

# **A RESEARCH STUDY ON THE DIGITALISATION OF HIGHER EDUCATION AND ITS IMPACT ON TEACHING AND STUDENTS ASSESSMENT IN COMMERCE, MANAGEMENT AND SCIENCE COLLEGES IN MUMBAI.**

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## **Abstract:**

Mere traditional classroom teaching is now a matter of the past. Introduction of technology has revolutionized the way teaching is conducted. It offers the flexibility for learning to be available to students at any desired time or place. Digitalization of education has also blurred the borders that were previously defined by students and teachers being present in the same location at the same time. Over the last decade, distance and online learning is becoming increasingly popular in India. Online learning courses are on the rise and have been facilitated by the increase in digital technology now being available in most of the country. Additionally, with the introduction of the learning management systems (LMS), student assessment through digitalization technology is now a reality. Students can also interact with their peers in and outside of the classroom. The aspect of peer centred learning has also helped to steer the soft skills of the students. LMS would positively impact the teaching process and student assessment. Furthermore, it provides an opportunity for students and faculty to attend or conduct a session from an off – site location, therefore making the world seem smaller and more accessible.

**Keywords: Digitalization, Indian Higher Education, Teaching & Student Assessment**

## **Objectives:**

1. To understand the impact of digital technologies on teaching process.
2. To understand the impact of digital technologies on student assessment.

## **Hypothesis:**

- H<sub>01</sub>: There is no impact of digital technology on teaching process.
- H<sub>11</sub>: There is an impact of digital technology on teaching process.
- H<sub>02</sub>: Digital technologies do not support the students' assessment.
- H<sub>12</sub>: Digital technologies support in the students' assessment.

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## Research Methodology

The primary research has been done using a questionnaire as an instrument. The sample size for the research has been 50 teachers in the city of Mumbai. The questions were designed to understand the need for digitalisation in education. Brief interactions with learned academicians and industry professionals helped the researcher in understanding about the need for technology in education and its impact on teaching & students assessment.

Research papers on relevant topics of e- learning, m – learning, research software, journals and several theses helped the researcher in studying more about the importance of digitalisation and its impact on teaching & students assessment.

The data collected with help of the questionnaire was analyzed with the help of the statistical package SPSS 22. The mean scores arrived were put to various statistical analysis using various statistical tools in order to test the research hypothesis. The cronbach alpha value has been determined to be 0.892 with the study conducted.

**Sample Size Justification** The sample size was finally fixed based on the statistical formula

$$n = \left[ \frac{Z_{\alpha/2} \sigma}{E} \right]^2$$

wherein N= number of samples, Z=1.96 at 95% confidence level

E = Margin of Error,  $\sigma$  = Standard Deviation

## Impact of Digitalisation on Teaching & Students Assessment

Questionnaires	Cronbach's Alpha Score
	Mumbai
Faculty's Perception on Digitalization on Higher education	.892

A learning management system (LMS) is software that is employed by educational institutions for delivery of their courses by both academic institutions as well as training institutes. The learning management system can be managed by both faculties as well as wherever the faculty deems necessary it can be managed by student control as well. The learning management system is used by faculty to provide educational resources for students as well as accept assessments and

return grades to students. The students use the learning management system to obtain learning resources from the faculty, interact with their peers, attempt quizzes or other learning assessments that have been prepared by the faculty as well as upload their assignments and receive their grades. For instance, faculties have various resources available in the learning management system in order to encourage interaction between students through forums and group discussions. The faculty assumes the role of a moderator and channelizes the discussion. The learning management system is also equally used by academic and training institutions to support traditional classroom teaching as well as distance/ online learning courses. In the recent years, the popularity of the learning management systems has also enticed schools to adopt some form of LMS. Schools have begun using the learning management system to provide students with exercises especially for mathematics as well as a tool for students to complete their homework. It has started preparing students to complete most of the assignments online and has also reduced the resistance towards the use of the learning management system during graduate and post – graduate studies. It is currently used as a supplementary tool with current teaching practices; however, its full potential is yet to be explored.

In the recent years, online learning or e – learning has become increasingly popular in India. E-learning involves the use of a web – based communication through which knowledge transfer and training is conducted. It involves teaching conducted entirely through the use of digital technology either directly through the internet or specifically prepared softwares available to faculties of the institute and students who enrol. Currently, various universities globally are experimenting with different modes of e – learning and have made strides towards moving many courses onto an e – learning platform. It is beneficial for institutions as they can engage with students worldwide and do not need to invest in having multiple campuses in different continents. It also benefits students and the society as the cost involved with travel and expenses towards accommodation and other living expenses in an overseas location are not incurred by them. It therefore makes e – learning an attractive option especially for mid – career professionals who do not need to move their residence location as well as can juggle between study and work easier. However, the cost involved in developing of an e - learning course is high and therefore requires careful planning and execution. Additionally, the course writers also require additional training on preparing an e – learning course module. E - learning courses are completely dependent on the learning management system and therefore require students that have some technical knowhow of digital systems and internet use. E -learning technology can also be used as a supplementary tool to traditional classroom teaching. For distance mode

learning, LMS systems have also been used to stimulate a virtual classroom, where students attend classes from a remote location (their homes or any other off-site location). Currently, schools worldwide are also experimenting with mixed mode teaching. In mixed mode teaching, a faculty is simultaneously teaching face – to – face students as well as students logged in via computer software from a remote location. The distance mode students are able to see the faculty through the use of a web camera and the faculty uses an active board / panel and the students are able to see whatever the faculty marks or writes on the active panel. The face – to – face and distance students are also able to interact with each other and both parties can participate in class discussions. Both students would utilise the learning management system; however, the faculty can choose to place the two sets of students in different cohorts and allot different activities to them or have all students under one cohort. The mixed mode teaching pattern is new to the educational sector and requires further research and trials with regards to its utility and space in the educational sector. There are a number of learning management systems available in the market today. The most widely used include Blackboard, Moodle and WebCT. These learning management systems provide the faculty with an assortment of tools for their use. These tools include quizzes, forum discussions, surveys, glossaries, online workshops, chats, forum messages as well as an option for students to upload their assignments and receive their grades from students. Although, learning management systems were started with a view to reduce the carbon footprint of the educational sector; its utility has been understood as spanning further to that cause. The learning management system also prompts students with regards to the due dates for assessments and assignments and has therefore also reduced the administrative costs normally incurred by educational institutions to provide for re - sits or late submission of assessments. It also ensures that time frames are met by all stakeholders using the system. The learning management system also provides a space for students to interact with each other even after regular teaching hours and also aids the building of a more close-knit student and alumni group. This is particularly important in the medical sector where these relationships forged during the academic period then provides an ease in setting up of medical practice and encourages cross – referrals among the whole cohort. In conclusion it can be stated that learning management systems are the future of education in India. Further improvements made to advance the abilities of the learning management systems will be beneficial to the education sector and will aid the future development of the e – learning courses. Through the learning management systems, Indian institutions can also employ the services of overseas based faculty from renowned universities. This facility will provide students in India the ability to experience

international level education without having to incur the huge capital costs in travelling overseas to do so. It also provides the educational institution with the opportunity to employ the services of a larger number of international faculties without incurring the cost of flying them in to teach the subject. It therefore acts as a more sustainable arrangement and can be widely used. The full potential of e – learning is yet to be fully acknowledged and utilised. Further research is required in this sector.

**Data Analysis and Hypothesis Testing:**

**H01: There is no impact of Digital Technology on teaching Process**

**H11: There is a significant impact of Digital Technology on Teaching Process**

**Interpretation:**

Since the impact of Digital technology on teaching process directed towards the understanding the awareness, usage and understanding of digital technology towards the betterment of teaching process, multiple demographic variables has been tested and the results are interpreted based on statistical tables obtained.

**Table 1. Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.974 <sup>a</sup>	6	.175
Likelihood Ratio	10.460	6	.107
Linear-by-Linear Association	.322	1	.570
N of Valid Cases	320		

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .14.

Since the Chi-Square table shows that the calculated value is significantly lower than the tabulated value at p value .05. And that established the fact that there is a significant impact of digital technology on Teaching process (Age wise). Thus the null hypothesis is rejected and the alternate hypothesis is accepted.

**H02: Digital technology do not Support the Student’s Assessment.**

**H12: Digital technology Support the Student’s Assessment.**

The hypothesis which has been formulated based on the second objective of the study like to study the impact of digital technologies on student’s learning abilities. Hypothesis has been tested by Multivariate ANOVA and the calculated value is lower than the tabulated F table value at p( .05) level and it established the fact that the Digital Technology supports on the student’s Assessment. Thus the null hypothesis is rejected and the alternate hypothesis is accepted.

**Multivariate Tests<sup>a</sup>**

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.577	316.405 <sup>b</sup>	5.000	1159.000	.000
	Wilks' Lambda	.423	316.405 <sup>b</sup>	5.000	1159.000	.000
	Hotelling's Trace	1.365	316.405 <sup>b</sup>	5.000	1159.000	.000
	Roy's Largest Root	1.365	316.405 <sup>b</sup>	5.000	1159.000	.000
Levelofpresentstud y_1	Pillai's Trace	.065	16.192 <sup>b</sup>	5.000	1159.000	.000
	Wilks' Lambda	.935	16.192 <sup>b</sup>	5.000	1159.000	.000
	Hotelling's Trace	.070	16.192 <sup>b</sup>	5.000	1159.000	.000
	Roy's Largest Root	.070	16.192 <sup>b</sup>	5.000	1159.000	.000
V17	Pillai's Trace	.062	4.915	15.000	3483.000	.000
	Wilks' Lambda	.939	4.945	15.000	3199.890	.000
	Hotelling's Trace	.064	4.968	15.000	3473.000	.000
	Roy's Largest Root	.043	9.950 <sup>c</sup>	5.000	1161.000	.000
TeachingSkill	Pillai's Trace	.082	6.559	15.000	3483.000	.000
	Wilks' Lambda	.920	6.575	15.000	3199.890	.000
	Hotelling's Trace	.085	6.577	15.000	3473.000	.000
	Roy's Largest Root	.044	10.322 <sup>c</sup>	5.000	1161.000	.000
V17 * TeachingSkill	Pillai's Trace	.135	6.441	25.000	5815.000	.000
	Wilks' Lambda	.870	6.574	25.000	4306.996	.000
	Hotelling's Trace	.144	6.655	25.000	5787.000	.000
	Roy's Largest Root	.090	20.966 <sup>c</sup>	5.000	1163.000	.000

a. Design: Intercept + Levelofpresentstudy\_1 + V17 + TeachingSkill + V17 \* TeachingSkill

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

Box's Test of Equality of Covariance Matrices <sup>a</sup>	
Box's M	567.258
F	6.193
df1	75
df2	2089.428

Sig.	.000
Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.	

**Interpretation:** Since the significance value .000 is lower than the .05 of p value, hence Box's Test of Equality of Covariance Matrices. It supports the alternate hypothesis that Digital Technology supports the Student's Assessment and the null hypothesis is rejected.

### **Conclusion:**

From the research it is noted that the idea of digitalisation supports teaching to a high degree and most faculties feel that this improves the teaching style. There is more of a practical based approach than the traditional style of board and chalk piece. Such technology in education is for the good and the enthusiasm in students is also determined to be higher.

The teachers feel that technology in education disrupts their existent style of teaching but helps them in simplifying the various administrative procedures such as attendance, assessments, class room discussions and activities. Though they agree that this is in the transition stages, they too agree that digitalisation of education is a necessity to sustain. However on discussions with many learned academicians state that digitalisation would help a lot in research and bring in more transparent communications between guides and students during research works. It would also increase global research activities and improvise Indian system by making it more competitive and expanding horizons.

### **Future Scope of Research:**

The research has been conducted in Mumbai and with just 50 as sample size especially focussing on science, commerce and management colleges. This research could be conducted in other cities or other states of the country to determine a higher analytical value. The research could also be conducted on different branches such as arts and engineering.

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