

Awareness about new media technologies used in classroom teaching among teachers in Indian Higher Education System

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Abstract: *The purpose of this study is to examine the awareness about the new media technologies among teachers used in classroom teaching in Higher education in Jaipur City, India, which can enhance the teaching and enrich practice and research. The paper discusses about the various new media technologies and awareness about these technologies among teachers. This paper also compares the awareness level among teachers those who are teaching in design and engineering programs to management programs. The analysis was done based on the quantitative research. The sample size of the research was 400 teachers of government and private universities of Jaipur city in India. The results explores that teachers who are teaching design and engineering disciplines are more aware and frequent use of different new media technologies compared to management teachers. The paper observes that teachers are keen to adapt the technology for teaching and also describes the challenges faced by the teachers. In the near future, this paper will help forming the framework for training the teachers at universities in Jaipur City.*

Keywords: New Media Technologies, Higher Education, Design and Engineering, Teaching Pedagogy.

Introduction

Education plays a very important role in one's life. Educational sector is one of the key sectors in India. Every parent in India wants his/her child to get the best education in good organizations. Parents in India generally believed that a good education will help the child to build as a world citizen through culture, wisdom and public spirited. They also believe that education promotes national interest, it builds moral, spiritual and ethical values. India has a rich history about the education. Indian education was evolved from the Vedic time period, which was based on the Vedas. This system is also known as the Gurukul system, where relationship between student and teacher was highly emphasized. One of the most pioneers' educational center at that time was Takshashila. Along with Takshashila, other major centers were also evolved at the same time, which includes Delhi, Agra, Jaunpur and Bidar. During the 7th century B.C., Muslim rulers promoted urban education and developed the concept literary societies. In the year 1813, the British introduced English into the education system and the main objective of the British education system was to encourage the students to develop modern education. In the year 1882, the first Indian commission was established in India, which projected the implementation of the private education in India. In 1902 - 1929 many committees were formed for strengthening the

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Any remaining errors or omissions rest solely with the author(s) of this paper.

Awareness about new media technologies used in classroom teaching among teachers in Indian education system. Technical education, learning was introduced both at the school and university level. In the year 1976, government of India had formed University Grants Commission, which promotes the excellence in teaching at various universities.

Department of Higher Education, India, Ministry of Human Development has recently promoting universities for the collaboration between technology and education in India. For this it has established National Mission on Education through Information and Communication Technology (NMEICT) Scheme, which focuses on teaching pedagogy, e- learning, providing multiple facilities for experimentation using real and virtual laboratories and encourages teachers to use the technology in the classroom teaching.

Many universities in India were implementing new ways of teaching methodologies through new media technologies in the classroom teaching. It was observed that there is still a communication gap between teachers and students. This paper mainly examines the awareness about the new media technologies among teachers in Higher education in Jaipur City, India.

This paper also describes about the various new media technologies used in Higher Education. The main objective of the research is that whether the teachers are aware about the new media technologies which will help in forming the framework for training the teachers at various universities.

Review of Literature

“There can be infinite uses of the computer and of new age technology, but if teachers themselves are not able to bring it into the classroom and make it work, then it fails.” – Nancy Kassebaum.

Teachers play a very important role in enhancing the learning skills among students. Nowadays students want the best from the teacher and teachers has a challenge to teach effectively in the classroom teaching. The three media are majorly used by teachers in the classroom teaching: traditional media, mass media and new media technologies.

In olden days teachers use different traditional methods like chalk, slate as teaching mediums. According to Friedmans (2008), chalk and slate had been replaced by newspapers, television and radio which was considered as the old medium. These forms are mainly used for entertainment and educational aspects. The internet has replaced the old form of media into the new media. Lievrouw and Livingstone (2002) defined new media as message, technology and social context. In another definition, Manovich (2002) defined new media as messages which uses digital computer technology for transferring the information. Presently many universities had imbedded different new media technologies in classroom teaching to enhance the student learning centric among the students and teachers. New media technologies include real time communication tools, robotics, wearable technology, makerspace, digital scholarship, internet of things, adaptive learning technologies, mobile learning, virtual & remote laboratories, social networks, 3D printing, Virtual and real laboratories, internet of things, near field communication and mobile broadband.

Research Methodology

The research problem statement focuses on the awareness of new media technologies among teachers in the Jaipur City in India. The objectives of the research is to find out the awareness about new media technologies among teachers. Based on the objective we had framed the null hypothesis.

H₀₁ – There is no awareness among teachers and students in classroom teaching.

The Department of Higher Education, defined the university as the university established or incorporated by or under a central act, a provincial act or a state act. At present in India, there are 45 central universities, 318 state universities, 185 state private universities, 129 deemed universities and 51 Institutions of National importance which include Indian Institution of Technology, Indian Institution of Management and National Institution of Technology (Source: <http://mhrd.gov.in/university-and-higher-education>). The data are collected from the sample size of 300 teachers from the 20 private, government and deemed universities in Jaipur City using the convenience sampling method. For data collection, a tool was developed. The semi structured questions were asked to the teachers. Based on the semi structured interviews, a rough draft of questionnaire for teachers was framed. The questionnaire was consulted from the subject experts for content validity. Based on corrections, we developed the final questionnaire. We conducted the pilot study on the 25 percent of the sample study which was 75 teachers. After that the norm settings were framed in the form of the score sheet and level of awareness. The questionnaire consisted of 20 questions in three sections. In the first section, only demographic questions were included which were designation, type of university, discipline. In the second section, all the questions related to the awareness about the new media technologies were included and in the third section, the questions related to the popular technologies were included.

To check the reliability analysis the Cronbach alpha is used. The internal consistency among the variables listed in table 1 was 0.720.

Table 1: Variables of Awareness among Teachers

Factor	Variables	Cronbach's Alpha
S1	Awareness about the term new media technologies	0.720
S2	Practices mostly used by teachers	
S3	Awareness about Virtual Laboratories	
S4	Availability of maker space facility	
S5	Use of 3D Printing Technologies	
S6	Use of Google Apps	
S7	Awareness about web 2.0 technologies	
S8	Learning Pedagogy	

Once the data are collected, the data analysis was done using the SPSS and Microsoft excel.

Data Analysis

Based on the collection of the data, based on the variables, the following observations were found.

Table 2: Awareness about the Term New Media Technologies among Teachers

Awareness about the term New Media Technologies	No. of Teachers (N)	%
Yes	263	87.7
No	37	12.3
Total	300	100

It was observed that 87.7% (263) teachers are aware of new media technologies and 12.3% (37) teachers are not aware about new media technologies (Table 2).

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Table 3: Awareness of the Term Web 2.0 Technologies among Teachers

Awareness about the term web 2.0 technologies	No. of Teachers	%
Yes	133	44.3
No	167	55.7
Total	300	100.0

It was observed that 44.3% (133) teachers are aware about web 2.0 technologies which Facebook, pin interest, YouTube, Vimeo and so on and 55.7% (167) teachers are not aware about new media technologies (Table 3).

Table 4: Awareness about Virtual Laboratories

Awareness about Virtual Laboratories	No. of Teachers	%
Yes	186	62.0
No	114	38.0
Total	300	100.0

The study observes that 62% (186) teachers are aware about virtual laboratories and only 38% (114) teachers are not aware about new media technologies (Table 4) and the usage of the virtual laboratories in the classroom teaching.

Table 5: Availability of Maker Space Facility in University for Learning

Availability of maker space facility	No. of Teachers	%
Yes	171	57.0
No	129	43.0
Total	300	100.0

57% (171) teachers are aware about the availability of maker space facility in the University for learning and only 43% (129) teachers are not aware about this availability (Table 5) and the private universities have the best facilities comparable to the government and state universities.

Table 6: Teaching Practices Followed By Teachers in the Classroom

Learning Pedagogy	No. of Teachers	%
Traditional Teaching	238	79.3
Flipped Classroom Teaching	62	20.7
Total	300	100.0

Interestingly, many teachers follow the traditional teaching (238) in the classroom compared to flipped classroom teaching (62) (Table 6). Traditional classroom teaching is teaching pedagogy where faculty comes to the class, give notes and students note the notes and homework is given for analyzing the level of understanding of the concept, whereas flipped classroom teaching is teaching pedagogy where videos, notes are shared with the students before coming. Students see the videos at home and in the classroom the discussion of the topic takes place among teachers and students. Many universities are following this methodology to increase the student – teacher centric learning.

Table 7: Use of Google Apps for studies

Use of Google apps for referencing	No. of Teachers	%
Yes	117	39
No	183	61
Total	300	100

39% (117) teachers use different google apps for referencing in the classroom compared to the 61% (183) teachers do not use google apps for referencing. But teachers feel that rhythm of teaching is lost if smartphones are allowed to use in the classroom by students during teaching.

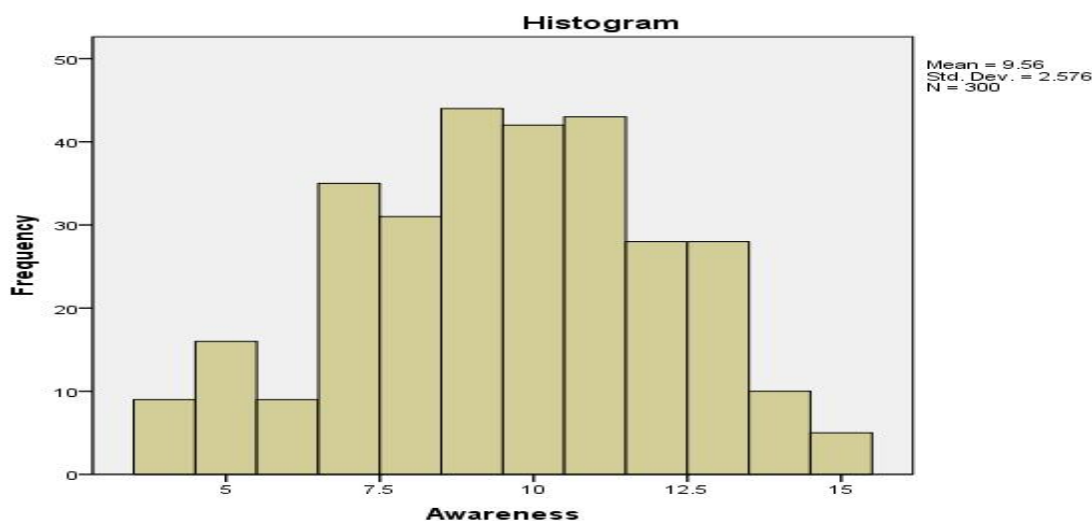
Results and discussions

In this study, the interpretation of the awareness among the teachers was based on the two major parameters discipline wise and designation wise. To check the normality of the data, Kolmogorov-Smirnov and Shapiro-Wilk test is used.

Table 8: Test of Normality of Awareness of New Media Technologies among the Teachers

	Tests of Normality					
	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Awareness	0.092	300	0.000	0.975	300	0.000

Figure 1: Histogram of normality of data among teachers



The figure 1 represents that the data are not normally distributed and significant value is 0.000 which is less than 0.005. Hence, the non – parametric tests are used to test the hypothesis. For awareness parameter discipline wise, Mann-Whitney U test was used for testing the below hypothesis and for the awareness parameter designation wise KW test was used.

- H₁₀ – There is no awareness among teachers and students in classroom teaching.
- H_{1a} – There is awareness about new media technologies among teachers.

Table 9: Awareness among the Teachers Discipline Wise

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	Program/Course	N	Mean	SD	Mann-Whitney U	P value
Awareness	Design & Technology	166	9.89	2.465	9344.500	0.017
	Commerce & Management	134	9.15	2.660		

For discipline wise, Mann – Whitney U test was used. This test is same as the parametric test of the t- test where it compares the mean values of two independent tests. It was observed that the teachers who were teaching the design & technology discipline are more aware compared to the teachers who were teaching in the commerce and management discipline. The p- value is less than 0.017 which is less than 0.05 (table 9), which means that the teachers are aware about the new media technologies.

Table 10: Awareness among the teachers designation wise

Designation	N	Mean	SD	X ² (KW test)	df	P value
Assistant Professor	171	9.81	2.516	5.338	2	0.039
Associate Professor	65	9.06	2.391			
Professor	64	9.38	2.854			

For checking the awareness among the teacher designation wise, KW test is used. The KW test is similar as the parametric test, Anova test. The KW test compares the mean value of more than two groups. It was observed that the young faculty is more acquainted with the new media technologies compared to the senior faculty. The p – value is less than 0.005, means we accept the alternative hypothesis.

Based the above statement it was observed that teachers are aware about the new media technologies in higher education.

Limitations of the study

- The respondents were restricted to the teachers those who were using the internet facilities.
- The research is not generic in nature, due to time constraint the research area is restricted to only one city.

Conclusions and recommendations

Department of higher education is implementing various new media technologies in higher education system in India. The study explores the initiatives being taken by Indian Universities in this prospect. As per the statistical data, it was observed that teachers who were teaching in design and technology discipline are more aware about the new media technologies than those teaching in commerce and management. It was observed that teachers who are exposed to regular classes are more acquainted to new media technologies compared to senior teachers. Based on the primary data, 80% teachers are still use the traditional classroom teaching than flipped classroom teaching as senior teachers are less adaptive to the new media technologies in the teaching methodology in higher education system.

Based on these findings, it is observed that a proper framework of the awareness program and applications of new media technologies should be developed for teachers in the Indian higher education system. Government of India should start a massive drive to bring awareness among students, teachers, and administrators through the Student Development Programme

(SDP's), Faculty Development Programme (FDP's) and Management Development Programme (MDP's) respectively. New media technologies thus will help universities in developing cities like Jaipur in promoting research & innovation across all disciplines along with interdisciplinary research.

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