Effect of Lockdown on Higher Education in the Wake of COVID-19 Epidemic: A Scientific Survey

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***Abstract*: This paper presents the influence on undergraduate and post graduate students studying in the various higher learning institutes due to lockdown imposed in the wake of COVID-19 Pandemic. An online survey was conducted from 1st July to 30th August 2020 to assess the influence on undergraduate and post graduate students studying in the various Government, Government aided and un-aided first grade colleges affiliated to Karnatak University, Dharwad, Karnataka, INDIA due to lockdown imposed in order to curb the COVID-19 Pandemic. A structured questionnaire was framed and the response was consolidated through Google forms sent via various social media platforms such as WhatsApp, TelegramApp and E-mail to compose the student's opinion. Around 1200 students are turned up their interest and actively participated in the exhaustive survey and submitted their responses. Simple percentage distribution was used to appraise the learning condition of the students. In the midst of lockdown period, major chunk of respondents were deliberately hang on to the virtual classes and webinars. Students have been experiencing various grievances related to power breakdown, network issues and difficulty in affording of sophisticated gadgets. Majority of the students not satisfied with virtual classrooms and have not shown much interest for the semester end examination to be conducted online.**

***Keywords*- Epidemic, Corona, Virus, Undergraduate, Postgraduate**

I. INTRODUCTION

The uncertain outburst of viral infectious coronavirus disease occurred in the extreme end of the year 2019 (named as COVD-19), caused severe acute respiratory syndrome among the infected persons. On January 30, 2020 the World Health Organization declared the outbreak as a Public Health Emergency of global health concern. As of February 14, 2020, 49,053 laboratory-confirmed and 1,381 deaths have been reported globally. Perceived threat of acquiring disease has led many countries to impose lock down as a part of preventive control measures. Corona virus belongs to the virus family causing viral pneumonia including fever, breathing difficulty and lung congestion [1]. These viruses are more prevalent in animals worldwide, but marginal cases of them are being affected by humans. The World Health Organization (WHO) used the term 2019 novel coronavirus (2019-nCoV) to denote the coronavirus that was detected from the lower respiratory tract of patients with pneumonia in Wuhan, China on 29thDecember, 2019 [2-4]. It was reported that, the epic centre of human infection of the virus was from the local South China Seafood Market in Wuhan, Hubei Province, China [5]. Consequently, The Chinese Centre for Disease Control and Prevention (China CDC) deployed a rapid response team to accompany Hubei provincial and Wuhan city health establishments to conduct etiological and epidemiological studies. The advisory board of WHO convened that, the outburst of the corona virus epidemic was associated with the marketplace, but no specific evidences identified in respect of animal or birds association with this viral transmission [6]. Scientists have put forth their efforts immediately to start the basic research on the origin of corona virus. The first genome of 2019 – nCoV was reported by Chinese research team headed by Prof. Yong-Zhen Zhang, on January 10, 2020 [7]. Within one month, this virus blow-out exponentially throughout China and globally during the Chinese New Year gatherings where there is high level of human mobility among Chinese. Although it is still early to predict the susceptible population, early patterns have shown a similar trend with Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) coronavirus, showing associations with age, immunity, biological sex and other health ailments [8]. 2019-nCoV has now been declared as Public Health Emergency of International Concern by WHO [9-10]. As reported by India Today Magazine 2020, during this lockdown period, the shutdown of educational institutions hampered the education system as well as teaching-learning process leaving a wide band gap between the teachers and learners. With this backdrop, the present study aims to identify the learning status, mode of learning and problems related to study during this lockdown amidst the COVID-19 pandemic.

II. OBJECTIVES AND SCOPE OF THE RESEARCH

The purpose of the present study is to explore the learning status of the postgraduate and undergraduate students. The scope of the study is confined to the postgraduate and undergraduate students of Government colleges, Government aided and un-aided colleges affiliated to Karnatak University, Dharwad, Karnataka, INDIA in this global health emergency.

This survey was conducted keeping in view;

To study the present-day virtual classroom concept

- To analyze the approach of students for virtual classroom
- To identify the affordability of gadgets for virtual classroom
- To analyze the technical failures in respect of virtual classroom
- To identify the demographic failures of virtual classes

III. LITERATURE SURVEY

Early twentieth century, few research studies have been carried out to examine the policies adopted by the higher education institutions during lockdown. However, this review focuses primarily on the studies related to policies in the digital revolution. Recently, study was conducted by Axios (www.axios.com) and College Reaction (www.collegereaction.com) in the US shows just how students feel about online learning which reveals that online learning was inevitable in this pandemic. Some of the digital initiatives of UGC & MHRD for higher education during COVID-19 are pointed as e-GyanKosh (http://egyankosh.ac.in/), Gyandarshan http: //www.ignouonline.ac.in/gyandarshan/), Gyandhara (http://ignouonline.a c.in/Gyandhara/), Swayam provides Massive Open Online Courses (MOOCs) with 140 universities approved credit transfer feature. e-Adhyayan (e-Books) National Digital Library of India (NDLI) (https://ndl.iitkgp.ac.in/) FOSSEE (https://fossee.in/) is short form for Free/Libre and Open Source Software for Education, VIDWAN (https://vidwan.inflibnet.ac.in/) Shodhganga (https://shodhganga.inflibnet.ac.in/) is a platform for research students to deposit their Ph.D. theses. Another study in medical college of UK, they felt that online classes is only for pre-clinical, who are placed in clinical environments require patient contact. Indeed, communication with and examination of patients is necessary for learning and building a diagnostic clinical thought process [15-18]. Disruptions in medical education are inevitable across the world; arrangements need to be made wherein the students can retain clinical skills and knowledge. Though not without its problems, tele-teaching technologies have the potential to substitute in-person lecture and clinical-based teaching, particularly during this pandemic. Such approaches may not only be necessary for effectively tackling the medical education dilemma during this current crisis but will also serve to lay the foundation for teaching during future biological emergencies or disasters (Areeb Mian and Shujhat Khan, 2020). After taking the opinion of the students, it is understood that Lockdown has a definite effect on education. Due to Lockdown issues, students can't concentrate on their studies and some students say that there is positive impact. Exams should be conducted online only and college professors should take online lectures during the lockdown period. These issues have increased the cost of education to some extent and these issues have not only affected the education sector but also all sectors. Some students also think that it is an opportunity to innovate on lockdown issues (Jadhav, Bagul and Aswale, 2020). The online mode of the teaching learning process is often discriminatory to poor and marginalized students. It is identified that the physically disabled and hearing-impaired students face defenseless challenges in online learning (Afaf Manzoor, 2020), than others having more needs related to health-care, safety and accessibility. The recent outbreak of COVID-19 has contaminated the societies with fear, anxiety and stigmatization. This pandemic has affected the lives of million people on earth in order to maintain their routine and social activities; however, the impact is heavier on vulnerable groups such as persons with disabilities [11-12]. It can be assumed that they are dully affected by the situation; one for having disability and second for not having accessibility while facing social isolation. The whole world gets into locked down, including higher education institutes and universities resulting multi-fold effects on educational activities. According to a recent report by UNESCO, 150 countries around the globe closed educational institutes that affected more than 80% students during the month of March 2020. Especially, physically challenged and hearing impaired students, who are ill-treated and marginalized in academia due to limited accessibilities and the enrollment of such students has dropped down to less than 0.5%. However, the present government through department of collegiate education is actively aiming high and is ready to facilitate universities in taking intensive preventive measures to uplift the career of such students. Now the situation of online classes will create more challenges for the inclusion of students with disabilities in higher education institutes. The expected major challenges are: one is the transition of virtual classes from physical classroom teaching which is important for the students with hearing impairment and the other is assessment and evaluation of disable students based on their level of disability. Moreover, the integrity of honesty in giving online feedback will also be a challenge for tutors to evaluate. An online survey was conducted by Nanigopal Kapasia et.al., 2020 from 1 May to 8 May 2020 to assess the impact of lockdown amidst COVID-19 on undergraduate and postgraduate learners of various colleges and universities of West Bengal. About 70% of learners were involved in virtual classroom and used android mobile phones for attending e-learning classes. Students have been facing various problems related to depression anxiety, poor internet connectivity and unfavorable study environment at home. Students from remote areas and marginalized sections mainly face enormous challenges for the study during this pandemic [13-14].

IV. SURVEY INSTRUMENT

The intention of the present study is to showcase the learning ailments faced by the students pursuing graduation and post-graduation at various government and non-government first grade colleges allied to Karnatak University, Dharwad, Karnataka, INDIA in the wake of lockdown due to COVID - 19 endemic. The scope of this study is to achieve the overall responses from the student fraternity particularly who are pursuing graduation and post-graduation in this difficult COVID-19 crisis. The research concludes that the coronavirus has an effect on students learning, an issue that is mainly surveyed through online [12] and seeks to know what they think about it, and sent students from different areas through social networking and sought their views on the impact of lockdown's periods issues on education. Survey issues included a variety of structured questionnaire was framed with respect to the customized objectives and the response was summarized through Google forms sent randomly using various social media platforms such as Whats App, Telegram App and E-mail to compose the student's opinion in results and discussion. Around 1200 students are turned up their interest and actively participated in the exhaustive survey and submitted their responses. Repeated follow ups and reminders were made to get back the duly filled feedback forms from the respondents.

V. RESULT AND DISCUSSION

5.1 Demographic Characteristics of Respondents

Table 1 Demographic Characteristic of Respondents

Characteristics	Frequency (n)	Percentage (%)
Gender		
Male	386	33
Female	814	67
Course Stream		
Arts	610	51
Science	306	25
Commerce	284	24
Course Studying		
B.Sc	208	68
B.Com	254	89
BCA	24	8
BA	610	100
M.SC	51	17
MCA	23	7
M.Com	30	11
BBM	-	
Others	-	
Semester Studying		
II	656	55
IV	463	38
VI	81	7

The gender wise distribution of respondents is illustrated in table-1. There are 386 male respondents and 814 are female. The female respondents are almost double in number compare to male in the present survey. This is certainly true because the female student strength is 67% and 33% male students were common in almost all colleges affiliated to Karnatak University, Dharwad. There are equal number of study population is obtained in all semesters. The majority of the students were from the Science academic background (50.83%) followed by arts background (25.56%) and 23.68% from commerce background.

5.2 Learning status during lockdown

Respondents are asked to mention the status of theory syllabus and practical experiments completed before lockdown and data is presented in Table-2.

Table 2 Status of syllabus completion prior to lockdown

Status of Syllabus	Frequency (n)	Percentage (%)
Theory Syllabus Completion		
Syllabus completed	180	15
One unit pending	323	28
Two Units pending	672	56
More than two units pending	25	21
Specify Others	-	-
Practical Experiments Completion		
All the Experiments are completed	56	18
One experiment pending	160	53
Two experiments pending	84	27
More than two experiments pending	6	2

Respondents are asked to express their opinion on response of the teachers during lockdown and data is presented in Table-3.

Table 3 Status of syllabus completion in the course of lockdown

Status	Frequency (n)	Percentage (%)
Syllabus completed before lockdown and study material provided	170	14
Syllabus completed before lockdown, but study was material not Provided	801	67
Online classes conducted for completion of syllabus	216	18
No virtual classes conducted to complete the syllabus	13	1

Majority of the respondents (56%) expressed that there is two units are pending followed by 21.1% more than two units pending and 28% one unit pending. Only 15% expressed completed syllabus. Further, respondents are asked to indicate status of practical experiments completed. Majority (53%) are expressed that almost all the experiments completed except one experiment pending followed by 27% two experiments pending, very few of them (2%) more than two experiments pending. It is evident from the Table-2 that 15% of theory syllabus 18% of practical experiments is not completed before lockdown. 67 % of the syllabus have completed before lockdown and about 1% of students mentioned that no online classes has been conducted to make up the syllabus, it may be due to lack of IT infrastructure and poor network issues. 14% syllabus have been completed by providing necessary study materials but very few of the surveyed students (about 1%) are expressing their views in respect of the study material was not provided.

5.3 Platform used for virtual classroom

In order to fulfil the void created on the student community in respect of teaching learning process, the respondents are provided different platforms by the teachers for online classes and the data is presented in the Table-4.

Table 4 Platform used for virtual classrooms

Platform	Frequency (n)	Percentage (%)
Google classrooms	80	6
Google meet	18	2
Jio meet	-	-
Cisco webex	22	2
ZOOM	680	57
Skype	28	2
Telegram app	69	6
Whats app	713	59
Videos uploaded through whatsapp	713	59
Videos uploaded through telegram app	25	2
Videos uploaded through youtube	380	32
Videos uploaded through college website	85	7

Most of the learners were used android mobile phones for joining virtual classes. Students have been facing various problems related to depression anxiety, mind distraction, poor internet connectivity and unfavorable study environment at home. Students from remote areas and marginalized sections mainly face gigantic challenges for their studies during this pandemic [19-20]. It is evident from the Table-4 that, majority of the Teachers completed by sending video lecture and sent study material through whatsapp. It was revealed from the extensive survey that the majority of the theory syllabus is completed prior to lockdown; however remaining portions are completed by conducting online classes.

It is found that the students were using various platforms for e-lectures, study material sharing and learning evaluation, such as the Zoom app, Team link, YouTube live, Skype, Google meets/hangout, Google classroom, WhatsApp, etc. The results also show that most of the respondents (57%) used the Zoom app for attending online classes, followed by Google classroom (6%) and YouTube live (32%). The learners also followed many platforms for getting study materials during this lockdown period. It is observed that students were more likely to study through shared study materials than attending online lectures mainly due to poor internet connectivity. The majority of the respondents (59%) used the WhatsApp group for getting study the materials from teachers and as well as friends, 7% students have viewed their college website for the study material and 2% of students used telegram app for this purpose. Teachers used many platforms not only for digital teaching and learning but also for learning-evaluation very quickly through Whats App group, Google classroom, Google form, Microsoft Kaizala and so on.

5.4 Opinion on conduction of online classes and semester end examination

Table 5 Opinion on Examination and online classes

Opinion	Frequency (n)	Percentage (%)
Conduction of Semester end examinations		
Yes	85	7
No	1101	92
Not sure	14	1
Conduction of online classes		
Yes	938	78
No	246	21
Not sure	16	1
Cost effective	987	82
Time saving	1102	92
Flexibility of time	356	30
Most of the lecturers taken virtual classes	458	38
Some of the lecturers taken virtual classes	238	20
None of the lecturers taken virtual classes	15	1
Only few lecturers have shared study material	85	7
Most of the lecturers shared study material	785	65
None of them have shared study material	19	2
Online classes substituted the conventional physical classroom teaching		

Yes	21	2
No	1159	96
Not sure	20	2
Constraints on online classes		
Power breakdown	899	75
No Network	939	78
Cannot afford smart phones or laptops	798	67
Classroom environment will not be their	1120	93
Psychological depression	560	47
Mental stress	421	35
Poor economic background	683	57

According to our survey, more than 90 per cent of students think that Lockdown has had a huge impact on education; very few students feel that it has any effect and some students are neutral. In this lockdown period, it was reported that learners were mostly suffering from stress, depression and anxiety. The students were also facing problems related to poor internet connectivity (78%), followed by the absence of a favorable environment to study at home (93%). Students residing in rural and remote areas may face poor internet connectivity. Moreover, poor economic conditions might be a reason for the unfavorable environment and lack of separate room for their study. Our study also found that many students face enormous challenges in e-learning and a substantial proportion of students could not attend online classes. Students from remote areas and marginalized sections mainly denied online learning due to the lack of electricity and poor internet connectivity. Poverty further exacerbates the problem of the digital learning process in this unwanted crisis period. On the bottom line, fewer students feel that they can't concentrate on their studies, their minds are full of fears about Corona virus, all of this has distracted them; social media and different daily news is affecting their mental state a lot, so they have to focus on their studies through virtual classes.

5.5 Awareness on Vijayibhava you tube channel

Respondents are asked to mention the awareness about Vijayibhava youtube channel and uploaded the videos, viewed the videos and availability of the videos, covered your subjects. The data is presented in Table-6. Vijayibhava youtube channel was developed and maintained by the Department of Collegiate Education, Government of Karnataka. 49% of students are aware about Vijayibhava youtube channel and 40% are not aware. 48% of the students have visited the department website and viewed the videos uploaded by the experienced professors of the various colleges working under allied colleges covered the videos of their subject areas. 43% of the students haven't turned out the Vijayibhava youtube channel for the learning aids and 9% of them are not aware of the facility. 34% of students were continued their studies through listening to the uploaded pre-recorded videos by the teachers.

Table 6 Awareness on Vijayibhava you tube channel

Information on Youtube channel	Frequency (n)	Percentage (%)
Awareness about VijayibhavaYoutube Channel		
Yes	586	49
No	485	40
Not sure	129	11
Visit of VijayibhavaYoutube Channel		
Yes	575	48
No	511	43
Not sure	114	9
Availability of Pre-recorded Videos of your syllabus covered		
Yes	409	34
No	285	24
Not sure	506	42

5.6 Accessibility of E-resources

Respondents were asked ways in which E-resources searching and availability of E-resources. Data is presented in Table-7. 18% of the respondents searched E-resources through the links sent by Teachers/Librarians followed by 7% through friends 2% learnt through seniors and majority of them still depend on the print sources.

Table 7 Availability and Searching of E-Resources

Opinion	Frequency (n)	Percentage (%)
Searching of E-Resources		
Know how to search	180	15
Don't know how to search	789	66
Still depend on print sources	383	32
Links sent by Teacher/Librarian	215	18
Learnt Through Friends	85	7
Learnt Through Seniors	19	2
Self-Taught	15	1

VI. CONCLUSION

This survey provides meaningful information for future research related to the topic and may support government decision-making on strategies to handle the upcoming challenges, grievances and threats imposed among the student fraternity at the higher education level and also to empower them with the right information and awareness as per the advisories being issued by the health and family welfare department, Government of Karnataka. After taking the opinion of the students, it is unveiled that the lockdown

amidst COVID-19 has made significant distraction in physical classroom learning education. The present study assessed the learning status of undergraduate and postgraduate students during this endemic. Although a certain percentage of students are using digital platforms for learning, many of them are facing a lot of problems in attending virtual classes. Due to Lockdown issues, students can't concentrate on their studies and some students say that there is positive impact. Exams should be conducted online only and college professors should take online lectures during the lockdown period. Ministry of human resource development has initiated to inculcate virtual classroom as a part of academic calendar in order to combat the challenges faced during critical epidemic emergencies. This study suggests targeted interventions to create a positive space for the students to continue the learning and the necessary approaches are urgently needed to build a resilient education system in the state that will ensure to develop the skill for employability and the productivity of the young minds of vulnerable section of society. Strategies are urgently needed to build a resilient education system in the state that will ensure the development of employability skills and the productivity of the young minds.

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