

# Web-based learning in higher education: A changing scenario of educational technology in India

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**Abstract: Introduction:** Web-based teaching and learning is a pace rising as a predominant paradigm within the delivery of education in Society. Internet is the ocean of information and knowledge. This ocean is created obtainable to any or all students for higher education can learn as early as possible in their life.

Thus, Technology connected tools is introduced in class education by victimization World Wide net as education delivery medium. **Objectives:** To study the Profile and Usage of Web-based learning amongst Undergraduate students of The Maharaja Sayajirao University of Baroda. **Sample:** 600 students were selected with Purposive convenient sampling method. Data was collected using self- designed questionnaire with Likert Scale frequency and percentage Used to analyze the data **Major findings:** High majority of the undergraduate students (74.70%) belonged to lower income group. Very high majority of the undergraduate students (92.30%) had internet connection at their personal space. Students were using smart phones (79.50%) to access internet and majority of them were using laptop (59.70%) for the same. Very few of them were also accessing it at cyber café (9.90%). Most of the Student were using 3G mobile network (67.70%). Majority of student using University library facility of Web-OPAC i.e. was (67.30%). Very high majority of them (96.30%) had high usage for Overall web based learning. Similarly, higher percentage of the undergraduate students had high usage of web based learning related to the curriculum aspects (72.50%) and soft skill aspects (77.20%) respectively.

**Key Words:** Web-based Learning, Higher Education, Soft Skill Aspects, Curriculum Aspects.

## 1. INTRODUCTION :

### e-learning initiatives in India

India earlier was a source country for international students and has now become a competitive market for student, teachers & Faculty. India is one of the fastest- growing countries with the second largest population in the world. The number of international students coming to India, is growing & proportion of population falling in the university age is also increasing. 75% of India's higher education institutions are now private, 90% in engineering, Management and IT. Over the past 10 years, the supply of the private sector has increased tremendously & any private sector provide to use online/ web- based learning to maximize scarce resources & achieve economies of scale. Thus, the drastic changes get in higher education. Government provided full policy & Public funds to create world's largest system in higher education. The UGC also took several steps in this direction providing personal computers, implementing computer science diploma, degree courses, Providing research and higher studies in this field. Thus, increased gross enrolment Ratio (GER) in higher Education by 5% during the XI five year plan period. A host of e-education sites continue to enter the market with focus offerings linking up student & teachers almost on a daily basis. It has become strength of teaching –learning. The whole world is involved in “web”

On the other side, the Department of Information Technology (DIT) is involved in the Development and promotion of Information Technology & e-learning is one of the thrust areas identified by the department. Youngsters as a student are using web-based learning, to support their knowledge and learning, Teachers are also using and giving work to their students related to it. Web-based learning is interesting because of audio, video visuals, sound effect, YouTube, (which is most subscribe Channel) thus, improves their learning.

## 2. REVIEW OF LITERATURE :

**Sood M and Singh V (2014)** studied on “e-learning: Gender analysis in higher education in North India”. The study was aimed to analyze the genders' interest in e-Learning in higher education in the northern part of India. A questionnaire survey designed for the purpose gathered information on students' participation and opinions about the use of e-Learning in higher education. The survey was conducted on a group of 392 people involved in higher education in Chandigarh (northern part of India) and surrounding areas. The group was a heterogeneous one and consisted of

students in the fields related to Information Technology at the college and university level. The students targeted were the ones who were enrolled in different streams (related only to the field of IT) at under graduate and post graduate levels for studying in various colleges as well as in the university affiliating these colleges. The analysis of the results clearly indicated that the e-learning patterns were not gender sensitive as far as the web-based learning style was concerned. Similarly, it was found that there was no significant gender sensitivity in the area of interests in software project management. But as far as the issues of ‘knowledge about the typical patterns observed in software projects’ was concerned, the various parameters have been found to be significantly gender sensitive.

**Ahmad F (2011)** “Internet use by the college students across disciplines: A study” Conducted study on to assess the in internet use of college students across disciplines; and the problems they encounter in using and searching the internet. 191 students were selected from general sciences, 288 form social sciences and humanities, 107 from business and commerce and 90 from computer sciences the students were selected from both urban and rural colleges of Kashmir valley based on the population of students. Questionnaire survey method was used for collection. The stratified random sampling was used for on the spot selection of students. The questionnaire was administered personally to ensure the excellent response rate as well as to avoid any misunderstanding while providing responses. The results reveal that majority of the students especially in the faculties of general science, social sciences, humanities, business and commerce do not use internet due to lack of facility or access or awareness, fear and anxiety or techno stress. These problems need to be solved in order to promote the internet use among the students. Lack of facility is the major obstacle in internet access which needs immediate attention. The need is to take steps to establish browsing centres in institutions/colleges with full internet connectivity. The adequate facilities in terms of space, staff and technology (number of computer, etc.) should be available for maximum utilization of internet sources and services. Lack of access to the internet is another major problem hindering internet use. Majority of the colleges who have internet facility provide internet access to the computer science students only and restrict students of other faculties in exploiting its services and sources. This indifferent attitude should immediately be stopped as internet is the most essential educational tool for students of all faculties. The students irrespective of subject tastes face various technical problems while using the internet like slow speed of internet, network problems (connectivity failure) and high cost of surfing charges. The governments should take steps to develop infrastructural facilities and communication technologies to overcome the network related problems.

### 3. OBJECTIVES OF THE STUDY:

- To study the Profile of the Undergraduate Students of The Maharaja Sayajirao University of Baroda.
- To study the Usage of Web-based learning amongst Undergraduate students of The Maharaja Sayajirao University of Baroda with respect to their
  - Overall Learning
  - Learning of curriculum Aspects
  - Learning of Soft Skills

### 4. METHODOLOGY:

#### 4.1 Population of the study

The population of the study comprised of the undergraduate students of the Maharaja Sayajirao University of Baroda, Vadodara.

#### 4.2 Sample selection for the study

- After deciding the population for the study, the next step was the selection of the sample. For this, purposive and convenient sampling methods were used. 600 Students was sample size for the study. Data collection during March 2019 to August 2019 was collected. Data was collected using self-designed questionnaire with Likert scale. Faculties that offers similar courses were merged together.

**Table. 1 Categorization of faculties:**

| Group No. | Name of Faculty Group         | Faculties Merged   |
|-----------|-------------------------------|--|
| 1.        | Arts and Commerce             | Faculty of Arts, Faculty of Fine arts, Faculty of performing arts, faculty of commerce, Faculty of Education, Faculty of Law |
| 2         | Science                       | Faculty of Science   |
| 3         | Technology                    | Faculty of Technology and Engineering  |
| 4         | Medicine                      | Faculty of Medicine , Faculty of Pharmacy  |
| 5         | Family and Community Sciences | Faculty of Family and Community sciences, Faculty of social work, Faculty of Journalism and communication                    |

#### 4.3 Data Analysis

The data was analyzed using frequency and percentage.

### 5. RESULTS :

#### 5.1 Profile of the student

The data revealed that majority of the undergraduate students (69%) belonged to middle age category i.e. above 19 years and remaining thirty one percentages of them belonged to young age category i.e. 16-18 years. Gender wise the percentage distribution was equal in both the categories viz. male (50%) and female (50%). It also revealed that equal percentages of students belonged to all the selected discipline, Arts and commerce (20%), Science (20%), Technology (20%), Medicine (20%), Family and Community Sciences (20%). Further, it also highlighted that year of study wise the respondents were distributed in three equal parts i.e. first year (33.33%), second year (33.33%), and third year (33.33%). The data presented that further revealed that high majority of the undergraduate students (74.70%) belonged to lower income group category whereas remaining one fourth of the undergraduate students (25.30%) belonged to higher income group.

#### 5.2 Web-based learning Facilities

Web based facilities available to undergraduate students at their personal space and their department. It revealed that very high majority of the undergraduate students (92.30%) had internet connection at their personal space and one third of them had internet connection at their department where they were studying. It is also revealed that more than two third of the undergraduate students (68.20%) had computer facility at their personal space. However, forty percent of them had computer facility at their department. The data regarding computer with facility revealed that a little more than forty percent of them had the same at their personal space whereas, a little more than one fourth of them had computer with internet facility at their department. It was also found that less than one third of the undergraduate students (31%) had computer facility without internet at their personal space and less than one fourth of them (23.30%) had the same facility at their department. Moreover, more than half of the undergraduate students (56.70%) agreed that they had laptop with internet connection at their personal space and very few of them had the same facility at their department. Further it also revealed that more than one third of the undergraduate students had laptop without internet facility at their personal space and few of them (10.70%) had the same facility at their department. The internet and computer has become a necessity in almost every household. This data supports the present research data that very high majority of the respondents had internet connection at their personal front. The use of ICT is also promoted in higher education in India. Therefore, each educational institute tries to include ICT in their teaching and learning pattern. Not only private institutions but also government educational institutes including primary and secondary schools, colleges, universities have computer as a subject for their students and also have computer lab facilities for teachers and students. Many scholars have stressed on the importance of introducing ICT in education. **Cross and Adam (2007)** has given four rationales for introducing ICT in education i.e. a.) Social: the need for familiarizing students with technology; b) Vocational: Preparing students for jobs that require skills in technology; c) Catalytic: use of technology to improve performance and effectiveness in teaching, management and many other social activities; d) Pedagogical for enhanced learning, flexibility and efficiency in curriculum delivery. (**in Mondal and Mete, 2012**) The present data also reflects that the university campus has computer facilities with and without the internet.

#### 5.3 Computer Training Programme

Very high majority of the undergraduate did not undergo to any computer training programme whereas, fifteen percentage of them had attended the computer training programme. It will not be considered wrong to assume that computer training can improve ICT competency. However, in present technological advanced era one cannot deny the ability of youth to consume ICT in various manner viz. for entertainment, business, e-banking, and education. **Wang and Dostal (2017)** also mentioned that training is important to the integration of ICT into education. It would not be wrong to assume that those students who had studied from CBSE schools had experience of using computer for studying various subjects like math and science and they had exposure of ICT enabled teaching and learning. Therefore, it can be understood that these students might not had undergone the formal training programme but had experience of using ICT for their educational purposes.

#### 5.4 Use of Web-based Learning amongst Undergraduate Students

The findings will include data regarding their internet accessibility, use of Web based resources at their university and home. It is shows that a little less than half of the undergraduate students were using computer daily for various activities. However, little less than one fourth of them (23%) were using it rarely. The data also revealed that few of the undergraduate students were using computer two-three times in a week (14.20%), and weekly (12.80%). Very

few of them (1.80%) were using computer fortnightly. The findings revealed that higher percentages of the undergraduate students were using computer daily. The possible reason could be their educational needs. The present curriculum of higher education in India requires use of ICT. Students are supposed to prepare their reports and assignment on computer. Higher education students were prepared to give seminars and presentations on their given topics. Hence, they were expected to use various presentation soft wares viz MS Office power point presentation, prezi and so on. Therefore, those students who were using computer daily or twice/thrice a week would be using it to prepare their assignments, reports and presentations.

### **5.5 According to their places to access of Computer and Internet**

It shows the data regarding the place used by undergraduate students to access computer and internet. It revealed that high majority of the undergraduate students were accessing computer from their home. However, little less than half of them were accessing it at their department's computer lab. It further showed that nearly one fourth of the undergraduate students were accessing computer at cyber café and remaining were accessing it at their friend's house (18.70%), relative place (13.30%) and other places (7.80%). The findings regarding the place used for internet accessibility revealed that high majority of them were accessing internet from their home. Nearly forty percentages of them were accessing internet at department's computer lab (39.50%). Furthermore, it also highlighted that more than one fourth of them were accessing internet at their friend's house and little less than one fourth of them were accessing it at their relative's place (24.50%) and cyber café (21%). Remaining few of them were accessing it at neighbor's house (18.70%) and other places (15.30%). Other places includes public places like malls, restaurants, railway station and so on. The main reason for accessing computer and internet at home could be the free time they have while they are at home. However, the reasons for using computer and internet at other place than home could be its unavailability and also the restriction by family members. Some families might restrict their children including the (teenagers and young youth) to use internet and computer due to the availability of uncensored content on it. Therefore, students could find it easy to use it at their friend's or relative's place. The speed of internet connectivity could be the reason to use it at different place like department or cyber café.

It is revealed that high majority of the undergraduate students were using smart phones (79.50%) to access internet and majority of them were using laptop (59.70%) for the same. It was also found that a little more than of one fourth of them were accessing internet at their personal computer (26.30%). However, less than one fourth of them were accessing it on tablet (24.20%) and computer lab (22.70%) at their department. Very few of them were also accessing it at cyber café (9.90%). **Taghizadeh and Yourdshahi (2019)** also found that youth were using smart phone for their educational purposes. The main reason for this was their increased mass media exposure, penetration of Smartphone/Handheld devices and also the rising number of social networking apps targeting to the youth. These evidences suggest that youth have been using smart phones for various purposes. Smart phones are portable and user friendly, hence youth uses them more in comparison to other devices. It is also highlighted that undergraduate students were accessing the internet from their department's computer lab and cyber café. The possible reason could be the high speed of internet available at university computer lab and cyber cafe.

It shows that more than two third of the undergraduate students were using 3G mobile network (67.70%) to access internet and more than one fourth of them responded that they use 4G Mobile Network for the same. This indicates that high majority of them were using high speed internet for various purposes. Whereas, one fourth of them were using universities free Wi-Fi facility (25.70%) to access internet. It was found that nearly one fifth of them were accessing it through paid wifi service (19.80%) at their home and very few them were accessing internet through Dongle with 2G (8%) Dongle with 3G (4.60%), LAN (3.90%), 2G Mobile Network (1.90%). The recent market research also suggests the high speed usage among Indian Internet users. The cheaper data plans for 4G and 3G mobile network across all the network operators had increased the number of internet users in the country. Mobile phones had become a primary device access internet and 4G and 3G network are most opted connection among the urban and rural population of India. (IAMA and Nielsen 2019)

### **5.6 Use of the Web-based Resources provided in Computer lab by University**

It is revealed that higher percentages of the undergraduate students were using wifi facility (40.80%) at the campus most of the time. It further revealed that half of them were using university's website (49.50) sometimes and little less than forty percent of them responded that they uses faculty website (38.50%) sometimes. Moreover, it also highlighted that undergraduate students were rarely using Hansa Mehta Library Portal (49.70%), e-book (48.50%), e-journal(52.30%), Web-OPAC (67.30%), and e-dictionaries (49.50%). It further showed that very few of them were not using all the available facilities to them.

### **5.7 Undergraduate students according to their usage pattern of web-based learning**

It shows the findings related to the usage of web based learning resources by undergraduate students. It revealed that very high majority of them (96.30%) had high usage for Overall web based learning. Similarly, higher percentage of the undergraduate students had high usage of web based learning related to the curriculum aspects (72.50%) and soft skill aspects (77.20%) respectively. It further revealed that a little more than one fourth of the undergraduate students had moderate usage of web based learning for curriculum aspects (26.70%), whereas a little more than one fifth of them had moderate usage for soft skill aspects (21.30%). The findings also highlighted that very few of them had low usage for overall (2%), curriculum aspects (0.8%), soft skill aspects (1.50%) related web based learning.

## 6. MAJOR FINDINGS:

- High majority of the undergraduate students (74.70%) belonged to lower income group.
- Very high majority of the undergraduate students (92.30%) had internet connection at their personal space.
- Students were using smart phones (79.50%) to access internet and majority of them were using laptop (59.70%) for the same.
- Very few of them were also accessing it at cyber café (9.90%).
- Most of the Student were using 3G mobile network (67.70%)
- Majority of student using University library provide facility of Web-OPAC i.e. was (67.30%).
- Very high majority of them (96.30%) had high usage for Overall web based learning. Similarly, higher percentage of the undergraduate students had high usage of web based learning related to the curriculum aspects (72.50%) and soft skill aspects (77.20%) respectively.

## 7. CONCLUSION:

The present study found that in contemporary education system it is vital for institutes to use web-based learning method that provides flexibility to the students and also boost their learning. It is apparent from the results of this research that web-based Learning has been willingly accepted by students as a source of reference and academic. Students were equally active in engaging with Web-based resources. Web based learning offers huge opportunities for learning and access to a vast amount of knowledge and information. Thus, the result of the present study suggests to have web-based learning environment in university. It is an instructor led technology based learning that may proves to be more effective in comparison to the traditional teaching and learning methods. It becomes difficult for the undergraduate students to comprehend well with self-regulatory and only self-instructional technology based educational tools. Therefore, the blended teaching and learning method can be the solution to for these issues. Such courses and the mode of the teaching–learning should be used for undergraduate students in formal education system.

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