Empirical Investigation On Faculty Perceptions Related To Online Teaching Effectiveness

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Abstract

Education is the most powerful weapon which you can use to change the world" – Nelson Mandela. Education is the principal stage for individuals to gain the knowledge, critical thinking, empowerment and skills they need to make this world a better place. Education is fundamental to success that is prerequisite for individual's progress and development. Eminent progress have been observed in education in India as from gurukul system to classroom based education, now moving towards technology based platform. Revolution in use and adoptability of Information and communication technology has given new edge to teaching-learning. For education system, it is said that online education is future .This change in delivering education will affect the stakeholders who are associated with education system. One of the important component for delivering effective and successful online education is faculty members. Faculty members are important component of education system so it is very important to acknowledge and understand the perception of the faculty members involved in online teaching to make teaching –learning more effective. This research work is an effort to explore the perception of faculty on online teaching effectiveness by exhausting various Information and Communication Technology tools. For the research work 250 faculty members data is collected which are occupied in pune region in different universities .Important parameters/factors recognized for the study purpose are personal factors, institutional factors, online environment factor (importance), online environment factor (satisfaction), and student engagement /active learning. Institutional factors and online environment factors (importance) is considered as the significant parameters by the faculty member towards online teaching. Study results supports that faculty members are satisfied with technical support and availability of course but not satisfied for the effectiveness of online communication tools. Even it was observed that student engagement /active learning factor is also one of the parameter where respondents Faculty members was not much satisfied.

Keywords- Education; factors; Knowledge; Teaching; Technology; Human Being; Online; E-Learning; Modern; ICT.

Introduction-

Education is pre-requisite and chief mechanism to empower the human beings to lead the blessed and happy life. Education is the base to gain the knowledge, expertise, skills so that individual can overcome barriers to exploit the available opportunities. To deliver the knowledge, traditional method of physical classroom system was in place but now education system is getting transformed form physical classroom to technology based education i.e. online education. Because of accessibility and availability of technology, it is must for faculty members and students to adopt the modern technology based education system and follow innovative way of teaching-learning. Online education is need of the time. So it is must for faculty members to adopt and be efficient in delivering online education. Online teaching is defined as adopting and using ICT resources to deliver the knowledge to students. India has large number of technologically driven persons due to availability of high speed internet and smart phones. Now Individuals are preferring the online education because of cost effectiveness and easy access. Universities are coming with lot of online courses. This give researcher's interest to study about this topic as it is always said we have to adopt the technology and it is future of education system so it is important to know the faculty members point of view who are already involved in online teaching so that quality education can be imparted in online mode. Research work attempts to study the following points

Objectives of the Research work are-

- To study the concept and significance of online teaching.
- To Study and recognize the imperative factors/ parameters influencing the online teaching.
- To understand the online teaching effectiveness by acknowledging Faculty perception via use of various ICT tools.

Theoretical Background-

- Online teaching can be defined as-"The method of providing formal and informal education by utilizing Electronic resources."
- Online teaching is stated as- "The practice of teaching -learning using the electronic resources."
- Online teaching can enable the availability of information and education at affordable pricing with self-paced learning by usage of ICT tools.

Significance of Online teaching-

The online education system is evolving at a very fast pace in India because of its importance towards more deeper penetration .The significance of e-learning is explained below in more detail

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  Online teaching is more cost effective as compared to the traditional method of classroom teaching. Education is available at lower cost as compared to other mode.

- Online teaching-learning facilitates the learning from anywhere at any time at the convenience of the learner.

- Online teaching learning provide opportunity to the learner to learn at his own pace as per his ease as whether he is slow learner or fast learner.

- Online teaching facilitates flexibility and network opportunities for learner as well as for instructors.

- Online teaching offer access of information and education at the place of learner so it's save the time of the learner in acquiring the knowledge.

- Now a days there are lot of international and national universities are there that are offering online courses to learner and degrees provided by these universities are recognized and valued by the corporate also.

- Online teaching can assist in extending opportunity to access the expertise skill sets.

Research Methodology-

Research work primarily efforts to study and understand the perception of Faculty members for online teaching effectiveness by utilizing various ICT resources for Undergraduate Programme from various universities with in the Pune city, state of Maharashtra, India. Total 285 questionnaires were prepared and administered of which total 250 responses was received. To understand the faculty's perception Five-point Likert scale is applied.

The collected data was abbreviated and entered in SPSS 20.0. For the analysis purpose, the questionnaire was coded into different variables/factors. To test the hypotheses, Factor analysis using SPSS 20.0 was implemented for the collected data. Researchers have gone through extensive literature and discussion with faculty members teaching under graduation courses to identify the Parameters/ Factors affecting online teaching.

Factors set for the Online Faculty Survey Scales

The research work intended at involving Likert five-point scales to determine faculty perceptions connected with online teaching effectiveness. Different Sets of questions determining, personal factors, institutional factors, online environment factor (importance), online environment factor (satisfaction), preferences regarding the custom of instructional learning delivery formats, and student engagement for online teaching experience was articulated to get the faculty perception. Recognized factors / parameters for the study are pointed out in detail below.

Online Environment Factors (Importance)

- Students' Accessibility of online class
- Reliability
- Effectiveness of communication tools
- Flexibility
- Faculty Accessibility of online class

Online Environment Factors (Satisfaction)

- Students' Accessibility of online class
- Reliability
- Effectiveness of communication tools
- Flexibility
- Faculty Accessibility of online class

Institutional Factors

- Online instruction is valued.
- Technical support to instructors and students.
- Importance of online courses quality and adequate support to design online courses.
- Appropriate hardware and software resources are provided and adequate support for the use of new and emerging technologies.
- Fair departmental evaluation for online teaching.
- Reasonable compensation for online teaching
- Reasonable student evaluation for online teaching.

Personal Factors

- Building relationships with online students
- Confidence to teach
- Enjoy teaching online.
- Quick feedback to students
- Online teaching is pleasing as extend education for vulnerable groups.

Student Engagement/Active Learning Factors

- Students enthusiastic for learning.
- Students actively involved in learning.
- Student participation level is low in course deliberations
- Keeping student's involvement throughout the course.
- Students motivation
- Students comfortably in asking questions about course content.
- Keeping student's involvement throughout the course.

Data Analysis-

To understand the faculty perception for online teaching effectiveness, Factor analysis is used for the research work. Mean and standard deviation is also calculated to comprehend the faculty perception. To analyze the data descriptive statistic and Principal Component Analysis, Extraction Method is used. Major five main parameters/factors related to online teaching is identified that is dignified by online environmental factors (satisfaction), online environment factor (importance), institutional factors, personal factors, and student engagement/active learning. Faculty respondents are asked questions on these parameters to acknowledge their

perceptions as what is important for them, for which factor they are comfortable, satisfaction or dissatisfaction for different parameters, their confidence level for these parameters. Descriptive statistics are also stated for the study.

Table No-1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Online Environment Factors (Satisfaction)	250	3.00	4.00	3.6560	.47599
Online Environment Factors (Importance)	250	1.00	5.00	4.6400	.52869
Institutional Factors	250	1.00	5.00	4.6640	.52172
Personal Factors	250	1.00	4.00	3.6440	.52761
Student Engagement/Active Learning Factors	250	1.00	5.00	3.6240	1.26532
Valid N (list wise)	250				

Institutional factors and online environment factors (importance) is considered as the significant parameters by the faculty member towards online teaching. Institutional Factors and Online environment factors (importance) have mean value of 4.6640 and 4.6400 which is highest amongst all other parameters.

KMO and Bartlett's Test –

Kaiser-Meyer-Olkin (KMO) Test is used to determine whether data is adequate for Factor Analysis. The Kaiser-Meyer-Olkin is applied to determine and measure of sampling adequacy. The Value of KMO varies between 0 and 1. The values which are closer to 1 are better and the value of 0.5 is the suggested minimum. As value of KMO is 0.660 that reflect sample is adequate.

Bartlett makes recommendation for the accepting value less than .05 Bartlett's test locates that the correlations are important and significant at 0.0001 level, when taken collectively while measure of sampling adequacy give the impression of being at the patterns between the variables.

Table No-2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.660
Bartlett's Test of Sphericity	Approx. Chi-Square	1506.808
	Df	10
	Sig.	.000

Table No-3: Communalities

	Initial	Extraction
Institutional Factors	1.000	.965
Student Engagement/Active Learning Factors	1.000	.870
Online Environment Factors (Satisfaction)	1.000	.923
Personal Factors	1.000	.927
Online Environment Factors (Importance)	1.000	.964

Extraction Method: Principal Component Analysis.

Table No-4: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.199	63.975	63.975	3.199	63.975	63.975	3.199	63.974	63.974
2	1.450	29.008	92.983	1.450	29.008	92.983	1.450	29.008	92.983
3	.210	4.191	97.174						
4	.123	2.455	99.629						
5	.019	.371	100.000						

Extraction Method: Principal Component Analysis.

Under extraction method, principal component analysis is used and major factors extracted are Institutional Factors and online environment factors (importance) which have cumulative variance 92.983 %. Student Engagement/Active Learning Factors got least response from faculty members as they responded it is difficult to keep students engage and participative in online teaching as control level is moderate.

Online Environment Factors (Importance)-

Faculty members were questioned about Online Environment Factors (Importance) responses are recoded in the range of one to five from lower to higher score. Of the five parameters, two important factors extracted are reliability and Students' Accessibility of online class.

Table No-5: Communalities

	Initial	Extraction
Faculty Accessibility of online class	1.000	.852
Reliability	1.000	.991
Students' Accessibility of online class	1.000	.976
Flexibility	1.000	.964
Effectiveness of communication tools	1.000	.828

Extraction Method: Principal Component Analysis.

Two major factors extracted were Students' Accessibility of online class and Reliability

Online Environment Factors (satisfaction)-

Faculty members were questioned about Online Environment Factors (satisfaction) responses are recoded in the range of one to five from lower to higher score. Of the five parameters, two important factors extracted are reliability and flexibility of online teaching.

Table No 6: Communalities

	Initial	Extraction
Flexibility	1.000	.940
Reliability	1.000	.954
Students' Accessibility of online class	1.000	.885
Effectiveness of communication tools	1.000	.883
Faculty Accessibility of online class	1.000	.927

Extraction Method: Principal Component Analysis.

Institutional Factors-

Faculty responded for Institutional factor on the seven parameters. Generally, faculty answered that they were satisfied with appropriate hardware and software resources provided and adequate support for the use of new and emerging technologies Than they responded for the factors technical support provided to instructors is also satisfactory and Importance of online courses quality and adequate support to design online courses. (Refer table no-9 &10).there were lesser amount of responses for online instructions.

Table No-7: Communalities

	Initial	Extraction
Technical support to instructors and students	1.000	.965
Importance of online courses quality and adequate support to design online courses	1.000	.965
Online instruction is valued.	1.000	.799
Fair departmental evaluation for online teaching.	1.000	.914
Reasonable compensation for online teaching	1.000	.836
Reasonable student evaluation for online teaching	1.000	.854
Appropriate hardware and software resources are provided and adequate support for the use of new and emerging technologies	1.000	.970

Extraction Method: Principal Component Analysis.

Personal Factors -

Faculty members were asked about the significance of five factors of the personal factors, responses are recoded in the range of one to five from lower to higher score. The most important factors, out of the five parameters extracted were confidence to teach online and building relationships with online students. Least responses was observed that faculty enjoy teaching online as they stated that they enjoy traditional method of teaching more as compared to online.

Table No-8: Communalities

	Initial	Extraction
Building relationships with online students	1.000	.950
Confidence to teach	1.000	.970
Enjoy teaching online.	1.000	.822
Quick feedback to students	1.000	.940
Online teaching is pleasing as extend education for vulnerable groups.	1.000	.848

Extraction Method: Principal Component Analysis.

Student Engagement/Active Learning Factors –

Faculty responded for Student Engagement/Active Learning Factors on the six parameters. Mostly, faculty answered that major important factors were keeping student's involvement throughout the course and Student's motivation for online course. They responded students are not enthusiastic for online leaning and low level of participation is observed form their side.

Table No-9: Communalities

	Initial	Extraction
Student's motivation.	1.000	.950
Keeping student's involvement throughout the course.	1.000	.960
Students enthusiastic for learning.	1.000	.800
Students actively involved in learning.	1.000	.924
Student participation level is low in course deliberations	1.000	.836
Keeping student's involvement throughout the course.	1.000	.874

Extraction Method: Principal Component Analysis.

Major Findings-

- It can be stated from the data analysis that appropriate hardware and software resources are provided and adequate support for the use of new and emerging technologies.

- Faculty Respondent are contented with that emphasis is given on importance of online courses quality and adequate support to design online courses. Even they responded that positively for the Technical support provided to them as well as technical support accessible to students.

- For student engagement and active learning, respondents are not satisfied as majority of the faculty members responded for student motivation as it is difficulty to keep students motivating and even they responded for student participation is low in course deliberations.

- It can be observed from data that majority of Faculty members replied that they are not satisfied with the effectiveness of online communication tools amongst Online Environment Factors as it is not much effective as compared to traditional method of teaching.

- Faculty member responded that confidence to teach online is required and Building relationships with online students should be given priority to make online teaching effective.

- Faculty member rated very less for the parameter reasonable student evaluation for online teaching as many methods are used for evaluation but fairness can be accurately judged.

Suggestions-

It is undeniably factual that online education is the future of the education sector and it has great prospect as it provides enormous occasion to diverse segment of society to be a part of education. To make online education more effective, faculty members are required to take more effort to inspire students by giving activities and case studies to make them involved during the online session. Regular and continuous feedback can support to comprehend the student's view about the understanding level of online teaching so that quality education cane be imparted. Collaborative dialogues and participating atmosphere should be stimulated in online classes to make student involved and active in online classrooms. It is further suggested blended learning will be more effective for imparting quality education amongst citizens.

Scope for further Study-

This study is an attempt to understand the faculty perception related to online teaching as they are important component of education system. This study can be further extended to understand and acknowledge the students perception also related to online education. Even research work can be further extended to different locations in Indi and abroad also.

Conclusions-

Education is stated as the substantial empowering power in the Individual's lives to lead a happy and blessed life. It is the foundation for creating knowledge/information, expertise for achieving the obtainable prospects. There is lot of transformation is observed in teaching- learning programmes as from the traditional physical classroom method to modern technology based practice. With ease of access of Information and Communication Technological resources, it is not erroneous to declare that online education is future and faculty members being important component of online teachings, required to adopt, unlearn and learn novel things and expertise to make them modernized and students responsive. Research findings spotlights that resources accessibility are there with faculty and students to move forward towards online education but then again motivation and involvement is requiring from the students side which is essential to make online teaching –learning effective and quality based. To keep faculty enthusiastic and energetics for teaching online students participation and involvement is must. More Efforts and steps can be directed to improve online communication tools so that more effective utilization can be done to make online teaching effective.

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