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Factors Influencing The Nippy Digital Teaching-Learning Process During Covid-19 Amongst Indian Academics

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Abstract

With the outbreak of COVID-19, the educational institutions, whether be it a School, College or a University has moved to a digital teaching-learning mode. In this study, we tried to find out the factors influencing the digital teaching-learning during the COVID-19 pandemic and its influence on adapting to a nippy digital teaching-learning platform by academics and factors impending its adaptability thereof. From the study, we identified four factors which have influence in the digital teaching-learning process, viz., communication skills, digital skill, knowledge management and ability to learn independently. It has been identified that COVID-19 has a positive and significant impact on Digital teaching mode. Knowledge of digital skills was found to act as the high contributing factor whereas knowledge management as the least contributing factor.

Keywords: COVID-19, Digital teaching, communication and digital skills, knowledge management, ability to learn independently.

Introduction:

The year 2020 brought with it a new term'COVID-19', a virus supposedly originated from the Wuhan city of China and soon declared as a pandemic by the World Health Organization. Approximately 1.3 billion of the Indian populations went under three weeks' lock down with limited movement as a preventive measure against the virus (Jeffrey & Kai, 2020). The lockdown is moving through various phases i.e. 1, 2, 3 and 4, consequently, this has led to the development of the concept 'Work from Home' (WFH).
According to UNESCO (2020) report, over 100 countries had implemented the nationwide closure, which had a direct impact upon half of the world's student population on their normal study environment. Soon the academic fraternity started embracing the e-learning as the new normal.
According to the India Today web desk (2020), various colleges and universities had instantly moved to virtual classes with digital teaching and interaction between academicians and students submitting assignments and other works through digital teaching-learning mode.
Due to lockdown situation, studies moved from conventional classroom to digital teaching classrooms and this situation has entirely changed the working style of the academics. Silman (2014) in his research conveyed that in the past many years, "the

enrolment in the digital class room is rising five times faster than campus enrolment." But the situation in India is a bit different where digital teaching is only 5-7%. To add worry to the prevailing situation, neither academicians nor students in most of the cases, seem friendly with the digital teaching mode, but are now bound to use the digital way of teaching (India Today Web desk, 2020).
With the outbreak of COVID-19, the goals of the educational institutions has been shifted in view to national development demands academia moving towards providing an in-depth knowledge to the learners and ensuring academic development.(Chen et al, 2006). However, these objectives are far from actual reality as most of the academicians are found lacking in digital skills which are required in conveying digital education to the students in a digital classroom scenario (Singh &Bhattacharjee, 2018).

Review of literature:

To get a fair overview of the digital pedagogy scenario amongst the academia, during the current pandemic situation, few reviews have been.
In a case study on "COVID-19 and digital teaching in higher education of Peking University" Bao (2020), has mentioned 5 points for conducting a highly effective digital teaching class.

The first principle is of appropriate relevance with the teaching content, the second principle is of effective lecture delivery, the third- principle is of sufficient support like timely feedback, digital tutoring and on line guidance through emails etc, after class, the fourth- principle is of quality participation and the fifth principle is of preparing contingency plan.

Awasthi(2020) in his study on effect of COVID-19 on campus has summarized the role of academics in imparting digital teaching. He studied as to how academics have taken the challenge of digital teaching with their enthusiastic and innovate ideas. Manglik(2020) in his study on COVID-19 and its impact has pointed out 4 points to cope with the digital teaching or digital teaching challenges. Firstly, fillip to E-learning, secondly to have a long term impact, thirdly, challenges in remote learning and lastly, COVID-19 redefining education. Anand (2020) in his study on Corona virus in India and parents' and teachers role during lock down has concluded that the advantage of digital teaching has enabled the students not to be bound to come to school or colleges as they can simply join the live classroom from any part of the world. Further, as advantage of digital teaching class, the students can revisit the recorded classroom as many times they want.
Singh &Bhattacharjee (2018) conducted a study "To measure the impact of digital teaching on job satisfaction of academics"[10]. This study upon 45 academics of 9various departments in the different designations i.e. Professors, Associate Professors and Assistant Professors etc. The study revealed that with the use of various digital skills in classroom teaching, the academics were satisfied towards their job. Melicherikova

&Busikova (2012) also conducted a similar research in the Slovak Universities. Their study revealed that digital teaching is not in a much trend and still academics consider it as an inferior way of education. In this regard, Yan & Li (2012) suggested the China knowledge grid environment to be adopted for the digital teaching.

Research Gap and Rationale of the study:

It has been observed that in a country like India, mode of digital teaching education hardly around 5-7% which shifted to digital teaching classes (UNESCO report, 2020), and now due to COVID-19, all of a sudden, the education industry has also adapted to e-learning mode or digital teaching classes. Almost all the schools and colleges in the country had also opted to this mode without prior training and this has put additional burden on the shoulders of the academics. In view of very limited researches on the advocacy of digital teaching-learning, the present research work is an effort to understand the factors influencing digital teaching-learning processes in midst of the Covid-19 pandemic amongst the Indian academics.

Objective of the Study

To analyze the teaching skills required in a digital teaching-learning platform. Further, the study also tried to measure the influence of COVID-19 on adapting digital teaching methods and find out the high and least influencing factors thereon.

Hypothesis framed

Following hypothesis were framed and tested.

H_0: There is no significant influence of the outbreak of COVID-19 on the academics' teaching-learning processes through digital platform.

Research Method

Nature of the study and Research area

The nature of the study was qualitative and respondents chosen were the academics from the Indian Universities (Private University, Public University, Deemed University and Own funded Institutes).

Population

Academics in the capacity as Assistant Professors, Associate Professors and Professors were part of the study drawn from Private University, Public University, Deemed University and Own funded Institutes.

Sampling technique

The Snowball sampling technique was adopted for the study.

Sample size

Total sample units included 240 academics from all the cadres including Assistant Professors, Associate Professors and Professors.

Nature of the Institute	Number of academics
Private institute	124
Public institute	49
Deemed university & own funded institute	47
Total	240

Data collection

The data has been collected from those academics who were working in higher education institution in India. They were approached through email and their social media platforms profile including Face book, LinkedIn.

Research Instrument

We developed a questionnaire tool coined as "Academics On-line Teaching Impact Evaluation Tool" through which the primary data were collected. The reason for developing a questionnaire tool was on account of lack of one appropriate tool which could capture all the variables meant for the study. Likert 5 point scale has been used, to measure the impact of digital teaching mode on academics in their research and teaching methods. Two types of scale were used:

First: '1- very dissatisfied', '2-dissatisfied', '3-neutral', '4-satisfied','5-very satisfied [10].

Second:'1-strongly disagree, '2-disagree','3-neutral','4-agree','5-strongly agree'[10].

Variables Selection

On the basis of previous studies, the researchers identified four types of skills which were required in the digital teaching by the academics.

- Communication skills (Vedha Priya, 2012; Singh & Bhattacharjee, 2018; Bates, 2015)
- Digital skills (Girish, 2018; Singh & Bhattacharjee, 2018; Bates, 2015)
- Ability to learn independently (Singh & Bhattacharjee, 2018; Bates, 2015; Girish, 2018).
- Knowledge Management (Vedha Priya, 2012; Singh & Bhattacharjee, 2018; Bates, 2015).

Analysis Design

To measure the significance of digital teaching, we used multiple regression technique. Further, we also used the step wise regression method to identify which factor had the highest impact and which had the least. The data was analyzed using SPSS 20.

Discussion

With the help of step wise regression method, representations of three tables were made. The first table reflected the model summary; the second contained the ANOVA table; and the third table contained the analysis of co-efficient.

Data Analysis

Table 1.1, showing the, 04 significant models have emerged which indicating the impact of IVs on dependent variables [10].

The first model of regression indicating the degree of association between 'the outbreak of COVID-19and communication skills under digital teaching', with value of "R" and "R-square" at 0.268 &0.072 respectively. It has been found that "R-square" value increased as some more IVs were added to the concerned regression model [10].

Next, model of regression, included two more IVs, firstly, "communication skills" & another is "digital skills". The value of "R-square" has changed from 0.072 to 0.099 after adding the variable 'digital skills'[10].

The third regression-model included the three IVs, firstly, "communication skills", secondly, "digital skills", and thirdly, "inability to learn independently". Value of "R-square" increased with addition of more IVs.

The final model seemed to be highly significant, with addition of 'fourth factor", i.e., 'knowledge management'. Value of 'R-square' was observed to be 0.149, which is reflected from value of "R-square" that in turn means 15 per cent of the total variation happening to the dependent variable is because of IVs and the remaining 85 per cent variation can be attributed to either chance or unknown factors[10].

In view of the above, four IVs are found to be significant in this model, viz, communication skills, digital skills, ability to learn independently, knowledge management. Thus, it has been found that all the four IVs were positive and significantly related to the digital teaching.

Table 1.2 and 1.3, indicating, model summary, all four regression models, Table 1.2 and 1.3, "value of F" is found to be significant at 1 per cent level of significance. Thus, the null hypothesis (H0) which states that "there is no significant influence of the outbreak of COVID-19 on the academics' digital teaching classes tends" is to be rejected. Thus, it can be

IV*- Independent variables

said that the digital teaching classes was influenced with the outbreak of COVID-19. Firstly, with the outbreak of COVID-19, academics through the digital teaching platforms need to use better and simple communication skills. Secondly, with the outbreak of COVID-19 all of sudden academics have moved towards digital class rooms where they

have to use digital skills. Thirdly, with the outbreak of COVID-19 ability to learn independently has been increased. Fourthly, with the outbreak of COVID-19 academics have to use the variable of knowledge management more.

Table 1.3 (Refer Annexure) is depicting, regression coefficients along for all four models of regression with their respective "t-value" and "p-value" as well. It has been observed that all the 04 factors, i.e, communication skills, digital skills, ability to learn independently and knowledge management are positively and significantly impacting in adopting the digital teaching mode for academics. Digital skills are the highly impacting factors followed by the communication skills and ability to learn independently. The least contributing factor is knowledge management.

Conclusion

From the current study, we found that the academics in the Indian higher educational institutions need all the 4 digital skills in adopting a digital teaching-learning method. From the model summary "R-Square" can help to predict that the 15 percent of the total variation in value of the dependent variable is because of IVs taken in this study while the remaining 85percentvariation is attributed to unknown factors. Hence, 04 skills which found to be significant in the presented "regression model", i.e. communication skills, digital skills, ability to learn independently and knowledge management found to be positive and associated to the digital teaching-learning[10]. These skills therefore had a significant relationship in the nippy digital teaching-learning process during the COVID-19 amongst the Indian academics.

Future scope:

The study focused upon the academics from higher education institutions only. Other researchers can delve further upon other educational institutions, either school or college level to identify on an individual basis the issues faced by the academics and their digital skills thereon.

Table 1.1 Digital Teaching

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.268[a]	.072	.068	.61726	.072	18.349	1	238	.000
2	.315[b]	.099	.091	.60937	.027	7.205	1	237	.008
3	.354[c]	.125	.114	.60177	.026	7.025	1	236	.009
4	.386[d]	.149	.135	.59465	.024	6.678	1	235	.010

a. Predictors: (Constant), communication skills

b. Predictors: (Constant), communication skills and digital skills

c. Predictors: (Constant), communication skills, digital skills and ability to learn independently
d. c Predictors: (Constant), communication skills, digital skills, ability to learn independently and knowledge management
source: Author's compilation from primary data
Software used: SPSS 21

Table 1.2 Digital Teaching
ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.991	1	6.991	18.349	.000[b]
	Residual	90.680	238	.381		
	Total	97.671	239			
2	Regression	9.666	2	4.833	13.016	.000[c]
	Residual	88.005	237	.371		
	Total	97.671	239			
3	Regression	12.210	3	4.070	11.240	.000[d]
	Residual	85.461	236	.362		
	Total	97.671	239			
4	Regression	14.572	4	3.643	10.302	.000[e]
	Residual	83.099	235	.354		
	Total	97.671	239			

a. Dependent Variable: COVID-19
b. Predictors: (Constant), communication skills
c. Predictors: (Constant), communication skills and digital skills
d. Predictors: (Constant), communication skills, digital skills and ability to learn independently
e. Predictors: (Constant), communication skills, digital skills, ability to learn independently and knowledge management
Source: Author's compilation from primary data, Software used: SPSS 21

Table 1.3 Digital Teaching

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.196	.203		15.740	.000
	Communication skills	.210	.049	.268	4.284	.000
2	(Constant)	3.258	.202		16.146	.000
	Communication skills	.245	.050	.313	4.892	.000
	Digital skills	-.074	.028	-.172	-2.684	.008
3	(Constant)	3.125	.205		15.213	.000
	Communication skills	.238	.050	.303	4.800	.000
	Digital skills	-.113	.031	-.262	-3.651	.000
	Ability to learn independently	.081	.031	.186	2.650	.009
4	(Constant)	2.746	.250		10.966	.000
	Communication skills	.276	.051	.352	5.394	.000

Digital skills	-.123	.031	-.284	-3.975	.000
Ability to learn independently	.090	.030	.207	2.955	.003
Knowledge management	.069	.027	.164	2.584	.010

a. Dependent Variable: COVID-19
b. Predictors: (Constant), communication skills
c. Predictors: (Constant), communication skills and digital skills
d. Predictors: (Constant), communication skills, digital skills and ability to learn independently
e. Predictors: (Constant), communication skills, digital skills, ability to learn independently and knowledge management
source: Author's compilation from primary data, Software used: SPSS 21

References

1) Anand, A. (2020). "Corona virus in India: How parents take on teacher roles amid Covid-19 lockdown". India Today Web desk.

2) Awasthi, A. (2020), Effect of COVID-19 on campus: Major steps being taken by colleges to keep education going. India Today Web desk.

3) Bates, A.W. (2015). Teaching in a digital age: Guidelines for designing teaching and learning. Vancouver BC Canada: Tony Bates Associates Ltd. ISBN:978-0-9952692-0-0.

4) Bao, W (2020). COVID-19 and online teaching in higher education: A case study of Peking University. Peking University Education Review. DOI: 10.1002/hbe2.191

5) Chen, S.H., Yang, C.C., Shiau, J.Y. and Wang, H.H. (2006). The development of an employee satisfaction model for higher education. The TQM Magazine, 18(5), 484-599.

6) Gettleman, Jeffrey, M & Kai, S (24 March 2020). India Today Web Desk. Manglik , R. (2020). COVID-19 impact: Will digital education take over the conventional education?". India Today web desk.

7) Girish, Sr (2018).Digitization of classroom for effective teaching and learning process specifically for computer science subjects by implementing ICT

technology. (Doctoral thesis Shri Jagdish Prasad Jhabarmal Tibarewala University, Jhunjhunu, Rajasthan), http://hdl.handle.net/10603/258653.

8) Melicherokova, Z &Busikova, A (2012). "Adopting e learning- a tool to overcome disadvantages of e-learning". ICETA 2012, 10th IEEE International conference onemerging e learning technologies and application, Nov 8-9, 2012, Staralesna, Slovankia, 263-267.

9) Silman, F. (2014). Work related basic need satisfaction as a prediction of work engagement among academic staff in Turkey. South African Journal of Education, 34(3), 47-56.

10) Singh, M &Bhattacharjee, A. (2018). Impact of Digital Teaching On Job Satisfaction: A micro level study. In Abhigyan Bhattacharjee (Eds) Human Resource Management & Development In the Digital Age. 1(2), 137-152.

11) The Conference Board of Canada (2014) Employability Skills 2000+ Ottawa ON: Conference Board of Canada.

12) United Nations Educational, Scientific and Cultural Organization (UNESCO), 2020 Report. https://unesdoc.unesco.org/ark:/48223/pf0000262748.

13) Vedha Priya. D, M. (2012). Challenges in Teaching Communication Skills In The Digital Age : A Compendious Study of The Synergy Between Teaching and Technology As a Solution newline.(Doctoral thesis- University of Madras, India. http://hdl.handle.net/10603/256937

14) Yan, Z. & Li. Y., (2012). Adaptive e learning: global thinking is knowledge management, International Journal of Human Computer Interaction, 7(1), 57-78.

15) Singh, M &Bhattacharjee, A. (2019) A Study to Measure Job Satisfaction Among Academicians Using Herzberg's Theory in the Context of Northeast India, Global business review, SAGE publication, Vol 21, Issue 1, 2020 https://doi.org/10.1177/0972150918816413.