

Blessings of COVID-19 Lockdown on Virtual Learning: A Higher Education Faculty Perspective

Mr. Hiteshkumar Patel¹, Dr. Vinodrai Patel², Dr. Baxis Patel³, Dr. KeyurNayak⁴

¹Assistant Professor - BhagwanMahavir College of Business Administration, VNSGU, Surat, Gujarat, India.

²Professor - Department of Business and Industrial Management, VNSGU, Surat, Gujarat,

India. ³Assistant Professor - Department of Commerce & Management, MSU, Vadodara,

Gujarat, India. ⁴Director – Laxmi Institute of Management, GTU, Valsad, Gujarat, India.

Corresponding Author:

Mr. Hiteshkumar Patel

Email:

hitesh8383@gmail.com

Article History: Received: 10 January 2021; Revised: 12 February 2021; Accepted: 27 March 2021; Published online: 28 April 2021

ABSTRACT

Background:

Academic iansare experiencing immensere formsglobally during lock down in COVID-19out-break.Thisstudywasintended to check how COVID-19 outbreak became blessings for higher education institute's faculties on virtual learning and skill developmentprogramme.ItbringshowtheIndianeducationsystemhasreacted toCOVID-19pandemicsituationin thelight of E-learning.

Methodology:

The research methodology used was primary in nature and descriptive research design has been made use of with the review of the literature. The research was conducted among 213 academicians of higher education universities and colleges across India through structured questionnaires. This questionnaire measures the achievements of academic excellence of higher education academicians.

Results:

The empirical result of the study reveals that, due to the outbreak of COVID-19 many of the academician has attended and Participated in various webinars, conferences, courses, workshops, research, orientation programs, faculty development programs, etc. related to his subject for skill development. Some of the academicians have paid fees for attending virtual learning programmes.

Conclusion:

VirtuallearninghasdominatedtheeducationlandscapeduringCOVID-19pandemicandbecameblessedforthe professorsin skill development. Professors also made good use of this time and became more equipped to increase the interest and knowledgeofthestudents.Thus,ifthislockdownhasbeenablessingforthe professors,the professorswhogotocolleg eafter the lockdown will seem to have become more equipped andskilled.

Keywords: COVID-19, E-learning, pandemic, skill development

INTRODUCTION

The COVID-19 pandemic continues to gather extensive international attention. The pandemic has resulted in significant changes in the world economy. India Janata Curfew involvement is more than the regular class engagement.The“JanataCurfew”wasapositivestepforfurtherawarenessandpreparednessaboutthequarantine and provided the doorway for implementation of lockdown in several states of India in its fight against the coronavirus. Prime Minister NarendraModi announced the nationwide shutdown, as the nation of 1.3 billion people shut down, the World Health Organization (WHO) said India s COVID fight could make or break the globalwar.COVID19pandemicisfirstandforemostahealthcrisis.Whenitcomestotheeducationsector,many countries have closed down schools and universities. (VeenaShenoy,2020).

This circumstance tested the education system across the nation and constrained educators to shift to an online modeofteachingovernight.Itisthecreativenessandbrainsofpolicymakersshowtheycanovercomeanissuefor this positively or adversely. Numerous education institutions that were prior hesitant to change their traditional teaching methodology had no alternative but to move altogether to online learning teaching. However, we have

someofthehighereducationinstitutionsinIndiasupportedbymanagementandfacultytogoforvirtualeducation.

Hence learning is moving online not only for the students but also for faculties on a huge scale. (VeenaShenoy, 2020) During this lockdown apart from students, teachers are also getting time to enhance

virtual learning and skill development while working from home. This scenario poses not only a unique challenge but also a potential opportunity and becomes blessings for faculty members in higher education across nation.

LITERATURE REVIEW

(Amit Kumar Arora, 2020), attempted to study the impact of lockdown on the teaching learning process. The objective of the study was to assess the adoption rate for virtual classes and to determine the various benefits, challenges, and reasons for non - adoption of virtual classes. The study considered responses from 341 teachers of higher education institutions (HEIs) of Ghaziabad region. The study was divided into two parts. One set of respondents were those who adopted virtual classrooms and another set that did not adopt virtual classrooms. Descriptive statistics and t - test were performed to analyse the data collected through primary sources. Among those who adopted virtual mode, the mean of actual benefits was significantly less than the mean of expected benefits. Network issues, lack of training, and lack of awareness were stated to be the major challenges faced by them.

(Lokanath Mishra, 2020), portrayed online teaching-learning modes adopted by the Mizoram University for the teaching-learning process and subsequent semester examinations. The paper employs both quantitative and qualitative approach to study the perceptions of teachers and students on online teaching-learning modes and also highlighted the implementation process of online teaching-learning modes. The value of this paper is to draw a holistic picture of ongoing online teaching-learning activities during the lockdown period including establishing the linkage between change management process and online teaching-learning process in education system amid the COVID-19 outbreak so as to overcome the persisting academic disturbance and consequently ensure the resumption of educational activities and discourses as a normal course of procedure in the education system.

(Amit Joshi, 2020), The study was conducted among the teachers working in the government and private universities of Uttarakhand, India. Semi-structured in-depth interviews were conducted among 19 teachers to collect data regarding the barriers faced by them during online teaching and assessment. The findings of the study can be helpful to the regulatory authorities and employers of higher education institutions who are planning to adopt online teaching as a regular activity in the future. The insights gained from the findings can help them

to revisit their existing policy frameworks by designing new strategies and technical structures to assist their teachers in successfully embracing the EdTech to deal with any crisis in the future.

(Johannes König, 2020), conducted a survey of early career teachers conducted in May and June 2020. They analysed the extent to which they maintained social contact with students and mastered core teaching challenges. Second, we analysed potential factors (school computer technology, teacher competence such as their technological pedagogical knowledge, and teacher education learning opportunities pertaining to digital teaching and learning). Findings from regression analyses show that information and communication technologies (ICT)

tools, particularly digital teacher competence and teacher education opportunities to learn digital competence, are instrumental in adapting to online teaching during COVID-19 school closures. Implications are discussed for the field of teacher education and the adoption of ICT by teachers.

(Ms. Veena Shenoy, 2020), concentrated to comprehend the innovation adoption, learning and teaching measures, student's engagement and faculty experience towards virtual classrooms during Lockdown because of COVID 19 in India. Inductive reasoning utilized in this examination and subjective exploration strategies are utilized to gather the information from the sample of 20 faculties related with Higher training organizations in Bangalore and showing teaching courses like PGDM, MBA, M.Com, MCA and soon. The finding of the examination proposes that during the lockdown time faculty have gone through the process of innovation adoption and students are engaged with different online methods of learning. There were heaps of fear, consciousness and anxiety among students and faculties with respect to COVID 19. Because of the circumstance, the greater part of the higher education institutions in Bangalore has greatly adopted the innovation and student's inclusion is more than the regular class engagement.

(Brenner, 2020), demonstrated feasibility of virtual learning for disseminating best practices in tracheostomy, engaging a diverse, multidisciplinary audience. An international multidisciplinary panel of experts convened to build a virtual learning community for tracheostomy care, comprising a web-based platform, five distance learning (interactive webinar) sessions, and professional discourse over 12 months. Structured pre- and post-webinar surveys were disseminated to global participants including otolaryngologists, intensivists, nurses, allied health professionals, and patients. Data were collected on audio-visual fidelity, demographics, and pre-and post-tutorial assessments regarding experience and skill acquisition. Learning of complex technical skills proved a hurdle, however, suggesting need for hands-on experience for technical mastery. While interactive video conferencing via webinar affords an engaging and scalable strategy for sharing knowledge, further investigation is needed on

clinical outcomes to define effective strategies for experiential online learning and virtual in-servicesimulations.

(Dhawan,2020),investigatedthedevelopmentofEdutechandOnlinelearninganddirectedaSWOTexamination of Educational organizations (schools, universities, and colleges) in India during the Covid pandemic disaster. is distinct and attempts to comprehend the significance of online learning in the time of an emergency and pandemics. Thereseearchtoolusedforanalysing the data which collected from various sources for this study was substance analysis and the research method was descriptive in nature. This study was completely based on the secondary data. This article put some light on the development of EdTech Start-ups during the hour of pandemic disasters and incorporates recommendations for scholastic organizations of how to manage difficulties related with online learning.

(Brett T. Comer, 2020), investigated that the pandemic has resulted in significant changes in clinical practice for otolaryngologists in the United States; many changes have been implemented to mitigate risks identified by otolaryngologists in other countries. COVID-19–induced limitations include social distancing and triaging of patient acuity. Additionally, a recent publication by Stanford University has drawn attention to the risks that otolaryngologists may face with regard to manipulation of the upper airway and mucosal disruption. The result has been a rapid and significant change in resident education at most academic institutions. This commentary outlines the development of the otolaryngology resident education consortiums, with implications for future education within and outside of otolaryngology.

(Duraku, 2020), studied to explore and describe the concerns of students, parents, and teachers related to the circumstances caused due to social isolation, and the perspectives of teachers and parents with regard to remote or online learning. This study adopted the qualitative research design. In the framework of this study, the case study research strategy was used. For data collection, semi-structured interviews were used, which were conducted with parents and teachers. Study participants are an active part of pre-university public institutions within municipalities from regions of Kosovo. The findings from the study confirm the common concerns of the two reporting groups in the study in relation to student assessment, worries and overload, as well as evaluation of the incompatibility of the learning conducted so far. The findings of this study confirm the readiness and motivation of teachers to advance their knowledge and skills, as well as to contribute with the aim of advancing the quality of education.

(Rajhansa,2020),meanttocapturetheenablingandimpedingfactorsof reforms,withanemphasis on optometry training in COVID-19 out-break. A cross-sectional survey was designed to find changes in optometry training and adaptations of Indian optometry educators amid COVID 19 lockdown. An online survey was conducted using structured questionnaire in the most recent last week of April 2020. 73 out of 78 optometry teachers (93.58%) have changed to e-learning mode in a brief period with great certainty. Most teaching learning and appraisal exercises was done using multi-gadget supporting video conferencing tools, devoted instructive gateways and web-based media applications. The COVID-19 pandemic is ending up being a valuable disruptor, permitting and rebuilding the present traditional, classroom-based education system.

(T.Gonzalez,2020),analysedtheeffectsofCOVID-19confinementontheautonomouslearningperformanceof students in higher education. Using a field experiment with 458 students from three different subjects at Madrid (Spain), the study differences in assessments by dividing students into two groups. The first group (control) corresponds to academic years 2017/2018 and 2018/2019. The second group (experimental) corresponds to students from 2019/2020, which is the group of students that had their face-to-face activities interrupted because of the confinement. The results show that there was a significant positive effect of the COVID-19 confinement on students' performance. Additionally, an analysis of students' learning strategies before confinement shows that students did not study on a continuous basis. Based on these results, it was concluded that COVID-19 confinement changed students' learning strategies to a more continuous habit, improving their efficiency.

(Luis Espino-Díaz, 2020), This study analysed the current situation of education in the context of the pandemic caused by COVID-19. Faced with these facts, teachers have had to adapt at a dizzying pace not only to new methodological approaches, but also to their own confinement, presenting high levels of stress. The purpose of this study is to offer a proposal that optimizes the work of education professionals in the current context of a pandemic through the use of Information and Communication Technologies (ICT) under the novel approach of the contributions of neuroeducation in the field of managing emotions and motivational processes, contributing to meaningful learning in students.

(Kumar,2020),ThispaperhighlightssomemeasurestakenbyGovt.ofIndiatoprovide seamless education in the country. Both the positive and negative impacts of COVID-19 on education are discussed and some fruitful suggestions are also pointed to carry out educational activities during the pandemic situation.

(Lisbeth Amhag, 2019), aimed to identify teacher educators' use of digital tools and subsequent need for digital competence in higher education. Methodically, a digital survey was distributed via e-mail to 405 teacher educators representing two faculties at the two universities; in total, 105 teacher educators

responded. The survey included 16 questions, with closed- and open-ended varieties. Two theoretical foundations were used: the TPACK model and, as a complement, computer self-efficacy. Through analysis of self-reported use, competence, and need for professional training in digitalization in teaching, results show that teacher educators do not use digital tools primarily for pedagogical purposes. Thus, they need extensive pedagogical support in creating digital teaching.

(Jo Tondeur, 2016), The research literature reports many examples of successful TPD but there remain many challenges to wider and deeper success in the variety of different contexts. Discussion by the thematic working group on TPD at EDU sumIT 2015 in Bangkok identified several challenges to successful TPD. This paper discusses those challenges, describes four cases of successful TPD from varied contexts, and derives a model for TPD based on observed commonalities in the cases.

(Bao, 2020), This paper focuses on a case of Peking University's online education. Six specific instructional strategies are presented to summarize current online teaching experiences for university instructors who might conduct online education in similar circumstances. The study concludes with five high-impact principles for online education: (a) high relevance between online instructional design and student learning, (b) effective delivery on online instructional information, (c) adequate support provided by faculty and teaching assistants to students; (d) high-quality participation to improve the breadth and depth of student's learning, and (e) contingency plan to deal with unexpected incidents of online education platforms.

(Chrysi Rapanta, 2020), With this article, authors provide some expert insights into this online-learning-related PCK, with the goal of helping non-expert university teachers (i.e., those who have little experience with online learning) to navigate in these challenging times. Our findings point at the design of learning activities with certain characteristics, the combination of three types of presence (social, cognitive and facilitatory) and the need for adapting assessment to the new learning requirements. We end with a reflection on how responding to a crisis (as best

we can) may precipitate enhanced teaching and learning practices in the post digital era.

(Arfan Shahzad, 2020), proposed a theoretical framework based on literature and model to determine E-learning portal success. The study compared male and female E-learning portal usage. The objective was to check the difference between male and female E-learning portals' accessibility among the students' perspective. The empirical data of 280 students participated from the different universities of Malaysia through google surveys analysed using the Partial Least Squares Structural Equation Modelling. The study further divided the full model into two domains, which are female and male. In the male model, information quality and system quality have direct relationships with user satisfaction. Information quality also supported the relationship with system use. At the same time, there is a positive relationship between user satisfaction and E-learning portals. Likewise, in the female model, E-service quality and Information quality both are supported by system use and user satisfaction.

(Muhammad Adnan, 2020), examined the attitudes of Pakistani higher education students towards compulsory digital and distance learning university courses amid Coronavirus (COVID-19). Undergraduate and postgraduate were surveyed to find their perspectives about online education in Pakistan. The findings of the study highlighted that online learning cannot produce desired results in underdeveloped countries like Pakistan, where a vast majority of students are unable to access the internet due to technical as well as monetary issues. The lack of face-to-face interaction with the instructor, response time and absence of traditional classroom socialization were among some other issues highlighted by higher education students.

(Nicole Johnson, 2020), conducted a survey investigating the rapid transition to emergency remote teaching in the early weeks of the pandemic at public and private postsecondary institutions in the United States. Participants consisted of 897 faculty and administrators at 672 U.S. institutions. Findings reveal that with few exceptions nearly all reporting institutions transitioned to emergency teaching and learning approaches. Administrators reported that faculty with and without online teaching experience pivoted to online teaching, and nearly all administrators indicated that those who did not have online teaching experience were in the process of learning how to teach online. Regardless of whether faculty had previous experience teaching online or not, many faculties reported that they were using new teaching methods.

OBJECTIVES OF STUDY

1. To understand how higher education faculties have utilised their time during COVID-19 lockdown to sharpen their skills through virtual learning.

2. To study the engagement of higher education faculties for skill development through online learning during the COVID-19 pandemic.

RESEARCH METHODOLOGY

Research Design: The study was based on descriptive research design.

Population and Sampling: The total number of faculties working at a higher education level in South Gujarat

was the target population. Thus, sampling frame would be Higher Educational institutes comprises of Universities and colleges of India. For this study total, 213 faculties working at higher education institutes have been contacted through convenient sampling technique. Due to paucity of time and resources available as well as coronapandemic Lockdown the data was collected through online mode.

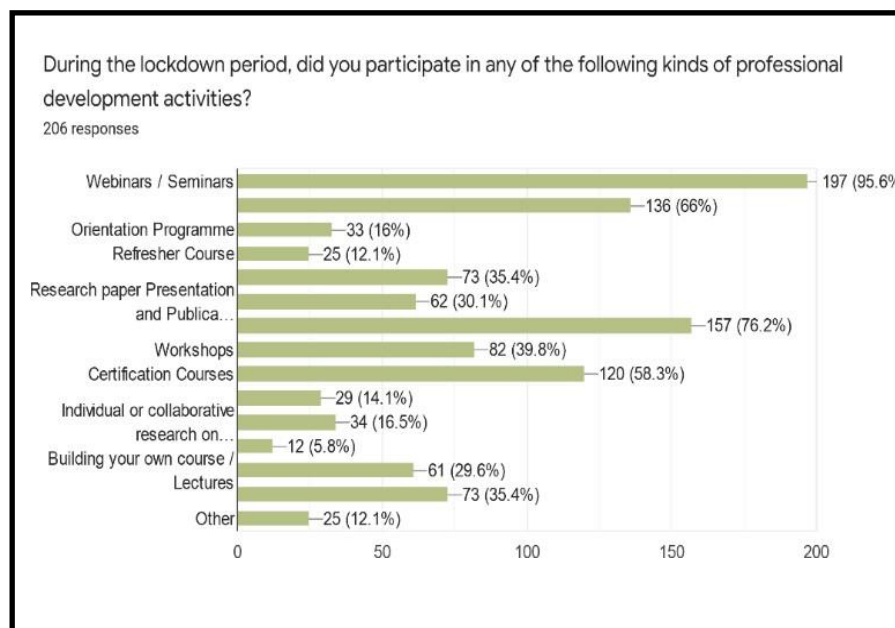
Source of Data Collection Primary data was used, it collected using the structured questionnaire as the instrument. The respondents were asked to fill the provided questionnaire without briefing the personal profile of respondents this helped researcher to avoid biases in responses. The Data were collected during the lockdown in India.

DATA ANALYSIS

The collected data have been analysed with the help of SPSS. The data shows that Out of the 213 respondents,

102 were male and 111 were female respondents. Out of total respondents, 150 were Assistant professor, 19 were Teaching Assistant, 13 were Associate Professor, 5 were Principal, 4 were Professor learned for skill development through virtual learning during Covid-19 lockdown. Moreover, 35.7% academicians from Management, 32.4%

from Commerce, 26% from Engineering and soon from different streams/faculty responded who learned for skill development through virtual learning during Covid-19 lockdown.



What they have done for skill development?

(Chart 1: Participated in various Professional Activities)

NO.	PROFESSIONAL DEVELOPMENT ACTIVITIES	%	RESPONSES
1	Webinars / Seminars	95.6	197
2	FDP (Faculty Development Programme)	66	136

3	Orientation Programme	16	33
4	Refresher Course	12.1	25
5	National / International conferences	35.4	73
6	Research paper Presentation and Publication	30.1	62
7	Online quiz on COVID 19	76.2	157
8	Workshops	39.8	82
9	Certification Courses	58.3	120
10	Network of faculties formed specifically for professional development.	14.1	29
11	Individual or collaborative research on a topic of interest.	16.5	34
12	Recertification / Advanced certification	5.8	12
13	Building your own course / Lectures	29.6	61
14	Independent reading	35.4	72
15	Other	12.1	25

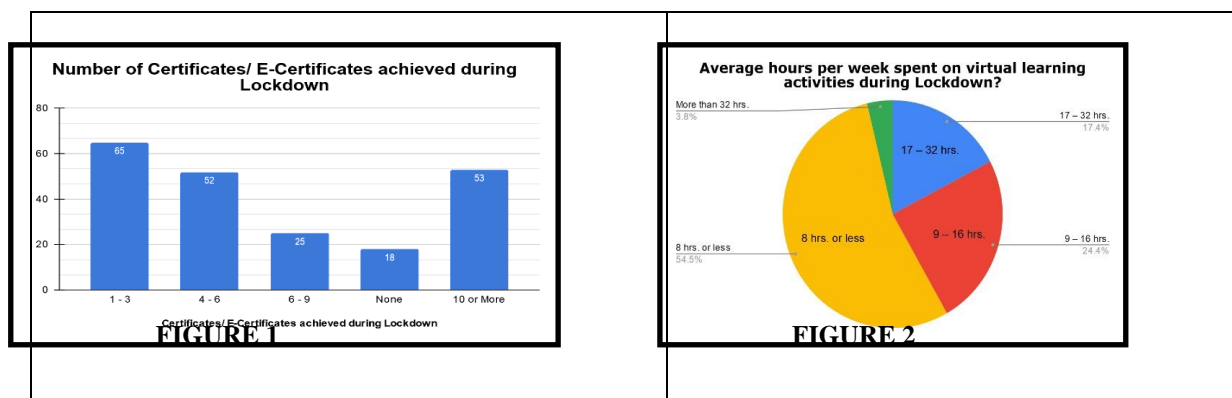
[Table 1: Participated in various Professional Activities]

Data shows that out of the total for multiple tick options regarding various learning program 197 (95.6%) respondents of higher Education institute have attended Webinar/ Seminars for virtual learning during Covid-19 lockdown. 136 (66%) respondents of higher Education faculties attended FDP (Faculty Development

Programme). 157 (76.2%) respondents of higher Education faculties have attempted online quiz on Covid-19. 120 (58.3%) respondents of higher Education faculties did Certification Courses to achieve academic excellence. 120 (58.3%) respondents of higher Education faculties have worked on Building your course / Lectures to achieve

academic excellence. 62 (30.1%) respondents of higher Education faculties were Research paper Presentation and Publication in national and international conferences. 25 (12.1%) respondents of higher Education faculties did online Refresher Course during lockdown.

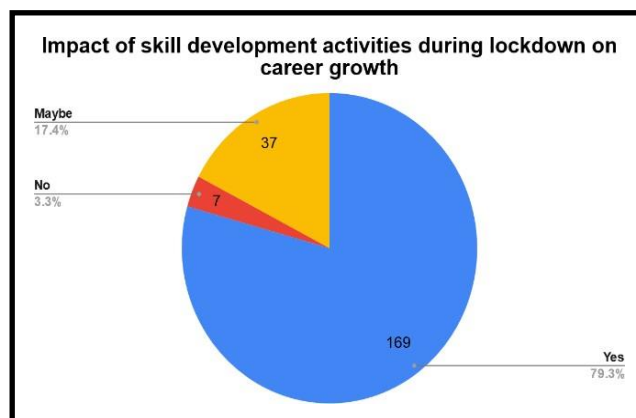
How about their engagement?



(Fig. 1 – 2: Engagement Level)

Out of the 213 respondents, 53 have achieved more than 10 certificates by virtual learning during lockdown and 65 respondents have achieved less than 3 certificates. However, 18 respondents have not got any certificate during Covid-19 lockdown (Fig. 1). 17.4% of respondents spent 17-30 hrs on virtual learning during lockdown while 54.5% of respondents spent less than 8 hrs on virtual learning during. However, 3.8% of respondents spent more than 32 hrs on virtual learning during lockdown (Fig.2).

Impact of Skill development activities



(Figure 3. Impact of Activities)

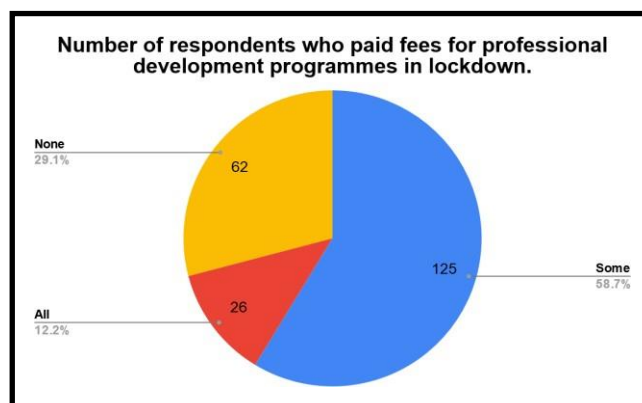
Out of the total 169 (79.3%) were responded 'YES' and they believe that there is a positive impact of skill development activities during lockdown on career growth, only 7 (3.3%) were responded 'NO' and they believe

that there is a positive impact of skill development activities during lockdown on career growth while 37 (17.4%) were responded 'MAYBE' on career growth (Fig.3).

In the Lockdown time, did you want to participate in more professional development programmes than you did?

156 (73.2%) responded 'YES' and they believe that they could have more professional development programmes than what they did, while 57 (26.8%) responded 'NO' and they believe that they have enough professional development programmes during lockdown.

Nature of activities in terms of paid or free



(Fig. 4: Nature of activities in terms of paid or free)

Out of the total 26 (12.2%), academicians have paid fees for attending various skill development programmes during Covid-19 lockdown and 125 (58.7%) of academicians have paid some fees for attending various skill development programmes while 62 (29.1%) attended free virtual learning programmes during the lockdown (Fig. 4).

Hypothesis:

H0: There is no statistically significant difference in the perceived importance of various motive to attend various E-Programs among various age groups of higher education faculties.

H0: There is a statistically significant difference in the importance of various motive to attend various E- Programs among various age groups of higher education faculties.

Test Statistics ^{a,b}			
	Chi-Square	df	Asymp. Sig.
Recognition	4.997	7	0.66
Professional development	7.512	7	0.378
E-certification	11.087	7	0.135
Engage in individual Development	11.06	7	0.136
Engage in collaborative Development	9.562	7	0.215
Promotion	2.102	7	0.954
Research Development	4.299	7	0.745
Virtual Education	3.802	7	0.802
Knowledge Enhancement	9.377	7	0.227
Time Utilisation	8.679	7	0.277
a. Kruskal Wallis Test			
b. Grouping Variable: Age			

[Table 2: Kruskal Wallis Test result]

The Kruskal Wallis Test in the above table shows that for all the motives to attend the online programs p-value is greater than 0.05 (at 95% Confidence level), therefore failed to reject the null hypothesis. it means there is no statistically significant difference in the perceived importance of various motive to attend various E-Programs among various age groups of higher education faculties.

H0: There is no significant difference in the perceived importance of various e programs among various higher education faculties belonging to different categories of Institutes.

H1: There is significant difference in the perceived importance of various e programs among various higher education faculties belonging to different categories of Institutes.

Test Statistics ^{a,b}			
	Chi-Square	df	Asymp. Sig.
Recognition	2.602469	2	0.272196
Professional development	0.854768	2	0.652213
E-certification	5.001406	2	0.082027
Engage in individual Development	0.151763	2	0.926926
Engage in collaborative Development	3.476243	2	0.17585
Promotion	2.099811	2	0.349971
Research Development	2.169003	2	0.33807
Virtual Education	3.617793	2	0.163835

Knowledge Enhancement	1.700371	2	0.427336
-----------------------	----------	---	----------

Time Utilisation	3.852518	2	0.145692
a. Kruskal Wallis Test			
b. Grouping Variable: College Type			

[Table 3: Kruskal Wallis Test result]

The Kruskal Wallis Test in the above table shows that for all the motives to attend the online programs p-value is greater than 0.05 (at 95% Confidence level), therefore failed to reject the null hypothesis. it means there is no significant difference in the perceived importance of various E-Programs among various higher education faculties belonging to different categories of Institutes.

H0: There is no statistically significant difference in the perceived importance of various E-Programs among various higher education faculties belonging to different streams of Institutes.

H1: There is a statistically significant difference in the perceived importance of various E-Programs among various higher education faculties belonging to different streams of Institutes.

Test Statistics a,b			
	Chi-Square	df	Asymp. Sig.
Recognition	4.556356	6	0.601834
Professional development	6.129885	6	0.408799
E-certification	3.753848	6	0.709946
Engage in individual Development	1.645027	6	0.949286
Engage in collaborative Development	0.878319	6	0.989808
Promotion	4.214134	6	0.647723
Research Development	4.23889	6	0.644384
Virtual Education	3.845673	6	0.697552
Knowledge Enhancement	5.809392	6	0.444877
Time Utilisation	3.190653	6	0.784566
a. Kruskal Wallis Test			
b. Grouping Variable: Stream / Faculty			

[Table 4: Result of the Kruskal Wallis Test]

The Kruskal Wallis Test in the above table shows that for all the motives to attend the online programs p-value is greater than 0.05 (at 95% Confidence level), therefore failed to reject the null hypothesis. it means there is no statistically significant difference in the perceived importance of various E-Programs among various higher education faculties belonging to different streams of Institutes.

MAJOR FINDINGS

Majority of the professors received e-certificates during the lockdown by participating in various webinars and online studies for skill development in addition to teaching children at home, solving their questions as well as increasing their knowledge base. Professors have also Participated in various webinars, conferences, courses, workshops, research, orientation programs, faculty development programs, etc. related to his subject for skill development. Some of them wrote and published a research paper. Near about half of the faculties paid the fee and did the online course and got the certificates. Moreover, it is interesting that the majority of the responded 'YES' and they believe that they could have more professional development programmes than what they did.

While the inferential statistics show that there is no statistically significant difference in the perceived importance of various E-Programs among various higher education faculties belonging to different streams of Institutes, Age group and among different categories of Institutes.

CONCLUSION

COVID-19 lockdown has significantly blessed the faculties of higher education institutes in terms of their opportunity for skill development. Mostly faculties of all age, irrespective of categories of institute and stream of the institute made good use of this time and became more equipped to increase the interest and knowledge of the students even half of the faculties have paid for these online learning programs. Since this lockdown has blessed faculties of higher education institutes, as and when they go to the institute after the lockdown, they will find themselves become more equipped and can impart updated knowledge to their students.

SCOPE FOR FUTURE RESEARCH

There are several opportunities to extend this study by adding more variable to current tool to enhance the scope as well as multivariate analysis would be applied. This study has concentrated on blessings of COVID-19 lockdown on virtual learning for higher education faculties only, however it can be extended for primary, secondary and higher secondary school faculties too. Further research would be extended from national level to international level too.

REFERENCES

1. Amit Joshi, M. V. (2020). Impact of coronavirus pandemic on the Indian education sector: perspectives of teachers on online teaching and assessments. *Interactive Technology and Smart Education*.
2. Amit Kumar Arora, R. S. (2020). Impact of Pandemic COVID-19 on the Teaching – Learning Process : A Study of Higher Education Teachers. Prabandhan: *Indian Journal of Management*.
3. Arfan Shahzad, R. H. (2020). Effects of COVID-19 in E-learning on higher education institution students: the group comparison between male and female. *springer*.
4. Bao, W. (2020). COVID-19 and online teaching in higher education: A case study of Peking University. *Wiley Periodicals LLC*.
5. Brenner, M. J. (2020). Multidisciplinary Tracheostomy Quality Improvement in the COVID-19 Pandemic: Building a Global Learning Community.
7. Brett T. Comer. (2020). Otolaryngology Education in the Setting of COVID-19: Current and Future Implications. *SAGE*.
8. Chrysi Rapanta, L. B. (2020). Online University Teaching During and After the Covid-19 Crisis: Refocusing Teacher Presence and Learning Activity.
9. Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis. *SAGE*.
10. Duraku, Z. H. (2020). The impact of COVID-19 on education and on the well-being of teachers, parents, and students:.
11. Jo Tondeur, A. F.-B. (2016). Responding to challenges in Teacher Professional Development for ICT Integration in Education. *Educational Technology & Society*.
12. Johannes König, D. J. (2020). Adapting to online teaching during COVID-19 school closure: teacher education and teacher competence effects among early career teachers in Germany. *EUROPEAN JOURNAL OF TEACHER EDUCATION*.
13. Kumar, P. (2020). Impact of Pandemic COVID-19 on Education in India. *SSRN*.
14. Lisbeth Amhag, L. H. (2019). Teacher Educators' Use of Digital Tools and Needs for Digital Competence in Higher Education. *Journal of Digital Learning in Teacher Education*.
15. Lokanath Mishra, T. G. (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *International Journal of Educational Research Open*.
16. Luis Espino-Díaz, G. F.-C. (2020). Analyzing the Impact of COVID-19 on Education Professionals. Toward a Paradigm Shift: ICT and Neuroeducation as a Binomial of Action. *Sustainability*.
17. Ms. Veena Shenoy, M. S. (2020). COVID 19 – Lockdown: Technology Adaption, Teaching, Learning,.
18. Mukta Shabd Journal.
19. Muhammad Adnan, K. A. (2020). Online learning amid the COVID-19 pandemic: Students' perspectives. *Journal of Pedagogical Sociology and Psychology*.
20. Nicole Johnson, G. V. (2020). U.S. Faculty and Administrators' Experiences and Approaches in the Early Weeks of the COVID-19 Pandemic. *Online Learning Journal*.
21. Rajhansa, V. (2020). Impact of COVID-19 on academic activities and way forward in Indian Optometry.

-
22. Journal of Optometry.
 23. T. Gonzalez, M. A.-L. (2020). Influence of COVID-19 confinement on students' performance in higher education. HaoranXie, Lingnan University, HONG KONG.
 24. VeenaShenoy,S.M.(2020).COVID19LockdownTechnologyAdaption,Teaching,Learning,Students Engagement and Faculty Experience. MukShabdJournal.
 25. Asraf Yasmin, B., Latha, R., & Manikandan, R. (2019). Implementation of Affective Knowledge for any Geo Location Based on Emotional Intelligence using GPS. International Journal of Innovative Technology and Exploring Engineering, 8(11S), 764–769. <https://doi.org/10.35940/ijitee.k1134.09811s19>
 26. Muruganantham Ponnusamy, Dr. A. Senthilkumar, & Dr.R.Manikandan. (2021). Detection of Selfish Nodes Through Reputation Model In Mobile Adhoc Network - MANET. Turkish Journal of Computer and Mathematics Education, 12(9), 2404–2410. <https://turcomat.org/index.php/turkbilmat/article/view/3720>