18                        | 27.27          |
| Poor internet access   | 9                         | 13.63          |
| Lack of training programs for teachers to use/teach Web 2.0 tools                        | 15                        | 22.72          |
| Other  | 9                         | 13.63          |

writing/editing/publishing and professional communication with others. 45 (68.18%) number of respondents expressed bookmarking web pages and sharing with students. A good number of the respondents i.e. 42 (63.63%) respondents showed sharing presentation on Slide share and creating Blogs/contributing to Blogs.

### Constraints in Teaching Web 2.0

Some prominent difficulties face by respondents while

teaching Web 2.0 tools are listed in Table 8. A majority of respondents i.e., 39 (59.09%) opined that student's limitations with ICT skills were main constraints in teaching Web 2.0. In addition to this, 24 (36.36%) of respondents thought lack of infrastructure which was followed by already overloaded with core library science teaching so no time to add on Web 2.0 tools, lack of content in local language and lack of training programs for teachers to use/teach Web 2.0 tools with 15 (22.72%) respondents.

**Table 9:** Convenience of Teaching Web 2.0 Tools

| Convenience of Teaching Web 2.0 Tools  | No. of Respondent (N = 66) | Percentage (%) |
|--|----------------------------|----------------|
| Student-centered teaching and learning   | 51                         | 77.27          |
| Instead of memorizing, students gain more freedom for creativity   | 36                         | 54.54          |
| The teachers will design the framework in which the students can adapt the courses according to their needs  | 36                         | 54.54          |
| A lot of content can be created during projects especially at university   | 36                         | 54.54          |
| It increases self-directed learning skills and enables teachers to better develop and realize their personal potential                                   | 42                         | 63.63          |
| It equips learners and teachers with versatile tools of knowledge exchange and collaboration, which overcome the limitations of face to face instruction | 15                         | 22.72          |
| P2P learning, students learn from peers  | 24                         | 36.36          |
| Support innovative teaching methods  | 42                         | 63.63          |
| Enhance student motivation   | 42                         | 63.63          |
| Learner centered instruction tools   | 21                         | 31.81          |
| Learning participation   | 36                         | 54.54          |
| Information/Knowledge Sharing  | 42                         | 63.63          |
| Other  | 3                          | 4.54           |

**Table 10:** Component of Web 2.0 Mentioned in Syllabus

| Component of Web 2.0   | No. of Respondent (N = 66) | Percentage (%) |
|--|----------------------------|----------------|
| Yes  | 60                         | 90.9           |
| No   | 3                          | 4.54           |
| No but would like to integrate it in the syllabus in future          | 0                          | 0              |
| Not exactly mentioned in the syllabus but demonstrate in practical's | 0                          | 0              |

### Convenience of Teaching Web 2.0 Tools

Respondents were requested to mention their opinion regarding the convenience of teaching Web 2.0 Tools. The majority of respondents i.e., 51 (77.27%) indicated that student-centered teaching and learning were the major convenience of teaching Web 2.0 Tools, which was followed by it increases self-directed learning skills and

enables teachers to better develop and realize their personal potential, support innovative teaching methods, information/knowledge sharing and enhance student motivation with 42 (63.63%).

### Component of Web 2.0 Mentioned in Syllabus

Respondents expressed that they have components of

**Table 10:** Future Plan to Have a Full or Part Time Course on Web 2.0

| Future Plan of Web 2.0 | No. of Respondent (N = 66) | Percentage (%) |
|------------------------|----------------------------|----------------|
| Yes                    | 33                         | 50             |
| No                     | 12                         | 18.18          |
| Planning phase         | 18                         | 27.27          |
| I do not know          | 0                          | 0              |

**Table 11:** Training Programme on Web 2.0 Tools

| Aspects      | No. of Respondent (N = 66) | Percentage (%) |
|--------------|----------------------------|----------------|
| Yes          | 60                         | 91             |
| No           | 6                          | 9              |
| <b>Total</b> | 66                         | 100            |

**Table 12:** Area of Training Need

| Area of Training Need  | No. of Respondent (N = 66) | Percentage (%) |
|--|----------------------------|----------------|
| Application of Web 2.0 technologies and tools in teaching and learning       | 36                         | 54.54          |
| Workshops for using Blogs/Wikis/SNS/Podcasting etc. in teaching and learning | 21                         | 31.81          |
| Workshops on application of Mashups in teaching and learning                 | 6                          | 9.09           |
| Other  | 3                          | 4.54           |

Web 2.0 mentioned in their course curricula. 60 (90.9%) of respondents opined that yes. 3 (4.54%) of respondents revealed that at present there is no Web 2.0 component in their syllabus.

#### **Future Plan to Have a Full or Part Time Course on Web 2.0**

Respondents were asked about future planning to have a full or part time. Result disclosed that 33 (50%) of respondents would like to have a full time. 12 (18.18%) of respondents did not want to adopt Web 2.0 education in teaching. 18 (27.27%) of participants were taking initiative part time course on Web 2.0.

#### **Training Programme on Web 2.0 Tools**

Training is an essential part of updating knowledge in all fields especially in library science. The disruptive technology has made highly indispensable to train so that they can teach the Web 2.0 technology to students of the

existing new environments of virtual learning concept.

#### **Areas of Training Need**

Respondents were asked to indicate whether they had undergone any training programmes in the use of Web 2.0. The responses have been presented in the following Table 12. A large number of majority of respondents i.e.; 36 (54.54%) were in favour of training in application of Web 2.0 technologies and tools in teaching and learning. 21 (31.81%) of respondents were interested to undergo training in workshops for using Blogs/Wikis/SNS/Podcasting etc. in teaching and learning, which was followed by workshops on application of Mashups in teaching and learning i.e; 6 (9.09%). 3 (4.54%) of respondents desired to training in some other Web 2.0 tools.

#### **CONCLUSION**

The present study is attempted to determine the introduction of Web 2.0 education in LIS virtual learning

and teaching. Majority of respondents i.e. 66 (100%) thought that it would facilitate new and innovative modes of learning. Apart from that, most of respondents i.e., 39 (59.09%) opined that student's limitations with ICT skills were main constraints in teaching Web 2.0. A large number of majority of respondents i.e.; 36 (54.54%) were in favour of training in application of Web 2.0 technologies and tools in teaching and learning. According to norms of the University Grant Commission in India, refresher course in the respective subject is compulsory for every instructor to attend. These refresher courses are organized by academic staff of colleges of universities, or the departments of universities. The directors of such colleges and departments should include the Web 2.0 component in their course so that instructor will be equipped with the teaching/learning of Web 2.0. The best way to learn is to read documentation available on the sites of Web 2.0 tools, Blogs and forums, and to employ a little practice and start to learn<sup>4</sup>.

#### RECOMMENDATION

The use of Web 2.0 tools has brought about a sweeping change in teaching and learning activities in a single platform where teachers and learners can interact easily at any time. These tools facilitate customized services by bringing out different contents i.e. audio, video, PDF, HTML etc. according to requirement of different users. Hence, Library science department should revise the course curriculum, up to date them in time to time, so that fresh Library Science students/next generation of student can have competency and expertise with current needs of emerging technology of the market.

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