Usage, Opinion and Problems of Web-based learning in Higher Education

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ABSTRACT

Introduction: Education is a bright that displays the direction in life to people. The purpose of teaching is not just to make a student literate but to add rationale thinking, knowledgeable, and self-sufficiency. There is a readiness to modification; there is hope for development in the different field. The use of technology to facilitate learning is accepted by the institutions. Web-based learning play a vital role in students life. E-learning refers to the use of information and communication technologies to enable access to online learning/teaching resources. **Objectives:** To study the usage, opinions and problems of Web-based learning amongst Undergraduate students of The Maharaja Sayajirao University of Baroda. **Sample:** 600 students were selected withPurposive convenient sampling method. Data was collected using self- designed questionnaire with Likert Scale Statistical Measures Used to analyze the data: Frequency and Percentage, t-test, ANOVA, and Post-hoc test. **Major findings:** The data revealed that majority of the undergraduate students (69%) belonged to the middle age category i.e., above 19 years, and the remaining thirty one percentages of them belonged to the young age category Gender wise 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 distribute in three equal parts i.e., First year (33.33%), second - year (33.33%), and final year (33.33%). The data presented that further revealed that a high majority of the undergraduate students (74.70%) belonged to lower - income group category whereas the remaining one - fourth of the undergraduate students (25.30%) belonged to the higher income group. There were significant differences in the overall use of Web based leaning resources amongst undergraduate students in relation to their age, and monthly family income.There were no significant differences in the overall opinions of undergraduate students of the Maharaja Sayajirao University of Baroda regarding web-based learning experiences in relation to their gender, age and monthly income. High percentage of students had faced moderate problems that is (67.8%) whereas more than one - fifth of them (21.0%) did not face any problems while using the Web based Resources for their learning purposes.

Keywords: Web-based Learning, Higher Education, Usage, Opinions, Problems.

INTRODUCTION

The growth of digital learning in Indiawith nearly a billion people on mobile phones and over 200 million mobiles connected to the web, there has been a substantial rise in digital learning.The employment of best-in-class content, real-time learning and feedback methods, and personalized instructions has encouraged online learning. People are stepping towards digital learning because web - based learning in education has several advantages, particularly for higher education, Institutions. Despite its several advantages and benefits, web- based learning is considered one of the best methods of learning. Each student has the luxury of choosing the right place and time according to **Smedley (2010),** the adoption of e-learning institutions as well as their students, or learns the flexibility of period and place of delivery or receipt of according to learning information. Web - based learning increases the efficacy of knowledge and skill through easy access to a large amount of information. Web - based learning motivates students to connect with others, share opinion. Web - based communication through a maintained relationship and keep learning to go.

Wagner et al. (2008) note that e-learning makes extra prospects for interactivity between students and teachers during content delivery. Where does learning is cost – effective? No need to run for classes by learners it provides learning opportunity for many students as possible without the need for any infrastructure. Thus, learners can learn with their peace. Some learners are slow learners. Learners can learn the material; content can verify at a later time or as needed. Distance learning courses from flexibility to be a key benefit of web - based learning. Learning allowed students such as working adult housewives and the differently able people as well as the elderly, who can reach and opportunities to learn from a distance.

OBJECTIVES

- 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

- To study the **differences in overall learning in the usage of web-based learning** amongst Undergraduate students of The Maharaja Sayajirao University of Baroda in relation to their variable:
  - Age
  - Gender
  - Discipline
  - Monthly Family Income
  - ICT Competencies
  - Attitude towards ICT
- To study the **opinions about the web-based learning experience** for Undergraduate students of The Maharaja Sayajirao University of Baroda with respect to their
  - Overall learning
- To study the **differences in overall learning in the opinion of learning in the web-based learning** experience for Undergraduate students of The Maharaja Sayajirao University of Baroda in relation to their Variable:
  - Age
  - Gender
  - Discipline
  - Monthly Family Income
  - ICT Competencies
  - Attitude towards ICT
- To study the **problems faced by the Undergraduate students** of The Maharaja Sayajirao University of Baroda in using web based learning with respect to their
  - Age
  - Gender
  - Discipline
  - Monthly Family Income
  - ICT Competencies
  - Attitude towards ICT

- To study the **differences in the problems faced by the Undergraduate students** of The Maharaja Sayajirao University of Baroda in using web based learning in relation to their Variable:
  - Age
  - Gender
  - Discipline
  - Monthly Family Income
  - ICT Competencies
  - Attitude towards ICT

NULL HYPOTHESIS

- There will be no significant differences in the **usage of Web-based learning** amongst Undergraduate students of The Maharaja Sayajirao University of Baroda in their **overall learning** in relation to the following variables.
- There will be no significant differences in the overall **Opinions of Web-based learning** amongst **Undergraduate** students of The MaharajaSayajiraoUniversity of Baroda in their **overall learning** in relation to the following variables.
- There will be no significant differences in the **Problems** faced by the Undergraduate students of The Maharaja Sayajirao University of Baroda in usage of web-based learning in selected Aspects with relation to the following variables.

METHODOLOGY

The Population of the study

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

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 wasused.

- Sample of the study was selected from below mention faculties of The Maharaja Sayajirao University of Baroda.

  1) Faculty of Arts, 2) Faculty of Science, 3) Faculty of Education and Psychology,

  4) Faculty of Commerce, 5) Faculty of Medicine, 6) Faculty of Technology and Engineering, 7) Faculty of Law, 8) Faculty of Fine Arts, 9) Faculty of Family and Community Sciences, 10) Faculty of Social work, 11) Faculty of Performing Arts,

  12) Faculty of Pharmacy,13) Faculty of Journalism and Communication.

  Those faculties that offer similar courses was merged. Then the faculties were categorized as mentioned below.

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

- After forming these five groups of faculties, it was decide to take an equal number of students from each group of faculty.
- From each faculty group, it was decided to take equal number of students from first year, second year and final year.

Selected Sample

Selected sample refers to the number of respondents selected for the study. It was decided to take Six Hundred undergraduate students from the faculties of The Maharaja Sayajirao University of Baroda, Vadodara. One hundred and twenty students was taken from each group of faculties.

Research Tools for Data Collection

The present study was exploratory research. Therefore, the survey method was applied for studying the Usage, Opinions, and Problems of web-based learning by undergraduate students. A structured questionnaire was use as the research tool. The tool was constructin the English language. The tool was made with the checklist, three-points and five-point rating Likert scale**.** The data was collected from undergraduate students of The Maharaja Sayajirao University of Baroda, Vadodara, from March 2019 to August 2019. To analyze the data used,Frequency and Percentage,Intensity Indices, t-test, ANOVA and Posthoc test.

FINDINGS

Frequency and Percentage Distribution of Undergraduate Students According to their Background Information

(N=600)

Independent Variables	**Categories**	**F**	**(%)**
Age	Young Age	186	31
	Middle Age	414	69
Gender	Male	300	50
	Female	300	50
Discipline	Arts and commerce	120	20
	Science	120	20
	Technology	120	20
	Medicine	120	20
	Family and Community Sciences	120	20
Year of Study	First year	200	33.3
	Second year	200	33.3
	Final year	200	33.3
Monthly Family Income	Lower Income (Rs. 5000 – Rs. 80000)	448	74.7
	High Income (Rs. 80001 & above)	152	25.3
ICT competency	High Competency	466	77.7

	Moderate Competency	128	21.3
	Low Competency	6	1.0
Attitude towards ICT	Positive Attitude	229	38.2
	Neutral Attitude	350	58.3
	Negative Attitude	21	3.5

The profile of undergraduate students. The data revealed that the majority of the undergraduate students (69%) belonged to the 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%). The table also revealed that equal percentages of students belonged to all the selected disciplines, 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 was distribute in three equal parts, i.e., first year (33.33%), second year (33.33%), and third year (33.33%). The data presented in table further revealed that a high majority of the undergraduate students (74.70%) belonged to the lower income group category whereas the remaining one fourth of the undergraduate students (25.30%) belonged to the higher income group.A high majority of the undergraduate students had high ICT competency (77.70%), whereas a little more than one fifth of them (21.30%) had moderate ICT competency and very few of them had low ICT competency (1%). AnAttitude of undergraduate students regarding ICT. It was found that a higher percentage of the undergraduate had a neutral attitude towards usage of ICT, and a little less than forty percentages of them had a positive attitude towards the same. However, very few of them negative attitudes towards the same (3.50%).

T- Ratio showing Differences in Overall Use of Web-based Learning Resources amongst Undergraduate Students (N=600)

Variable	Category	N	Mean	Std. Deviation	T-Value	p-Value
Gender	Male	300	70.51	12.30	1.45	0.149
	Female	300	69.06	12.28		
Age	16-18 Years	186	71.33	13.47	1.95	0.05*
	19-21+ years	414	69.10	11.69		

Monthly family Income	Low Income	448	70.59	12.31	2.75	0.00**
	High Income	152	67.43	12.01		

The table shows the difference in overall use of Web-based leaning resources amongst undergraduate students. The data revealed that there was no significant differences in overall use of Web based leaning resources amongst undergraduate students in relation to their gender. This indicates a similar usage pattern amongst both males and females. Hence, the null hypothesis stating that there will be no significant differences in the overall usage of web-based learning resources amongst the undergraduate students of The Maharaja Sayajirao University of Baroda about their gender was accepted.The table also shows that there were significant differences in the overall use of Web-based leaning resources amongst undergraduate students in relation to their age and monthly family income. The results showed that students who belonged to a younger age group (16-18 Years) were using it more in comparison to another category. Income group -wise, it was found that undergraduate students who belonged to lower-income group had overall more usage of web-based learning resources in comparison to students belonging to higher income groups. This means that the overall use of Web based learning resources amongst undergraduate students differs according to their age group and income group. Hence, the null hypothesis stating that there will be no significant differences in the overall usage of web-based learning resources amongst the undergraduate students of The Maharaja Sayajirao University of Baroda in about their age and income group was not accepted. It can be understand that younger students would be using it more in comparison to the older age group. The researches have proven that younger age group users are more comfortable in adapting new technology, and hence, they are expected to use it more than their counter parts.

Analysis of Variance (ANOVA) Showing Differences in Overall Usage of Web-based learning amongst Undergraduate students in Relation to Selected Variables (N=600)

Variable	Source	Sum of Squares	Df	Mean Square	F	p-Value
Discipline of Study	Between Groups	5469.7	4	1367.4	9.6	0.01**
	Within Groups	85146.5	595	143.1		
Year of Study	Between Groups	3366.0	2	1683.0	8.8	0.01**
	Within Groups	114240.9	597	191.4		

ICT competency	Between Groups	31270.8	2	15635.4	157.3	0.01**
	Within Groups	59345.4	597	99.4		
Attitude towards ICT	Between Groups	25176.4	2	12588.2	114.8	0.01**
	Within Groups	65439.8	597	109.6		

The table indicates that there were significant differences in Overall Usage of Web-based learning amongst Undergraduate students in relation with theirthediscipline of their study, year of study, ICT competency, and also with their attitude towards ICT. Therefore,the null hypothesisthat there will be no significant differences in the overall usage of web-based learning resources amongst undergraduate students of the Maharaja Sayajirao University of Baroda about their discipline of study, year of study, ICT competency and also with their attitude towards ICT were not accepted. This signifies that the overall usage of Web-based learning resources among undergraduate students varied according to the mentioned variables.

Tukey's HSD comparison in overall usage of web-based learning in relation with selected variables

Variables	**Variables (I)**	**Variable (J)**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**
Discipline of the Study	Faculty of Science ($\bar{x}$ =74.80)	Arts and Commerce ($\bar{x}$ =66.57)	9.73333*	1.75525	0.01**
		Family and Community Sciences ($\bar{x}$ =66.80)	9.69167*	1.75525	0.01**
Year of Study	1st year ($\bar{x}$ =92.55)	3rd year and final year ($\bar{x}$ =86.75)	5.79500*	1.38332	0.01**
ICT Competency	Low Competency ($\bar{x}$ =44.66)	Moderate Competency ($\bar{x}$ =77.27)	-32.60677*	4.80064	0.01**
		High Competency ($\bar{x}$ =93.52)	-48.86123*	4.72204	0.01**
Attitude towards ICT	Positive Attitude ($\bar{x}$ =97.85)	Neutral Attitude ($\bar{x}$ =85.58)	12.26732*	1.00992	0.01**
		Negative Attitude ($\bar{x}$ =65.81)	32.23685*	2.70921	0.01**

The table shows the post hoc analysis for the overall usage of web-based learning and highlights the significant differences amongst the categories of variables. It was found that the Discipline of

the study among undergraduate students of the Faculty of Science had more usage ($\bar{x}$ =74.80, p<0.01)and Arts and commerce ($\bar{x}$ =66.57)and Faculty of Family and community sciences had low usage($\bar{x}$ =66.80). The first year students ($\bar{x}$ =92.55, p<0.01) had an overall high usage of web-based learning resources in comparison to third year and final year students ($\bar{x}$ =86.75). It is understood that the undergraduate students have to study a wide course outline covering all the major subjects at the first year level. Whereas, in the final year their course outline focuses on one major subject that they have opted for (their specialization). Therefore, in the first year they need to gather a variety of reading materials for numerous sources. Web-based resource materials are easily available and accessible. Hence, the students would be using it more in comparison to other categories. Furthermore, it was also found that students who showed low ICT competency ($\bar{x}$ =44.66) had overall, low usage of web-based learning resources in comparison to those who had high ($\bar{x}$ =93.52)and moderate($\bar{x}$ =77.27, p<0.01) competency. The obvious reason behind this finding is their comfort for using ICT for different purposes. Those students who had high to moderate ICT competency possessed a higher comfortable attitude towards ICT. Hence, they would be finding it easy to use web-based learning resources in comparison to those who had low ICT competency. Therefore, they showcased overall high usage. The results for attitude towards ICT and their overall usage for web based learning resources showed that those who had a positive attitude towards ICT were using it more in comparison to those who had negative ($\bar{x}$ =65.81, p<0.01) and neutral ($\bar{x}$ =85.58p<0.01) attitude towards the same. A Positive attitude towards ICT a higher level of adaptability towards the new technology. It reflects that those who had a positive attitude towards ICT would be using web-based learning resources with ease in comparison to their counterparts.

T- Ratio showing Differences in Overall opinions of Web-based Learning Resources amongst Undergraduate Students (N=600)

Variable	Category	N	Mean	Std. Deviation	T-Value	p-Value	Remarks
Gender	Male	300.0	61.84	10.94	**0.465**	0.642	NS
	Female	300.0	62.24	10.50			
Age	16-18 Years	186.0	63.01	10.63	**1.489**	0.137	NS
	19-21+ years	414.0	61.60	10.74			
Monthly Income	Low Income	448.0	62.53	10.60	**1.93**	0.054	NS

The table revealed that there were no significant differences in the overall opinions of undergraduate students regarding web-based learning experiences in relation to their gender, age, and monthly income. Thus, the null hypothesis stating that there will be no significant differences in the overall opinions of undergraduate students regarding web-based learning experiences in relation to their gender, age, and monthly income were accepted. This finding indicates that the undergraduate students had similar opinions for overall learning through web-based resources according to their gender, age, and monthly family income. It can be understood that the undergraduate students did not have much exposure to web-based learning experiences. The teaching pattern in the Maharaja Sayajirao University of Baroda is traditional. At undergraduate level, students get assignments that required the use of different software like MS Word and MS Powerpoint. The reading material and pamphlets are also provided to students for their preparation purposes. The assignment submission is taken in hard copy. Thus, the teaching pattern does not involve much exposure to ICT. However, students may use the internet and computer for other purposes like entertainment, socialization and so on. Therefore, it becomes difficult for them to have strong opinions for web based learning experiences, and hence no significant differences were found.

Analysis of Variance (ANOVA) Showing Differences in Overall opinions of Web-based learning amongst Undergraduate students in Relation to Selected Variables (N=600)

Variable	Source	Sum of Squares	Df	Mean Square	F	p-Value
Year of Study	Between Groups	2439.8	3	813.3	7.3	0.01**
	Within Groups	66317.2	596	111.3		
Discipline of Study	Between Groups	3929.5	4	982.4	9.0	0.01**
	Within Groups	64827.6	595	109.0		
ICT competency	Between Groups	21950.2	2	10975.1	140.0	0.01**
	Within Groups	46806.8	597	78.4		
Attitude towards ICT	Between Groups	19105.7	2	9552.9	114.9	0.01**
	Within Groups	49651.3	597	83.2		

The table reveals the significant differences in the opinions of undergraduate students regarding their web-based learning experiences. It reveals that there were significant differences in the opinions of students regarding their web-based learning experiences in relation to their year of study, the discipline of study, ICT competences, and attitude towards ICT. Thus hypotheses stating there were no significant differences in opinions of students regarding their web-based

learning experiences in relation to their year of study, the discipline of study, ICT competences, and attitude towards web-based learning were not accepted. It indicates that the opinions of them varied based on mentioned variables.

Tukey's HSD comparison in overall opinions of web-based learning in relation with selected variables (N=600)

Variable	Variables (I)	Variable (J)	Mean Difference (I-J)	Std. Error	Sig.
Year of Study	1st Year ($\bar{x}$ =64.36)	2nd Year ($\bar{x}$ =61.54)	2.820*	1.059	0.05*
		3rd & Final Year ($\bar{x}$ =60.23)	4.125*	1.059	0.01**
Discipline of Study	Science ($\overline{x}$ =65.72)	Arts & Commerce ($\bar{x}$ =58.81)	6.908*	1.348	0.01**
		Family & Community Science ($\bar{x}$ =59.68)	6.033*	1.348	0.01**
	Technology ($\bar{x}$ =63.83)	Arts & Commerce ($\bar{x}$ =58.81)	5.025*	1.348	0.01**
		Family & Community Science ($\bar{x}$ =59.68)	4.150*	1.348	0.01**
ICT Competency	Low Competency ($\bar{x}$ =30.17)	Moderate Competency ($\bar{x}$ =52.52)	-22.357*	3.699	0.01**
		High Competency ($\bar{x}$ =65.06)	-34.898*	3.638	0.01**
Attitude towards ICT	Positive Attitude ($\bar{x}$ =68.48)	Neutral Attitude ($\bar{x}$ =58.84)	9.637*	.775	0.01**
		Negative Attitude ($\bar{x}$ =45.10)	23.385*	2.079	0.01**

The Table showed the post hoc analysis for overall opinions of web-based learning in relation to selected variables. It highlighted those undergraduate students who were studying in the first year ($\bar{x}$ =64.36) had significantly more favorable opinions in comparison to those who were insecond year ($\bar{x}$ =61.54, $p<0.05$) and final year($\bar{x}$ =60.23, $p<0.01$). The reason could be the heavy usage of web-based resources among the first-year students for various purposes. It can be understand that the first-year students had a more favorable opinion regarding web-based learning because they were using it more in comparison to others. The significant differences were also observed according to the discipline of their study. It was found that those students who were in Science ($\overline{x}$ =65.72) discipline had more favorable opinion for overall experience of web-based learning in comparison to those who were studying in Arts and Commerce ($\overline{x}$ =58.81,

p<0.01) and Family & Community Science($\bar{x}$ =59.68, p<0.01). Table 52 further revealed that undergraduate students studying in Technology($\bar{x}$ =63.83) also had significantly favorable opinions for web based learning in comparison to the students studying in Arts and Commerce ($\overline{x}$ =58.81, p<0.01) and Family & Community Science($\bar{x}$ =59.68, p<0.01). The reason could be the more usage of web based learning resources by Science and Technology students in comparison to those who were studying in Arts and Commerce and Family and Community Sciences. The present findings also showcased heavy usage of web based learning resources among Science students. ICT competency wise it was observed that those students who showed high ($\bar{x}$ =65.06) and moderate ($\bar{x}$ =52.52)ICT competency had overall more favorable opinions for web based learning resources in comparison to those who had low ICT competency ($\bar{x}$ =30.17, p<0.01). Moreover, it was also revealed that those who had positive attitude towards ICT ($\bar{x}$ =68.48) had more favorable opinion for overall web-based learning in comparison to those who had neutral ($\bar{x}$ =58.84, p<0.01) and negative ($\bar{x}$ =45.10, p<0.01) attitude. The present findings indicate that technology is playing as a helping hand for undergraduate students in their learning process.

Table Percentage Distribution of undergraduate student while using the web-based learning resources (N=600)

Problems	**F**	**%**
More Problems	67	11.2
Moderate Problems	407	67.8
Did not had any Problem	126	21.0

Table highlights that higher percentage (67.8%) of students had moderate problems whereas more than one-fifth of them (21.0%) did not face any problems while using the Web-based Resources for their learning purposes. However, very few of them (11.20%) reported more problems regarding the same. The problems that undergraduate students facing wererelated to Internet connectivity, affordability, downloading reading materials, pop-up advertisements, limited data, paid content on the internet , viruses attacked on the device. Moreover, the students were also facing problems as the content was in English and unavailability of physical notes.

T- ratio showing differences in problems faced by the Undergraduate Students in Variables (N=600)

Variable	Category	N	Mean	Std. Deviation	T-Value	p-Value
Gender	Male	300.0	48.50	12.22	-0.77	0.439
	Female	300.0	49.26	11.73		
Age	Younger Youth	186.0	45.97	13.00	-3.82	**0.01****
	Youth	414.0	50.18	11.26		
Monthly Income	Low Income	448.0	48.29	12.05	-2.06	**0.03***
	High Income	152.0	50.61	11.63		

The Table revealed that there were no significant differences found in the problems of web-based learning resources amongst undergraduate students in relation to their gender**.** This signifies that the undergraduate students were facing problems while using web-based learning resources irrespective of their gender. Hence, the null hypothesis stating that there will be no significant differences in the problems ofundergraduate students of The Maharaja Sayajirao University of Baroda while using web-based learning resources aboutto their gender was accepted. The possible reason for such finding could be that the problem -based needs like high-speed internet connectivity, poor data, more data to use, trust worthy websites relevant learning materials; of the students might be similar concerning their Gender. Therefore, they would be facing problems a similar manner. However, the findings regarding the differences in the same in relation with their age and income group reflected that there was significant differences in the problems under graduate students while using web-based learning resources in relation to their monthly family income as well as their age. The findings revealed that those students who belonged to the younger youth category (45.97) and low -income group (48.29) were facing less problems in comparison to those who were youth,i.e., 19-21 years old (50.18) and belonged to the higher income group (50.61). Hence, the null hypothesis stating that there will be no significant differences in the problems of undergraduate students of The Maharaja Sayajirao University of Baroda while using web-based learning resources about their monthly family income and Age were not accepted.

Analysis of Variance (ANOVA) showing Differences in Problems Faced by Undergraduate students while using web-based learning resources related to selected variables (N=600)

Variables	Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
Discipline	Between Groups	8244.843	4	2061.211	**15.793****	**0.01**
	Within Groups	77655.275	595	130.513		
Year of study	Between Groups	5690.5	3	1896.8	**14.1****	**0.01**
	Within Groups	80209.6	596	134.6		
ICT competency	Between Groups	1320.027	2	660.014	**4.659***	**0.01**
	Within Groups	84580.091	597	141.675		
Attitude towards ICT	Between Groups	26.628	2	13.314	0.093	.912
	Within Groups	85873.490	597	143.842		

The table shows that there were significant differences in problems faced by students while using the web-based resources in relation to their Discipline of study, Year of Study, and ICT Competency. Hence, the null hypothesis stating that there will be no significant differences in the problems ofundergraduate students of The Maharaja Sayajirao University of Baroda while using web-based learning resources in relation to their Discipline of study, Year of Study and ICT Competency were not accepted. It means that undergraduate student's problems while using web-based learning resources varied based on these Disciplines of study, Year of Study, and ICT Competency. However, no significant differences were found for the same in relation to their Attitude towards ICT. Hence,the null hypothesis stating that there will be no significant differences in the problems ofundergraduate students of The Maharaja Sayajirao University of Baroda while using web-based learning resources in relation to their Attitude towards ICT were accepted.

Tukey's HSD comparison forproblems faced by undergraduate students while using web-based learning resources in relation to selected variables (N=600)

Variables	Variables (I)	(J) Variable	Mean Difference (I-J)	Std. Error	Sig.
Year of study	2nd year ($\bar{x}$ =50.61)	1st year ($\bar{x}$ =44.57)	6.04500*	1.15949	0.01 **
	Final Year ($\bar{x}$ =51.45)	1st year ($\bar{x}$ =44.57)	6.88000*	1.15949	0.01 **
Discipline	Arts & Commerce	Faculty of Science	7.49167*	1.47486	0.01 **

	($\bar{x}$ =51.86)	($\bar{x}$ =44.37)			
		Technology ($\bar{x}$ =45.60)	6.25833*	1.47486	0.01 **
	Family & Community Science ($\bar{x}$ =54.21)	Faculty of Science ($\bar{x}$ =44.37)	9.84167*	1.47486	0.01 **
		Technology ($\bar{x}$ =45.60)	8.60833*	1.47486	0.01 **
		Medicine ($\bar{x}$ =48.32)	5.89167*	1.47486	0.01 **
ICT Competency	Moderate Competency ($\bar{x}$ =51.57)	High Competency ($\bar{x}$ =48.21)	3.36001*	1.18780	0.01 **

Table highlighted the significant differences among the categories of selected variables for problems faced by Undergraduate students while using web-based learning resources. The data were analyzed using Tukey's HSD comparison test to know that which year of study, the discipline of study, and ICT Competency showcased more problems for the same. It was found that the first year students were significantly facing more problems in comparison to those undergraduate students who were studying in the second year and Final year. It can be understood from these that those students who were studying in the upper level were facing fewer problems in comparison to those who were fresher. The possible reason could be their experiences of using ICT and Web-based learning resources for their educational purposes. The teachers give numerous assignments to students that demands to use of web-based learning resources guiding students like using a computer for preparing field report, using the internet for preparing IEC materials, using IEC material and seminar base assignment and so on. Discipline wise, it was found that those who were studying in Science and Technology were facing more problems in comparison to those who were studying in Arts and Commerce and family and Community Sciences. Undergraduate students who were studying in Medicine discipline also facing more problems in comparison to those who were studying in Family and community Sciences. The More usage indicates higher consumption of ICT. Hence, it can be inferred that undergraduate students from Science, Technology, and Medicine stream might be facing problems of slow internet connectivity, limited data available to use, inadequate material available for learning.

CONCLUSION

Based onfindings, it can be concluded of the present study throw light on the Usage, Opinions, and Problems of Web-based learning by undergraduate students. It was found the overall similar

usage pattern of Male and Female. Majority of the young age group with lower income group and first year using more web-based learning. No wonder youngsters, especially students and Researchers, were using more internet even most of the time spent in online learning. Faculty wise Science students had high usage were as Arts and Commerce, Family and Community Sciences, and Medicine had low usage. **Ibegwam (2002)** discovered in his study that many students were not using the internet in the College of Medicine at the University of Lagos. There are problems associated with internet technology such as slowness of the server of its breakdown which described as constant disconnection due to poor phone-lines. **Chifwepa (2003)** identified a lack of guidance, the inability of use, inadequate internet facilities as some of the reasons for low use. High majority null hypothesis stating that there will be no significant differences in theusers opinions and problems ofundergraduate students of The Maharaja Sayajirao University of Baroda while using web-based learning resources about their Age and Monthly income. Students faced Moderate problems during web-based learning resources. Students faced Problems like insufficient time, insufficient access to technological resources, insufficient effective training, and problem in its technical operation and have a lack of confidence amongst students.

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Web-based learning: Problems and Tip-off Students

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Abstract

This paper reports on a quantitative study that investigated find out the suggestion from student in web based learning in higher education. Objectives: To study the Profile of the Undergraduate Students of The Maharaja Sayajirao University of Baroda. To obtain the Suggestions from the Undergraduate students of The Maharaja Sayajirao University of Baroda for improving the usage of web-based learning amongst the students Sample: 600 students were selected with Purposive convenient sampling method. Data was collected using self- designed questionnaire with Likert Scale. Major findings: Majority (60.3%) of the students strongly suggested the usage of web based learning in higher education suggested. And very few of them (2.70%) had given least suggestion for the use of web-based learning in higher education. However, more than one third of them (37%) moderately. findings highlighted the suggestions that university should provide different study materials on its websites for learning. (4.0) It is provide 24/7 accessibility to course materials. When course content and activities are provided online, students no longer need to worry about accessing course materials. Students can complete assignments during their most productive times. Busy students can choose to download readings or take practice

Keywords: Web-based Learning, Higher Education, Suggestions

1. Introduction

Indian higher education system has grown many fold since independence it has now 993 universities, 3.7 crore students and around 14 lakh teachers. We have to extra careful not to compromise on the quality of higher education during these phase of transition. There have been reports about un – employability of graduate coming out of our higher educational institutions. Some of the lacunae pointed out by industry are soft skill such as effective communication, team work discipline, professional and ethical practices, among others. UGC keeping this in mind, have come out with a quality Mandate under which a number of initiatives have been taken like:

- Induction programme for students (Deeksharamh)
- Promoting use of ICT based learning tools for effective teaching-learning process.
- Digital revolution is bringing in sweeping changes in the Higher Education landscape. Every institute is taking various initiatives in promoting digital education. MHRD has taken up novel initiatives like SWAYAM (India's own MOOCs), Swayam Prabha, National Digital Library (containing 6.5 million books), and National Academic Depository. UGC has drafted New Online Education Regulation and rules for the same have also been framed. The conference intends to bring together to share best practices and experiences of all aforesaid initiatives and initiatives of private institutions as well.
- The technology of online education and all the digital initiatives have the possibility to revolutionize higher education scenario in the near future. Other than the aforesaid initiatives MHRD has also started initiatives like "Cashless Campus" and Digital Financial Literacy of community by students. The National Convention is to further this drive and to take the fruits of these digital initiatives to the students.

Digital way for educational excellence

- The aim to raise the Gross Enrolment Ratio (GER) in the higher education from 24.5 (2015-16) to 30 by 2020, and the quest to enhance the quality of education would require a large scale expansion of the high quality education opportunities. However, physical expansion of such facilities is fraught with both infrastructural and human resource limitations. Fortunately, in the days of fast expanding IT facilities, the technology can be leveraged to address these twin concerns of enhancing access and quality.
- The use of technology through online education in higher education also becomes imperative due to the following factors:

a) Affordable: Online education is cheaper than formal education without compromising on quality, thanks to low infrastructure costs and large learner base. b) High Quality: Online Education is directly delivered by the best teachers, assuring high quality of instruction. c) Inclusive: Online Education addresses the rural-urban divide which is manifested by the fact that at present India has 4.5% graduates in rural areas as against 17% in urban areas. For females, the disparity is starker: 2.2% female graduates in rural areas, as against 13% female graduates in the urban areas. d) Employability: By a flexible curriculum that is in line with the current market requirements, the online education can enhance the employability quotient in the youth. e) Uses internet: The penetration of IT infrastructure is expected to increase the internet users from 40.9 Cr in 2016 to 73.5 Cr by 2021. This will enhance access to online courses to the youth. f) Smart Phones: Increasing penetration of smart phones, which is expected to increase from 29 Cr (2016) to 47 Cr (2021), would further facilitate the use of the online courses using the telecom spectrum. g) Higher spend: The households' spend on higher education is going to increase in future, affording opportunity for the hitherto unreached population to the portals of higher education. h) Retraining the workforce: The pressing need of the employment sector for re-training and career upgradation as per the needs of the market is best served by online education leading to Life-long learning. i) Skilling the unskilled: The Skill India Mission would certainly require online courses for reaching out to the large number of unskilled or semi-skilled population to help them to upgrade their skills. The education through digital mission holds promise since it is accessible to everyone, it is affordable, it can overcome the shortage of quality faculty and it can enhance the enrolment in higher education system. The digital learning platforms provide opportunities for lifelong learning. Hrastinski (2008) defined E- learning as learning and teaching online through network technologies, is arguably one of the most powerful responses to the growing need for education. Thus, taking initiative and took the research study with young Brigades.

2. Objectives of the Study

- To study the Profile of the Undergraduate Students of The Maharaja Sayajirao University of Baroda.
- To study the Problems faced by the Undergraduate students of The Maharaja Sayajirao University of Baroda in using web based learning with respect to their
  - Age
  - Gender
  - Discipline
  - Monthly Family Income
  - ICT Competencies
  - Attitude towards ICT
- To study the differences in the problems faced by the Undergraduate students of The Maharaja Sayajirao University of Baroda in using web based learning in relation to their
  - Age
  - Gender
  - Discipline
  - Monthly Family Income
  - ICT Competencies
  - Attitude towards ICT
- To obtain the Suggestions from the Undergraduate students of The Maharaja Sayajirao University of Baroda for improving the usage of web-based learning amongst the students

3. Null Hypothesis

- There will be no significant differences in the **problems** faced by the Undergraduate students of The Maharaja Sayajirao University of Baroda in usage of web-based learning in selected Aspects with relation to the following variables.

- Age
- Gender
- Discipline
- Monthly Family Income
- ICT Competencies
- Attitude towards ICT

4. Methodology

4.1 Populations of the study

The population of the study comprised of the undergraduate students of the Maharaja Sayajirao University of Baroda, Vadodara, Gujarat 600 students was selected.

4.2 Selected Sample

Selected sample refers to the number of respondents selected for the study. It was decided to take one Hundred and Twenty undergraduate students from the faculties selected from The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat (Arts and Commerce, Science Technology, Medicine, Family and Community Sciences)

4.3 Sample Selection and Research Tool

Purposive convenient sampling method was used by the researcher, Data was collected using self-designed questionnaire with Likert scale.

4.4 Data Analysis

The data was analyzed using frequency, percentage, Intensity Indices, t-test, ANOVA and Posthoc test (Tukey's HSD comparison).

5. Finding of the Study

5.1 Profile of the Undergraduate Students

Table (1) Frequency and Percentage Distribution of Undergraduate Students According to their Background Information (N=600)

Independent Variables	Categories	F	(%)
Age	Young Age	186	31
	Middle Age	414	69
Gender	Male	300	50
	Female	300	50
Discipline	Arts and commerce	120	20
	Science	120	20
	Technology	120	20
	Medicine	120	20
	Family and Community Sciences	120	20
Year of Study	First year	200	33.3
	Second year	200	33.3
	Final year	200	33.3
Monthly Family Income	Lower Income (Rs. 5000 – Rs. 80000)	448	74.7
	High Income (Rs. 80001 & above)	152	25.3
ICT Competency	Low Competency	6	1.0
	Moderate Competency	128	21.3
	High Competency	466	77.7
Attitude towards ICT	Positive Attitude	229	38.2
	Neutral Attitude	350	58.3
	Negative Attitude	21	3.5

Table 1 showed the profile of the undergraduate students. 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%). Table 23 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 in table 1 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. It was also found that high majority of the undergraduate students had high ICT competency (77.70%) whereas a little more than one fifth of them (21.30%) had moderate ICT competency and very few of them had low ICT competency (1%). Moreover, it was also found that higher percentage of the undergraduate had neutral attitude towards usage of ICT and a little less than forty percentages of them had positive attitude towards the same. However, very few of them negative attitude towards the same (3.50%).

Table (2) : Percentage Distribution of undergraduate student while using the web-based learning resources

(N=600)

Problems	**F**	**%**
More Problems	67	11.2
Moderate Problems	407	67.8
Did not had any Problem	126	21.0

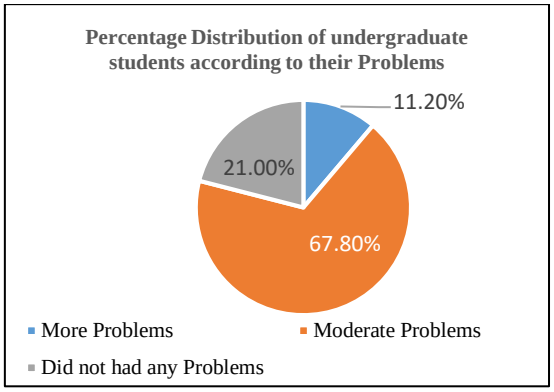


Table 2 highlights that higher percentage (67.8%) of students had moderate problems whereas more than one fifth of them (21.0%) did not faced any problems while using the Web based Resources for their learning purposes. However, very few of them (11.20%) reported more problems regarding the same. The problems that undergraduate students facing were related to Internet connectivity, affordability, downloading reading materials, pop-up advertisement, limited data, paid content on internet , virus attacked on device. Moreover, the students were also facing the problems as the content was in English and unavailability of physical notes. Priebe M;et.al (2020) "Slow Internet connections or limited access from homes in rural areas can contribute to students falling behind academically. The data also revealed that 21% of the undergraduate students did not faced any problems. That means they were comfortable in using web- based learning resources for learning.

Table (3) Intensity Indices for problems faced by Undergraduate students while using the web-based learning resources. **(N=600)**

Problems	**I.I**
Overall	2.60
Difficulty in choosing trustworthy websites for learning	3.44
Difficulty in integrating web-based learning resources into the curriculum.	3.44
Difficulty in downloading materials	3.43
Popup of many unwanted elements (e.g. promotional advertisements.)	3.29
slow connectivity	3.23
Create Pressure on me for exam without interactions	3.15
internet recharge is expensive	3.08
less data (MB/GB) available for use	2.98
Difficulty in learning without physical notes	2.88
virus attacks on device	2.86
Dependency on some other people while paying online fees	2.78
Inadequate of material available for learning	2.73
Internet connectivity was creating problem in learning	2.68
Content was in English	2.63
Difficulty in handling computer hardware part	2.44
Difficulty in installing Google chrome or Mozilla Firefox	2.39

The overall intensity indices for problems faced by student while using the web-based learning resources was 2.60. This reflects that students had overall moderate problems while using the web-based learning resources This table reveals that the item wise intensity indices for problems that under graduate students faced while using web-

based learning resources ranged between 2.51-3.49. This indicates that undergraduate students had faced moderate to less problems while using the web-based learning resources. The item that showed the highest intensity index was "difficulty in downloading reading materials, difficulty in choosing trustworthy website, as well as integration of web-based learning into curriculum" (3.4) whereas, item related to installation of software and handle hardware part showed the least intensity index (2.4). Like Google Chrome and Mozilla Firefox and handling hardware parts like CPU, Hard disk, UPS Printer showed the least intensity indices. This reflex that the undergraduate students were hardly facing any difficulty related to installing, software and handling Hardware. It indicates that they were comfortable in working with ICT for various purposes. Furthermore also shown that undergraduate students faced moderate problems for the following. -

Student had faced moderate problems related to

- Difficulty in downloading materials (3.4)
- Difficulty in choosing trustworthy websites for learning (3.4)
- Difficulty in integrating we-based learning resources into the curriculum (3.4)
- Popup of many unwanted elements (3.3)
- Slow connectivity (3.2)
- Internet recharge is expensive (3.1)
- less data (MB/GB) available for use (3.0)
- Difficulty in learning without physical notes (2.9)
- Virus attacks on device (2.9)
- Dependency on other people while paying online fees (2.8)
- Insufficient material available for learning (2.7)
- Content was in English (2.6)

The present findings highlighted that undergraduate students, were moderately facing problems related to internet connectivity, expense on monthly internet recharge, limited data available to use, dependency on others to pay online fees. It also showed the difficulty that undergraduate students were facing due to available content was in English, inadequate reading materials and unavailability of physical notes. Virus attack on device was also considered as a moderate problem amongst them. The qualitative data of the present study also showcased the similar findings and highlighted that more students were facing problems related to Wi-Fi router while using the web-based resources. Other research related to web-based learning and internet also showcased similar results. Kim, Mims & Holmes, (2006) argued that internet accessibility speed affect the learning amongst students. They found that those students who access internet only through their mobile phone showed lesser marks through e-learning than those who had fast internet access like Wi-Fi. The Use of ICT and internet may also cause physical problems like backache, neck ache, Headache, strain in eyes and so on. The use of computer and internet results in lack of muscle contractions, lack of physical activity, exercise, and training, reduce sleep time. (Chou, 2001; Hakala, et al., 2006; Van den Bulck, 2004)**.** The undergraduate students might be facing problems related to downloading reading materials because of copyright issues, unviability of relevant soft were and also the slow internet connectivity. Another problem that under graduate students were facing was "Pop up of unwanted advertisement". Almost all the website advertise different products according to their visitors. It may create psychological impact on the visitors. Sometimes the advertisement are promotional and some time they are for some social cause. However, the present finding shows that undergraduate students consider such pop –up advertisements as problems while using web- based learning resources. The undergraduate students in the Maharaja Sayajirao University of Baroda, come from different schools having different medium of instructions. Like English, Gujarati, Marathi and so on. Hence, the students would be facing problems in using web-based learning resources that were in English.

Table (4) Differences in problems faced by undergraduate students while using web-based learning (N=600)

Variable	Category	N	Mean	Std. Deviation	T-Value	p-Value
Gender	Male	300.0	48.50	12.22	-0.77	0.439
	Female	300.0	49.26	11.73		
Age	Younger Youth	186.0	45.97	13.00	-3.82	**0.01****
	Youth	414.0	50.18	11.26		
Monthly Income	Low Income	448.0	48.29	12.05	-2.06	**0.03***
	High Income	152.0	50.61	11.63		

**p<0.01, *p < 0.05

Table revealed that there were no significant differences found in the problems of web based learning resources amongst undergraduate students in relation with their gender**.** This signifies that the undergraduate students were facing problems while using web based learning resources irrespective of their gender. Hence, the null hypothesis stating that there will be no significant differences in the problems of undergraduate students of The Maharaja Sayajirao University of Baroda while using web-based learning resources in relation to their gender was accepted. The possible reason for such finding could be that the problem based needs like high speed internet connectivity, poor data, more data to use, trust worthy websites relevant learning materials; of the students might be similar with respect to their Gender. Therefore, they would be facing problems in similar manner.

However, the findings regarding the differences in the same in relation with their age and income group reflected that there were significant difference in the problems under graduate students while using web based learning resources in relation with their monthly family income as well as their age. The findings revealed that those students who belonged to younger youth category (45.97) and low income group (48.29) were facing less problems in comparison to those who were youth i.e. 19-21 years old (50.18) and belonged to higher income group (50.61). Hence, the null hypothesis stating that there will be no significant differences in the problems of undergraduate students of The Maharaja Sayajirao University of Baroda while using web-based learning resources in relation to their monthly family income and Age were not accepted. There are many challenges regarding the integration of ICT particularly in developing countries, where high opportunity costs are involved in establishing institution wide ICT systems compared to developed countries. The present finding also highlighted the similar problems in the university campus. Thus, students were facing problems related to Wi-Fi connectivity, and slow Speed. The result also showed that less than half of the students were using computer lab in their department for preparing any document on computer and accessing internet.(referred table 27 and 28) However, very of the undergraduate students were using web-based learning resources like e-books, e-journal, e-dictionary , e-libraries provided in computer lab by the University.(referred table 30). The lesser percentage indicate the in ability of the institute in providing quality web-based learning resources. The present result are indicating to strengthen the web- based learning resource facility in the promise. Another important problem faced by the participants at home was the un-availability of the required software. Unavailability of relevant and appropriate software may cause in problems in using computer for various purposes. Other problems participants faced while using web-based learning resources were virus threats, network problems, slow speed of computers and internet, lack of data or accessing internet. The students might be facing problems due to lack of technical support available to them in college and at their home.

Table (5) Analysis of Variance (ANOVA) showing Differences in Problems Faced by Undergraduate students while using web-based learning resources related to selected variables

(N=600)

Variables	Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
Discipline	Between Groups	8244.843	4	2061.211	**15.793****	**0.01**
	Within Groups	77655.275	595	130.513		
Year of study	Between Groups	5690.5	3	1896.8	**14.1****	**0.01**
	Within Groups	80209.6	596	134.6		
ICT competency	Between Groups	1320.027	2	660.014	**4.659***	**0.01**
	Within Groups	84580.091	597	141.675		
Attitude towards ICT	Between Groups	26.628	2	13.314	0.093	.912
	Within Groups	85873.490	597	143.842		

**p<0.01, *p < 0.05

Table shows that there were significant differences in problems faced by students while using the web-based resources in relation with their Discipline of study, Year of Study and ICT Competency. Hence, the null hypothesis stating that there will be no significant differences in the problems of undergraduate students of The Maharaja Sayajirao University of Baroda while using web-based learning resources in relation with their Discipline of study, Year of Study and ICT Competency were not accepted. This means that undergraduate student's problems while using web-based learning resources varied on the basis of these Discipline of study, Year of Study and ICT Competency. However, no significant differences were found for the same in relation with their Attitude towards ICT. Hence, the null hypothesis stating that there will be no significant differences in the problems of undergraduate students of The Maharaja Sayajirao University of Baroda while using web-based learning resources in relation with their Attitude towards ICT were accepted. Therefore, it can be inferred from table that undergraduate students wear facing different problems according to their discipline of study, year of study and their ICT competency. The post-hoc analysis further showed the differences amongst the categories of these variables.

Table (6) Tukey's HSD comparison for problems faced by undergraduate students while using web-based learning resources in relation to selected variables

(N=600)

Variables	Variables (I)	(J) Variable	Mean Difference (I-J)	Std. Error	Sig.
Year of study	2nd year ($\bar{x}$ =50.61)	1st year ($\bar{x}$ =44.57)	6.04500*	1.15949	0.01 **
	Final Year ($\bar{x}$ =51.45)	1st year ($\bar{x}$ =44.57)	6.88000*	1.15949	0.01 **
Discipline	Arts & Commerce ($\bar{x}$ =51.86)	Faculty of Science ($\bar{x}$ =44.37)	7.49167*	1.47486	0.01 **
		Technology ($\bar{x}$ =45.60)	6.25833*	1.47486	0.01 **
	Family & Community Science ($\bar{x}$ =54.21)	Faculty of Science ($\bar{x}$ =44.37)	9.84167*	1.47486	0.01 **
		Technology ($\bar{x}$ =45.60)	8.60833*	1.47486	0.01 **
		Medicine ($\bar{x}$ =48.32)	5.89167*	1.47486	0.01 **
ICT Competency	Moderate Competency ($\bar{x}$ =51.57)	High Competency ($\bar{x}$ =48.21)	3.36001*	1.18780	0.01 **

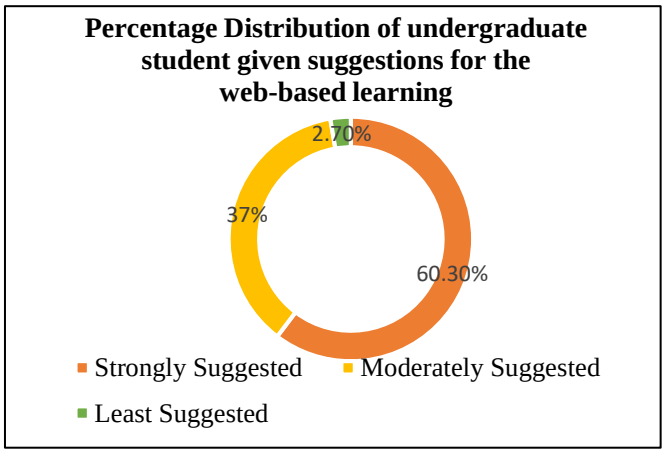
**p<0.01, *p < 0.05

Table 6– highlighted the significant differences among the categories of selected variables for problems faced by Undergraduate students while using web-based learning resources. The data was analyzed using Tukey's HSD comparison test to know that which year of study, discipline of study and ICT Competency showcased more problems for the same. It was found that first year students were significantly facing more problems in comparison to those undergraduate students who were studying in second year and Final year. It can be understood from these that those students who were studying in upper level were facing less problems in comparison to those who were fresher. The possible reason could be their experiences of using ICT and Web based learning resources for their educational purposes. The teachers give numerous assignments to students that demands to use of web based learning resources guiding students like using computer for preparing field report, using internet for preparing IEC materials, using IEC material and seminar base assignment and so on. Table (I.I) showed that undergraduate students were facing problems related to downloading reading materials, choosing trust worthy website, integrating web-based learning in to the curriculum and learning without physical notes. First year students might be facing such issues as they are at entry level of their undergraduate degree course.

Discipline wise, it was found that those who were studying in Science, and Technology were facing more problems in comparison to those who were studying in Arts and Commerce and family and community Sciences. Undergraduate students who were studying in Medicine discipline also facing more problems in comparison to those who were studying in Family and community Sciences. The present findings also indicated that the students from Science and Technology streams used more web-based learning resources in comparison to Arts and Commerce for their curriculum aspects. The More usage indicates higher consumption of ICT. Hence, it can be inferred that undergraduate students from Science, Technology and Medicine stream might be facing problems of slow internet connectivity, limited data available to use, inadequate material available for learning. The table further reveled that those who had high ICT competency were facing significantly more problems in comparison to those who had moderate ICT competency. Those who had high competency might be exploring web based learning resources in comparison to others. Therefore, they might be facing More Problems like popup of unwanted elements, virus attack on device, dependency on other people to pay online fees and so on. Quadri, (2011) also quoted problems while using internet services among students they were slow internet speed, power failure, poor computer skills, lack of adequate numbers of personal computers, payed online services. Shehu, Urhefe and Promise, (2015) highlighted several challenges faced by the participants while accessing the internet in Nigeria libraries. The study reveals that majority (65%) of the respondent indicated power outage as the major factor that hinders the access and the use of internet in schools. Also, Rosenberg (2005) observed that speed and reliability of Internet connection is a major challenge faced by students in retrieving resources. In addition, Luambo and Nawe (2004), in a similar research reveal that the slow Internet connections attributable to small bandwidth is also a major factor hindering Internet access and use in Africa. Problems faced by students like insufficient time, insufficient access of technological resources, insufficient effective training, problem in its technical operation and has lack of confidence amongst students.

Table (7) Percentage Distribution of undergraduate student suggestions while using the web-based learning (N=600)

Suggestions	F	%
Strongly Suggested	362	60.30
Moderately Suggested	222	37
Least Suggested	16	2.70



The data presented in table 7 reflects that Majority (60.3%) of the students strongly suggested the usage of web based learning in higher education suggested. And very few of them (2.70%) had given least suggestion for the use of web-based learning in higher education. However, more than one third of them (37%) moderately. The results may be inferred as the students had more experience with technology and hence, they were able to suggest

more for web-based learning in a positive manner. The technological experience amongst young students enabled them to be the independent learners and therefore they strongly suggested the use of Web-based Learning for future students.
Misko J et.al (2006) These students made suggestions for upgrading and updating facilities, technology and texts to meet current requirements, improving availability of adequate and appropriate resources, including relevant and practical texts, and using different types of media, including videos, CDROMS, and web-based materials.

Students have to be motivated, proactive and enthusiastic to succeed in the web-based learning environment. The University of Houston revealed that students perceive that online courses help them in developing time management skills and thus, in improving their self-regulatory skills.

Table (8) : Item wise Intensity Indices of Suggestions given by Undergraduate Students for Use of Web Based Resources for Learning.

The University Should	**I.I**
Provide facility to use web-based learning.	**4.3**
Put help desk to new enrolled students for online registration	**4.3**
Increase support system for Web-based learning resources in every faculty.	**4.2**
Provide different study materials on its websites for learning	**4.1**
Introduce new program policy regarding Web –based learning with UGC	**4.1**
Provide training to students to use different software for learning	**4.0**
Have good infrastructure facility for Web-based Learning in university	**4.0**
Have free Wi-Fi zone to work in university.	**4.0**
Guest Wi-Fi facility to access internet in the university	**3.9**
Offer a compulsory subject through Web based Learning at First year Level	**3.9**
Allow access to restricted websites in Canteen/ Parking	**3.8**
Have integration of online classes into regular classes	**3.8**

Table 8 reveals that the item wise intensity indices for suggestions of students for using web-based learning ranged between 4.3 – 3.8. This indicates that student had strong suggestions for use of web-based learning. The item that showed the highest intensity index was "university should provide facility to use Web-based learning" (4.3).

Dewhurst et al., 2000; Tweddle et al., 2000 said the web-based learning environment is an interactive network system consisting of a variety of functions to support a virtual classroom to enhance the quality of teaching and learning activities. Studies have shown that students are generally capable of using online learning material more effectively. Hence, the university should provide facilities for Web-based learning.The WBL environment is an interactive network system consisting of a variety of functions to support a virtual classroom to enhance the quality of teaching and learning activities. Studies have shown that students are generally capable of using online learning material more effectively (Dewhurst et al., 2000; Tweddle et al., 2000). The present finding also highlighted that the university should put help desk to new enrolled students for online registration. The student can enquire regarding their courses, subject and enroll themselves for the same through these help desks. There should be an increase in support system available for Web-based learning resources in every faculty. (4.2) wasim J et.al (2014) Web based learning offers huge opportunities for learning and access to a vast amount of knowledge and information. The role of teachers is to ensure that the learning environment provided takes account of learners' needs and ensures that they are effectively prepared and supported. Online learning has advantages, but web based learning should not always be viewed as the method of choice because barriers (such as inadequate equipment) can easily detract from student learning. The technology must therefore be applied appropriately and not used simply because it is available and new or because students and teachers have particular expectations of this means of course delivery. The following suggestions to universities considering deploying web-based learning tools: provide adequate training for instructors and students, carefully consider the needs (of instructors, students, administrators) before selecting a technology , Provide integration, standardization, flexibility and accessibility in tool/program choices ,Ensure universality in access and usability across campus and universities for every student. Furthermore, the present findings highlighted the suggestions that university should provide different study materials on its websites for learning. (4.0) It is provide 24/7 accessibility to course materials. When course content and activities are provided online, students no longer need to worry about accessing course materials. Students can complete assignments during their most productive times. Busy students can choose to download readings or take practice exams whenever it is most convenient. Continual access to course documents also insures students can obtain materials at any time, removing the opportunity for frustrations such as "The library was

closed". Introduce new program policy regarding Web –based learning with UGC.(4.1) **Internet society (2017)** Policy maker concerned with ICTs and with education have the opportunity to develop a vision for the Future which will enable technology to benefit both students and national development. They should work together to develop that vision, and to design policies that integrate ICTs in national strategies for sustainable development including critical development sectors like education. Provide training to students to use different software for learning. (4.0) concerning these relatively new challenges but also the unprecedented opportunities of ICT, the requirements for training and practical work of students are changing. It is necessary for the students to be trained in the spirit of these new tasks as soon as in their learner's education. have good infrastructure facility for Web-based Learning in university.(4.0) The need for infrastructural facilities are assessed by various parameters like the introduction of new courses, increase in the intake of students, changed curriculum demanding the introduction of new laboratories, diversification of courses, need for introducing the technological innovations. Thus, effective infrastructure produce best in classroom by providing conducive and comfortable condition. Another suggestion that students stressed upon was to have free Wi-Fi zone to work in the campus(4.0) and Guest Wi-Fi facility to access internet in the university(3.9). Internet access via wireless computers increased to their highest levels in the year 2008 (Centre for the Digital Future, 2008)at various places. With the Internet access, students can follow and receive lessons not only within the prescribed class. With the Wi-Fi existence, teachers have more autonomy to facilitate interaction among students beyond the classroom time University should provide Offer a compulsory subject through Web based Learning at First year Level.(3.9) (Calder & Hanley, 2004) first year students find their initial studies stressful as they are exposed to new ways of learning. Many in their first year of university learning find difficulty with learning approaches that place high levels of responsibility onto them. Such strategies can work if there is sufficient scaffolding and support but in large classes, it is often difficult to provide sufficient support to address the many needs of these new students. University should allow access to restricted websites in Canteen/ Parking, (3.8) if you come across a website that is blocked that you feel has educational value, you can either override the block or submit the website for review. Some categories of websites allow you to override the block immediately; others require a request to have them unblocked. Only teachers, staff members and administrators have the ability to override or submit websites for review (not students). University should have integration of online classes into regular classes, (3.8) Integrating online and in-classroom is beneficial because it combines face-to-face teaching with the agility of virtual learning. No student is alone, yet has a sense of independence in his or her educational journey. With a mix of online and traditional learning, parents can have a better understanding of progress and struggles. It's less on the teachers to engage with the parents, yet teachers can still be available for if extra information is needed.

Whereas suggestions related to integrated classroom and some Permission restricted for websites showed the least intensity index (3.8). Students also had moderate suggestions related to web-based learning. They suggested that:

- There should be strong network connectivity through university wi-fi
- Presentations exams should be taken online to increase the confidence amongst students made compulsory to be confident for student
- University should have an online and subject to study for all students studying in various faculties.

Conclusion

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–leaning should be used for undergraduate students in formal education system.

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