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Future Possibilities in Implementing the WEB 2.0 Technology in Higher Education: A Comparative Study

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ABSTRACT

The perception of the respondents about the future possibilities in implementing the Web2.0 technology in higher education are studied and compared. The responses of teachers and students from science background from four different faculties of five universities are collected. For the purpose of study, the three dimensions are taken i.e. Implementation strategies; Educational benefits; the Barriers and the challenges faced w.r.t WEB2.0 technology and analysed through self developed 5 point likert scale with 26 items is used. The sample size is 220. The means are calculated and the each group is compared with Faculty of Education. For comparing the t-test is conducted at 0.05 confidence level. The lack of awareness is the major issue in using the technology.

Keywords: Implementation strategies, higher education, WEB 2.0 technology

In the last years, the Web 2.0 was defined from different perspectives and by different authors. Even the definitions of Web 2.0 terms are highly debatable, however, they don't exclude each other because Web 2.0 refers to the social use of the web which allow people to collaborate, to get actively involved in creating content, to generate knowledge and to share information online. Apart from that, Web 2.0 platforms are seen to have an emerging role to transform teaching learning processes (Alexander & Levine, 2008). Specific technologies and services contributing in higher education include blogs, micro blogs, wikis, and syndication of content through RSS, tag-based folksonomies, social bookmarking, media sharing, social networking sites and other social software artifacts. There are already a growing number of users from higher education sector who are exploring Web 2.0 technologies in their activities with students or as part of their personal learning environment. It is important to realize that Web 2.0 has to share something new with higher education.

Through this paper, the future possibilities in implementing the Web 2.0 technology into the higher education are studied. The students and teachers from four faculties of science background from different universities are taken and their perception is studies through 5 point likert scale.

Research Objectives

To study the perception of students and teachers of science background from different faculties about the future possibilities in implementing the Web2.0 technology in higher education.

Research Hypothesis

There is no significant difference about the perception of future possibilities in implementing the Web2.0 technology among the students and teachers of science background of higher education.

Research Design and Sampling

For the purpose of study; 160 students and 60 Teachers are taken from four faculties. The following (Table 1) shows the sampling method:

Table 1: Table showing Sampling Technique

Number of Respondents	Faculty of Engineering	Faculty of Science (PCM)	Faculty of Sciences (Biosc, Biotech, Physio)	Faculty of Education
Students = 160	40	40	40	40
Teachers = 60	15	15	15	15

The sample is taken from five different universities and four different streams. Jamia Millia Islamia, New Delhi; Apeejay University, Gurgaon; Amity University, Noida; Lingyas University, Faridabad; Manav Rachna Intaernational University, Faridabad. 40 students and 15 teachers are taken from four different streams: Faculty of Engineering (Mechanical, ECE, Electronics), Faculty of Sciences (Physics, Chemistry, Mathematics), Faculty of Sciences (Biosciences, Biotechnology, Physiotherapy) and Faculty of Education (Teaching of Physical Sc, Teaching of Life Sc, Teaching of Home Sc). The descriptive survey is the design of the study and sample is composed through Stratified Random Sampling. The t-test through the SPSS software is the methodology used in the study. The framed hypothesis is tested at 0.05 confidence level. For each group, the means are calculated and compared with the Faculty of Education.

Analysis and Interpretation

The analysis is carried out by using t-test with SPSS software version 21.

INTERPRETATION

Faculty of Engineering Vs Faculty of Education

The Mean value calculated from students' and teachers' responses are 0.03923, 0.04538 and the t values are 1.129 , 0.606 respectively. The significant values at 2 tailed tests are 0.269 and 0.550 for students and teachers respectively, which is greater than the 0.05 level of significance. Thus there exists no a significant difference among the students of both the faculties about the future possibilities of implementing and integrating the technology. Hence the null hypothesis is accepted.

Faculty of Science (PCM) Vs Faculty of Education

The Mean value calculated from students' and teachers' responses are 0.00796, 0.03692 and the t values are 0.254 , 0.344 respectively. The significant values at 2 tailed tests are 0.802 and 0.734 for students and teachers respectively, which is greater than the 0.05 level of significance. Thus there exists no significant difference among the students of both the faculties about the future possibilities of implementing and integrating the technology. Hence the null hypothesis is accepted.

Faculty of Science (Biosc, Biotech, physiotherapy)Vs Faculty of Education

The Mean value calculated from students' and teachers responses are -0.02692, -0.20077 and the t values are -0.671 , -0.364 respectively. The significant values at 2 tailed tests are 0.508 and 0.185 for students and teachers respectively, which is greater than the 0.05 level of significance. Thus there exists no significant difference among the students of both the faculties about the future possibilities of implementing and integrating the technology. Hence the null hypothesis is accepted.

In both the cases, the students and teachers from the four groups favoured that to implement the technology few strategies need to be implemented. The respondents from each group are agreed about the educational benefits of implementing the Web 2.0 technology into the education in future course of time.

Fig. 1 are drawn about the on-average responses received from the students and teachers.

DISCUSSION

To implement the technology in present and in future educational setup the respondents' perception was asked through the likert scale. It was analysed that the main problem in adopting the technology is resistance to change. 92% of the students from the Engineering group, 82% of the students from the Science (PCM), 74% of the students from the Sc(Biosc, Biotech, Physio) and 57% of the students from the Education group were agreed that Web2.0 would encourage the

t-test Analysis on Students' Responses (Table 2):

Table 2: t Test Analysis on Students' Responses about Future Possibilities in Implementing the Technology

		Paired sample Test							
		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Engg – Education	.03923	.17713	.03473	-.0323	.1107	1.129	25	.269
Pair 2	ScPCM – Education	.00769	.15472	.03034	-.0548	.0701	.254	25	.802
Pair 3	ScBioscPhysio – Education	-.02692	.20456	.04011	-.1095	.0557	-.671	25	.508

t-test Analysis on Teachers' Responses (Table 3):

Table 3: t Test Analysis on Teachers' Responses About Future Possibilities in Implementing the Technology

		Paired sample Test							
		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Engg – Education	.04538	.38210	.07494	-.10895	.19972	.606	25	.550
Pair 2	ScPCM – Education	.03692	.54732	.10734	-.18414	.25799	.344	25	.734
Pair 3	ScBioscPhysio – Education	-.20077	.75030	.14715	-.50382	.10228	-1.364	25	.185

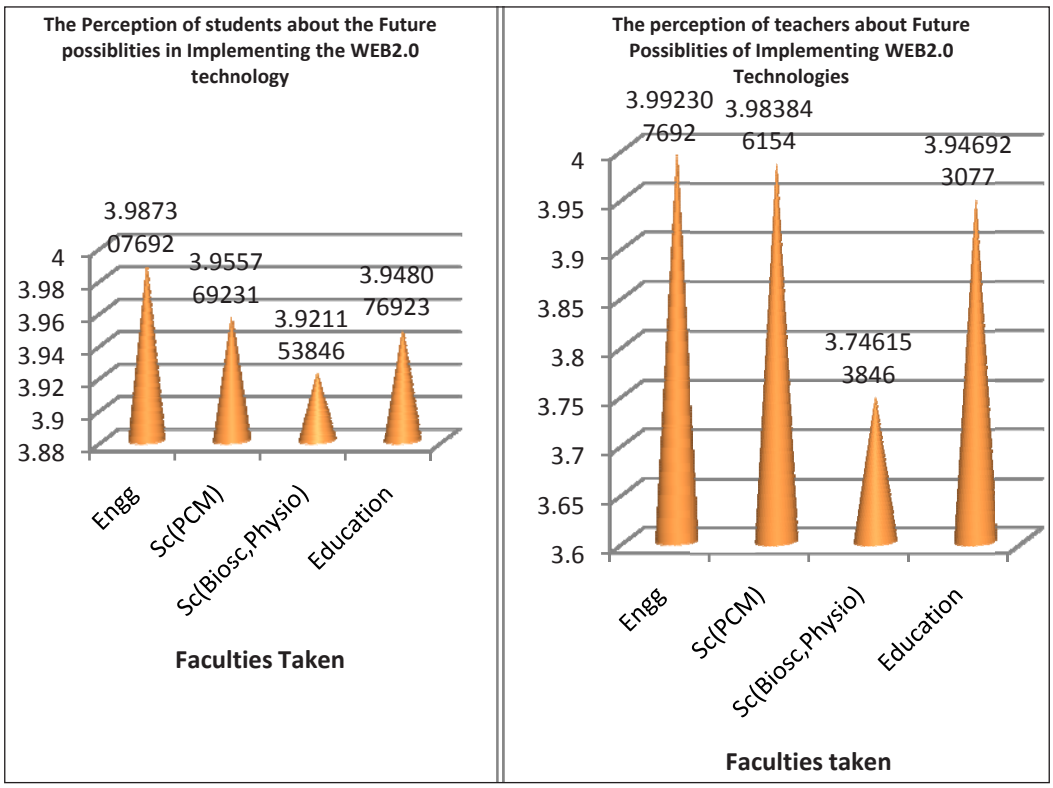

Fig. 1: Future possibilities in implementing the Web2.0 Technology among students and teachers: A comparative graph

learner to add value to the pedagogical applications. About 90% of the respondents from the each group were agreed that Web2.0 technology meant for the digitally and technically sound users. The students and the teachers agreed that the educators who were using the technology enhanced the classroom interaction more.

Students were motivated if the technology used by the teachers appropriately. More than 90% of the students from the Engineering group and Sc (PCM) group agreed that online sessions of the classes focus more on the real problem. 100% of the respondents from the Engineering group, 90% from the Science (PCM), 87% from the Sc (Biosc, Biotech and Physio) and 77% from the Education group were agreed that learning could be enhanced as space and limit would be extended beyond the school boundaries. 87% of the respondents from the Engineering, 75% of the respondents from the Sc(PCM) and Science (Biosc, Biotech, Physio) and 66% of the respondents from the Education agreed that integrating Web2.0 would allow the user to take greater control of the courses. The teachers could post the online assignment and the student's performance could be tracked easily.

Students and teachers were also agreed that though the technology is new and therefore it may take time to execute which need lots of preparation and technical skills but once implemented saves time for future references.

Challenges, Issues and Barriers

Web 2.0 technology has moved and empowered the Higher Education institutions into an innovative direction and also the users. But to adopt the technology there were the issues of lack of attention and lack of awareness in implementing the technology. There would be need to change the mindset of teachers, administrators, trainers and most important the learners. The main challenge in adopting the technology was Lack of Readiness. Most of the respondents agreed that users are not ready to accept the change. The Inadequateness in the quality, lack of resources was the main barriers in implementing the technology where organisation can act as a stimulating agent (Collis & Moonen, 2008).

100% of the respondents from each group agreed that special training and workshops would be arranged on working of different Web 2.0 tools in education. The students also agreed that if technology not properly infused into the education, might hamper their learning outlook. 65% of the students from the Engineering, 62% of the students from the Sc(PCM), 32% of the students from the Sc(Biosc, Biotech, Physiotherapy) and 45% of the students from the Education were agreed that technology was impressive but could not be used into the classroom regularly. Further the students who opposed the technology were asked not to use it at all, but they denied and agreed that communication and interaction cannot persist without the use of technology. The students from Engineering and Sc (PCM) were agreed that learning would be achieved even in the absence of the educators and out of the classroom boundaries.

In the present context, the lack of technical skills, lack of awareness to implement the technology, improper infrastructure, privacy issues and threats, limited subscription of useful online learning resources, freedom to access and mostly implement the technology and lack of trained manpower were the main challenges to infuse the technology into the education. If all these were taken care of, Web 2.0 may act as a better learning platform to motivate formal and informal modes of learning.

Future Possibilities: Recommendations and Conclusion

The future of Web 2.0 technology into the education can be forecasted in two directions: technological and social. "Without doubt, developing future interfaces will be a necessity; however the typical end user (the learner) must be in the centre of all our work). It was suggested that implementing web technologies there would be the focus on what to write instead of how to write. Web 2.0 technologies can act as a medium to provide education to distant learners if the technology is properly used by the users which requires proper training for professional development on educators end. Trainers, teachers and the educators can train themselves by simply having access to different Web2.0 tools which are available online.

In the future context, to integrate the technology there are some implementation strategies that need to be achieved. 100% of the students were agreed that apart from the regular classes, it is important

to provide many mini classes throughout the years so that users could go back and look through the information on their own. Also, the teachers were overburdened and in hurry to complete the courses hence they prefer the conventional method of teaching to finish up the syllabus. Thus, 100% of the teachers from each group agreed that some spare time and supplement teachers should be given to the educators so they may utilize their time to learn the new stuff. It was also recommended that during the exams and assessment students were given freedom to access the technology but in restricted way. 100% of the students from the Sc (Biosc, Biotech, Physio) group were agreed that teachers training institutes must be technically versed so that implementation can start at grass root level. Web 2.0 technologies provide ways to explore different medium of instructions. 21stcentury students are digitally driven and require an interactive and collaborative learning environment for which Web 2.0 enabled education is the best suited for.

For better implementation, the mindset should be changed as the present and would be users believe in conventional approach mode of learning. However the technology is taking its place into the curriculum, but the textbooks cannot be fully replaced.

The study specifies that there is a difference among the respondents of different disciplines taken in using the technology. Emails, Youtube, SNS (facebook), slideshare.com are few of the tools which are common among the learners. Though there is awareness about the technology but only few are using it by own. The main challenge faced is that the technology is not being used up to the marked between teachers and their learners. The respondents are using the technology but at their own end. It is suggested that the technology integrated classroom and courses must be a part of the future curriculum.

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