National Conference Proceedings

On

"Online Digitalisation of Teaching During & Post Covid-19"

Friday 31st July, 2020

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Edited and Compiled by
Dr.Mamta Shah

Student Coordinator

Rohan Singh (PGDM Student)

WELCOME TO GNIM NATIONAL CONFERENCE-2020

On behalf of the organizing committee, we are pleased to announce that the National Conference on **"Online Digitalization of Teaching During & Post Covid-19"** will be held on Friday, 31st July 2020 at GNIM via online mode. This conference provides an ideal academic platform for researchers to present the latest research findings and describe emerging technologies, and directions in online teaching and related issues. The conference aims to bring together leading academicians, researchers and scholars to exchange and share their experiences and research results about all aspects of online teaching as per the need of the hour in current pandemic scenario. It also provides the premier interdisciplinary forum for Faculty, students and practitioners to present and share their views, ideas and results, to discuss about developments and applications in all areas and to analyze multifarious aspects related to online teaching. The conference will bring together leading academic people, researchers and scholars in the domain of interest from around thecountry.

Best Regards,

Prof (Dr). Maninder Kaur

“Online Digitalization of Teaching During & Post Covid-19”

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INDEX

Global Challenges of Education during Covid-19 Pandemic

Mohd Waseem[1], Mohd Saleem[2], Nilesh Dokania[3]

[1]Researcher, Department of Civil Engineering, Faculty of Engineering & Technology, Jamia Millia Islamia, New Delhi-110025, waseemjmi111@gmail.com

[2] Assistant Professor, University Polytechnic, Faculty of Engineering & Technology, Jamia Millia Islamia, New Delhi-110025, md.saleem0502@gmail.com

[3]Assistant Professor, Department of Computer Science, Guru Nanak Institute of Management, GGSIPU, Delhi, dokania_nilesh@rediffmail.com

ABSTRACT

Countries are introducing emergency measures to slow down and restrict the spread of the virus with the spread of the Covid-19 and prepare for a potential longer-term loss of attendance at school and university. Every school closure week would result in a huge loss of the human capital growth with major long-term economic and social consequences. Although this is a strong stress test for educational system, it is also an opportunity for alternative educational opportunities to develop. Schools around the world are implementing existing platforms from Google Classroom, Microsoft education and Conference application such as Zoom, Google Meet, Google Hangout, Skype and Cisco WebEx. Accordingly, education ministries in dozens of countries provide students with remote learning opportunities when schools are closed. The pandemic has, it goes without saying transformed the countries old chalk-talk teaching model into one driven by technology. This revolution in educational delivery is forcing policy makers to find out how to accelerate on scale participation while maintaining inclusive e-learning approaches and resolving the digital divide.

Keywords: Covid-19, Video Conferencing, e-learning, Webinars, Challenges

1. INTRODUCTION:

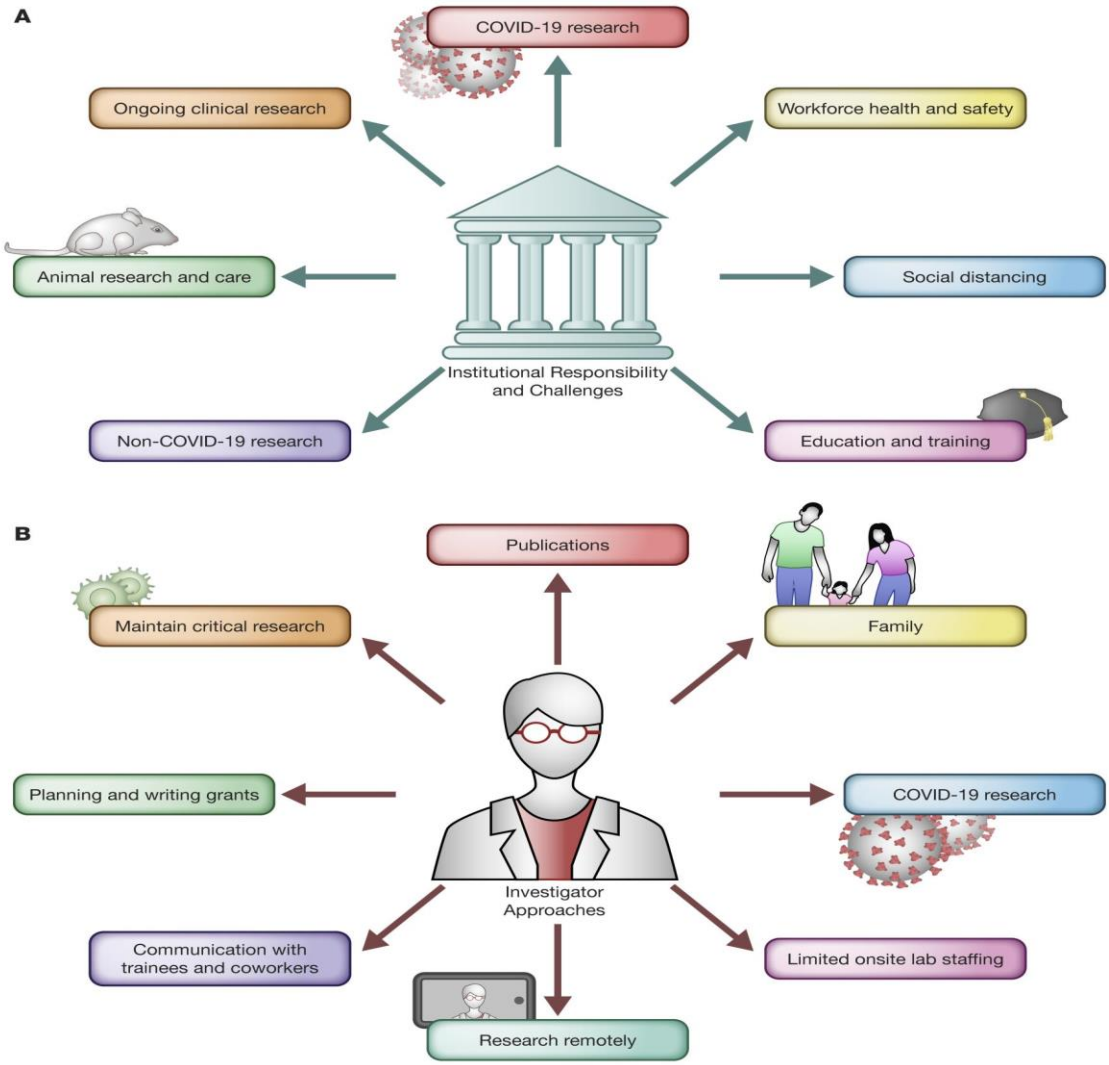
What signifies COVID-19? COVID-19 stands for coronavirus disease and is even known as the 2019 novel coronavirus or '2019-nCoV'(Bender, 2020). The COVID-19 virus is associated with Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV), which may also be as catastrophic (Meng, Hua & Bian, 2020). The new virus can be spread by droplets or by touching surface metals or other materials contaminated by a person with respiratory problems in just minutes. While the elderly and very young children are particularly affected, once it reaches the body, no one is immune to this new infectious disease, and all people are vulnerable to its devastating effects (Bender, 2020; Meng, Hua & Bian, 2020).

Globally, most education campuses are now closed which affects an astonishing 1.5BN students, or approximately 20% of the world's population, and their families. Many institutions globally were forced to transform into 100% digital learning providers in a matter of days. However, not all institutions, or educators, find themselves well prepared to move to an online operating model, from a technical, pedagogical and organizational standpoint.

For organization workers now needing to operate remotely, the implementation of this new paradigm would be difficult. Educating the staff to direct them through these times of crisis is crucial to keeping them informed and empowered. In order to effectively address this problem, it is important to make e-learning content easy to access and meet employees of the 20th century on their terms: interactive, online and on any platform. The COVID-19 pandemic has elevated into a global health crisis in just a couple of weeks, and has significantly disrupted (higher) education & research. Worldwide educational institutions, ranging from small schools to large university systems, face enormous challenges in dealing with closed campus facilities.

Institutions are now making the most of their current solutions for academic learning management system (LMS) and further leveraging applications for video conferencing to improve their online learning environment. But institutions are increasingly facing new dimensional challenges to ensure sufficient contact, participation, and achievement among students. Now that so much content and learning has forced online, there is no putting the toothpaste back in the tube. Hence, institutions need to prepare themselves for a post-COVID-19 reality. Strategies need to be revisited to transform the institution into digital & remote learning powerhouses, utilizing digital technology to better support students and with these providing opportunities to reach even more, and more diverse, learners than ever on-campus.

Strengthening the university's educational planning and health measures can provide an opportunity for students and the other stakeholders to continue learning while preventing virus spread. Such preventive measures might improve environmental hygiene to mitigate infectious disease transmission (Lee et al, 2003). This paper was therefore created to potentially inspire other educational researchers to record and generate research data about how the current pandemic has changed the functioning of educational systems around the world.



(A) COVID-19 introduces new institutional responsibilities and challenges, including ensuring the continuity of ongoing clinical research, increasing COVID-19 research, ensuring employee and student safety, enforcing social distancing measures, ensuring continued education of undergraduates and graduate students, and restricting non-essential, non-COVID-19 research activities and maintains required animal care resources.

(B) Investigators have used many methods to deal with on-site laboratory constraints and shutdowns. Researchers conducted important research practices, continued to send reports,

balanced work and family commitments, initiated or collaborated on research related to COVID-19, ensured minimal on-site laboratory personnel, engaged in remote research opportunities, established regular and frequent contact with trainees and colleagues, and continued to prepare and write research grants. Illustrated by Rachel Davidowitz. (Bishr Omary M. et al, 2020)

1. CHALLENGES:

- The educational institutions are focused on integrating and adapting interactive and remote learning in response to COVID-19. But what about monitoring the growth, commitment and encouragement of the students who are actually slipping through the cracks? This will be critical in helping students complete their course work and ultimately graduate with success.
- It is a big challenge to remain linked with teaching staff and students as educational institutions move rapidly to digital and remote learning. Staying connected to all students in these times and acting rapidly on their remote learning experiences and feedback is critical to the mission.
- Education institutions have large back office operations which effectively 'run the institution' from finance to procurement to human resources. The in-person contact is suddenly gone with working remotely which causes delays and slows down business processes, advancement of research projects, etc.
- Once digital and remote learning replaces physical lectures and classroom work, the next challenge arises how to assess the knowledge gained and provide remote digital exams with the highest degree of validity, is it safe and authentic?
- For organization workers now needing to operate remotely, the implementation of this new paradigm would be difficult. Educating the workers to direct them through these times of crisis is crucial to keeping them informed and empowered. In order to tackle this challenge effectively , it is important to make e-learning content easy to access and meet workers of the 20th century on their terms: interactive, online and on any platform.
- In today's situation where the COVID-19 pandemic has a major impact not just on education but also on many other industries, sectors and so on, it is important to ensure that the institution is able to continue its daily operations. Especially in cases where key research projects (the key research facilities are often still open) it is vital to continue the critical 'supply chain' (lab and research) equipment.

- A significant adverse impact of the COVID-19 pandemic is likely to be increased social isolation and loneliness, which are closely related to lifelong attempts at anxiety, depression, self-harm and suicide.

Table 1: Advantages and Disadvantages of Online education

Advantages	**Disadvantages**
Students	
Flexibility in learning	No direct contact with teachers
Complete autonomy	Frequency and lack of credibility when using online and educational resources
Follow-up and self-assessment	
Management and independence at work	
Teachers	
Provide the basic conditions for assessing the level of learners	Lack of direct contact
Personal training in the use of digital tools	Multiple procedures to be taken
Flexibility in tables	Communications are mostly written
Directly support learners	Problems in managing unethical behavior like cheating
University	
Detailed reports	Fear of some learners
Flexibles tables	Investment in the purchase of technological equipment (computer)
Group training (reducing the number of learners)	Companies have little or no information on e-learning tools
Low educational costs	Absence of incentives for some learners

2. RECOMMENDATIONS FOR HIGHER EDUCATION

3.1 Incorporate Environmental and Health courses in the educational program

Institutions of higher education should include courses on the environment and health in their curriculum. Having the curriculum as sensitive to the needs of the world at present is particularly

of utmost importance. The inclusion of basic environmental and health education courses should be accessible to all university students (Türkoglu, 2019). Environmental science education initiatives will create people who can be informed on the climate, and who can exemplify social action issues regarding environmental safety. It is to respond to the real problems the world is grappling with, and thereby improve understanding among the students and develop positive attitudes. This educational initiative will help to resolve potential environmental challenges.

3.2 Reinforce Environmental and Hygienic practices

There is a need to improve policies on environmental hygiene at all learning stages. Promoting awareness of societal issues for students particularly health-related challenges for the universities. The COVID-19 pandemic has put school closures worldwide, so environmental hygiene will be a priority in schools in the future to avoid infectious disease transmission and outbreak.

3.3 Integrate a digital Medical and Mental health programs

Schools need to improve their medical facilities and support systems for students so that there is consistent monitoring and execution of clinical activities inside and outside the academy. Since of global pandemic patterns, higher education needs to prioritize the learning, career counseling, and even the medical facilities and programs that should be open to the university students and also by digital communication. Free educational resources such as medical counselling, mental wellbeing teleconferencing, and other similar online health programs from members of medical professionals and qualified health specialists such as psychologists and guidance counselors should be readily accessible to students even outside the centers.

2.4 Emigrate courses, integrate curriculum skills and increasing the preparation of teachers for online learning

Because of the COVID-19 pandemic, worldwide intuitions of higher education are switching to online learning or distance education curriculum. The leverage is that students can learn at their accessibility because attending training centers and universities is undesirable. The big change to online learning does not involve the face-to-face contact between teachers and students along with their peers, thereby preventing and monitoring the virus spread. While this online delivery can pose obstacles to teachers because they need to develop internet-driven skills in preparing, implementing, and evaluating their students' results, providing teachers with appropriate training courses may help them execute the courses efficiently through online delivery. Although there

numerous apps available that provide the teachers with creative resources to use to facilitate learning for students with different educational needs. The technology tools, program design, instructors' choices, sensitive curriculum, and supportive partners are important and significant for delivering the lessons successfully in a digital environment.

3.5 Reinforce efforts in research, data management and evidence based initiatives

Higher education institutions are expected to show sensitivity to the stakeholders. The standards are higher because of the barriers set for the performance of higher-level organizations by government bodies, accreditation agencies and other stakeholders (Ludeman et al., 2009). Even so, these times are changing globally, and even the pandemic has changed the way in which educational systems will work that much research is needed to decide how higher education institutions will respond to the crises of education, economy and employment. Faculty, academics, and higher education practitioners need to engage and reinforce research, assessment, and strategic planning initiatives to document best methods, promote evidence-based practices, and boost higher education student learning even in the midst of the COVID-19 pandemic or potential spread of other viruses in the years ahead.

3. CONCLUSIONS

Worldwide, higher education is hampered by the COVID-19 pandemic, following thousands of school closures in a very short time to execute social distancing measures. However, on a light note, the global pandemic has opened up opportunities for the country to upgrade its delivery method of education and to move on its focus to emerging technologies. Therefore, higher education institutions must take the opportunity to improve their evidence-based policies, provide affordable mental health-related resources, and transform the curriculum responsive to changing times' needs. The identification, evaluation, and refining of mechanistically guided approaches is urgently needed to tackle the psychological, social and neuroscientific dimensions of this pandemic.

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Ethics in Research

Principles & Guidelines

Dr. Nidhi Gupta, Associate Professor

Department of Chemistry, Kanoria College, Jaipur

Abstract : - There are a number of ethical principles and guidelines that should be taken into account when performing undergraduate and master's level research. Research ethics educates and monitors scientists conducting research to ensure a high ethical standard. This article seeks to briefly review the various principles and guidelines of research ethics that exist on issues related to informed consent, confidentiality, providing incentives and various forms of research misconduct.

Keyword's – Ethics, Confidentiality, Misconduct, Informed Consent.

Introduction –

The ethics in research meaning that when a person or a research giving to start a research work from that time he/she should follow some rules and regulations to conduct the research work. The birth of modern research ethics began with a desire to protect human subjects involved in research projects. The first attempt to craft regulations during the Doctor's Trial of 1946-47 (1-3). The following is a general summary of some ethical principles and guidelines.

Ethical Principles

Research ethics are based on three fundamental principles

1. **Respect for Persons**

This principle incorporates two elements that deal with respecting people in regard to research:

People should be treated as autonomous

The term autonomous means that a person can make his or her own decisions about what to do and what to agree to. Researchers must respect that individuals should make their own informed

decisions about whether to participate in research. In order to treat people as autonomous, individuals must be provided with complete information about a study and decide on their own whether to enroll.

People with diminished autonomy should be protected

Some people in society may not have the capacity to make fully informed decisions about what they do or what happens to them. This could include young children, people who are very ill, or those with mental disabilities. In such cases, these people should be protected and only be included in research under specific circumstances, since they cannot make a true informed decision on their own.

2. Beneficence

The definition of beneficence is action that is done for the benefit of others. This principle states that research should:

Do no harm

The purpose of health research is to discover new information that would be helpful to society. The purpose of research should never be to hurt anyone or find out information at the expense of other people.

Maximize benefits for participants and minimize risks for participants

The purpose of much research involving humans is to show whether a drug is safe and effective. This means participants may be exposed to some harms or risks. Researchers are obligated to do their best to minimize those possible risks and to maximize the benefits for participants.

3. Justice

This principle deals with the concept of fairness. Researchers designing trials should consider what is fair in terms of recruitment of participants and choice of location to conduct a trial. This encompasses issues related to who benefits from research and who bears the risks of research. It

provides the framework for thinking about these decisions in ways that are fair and equitable. People who are included in research should not be included merely because they are a population that is easy to access, available, or perhaps vulnerable and less able to decline participating. An experimental strategy that is likely to be used by many types of people should be tested in the very populations of people who are likely to use it, to ensure that it is safe, effective, and acceptable for all of the potential users. For example, experimental treatments that are intended for use in the general population must be studied not only on men, but on enough women to ensure that they are also safe and effective for women. The principle of justice also indicates that questions being asked in trials should be of relevance to the communities participating in the study. People who are included in research should not be included merely because they are a population that is easy to access, available, or perhaps vulnerable and less able to decline participating. An experimental strategy that is likely to be used by many types of people should be tested in the very populations of people who are likely to use it, to ensure that it is safe, effective, and acceptable for all of the potential users. For example, experimental treatments that are intended for use in the general population must be studied not only on men, but on enough women to ensure that they are also safe and effective for women. The principle of justice also indicates that questions being asked in trials should be of relevance to the communities participating in the study.

Ethics Guidelines

Research ethics provide guidelines for the responsible conduct of the research. The 10 guidelines are as follows:

1. Research participants must voluntarily consent to research participation.

2. Research aims should contribute to the good of society.

3. Research must be based on sound theory and prior animal testing.

4. Research must avoid unnecessary physical and mental suffering.

5. No research projects can go forward where serious injury and/or death are potential outcomes.

6. The degree of risk taken with research participants cannot exceed anticipated benefits of results.

7. Proper environment and protection for participants is necessary.

8. Experiments can be conducted only by scientifically qualified persons.

9. Human subjects must be allowed to discontinue their participation at any time

10. Scientists must be prepared to terminate the experiment if there is cause to believe that continuation will be harmful or result in injury or death.

Conclusion

The recent increase in research activities has led to concerns regarding ethical and legal issues. Various principles and guidelines have been formulated by organizations and authorities, which serve as a guide to promote integrity, compliance and ethical standards in the conduct of research.

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Online digitalization of teaching during and post Covid-19

KRITI KANWAL

(PGDM 4Th SEMESTER, GNIM)

ABSTRACT

The COVID-19 pandemic of 2020 which was first detected in Dec 2019 in the Wuhan city of China continues to spread across the world by leaps and bounds, disrupting all walks of life namely economical, political, and mutual interactions amongst the countries. It has thrown education around the world in a loop, with all educational institutions from Howard to IITs being closed. The schools are shut down and the students are homebound with limited contact with friends, classmates, and teachers and with no physical or social contact activities. While all the recognized boards have cancelled or postponed their exams, the student community is feeling deeply anxious about their future education and career which is dependent on their school/college leaving examinations.

To overcome this disruption of classroom education because of COVID-19 pandemic, the next course of action is to move to E-Learning through digital platform by teachers and students while parents acting as facilitators. India is having a student strength of 34 Crore and 99% of these are imparted education through physical classroom method of learning. The UGC are making constant effort to make classes online, though the academicians and other stake holders are raising concerns on this online shift. However, taking into the consideration the present scenario this is the only viable option left with us.

This case study tries to throw light on the E-Learning initiatives taken by the government and other concerned ones during the COVID-19 Pandemic so that the process of education is not hampered.

HISTORY

On 31st December 2019, the WHO was formally informed by the CHINA about a few Pneumonia cases in WUHAN city, having a population of 11 million. By January 5 2020 , 59 cases were known with nil fatality. On 15th Jan 2020, 282 confirmed cases were reported including 4 cases from Japan, South Korea and Thailand.

The cause of this Pneumonia like acute respiratory syndrome that became to be known as COVID-19 was a novel coronavirus, **SARS-COV-2.**

Later Analysis suggested that SARS-COV-2 originated in animals , probably bats and was transmitted to human beings through other animals at the **Huainan wet market in WUHAN city, China**

Thus, the virus having passed into humans through adaptation , infected more people and acquired characteristics of being highly infectious and thus spread very quickly around the world. SARS-COV-2 is the 7th similar respiratory infection in human beings, that all believed to have originated in animal.

Ever Since the cases have been spreading in the entire world and are still progressing by leaps and bounds with the latest figures(as on 21st July 2020), being **14,876,330** total cases, out of which **6,13,722** people have died , **8,930,270** have recovered and **5,332,338** are active cases.

India being at no 3 in the COVID affected countries ranking, has a total of **1,156,189** total CORONA cases ,out of which **28,099** people have died , **7,24,702** have recovered and **4,03,388** are active cases

CORE PROBLEM

The world changed in the blink of an eye as the COVID-19 breakthrough progressed. Schools and colleges closed overnight, students were liberated from schools and colleges but confined to their homes and parents had to grapple with keeping children productive at home. More than the students the worst affected were the teachers who are generally intimidated by the technology especially at the ground root level and faced a huge challenge as to “How to teach online, best online teaching platform, online teaching tools and techniques”. Out of the blue the teachers were asked to take the bull by its horns but more than anything else online classrooms have brought up the issue of classroom management. Teachers already have enough trouble keeping their classroom in-order but managing students online proved to be much more worse. This is more true for primary and secondary teachers. Availability of right hardware and good internet connectivity is a common issue for both the teachers and students. Then the expertise to use online platforms like Zoom, goggle classroom, LMS, Microsoft Teams, etc has been a big challenge.

Teachers need full support of school establishment, parents and students for establishing a new equilibrium and a new normal to meet the challenges of teaching, conducting assessment, and evaluating students online during and post COVID-19.

PROBLEMS RELATED TO CORE PROBLEMS

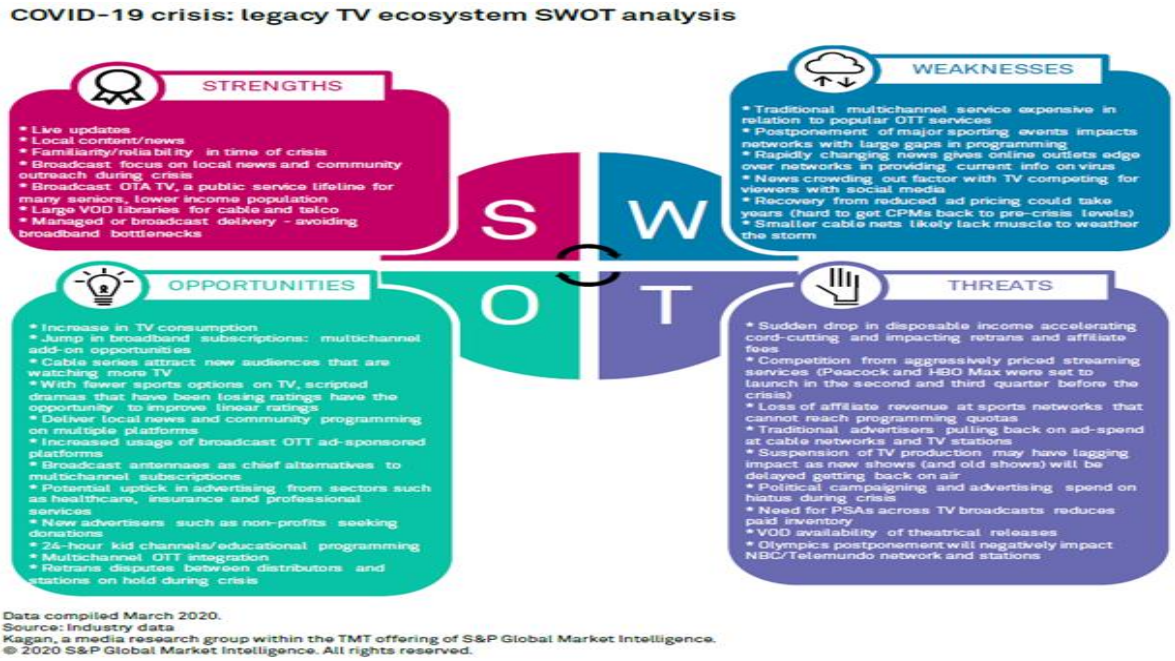
Due to COVID-19 pandemic health crisis, the schools, colleges, and universities across the world have been compelled not to conduct physical classes and have moved to online teaching and learning. This has turned as massive shock for teacher's productivity and student's social life and learning. The assessments have moved online with a lot of trial and error and uncertainty for everyone. In such uncertain times teachers, students, and parents are experiencing great stress and anxiety and challenges. Both short term and long term challenges related to this core problem being faced by all the stake holders are:

- Teachers especially at lower level are not techsavvy and are unable to learn the tricks of net technology overnight leading to great stress
- Second big challenge is how to keep students onboard and to avoid distractions from other social networking sites during ongoing learning periods
- Another challenge is digitalization of teaching material at short notice as few teachers have digital and ICT skills
- Both teachers and students are facing connectivity issues
- Students are from different social background and most of them do not have access to laptop or similar devices, thus making it impossible for them to attend online sessions
- Last but not the least , problem is of correct evaluation of student's knowledge in absence of proper vigilance during online exam

SWOT ANALYSIS

The recent disaster in the form of COVID-19 which is spreading like a forest fire around the world has necessitated lockdown of all the schools, colleges and universities to curb further spread of corona virus. Many academic institutions are seeking help of online learning so that teaching and learning processes are not hampered.

The SWOT analysis of online learning is depicted by the diagram below:



STRENGTHS

- E-learning methods and processes are really strong. The best thing about e-learning process is that it has time flexibility. The teacher and student can choose their time of convenience for imparting and gaining knowledge except a small time slot has to be used for interactive and real-time learning
- It offers location flexibility as both teacher and student can be at their convenient location around the world
- While classroom teaching is restricted to very small number of students, n number of students can be taught through e-learning thereby covering wide audience
- The number and scope of courses and content is immense. One can learn any topic under the sun online without the hassle of finding a suitable teacher for that particular topic
- To and fro immediate feedback between teacher and student is available online thereby ensuring the continuity of the subject

WEAKNESS

- Technical difficulty is the main weakness of e-learning especially in developing countries like India as majority of students do not have access to e-learning devices or strong net connectivity
- Since e-learning is a new and alien concept to majority of students in developing countries, it affects adversely their learning capacity and confidence level
- Time management is also a big issue with students and teacher as both have to be available at a particular time slot for interactive e-learning
- Introduction to net devices may distract students to other social networking sites leading to frustration , anxiety, and confusion due to over knowledge
- Students in general are more serious in personnel or physical teaching and may not be that attentive during online sessions

OPPORTUNITIES

- E-learning has lot of opportunities available with scope of innovation and digital development by the developers
- The developers can develop flexible programs for same topic depending on the mental capacity of various group of students
- Latest skills of problem solving , critical thinking and adaptability to new thoughts and ways can be developed through e-learning
- One big opportunity lies in the fact that anyone of any age can learn anything irrespective of any background without any formal restriction
- E-learning can give you wide range of subjects and as many different postulates of the same topic

THREATS

- Online learning faces many threats and challenges ranging from learner's issues, educator's issue, content issues and delivery issues mainly due to unequal distribution of ICT infrastructure
- The quality of education is also a big threat to online e-learning due to different understanding and appreciation and grasping of the subject material
- Digital illiteracy in developing countries is also a big threat and challenge as a considerable portion of the students are not compatible with e-learning
- Digital divide due to vast economic background of the students in the 3rd world country is also a big challenge
- The cost of the technology for receiving and imparting e-education is quiet high and may not be affordable for underdeveloped and developing countries

SOLUTIONS TO THE CORE PROBLEM

- The solution to the core problem of not being able to conduct classroom teaching is to find the alternate and distant means of teaching the students during the COVID-19 pandemic. No doubt, the system of distance learning already existed but to a very limited extent. Since now it has to be done on 100% basis, it has raised a problem of immense size to all the stakeholders. Now, this can be resolved by the means of online teaching.
- Another possible way out is to encourage the students to do self study and refer to the teachers for doubt clearance through telephone or net devices.
- The students at lower levels can be taught or guided by elder siblings/relative/parents who are also homebound during this pandemic
- Students can gather in small number with due precautions and take the help of neighborhood teachers and senior students

SOLUTIONS TO THE PROBLEM RELATED TO CORE PROBLEM

The problem in implementing the solution suggested above shall be many and have to tackled pragmatically

- The problem of teachers not being tech savvy is real challenge which cannot be tackled overnight. The teachers should be encouraged to take the help of tech savvy younger generation in their vicinity to learn and impart knowledge to their students. They can also learn online teaching method through various YouTube and other similar channel
- The challenge of keeping students on board and avoiding distractions from other social sites can be done by making the lectures more interactive and interesting and by involving the parents to act as administrator.
- The challenge of digitalization of study material has to be Tackled by the government and they should use all means at their disposal to provide suitable subject videos on the ongoing or new educational channel
- The issue of net connectivity and devices can be tackled by improving net connectivity and providing soft loans to the students to purchase the device.
- The students from the underprivileged may not be inclined to take the loans so they must be gifted or rented a device/smartphone individually or in small groups so that they can also attend online sessions
- The problem of correct and honest evaluation of student's knowledge can be tackled by asking parents to act as invigilators for the ultimate benefit of their ward

CONCLUSION

"**When the going gets tough, the tough gets going**" **And** "**Extraordinary situation s demand extraordinary solutions**"

These are the time tested homilies of our forefathers. No doubt, the times and prevailing situation under COVID-19 pandemic is very alarming and scary but humanity has been facing such situations in every century atleast once and has come out with flying colors everytime. So, we should not panic and have faith in our scientists and researchers who are working day and night to curb the spread of this virus. We are lucky that as compared to last such instances we are

technically much more advanced to find a vaccine for this problem. In this meantime we must **LIVE.** To live we must follow the safety regimes advised by the scientists and doctors , which are**:**

- Wearing mask and covering hands whenever leaving the house
- Washing hands every now and then
- Avoiding crowds and crowded places
- Keeping an arm's distance from all
- Avoid attending social gatherings
- No unnecessary outing and outside eating
- Avoiding shake hands and hugs
- Getting tested timely if need be
- Enhancing self immunity by drinking warm water, steam inhalation, gargles, eating fruits and vegetables and avoiding oily food.

In the end I would like to salute all the teachers, doctors, nurses and other frontline warriors who are working day and night to keep us enlightened and safe, ignoring the peril to their own life.

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A Research Paper On Digital Education An Option To Physical Distancing (Covid-19)

Ms Karishma Arora
Dr Seema Girdhar

ABSTRACT

Coronavirus disease (COVID-19) is a newly discovered infectious disease caused by a virus named "coronavirus". The lockdown due to COVID 19 has largely affected the lives of students as they no more get to interact on a one on one basis with their teachers. This shift in education from traditional classroom learning to computer-based learning might be one of the largest educational experiments to date. As the online teaching-learning process has become more prevalent in India due to COVID 19 pandemic, it becomes particularly important to know its growth. The present study was therefore designed to understand the student's perspective, attitudes, and readiness about online classes being conducted at the University level. An Observational, Descriptive study was conducted. The data was collected using a Questionnaire. Literature is collected through various journals, magazines, search engine etc.

Key Words : Coronavirus, Students, Education, Online, Classes

INTRODUCTION

Coronavirus disease (COVID-19) is a newly discovered infectious disease caused by a virus named "coronavirus." This disease is highly infectious in nature (WHO, 2020) As this disease is highly infectious, it can be easily transmitted from person to another via their respiratory droplets and different contact routes like hands, nose, and mouth. (WHO 2020). Transmission through droplets can occur when the infected person is in close proximity (within 1 m) with a normal individual. At such a time, the person having some respiratory symptoms like sneezing and coughing can easily pass the infection to a non-infected person with whom he is in close contact. The infection can also be transmitted through objects like utensils and clothes used by the infected person. (WHO 2020) The pandemic has hit around 211 countries of the world, affecting 1282931 people, and claiming 72,774 lives across the world. (WHO, 2020)

India is not left behind. India reports 5194 cases and around 149 deaths. World Health Organization, 2020. The government and different communities are working worldwide to control the situation and to limit the spread of this virus. As a result of this, people are advised

to do nothing. As social distancing might help in limiting the spread of this virus, there has been lockdown in the country, and people are asked to sit at home.

India's education system is measured to be third largest in the world to United States and China. In India Education system has expanded considerably at a very fast pace, there are 789 universities, 37,204 colleges and 11,443 stand alone institution in India as per 2017 statistics from the UGC.

Educational institutions (schools, colleges and universities) in India are currently based on traditional methods of learning, that is, they follow the traditional set up of face to face lectures in classroom. The sudden outbreak of a deadly disease called COVID19 caused by a corona virus shook the entire world The **WORLD HEALTH ORGANIZATION** declared it as a pandemic.

Different sectors, including the education sector, have seen a setback due to the COVID 19 being at a rise. At this time of crisis, it becomes challenging to keep the education continuous and unaffected due to this disastrous pandemic. There has to be a system where there is togetherness between the students and teachers without actually being together.
In this time of crisis, various educational organizations have come together and developed a variety of platforms in order to participate in online teaching-learning projects. As a result of this approach, more and more students now have the facilities to progress in their educational field while being safe in the home premises.

Apart from the different advantages, there are certain challenges which the online mode of teaching and learning throws at faculty members as well as the students.

Different online courses have been developed by various agencies like SWAYAM and MOOCs Ataizi, 2005; Ministry of human resource development, 2020. And students have been taking up different courses to gain more knowledge. Digitalization in the learning and teaching process has largely affected the present state of education in our country. As COVID 19 spread like fire in the forest, all educational institutions were shut down as the country followed quarantine policies and lockdown, which could possibly prevent the spread of CoVid-19. This has led to a change of face of education from traditional classroom teaching to technology-based online teaching.

Many government and private institutions, including IITs and IIMs, have taken a leap from conventional classroom teaching to digital teaching. They have started teaching their students through online classes so that the global COVID-19 pandemic does not affect the student's education.

The campuses have been shut down, but professors are busy working from home, preparing effective study material for their students so that there isn't any halt in the teaching-learning process. Teachers are working hard and are available for students at all times of the day in order to reduce the hardship and disruption being caused to the students across the country at this point in time due to the COVID 19 pandemic. This shift in education from traditional classroom learning to computer-based learning might be one of the largest educational experiments to date.
A teacher's job is not just making their students learn. Their job is to overall groom their students letting them know what is right and what is wrong.
The world of education has been greatly affected by the coronavirus disease 2019 (COVID-19)
Learning online through online lecture sessions has a lot of advantages over traditional classroom learning. Online learning involves the use of less paper, and it involves saving time with easy and quick access to a wide source of information.
Digital learning has led to a reduction in cost and has taken the impact and reach of resources for students as well as teachers to another level. However, it has been observed that the things taught through online mode have a lot many challenges for the educator as well as the learner. The government is working with various agencies to build up new platforms where students, teachers and parents can closely connect.
. Teachers and students are now largely joining different platforms through which e-learning can be easily done. It is easily accessible and can reach to rural and remote areas. It is considered to be relatively cheaper mode of education in terms of lower cost of transport, accommodation and overall cost of institution-based learning.

RESEARCH METHODLOGY

Research is a contribution to the existing store of knowledge. Research methodology is a way to systematically solve the research problem. It is the science of studying how a research is done. The research has explained the methods and steps adopted for achieving the purpose of the study and to arrive meaningful conclusion.

TYPES OF DATA

Data are the base providing information which helps in research paper for the study. Both primary and secondary data were collected where primary data has been collected through structured questionnaire**.**

SAMPLING PLAN

The present study is conducted in Delhi Region.

SAMPLING SIZE AND METHOD

The study population was selected randomly. The questionnaire was prepared in the form of google docs and the link was sent to the students through WhatsApp and E-mail. A total of 100 students participated in the study

The questionnaire designed for the students consistent of questions to assess whether they are like studying online in pandemic situation and what are the reasons for their like and dislike about online classes.

OBJECTIVES

The main goal of the research paper is to find out the students are satisfied with the online study (new e-learning) adopted by all institutions as a result of COVID-19. And what are the reasons for their like and dislike about online classes. To conduct an analysis of online learning during the Corona Virus pandemic and natural disasters.

LITERATURE REVIEW

- **Stephanie J. Blackmon and Claire Major** (2012)STUDENT EXPERIENCES IN ONLINE COURSES A Qualitative Research Synthesis, We believe that the studies taken together suggest that students take online courses for a number of personal reasons. Several factors influence their experience, some of which students control and some of which faculty control. Students have to balance work and family, to manage time, and to make a personal commitment. Instructors should work to establish presence in the absence of physical copresence, work to build intellective relationships with students, and work to create a sense of community. It is a balance of student and 84 The Quarterly Review of Distance Education Vol. 13, No. 2, 2012 instructor factors that influence faculty and student experiences.

- **Review Anna Sun and Xiufang Chen(2016)** Effective online instruction is dependent on well-designed course content, motivated interaction between the instructor and learners, well-prepared and fully supported instructors, etc. With our thorough analysis on this matter, this study further confirms that teachers definitely and indisputably play a crucial role in online education. They facilitate individual and group discussions, respond to student questions, design course assignments, and evaluate students' learning. Technology does not – and cannot – replace the role and position of the teacher.

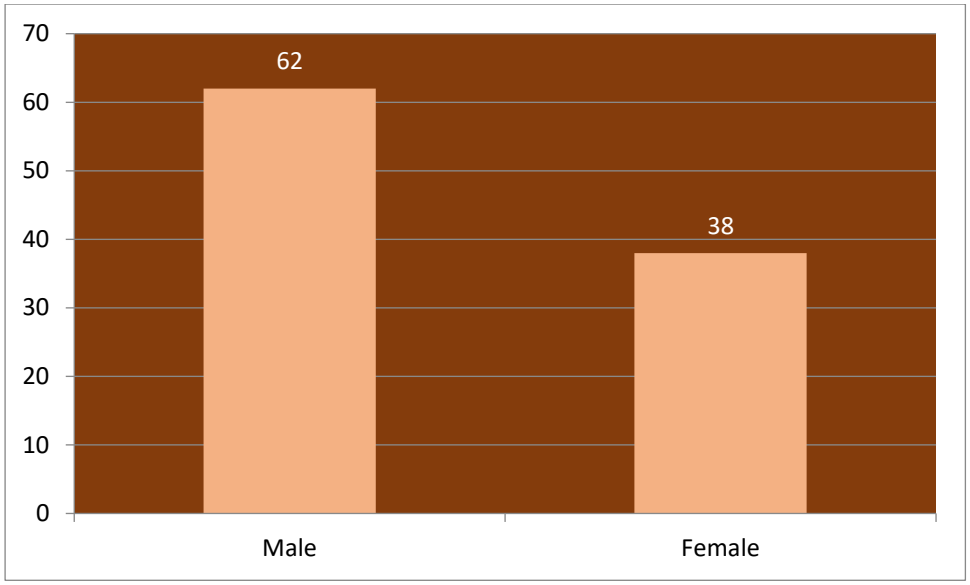
- Chia-Wen Tsai (2016), Research Papers in Online Learning Performance and Behaviour, It is expected that the articles in this special issue can provide readers, educators, teachers, and schools that are implementing online education some references for design of their online, blended, or flipped courses, and further improve their students' learning performances and behaviours. Finally, the guest editor of this special issue would like to express appreciation to the reviewers for their constructive comments and suggestions that contributed to the completed versions of this issue's papers.

ANALYSIS & INTERPRETATIONS

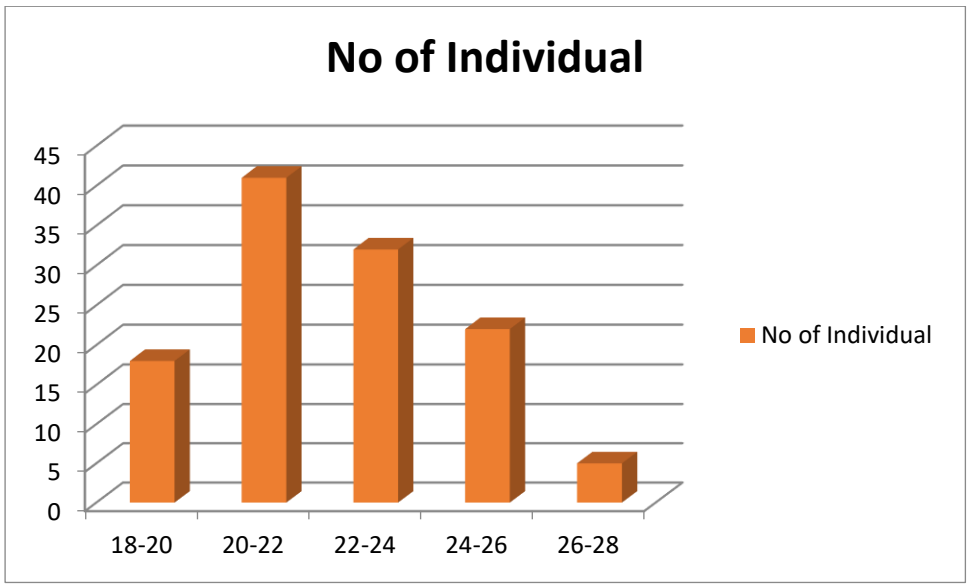
Data analysis and interpretation are the procedure of conveying meaning to the collected information and determining the conclusions, significance, and implications of the findings. It is an important sensational part of the findings. It is an important and sensational step in the process of research. In all research studies, analysis follows data collection.

Through the survey it is found by a researcher that out of the entire study population 62 were males and the 38 were women as shown in below figure:

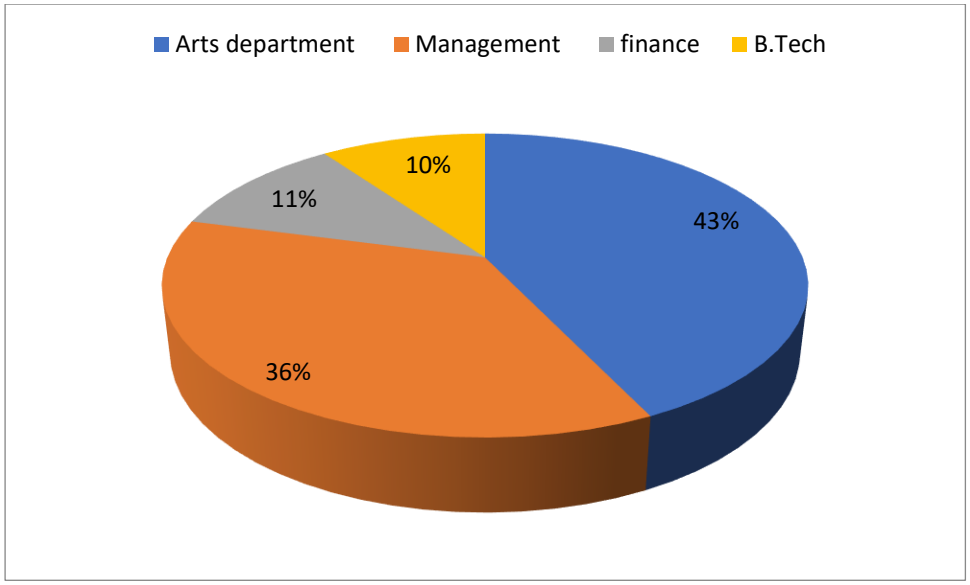
Male	62
Female	38



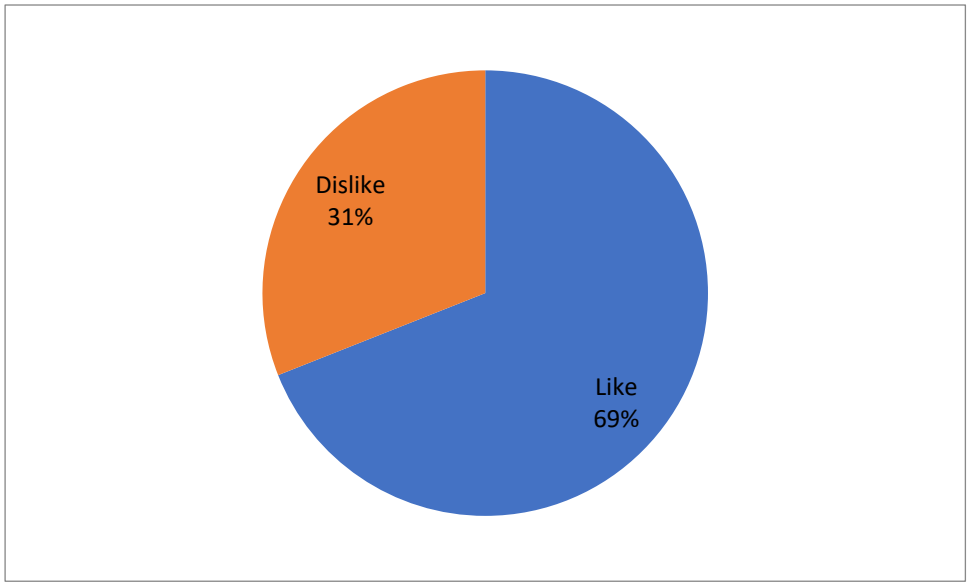
The study population was the students enrolled in various courses. Maximum respondents were from the age group of 20-22 years (41%) followed by individuals belonging to 22-24 years (32%), as shown in figure



The students were from various departments highest being from the Pharmacy department (59%), followed by Management (13%), Computer Applications (10%) and B.Tech (8%)



From the data collected, the study population reported that maximum students like studying through online classes. A large bulk of 69% of students reported that they enjoy e-learning, as shown in figure

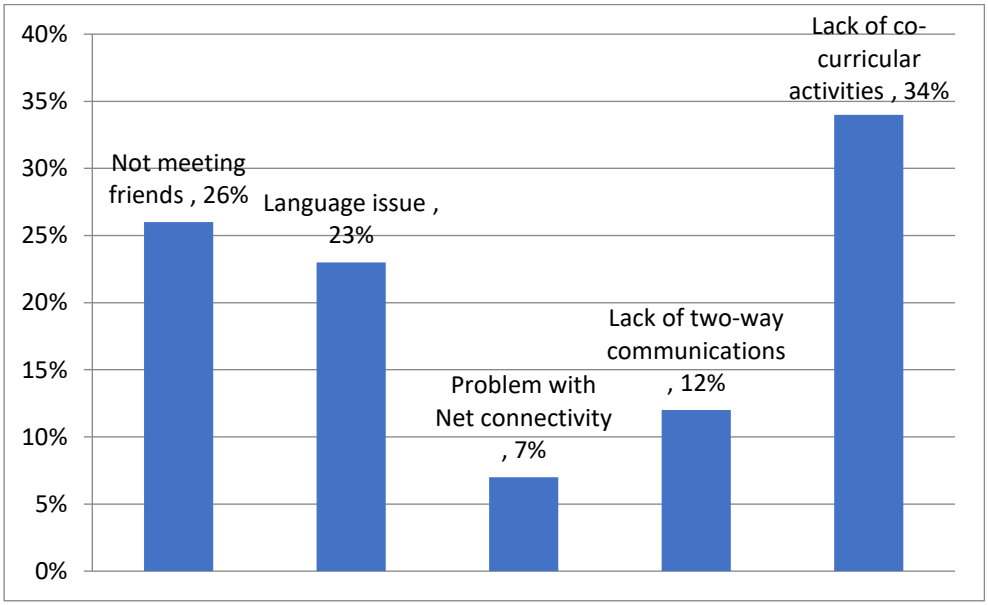


Study time becomes flexible" (49%) with online classes was the most common reason found of students liking online classes. The above-stated reason was followed by "Study location becomes flexible" (32%), "Face to face interaction becomes limited" (10%), "No need to visit the campus" (5%) and other miscellaneous reasons (5%). The result has been depicted in table

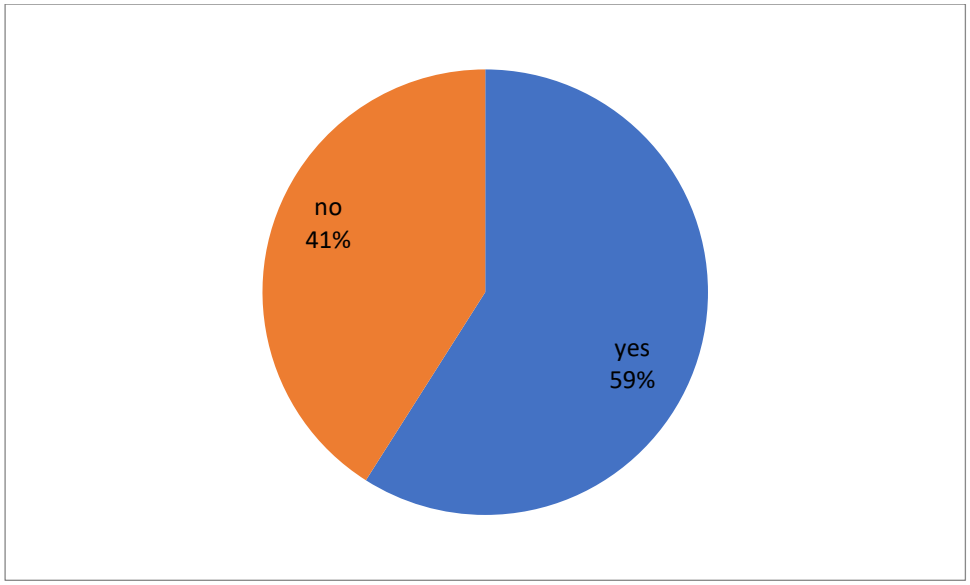
Reasons	Percentage
Face to face interaction becomes limited	10
No need to visit the campus	5
Study time becomes flexible	32S
Study location becomes flexible	49
miscellaneous reasons	5

The satisfaction level of the students was rated on a scale of 0 to 5. 0 being "completely unsatisfied" and 5 being "completely satisfied," with 1 being "mostly unsatisfied," 2 being "somewhat unsatisfied," 3 being "somewhat satisfied" and 4 being "mostly satisfied." After analysis of the result that 35% were "mostly satisfied" 23% were "somewhat satisfied," 15% were "completely satisfied," 13% were "somewhat unsatisfied," 11% were "mostly unsatisfied," and 7% were "completely unsatisfied

The most commonly stated problem with online class was "A lack of co-curricular activities" (34%), followed by "Not meeting friends" (26%), "Language issue" (23%), Lack of two-way communication" (12%) and "Problems with net connectivity" (7%)



From the data collected, it was reported that a good amount of students (59%) prefer the online continuity mode of teaching and the same is depicted



The present study was carried out amongst 100 students. After analyzing the results, it was found that 68% of the students liked studying through online classes. The most common reason (36%) as to why the students like studying online were that the study time becomes flexible and a huge advantage of online classes is that class recordings are made available for students to revisit so that they can refresh the concept learnt during the session. Lack of co-curricular activity was the most common issue (34%) of online classes, as reported by the students. Most of the students were found satisfied with the content and procedure of online teaching. About 30% of the students reported that they prefer their lecture being delivered through a PPT with an audio recording. The present study that was conducted among college students revealed that maximum students are in favor of studying through online classes, but they feel that there is a lack of co-curricular activities in the online mode of conducting classes. As the students are in favor of online classes, such classes must be continued with some interventions.

Conclusion

The lockdown amidst COVID-19 has made significant disruptions in academic activities. The present study assessed the learning status of undergraduate and postgraduate students during this pandemic. Although a substantial proportion of students are using digital platforms for learning,

many of them face huge challenges in online study. Our study has suggested the following recommendation to the government, policymakers, and institutional authorities:

The present study revealed that maximum students are in favor of studying through online classes, but they feel that there is a lack of co-curricular activities in the online mode of conducting classes. The universities should design a plan, so that along with studying their regular course, students also get to participate in some fun-loving activities so that they wholeheartedly continue to have an interest in the online lectures.

At this critical period, the open-source digital learning and learning management system could be adopted by the institutional teachers to conduct online learning.

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DIGITAL TEACHING - IMPARTING KNOWLEDGE OR MODERNISING EDUCATION

Deepanjali Arora, MCA Student, GNIM, Delhi, darora939@gmail.com
Dr. Shipra Jain, Associate Professor, GNIM, Delhi, jainshipra11@gmail.com

ABSTRACT

The recent upsurge of digitization in education industry has totally changed the teaching-learning scenario in the whole world including India to a great extent. The boost of technology in the higher education arena has made imparting education convenient and stress-free for both students and educators. Business Schools across the globe are gradually implementing digital teaching solutions and tools as a gateway to make the classroom atmosphere more comprehensive and participatory. As students have to correlate their classroom learning with the practical and actual business world, the true revolution in education can only be achieved via digitization of education so that students can learn at their own pace both within and outside the classroom scenario. With the advent of introduction of many educational tools using digital technology and availability of new softwares, more than 100,000 schools and colleges in India have initiated the use of various dimensions of digital technology. The quality of higher education scenario in India today is highly influenced and simplified by the propagation of digital innovative tools and solutions of educational technological advancements.

Cloud learning is starting to be looked at seriously by many educational institutions as a replacement or supplement to their traditional teaching practices. The use of internet, tablets, smartphones, personal computers, laptops and social media platforms and applications like Facebook and others have a far more enriching impact on digital education than one can imagine. The present paper seeks to evaluate the digitalization of teaching during and post COVID-19 and the potential bottlenecks involved with measures to overcome them.

KEYWORDS

Cloud Learning, Pedagogic Workflow, Digital Natives, E-Learning

1. INTRODUCTION

A sudden change in our surrounding at the middle of March when everything was going right, an invisible virus completely changed the way the world was operating. The education sector, working sector, personal routine all was suddenly affected by this pandemic COVID-19.

While the most important factor of education is crucially affected. The teachings, the delivery of tutorial contents between the teacher and the student has been suffered a lot . But since the life is worthless without knowledge and learning, so the teaching must go on it shouldn't be affected by the COVID-19 pandemic. Hence the digitalization of teaching began where schools, colleges, tution centers, started online classes with various mediums in hand. Zoom, Google Classroom, Microsoft Teams all were the new platforms for students to learn and teachers to present their teachings. With the days passing on all the platforms took place of schools and colleges, where the classes or lectures were to be conducted.

2. ANALYSIS

A six-year-old kid is able to operate Zoom and a nine-year-old can easily complete the work on Google classroom. Lockdown has taught us, how easily we can handle the situations while being a kid's parent or a kid himself. The thought of getting back the normal situation is still kept in mind but with this all the digitalization teaching became very handy.

There are, however, challenges to overcome. Some students without reliable internet access and/or technology struggle to participate in digital learning; this gap is seen across countries and between income brackets within countries. For example, whilst 95% of students in Switzerland, Norway, and Austria have a computer to use for their schoolwork, only 34% in Indonesia do, according to OECD data.

In the US, there is a significant gap between those from privileged and disadvantaged backgrounds: whilst virtually all 15-year-olds from a privileged background said they had a computer to work on, nearly 25% of those from disadvantaged backgrounds did not. While some schools and governments have been providing digital equipment to students in need, such as in

New South Wales, Australia, many are still concerned that the pandemic will widen the digital divide.

As the classroom size is being reduced to computers, laptops, tablets or mobile phones, the future will see a surge in online content being delivered through multiple channels. Where learning apps like Byju's have already made their mark, we will see many more such start-ups building online content.

According to the Google Trends Report released in April 2020, there has been an exponential growth in searches on the e-learning segment. An 85 per cent growth was registered in Google searches on the phrase "learn online", 148 per cent growth on "teach online", 79 per cent increase in searches for "at-home learning" and a whopping 300 per cent increase in searches for "classes online". This is an opportunity that should also be utilized by schools and tuition centers, to deliver the basic content online and use the school hours for mentoring, facilitating and skilling the students.

2.1 The Teachers Transformation To "Digi-Guru"

The role of teachers today is changing from simply distributing knowledge, to heeding the comprehensive feedback and high-quality assessment of the students. Rather than being teachers literally, they are becoming schools in themselves, imparting both knowledge, skills and attributes to one and all. In this way, they produce an entire batch of skilled and intelligent students in every class that they head to. Of all the facts, one is absolutely true, “No Technology Can Replace Teachers”. However, it is also the responsibility of the teachers to a great extent to incorporate modern education technologies like online assignment and video lecture in the classrooms to help make the study material engaging, interactive and refreshing. Apart from getting involved in studying through such innovative measures, students will understand the relevance and importance of the entire content, thereby showing more interest in studies and learning. The advantage of digital learning is also that it helps both introverted and extroverted students voice their views in the classroom. With the help of web tools like message boards, forums and online lectures, students who are shy and hesitant can be empowered by the teachers in classrooms.

3. IMPLEMENTATION

In order to create great digital teaching where the use of technology can amplify learning and development, an appropriate EdTech pedagogic workflow, that incorporates traditional elements of teaching practices and the use of current mobile technology becomes necessary. This pedagogic workflow is the disappearance of walls and enclosed structure of the classroom, in which both the teacher and student can communicate seamlessly through various digital channels and in which they become co-learners. This can be constructed using a virtual classroom platform. It is about the use of a blended learning approach where technology becomes transparent and in which the student and teacher can flip between pen and paper to online tools for capturing digital data and to share information among themselves and peers. It should include a seamless and effective feedback and assessment journey, which can take place in real time with the intent of creating more successful achievement outcomes using options such as the Google or Microsoft Classroom eco-system.

3.1 Technology is the medium to provide tutoring, not the teacher itself.

It is important to remember that technology has the potential to amplify great teaching and is there to help teachers to do their job more efficiently and effectively, and not to replace them. It is also vital to recognise that teachers are still the catalyst who should facilitate these instructional processes in an educational technology environment. If schools have decided to adopt mobile technology as a strategy within their educational culture, then integrating it effectively into the curriculum should become a priority. This understandably does not come easy and requires teachers to think creatively, laterally and to the extent, as digital natives (the generation of people born during or after the rise of digital technologies), so that they can use technology as a tool to promote and extend their students' ability to learn on a daily basis. At the end of the day, the killer app is still the teacher.

Nevertheless, the effectiveness of online learning varies amongst age groups. The general consensus on children, especially younger ones, is that a structured environment is required, because kids are more easily distracted. To get the full benefit of online learning, there needs to be a concerted effort to provide this structure and go beyond replicating a physical class/lecture through video capabilities, instead, using a range of collaboration tools and engagement methods

that promote “inclusion, personalization and intelligence”, according to Dowson Tong, Senior Executive Vice President of Tencent and President of its Cloud and Smart Industries Group.

“Technology can never replace great teachers but technology in the hands of great teachers is transformational” George Couros.

3.2. What does this mean for the future of learning?

While some believe that the unplanned and rapid move to online learning – with no training, insufficient bandwidth, and little preparation – will result in a poor user experience that is unconducive to sustained growth, others believe that a new hybrid model of education will emerge, with significant benefits. “I believe that the integration of information technology in education will be further accelerated and that online education will eventually become an integral component of school education,“ says Wang Tao, Vice President of Tencent Cloud and Vice President of Tencent Education.

However, these new styles of learning come with their own sets of challenges. While the future of work is about being more creative and empathetic, online learning can teach the content. However, moral values can only be taught by people. And thus, the structure of the schools, the training of the teachers and the content has to be modified and developed accordingly. Schools will have to shape up to enhance the creativity of their students and design their critical thinking.

4. CONCLUSION

The COVID-19 has resulted in schools shut all across the world. Globally, over 1.2 billion children are out of the classroom. As a result, education has changed dramatically, with the distinctive rise of e-learning, whereby teaching is undertaken remotely and on digital platforms.

Research suggests that online learning has been shown to increase retention of information, and take less time, meaning the changes COVID-19 have caused might be here to stay.

4.1 A changing education imperative.

It is clear that this pandemic has utterly disrupted an education system that many assert was already losing its relevance. In his book, 21 Lessons for the 21st Century, scholar Yuval Noah

Harari outlines how schools continue to focus on traditional academic skills and rote learning, rather than on skills such as critical thinking and adaptability, which will be more important for success in the future. Could the move to online learning be the catalyst to create a new, more effective method of educating students? While some worry that the hasty nature of the transition online may have hindered this goal, others plan to make e-learning part of their 'new normal' after experiencing the benefits first-hand.

4.2 Future of Digitalization Teaching to be structured yet.

The places will also be structured to accommodate multi-disciplinary peer-learning. A good example of this is a SuperLab in London. With 280 individual workstations, this SuperLab is considered one of the largest and most advanced educational facilities in Europe. It is the first open-plan SuperLab in the world to enable scientific research and learning to be carried out simultaneously at such a scale. Just like Finland, the schools should prepare for phenomenon-based learning with an emphasis on communication, creativity and critical thinking, and better prepare students to apply their knowledge in the 21st-century workplace.

4.3 Drawbacks also resist with modern teaching skills

Spending too much time on the screen also has its limitations. This needs to be neutralised with offline workshops, worksheets and smart games. The focus should be on practical understanding, internships, and certificate-based learning, to act as a promising tool for career readiness.

While this may seem obvious, students have a tendency to underestimate the impact of never meeting the instructor and other students in the class. Mark Edmundson, an English professor at the University of Virginia, argued in a Time opinion piece that online education creates a "monologue and not a real dialogue" in the learning environment. Building relationships with your instructor and classmates will require more effort in an online environment.

4.4 The importance of disseminating knowledge is highlighted through COVID-19

Major world events are often an inflection point for rapid innovation – a clear example is the rise of e-commerce post-SARS. While we have yet to see whether this will apply to e-learning post-COVID-19, it is one of the few sectors where investment has not dried up. What has been made

clear through this pandemic is the importance of disseminating knowledge across borders, companies, and all parts of society. If online learning technology can play a role here, it is incumbent upon all of us to explore its full potential.

To sum up in the words of Brian Greenberg “Technology is important, but it’s really just the means to an end. The real magic is in giving great educators freedom and license into how school works.”

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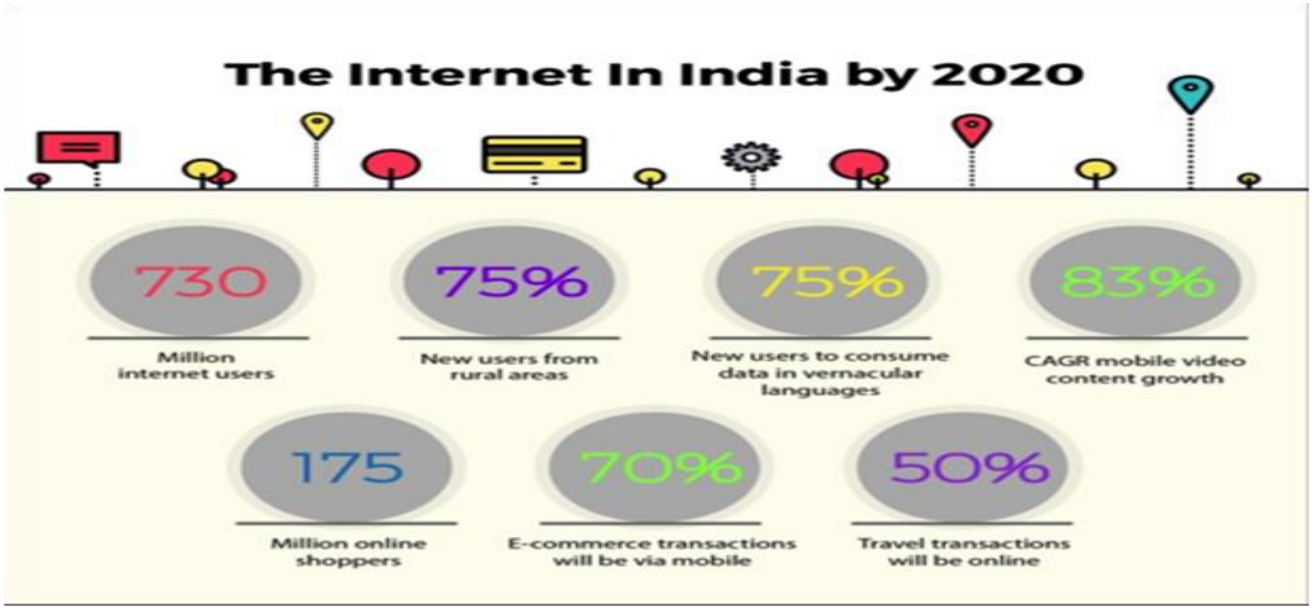
Future of Education post Covid-19

Dr. Mamta Shah-(Assistant Professor-GNIM)

Abstract

The Covid-19 outbreak, which has spread across 191 countries, is continuing to severely disrupt industries across the board, one of which is education. As schools, colleges and universities remain fully or partially closed, it is estimated that 90% of the world's learners, totaling an astronomical 1.6 billion people, are being affected by the pandemic. The figure for India alone is 320 million. Institutes of higher education are likewise going through the biggest crisis they've faced in their entire period of existence. With no immediate prospect of students enrolling for the upcoming academic term, coupled with a stoppage of existing curricula that were scheduled to be delivered in the classroom and also no sector-specific relief provided as yet by the government, institutes risk losing their bread-earning source of revenue. Consequently, a vast majority of them are scrambling to leverage online modes of learning as a stop-gap measure, if not a solution that can sustain in the longer term.

Internet and online growth



Over the past two decades, advances in digital technology have seen a steady rise in the MOOC (Massive Open Online Classes) mode of education, even among premiere universities across the world, such as Massachusetts Institute of Technology and Harvard University, and in India, by the IIMs, XLRI and other institutes. Both in India and abroad, though, until now,

they have been fairly cautious in their offerings of online education, limited the scope to niche, short term courses or part-time executive management catering to working professionals.

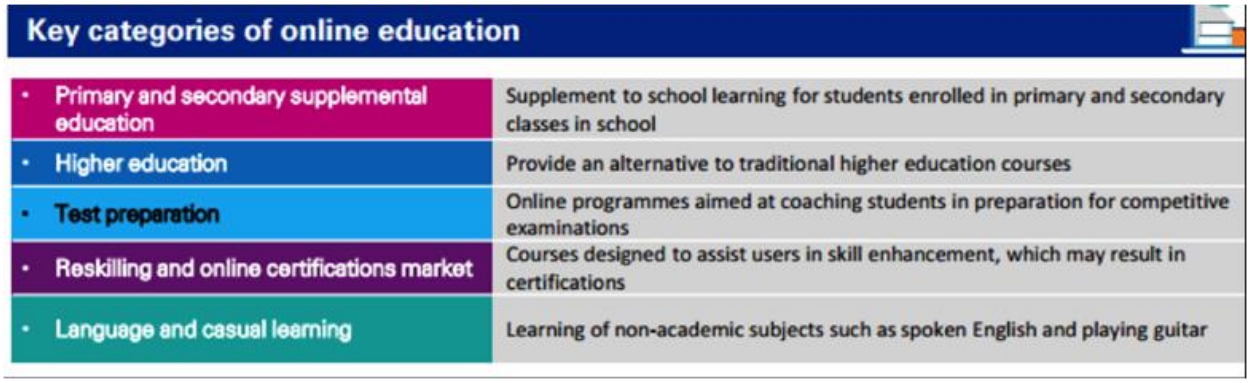
Two main reasons account for this. First, premiere institutes have continued to focus on classroom-based education, as a visible quality differentiator, separating them from an exponentially increasing number of new entrants in the sector, primarily relying on online education. The second reason relates to security and intellectual property rights. For premiere institutes, the security and protection of their course content is an overriding imperative. The bulk of smaller players in the online educations sector, on the other hand, rely on a wide range of tools, such as Zoom, Google Hangout, Webex, Microsoft Team, Lark, and Jitsy, often even operating on free, trial versions of these products. The risks from a standpoint security breach are substantial, something that has been reinforced by the recent issues reported with Zoom.

But the present crisis has now precipitated a three-fold challenge for premiere institutes: to provide online, undisrupted education that is high-quality, scalable and secure. Professor Soumyakanti Chakraborty at IIM-C articulates the latent opportunity that's present amid the crisis: "Many institutes of higher education in India have been quick to embrace digital technologies to keep the ball rolling. Although primarily driven by immediate needs, this would help us gain valuable experience. Changes which otherwise take years may now be forced upon us in months; programs we've been conducting in campus may now have to be shifted online, partially or completely. What we need to do now is to make pedagogical adjustments to adapt our regular courses to online teaching."

Rebirth of Education

As painful and stressful a time as this is, it may fashion a long overdue and welcome rebirth of our education systems. The pandemic has been a great leveller in a way, giving all stakeholders (educators, learners, policy-makers and society at large) in developed and developing countries a better understanding of our current education systems' vulnerabilities and shortcomings. It has underscored how indispensable it is for our populations to be digitally literate to function and progress in a world in which social distancing, greater digitalization of services and more digitally-centered communications may increasingly become the norm. More fundamentally, COVID-19 is causing us to challenge deep-rooted

notions of when, where, and how we deliver education, of the role of colleges and universities, the importance of lifelong learning, and the distinction we draw between traditional and non-traditional learners.



This pandemic has also made people realize how dependent we are on so-called low-skilled workers to keep our lives going. During shutdowns, lockdowns, curfews, it's these workers who are on the front lines, working multiple shifts to maintain delivery and take care of our basic needs. Over time, automation will continue to eat into these jobs. While there will always be services provided by low-skilled workers, most new jobs will require higher skills levels. Being able to reskill and upskill in this rapidly changing world is not only a necessity but an economic imperative.

COVID-19 has struck our education system like a lightning bolt and shaken it to its core. Just as the First Industrial Revolution forged today's system of education, we can expect a different kind of educational model to emerge from COVID-19.

This pandemic has made all the educational schools across the world to adopt teaching online. Courses are conducted online, examinations are conducted online, assignments are submitted through email. For countries like India, this is a good opportunity to strengthen the internet connectivity across rural India. Every village and towns in India should be digitally connected for better interaction between the students and teachers. Institutes like IITs have "a sort" of infrastructure to connect students but the experience shows that not all students had good interaction due to various reasons. Some of the students are quick to adapt to this system and some take little longer time to acquaint with this system. India should establish a good infrastructure for online education like some of the advanced countries. The greatest advantage of such a system is education can become international. Advance institutes like IITs and NITs can globalize online education while Universities, initially, nationalize online

education. Fundamental structural changes should be made in the curriculum/syllabi and programmes should be popularized to attract students across the countries. Skill development should be part of the curriculum in Engineering and science degree programmes. This will create future entrepreneurs. This is one way to beat unemployment and increase business skills amongst the youth. The business community should play a leading role in this new educational system. What is the opinion of the experts?

The strength lies in the faculty and institute nurture. Faculty need to change their mundane teaching methods and adapt to evolving technology-centred teaching. The faculty should establish themselves as "competent" individuals who can deliver what the students expect. To establish faulty should be active in research and research publications and gain experience /skills in online teaching. In a way, the learning institutes become virtual institutes. Every student's home becomes his institute. This will reduce the demand for the infrastructure of the institute. However, research labs should function as usual to support research. Research collaboration can go online and can be internationalized.

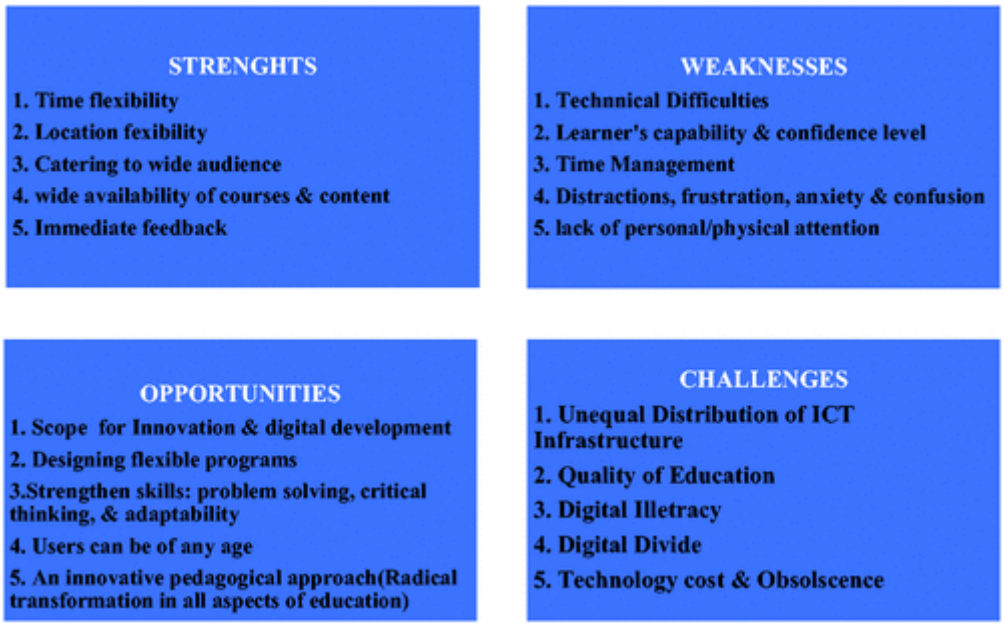
Higher education in India needs to be more international, more flexible (curriculum), should be innovative and should be open for more collaboration.

According to Dr Francisco Marmolejo, advisor to Qatar Foundation in India, during his webinar, held by the Jio International Institute, India, higher education should be re-designed. It should be flexible, more innovative, more international but more locally connected and socially responsible, more collaborative and less risk-averse. Innovative models should be introduced. Universities/institutes could be online- providing internet-based flexible offerings (open universities); traditional learning with hand-on work; collaboration with other schools. Of course, there are challenges one has to face at the initial stages: e.g. leveraging technology to deliver better and more inclusive education, contributing to digital economy and society and responding to global demand but shifting demographics. Faculty play the most important role in such a system. According to Dr Francisco, true international engagement comes with curriculum integration and active participation by the faculty. Faculty need to be motivated and actively involved in curriculum integration.

Online education does not mean without laboratory experience to students. Skill development needs laboratories/workshops. There could be centers across the countries to support skill development activities. These centers could be institutes, colleges, universities. On the research front: it is all collaboration and not competition. Projects needs to be designed

through collaboration so that laboratory/research facilities could be shared. This will lead to strong centers of research laboratories on the scale of a region —-for example, there could be a strong collaboration within the SE Asia region. There is none till now.

Post Covid-19 is an opportunity to transform the higher education system. Institutes/ universities should utilize this opportunity to transform itself. Curriculum design, collaborations, skill development and faculty involvement —all should focus on internationalizing higher education. Today it is Covid-19…we don't know what lies ahead in future for the million youngsters.



Strengths

E-learning methods and processes are really strong. These strengths of the online learning modes can rescue us from these hard times. It is student-centered and offers a great deal of flexibility in terms of time and location. The e-learning methods enable us to customize our procedures and processes based on the needs of the learners. There are plenty of online tools available which is important for an effective and efficient learning environment. Educators can use a combo of audio, videos, and text to reach out to their students in this time of crisis

to maintain a human touch to their lectures. This can help in creating a collaborative and interactive learning environment where students can give their immediate feedback, ask queries, and learn interestingly. The Anywhere-Anytime feature of e-learning is beneficial in the times of crisis-like situation, for instance, man-made disasters, natural disasters, or pandemics such as Covid-19. The closure of places and unsafe traveling by roads can create a lot of troubles but e-learning will at least not keep us deprived of getting an education at our homes or workplaces.

Weaknesses

E-learning has certain weaknesses in the form that it can hamper the communication between the learner and the educator, that is, direct communication and human touch are lost. Users can face many technical difficulties that hinder and slow-down the teaching–learning process (Favale et al., 2020). Time and location flexibility, though it is the strength of online learning these aspects are fragile and create problems. Student's nonserious behavior in terms of time and flexibility can cause a lot of problems. All students and learners are not the same, they vary in degrees of their capabilities and confidence level. Some do not feel comfortable while learning online, leading to increased frustration and confusion. Inadequate compatibility between the design of the technology and component of psychology required by the learning process; and inadequate customization of learning processes can obstruct the teaching process and creates an imbalance.

Opportunities

Online learning generally has a lot of opportunities available but this time of crisis will allow online learning to boom as most academic institutions have switched to this model. Online Learning, Remote Working, and e-collaborations exploded during the outbreak of Corona Virus crisis (Favale et al., 2020). Now, academic institutions can grab this opportunity by making their teachers teach and students learn via online methodology. The people have always been complacent and never tried some new modes of learning. This crisis will be a new phase for online learning and will allow people to look at the fruitful side of e-learning technologies. This is the time when there is a lot of scope in bringing out surprising

innovations and digital developments. Already, EdTech companies are doing their bit by helping us fighting the pandemic and not letting learning to be put at a halt. Teachers can practice technology and can design various flexible programs for students' better understanding. The usage of online learning will test both the educator and learners. It will enhance problem-solving skills, critical thinking abilities, and adaptability among the students. In this critical situation, users of any age can access the online tools and reap the benefits of time and location flexibility associated with online learning. Teachers can develop innovative pedagogical approaches in this panicky situation, now also termed as Panicgogy. EdTech Start-ups have plenty of opportunities to bring about radical transformations in nearly all the aspects associated with education ranging from, teaching, learning, evaluation, assessment, results, certification, degrees, and so on. Also, increasing market demand for e-learning is an amazing opportunity for EdTech start-ups to bring technological disruption in the education sector.

Challenges

Online learning faces many challenges ranging from learners' issues, educators' issues, and content issues. It is a challenge for institutions to engage students and make them participate in the teaching–learning process. It is a challenge for teachers to move from offline mode to online mode, changing their teaching methodologies, and managing their time. It is challenging to develop content which not only covers the curriculum but also engage the students (Kebritchi et al., 2017). The quality of e-learning programs is a real challenge. There is no clear stipulation by the government in their educational policies about e-learning programs. There is a lack of standards for quality, quality control, development of e-resources, and e-content delivery. This problem needs to be tackled immediately so that everyone can enjoy the benefits of quality education via e-learning (Cojocariu et al., 2014). One should not merely focus on the pros attached to the adoption of online learning during the crises but should also take account of developing and enhancing the quality of virtual courses delivered in such emergencies (Affouneh et al., 2020). A lot of time and cost is involved in e-learning. It is not as easy as it seems, a considerable amount of investment is needed for getting the devices and equipment, maintaining the equipment, training the human resources, and developing the online content. Therefore, an effective and efficient educational system needs to be developed to impart education via online mode.

Ensuring digital equity is crucial in this tough time. Not all the teachers and students have access to all digital devices, internet, and Wi-Fi. Unavailability of proper digital tools, no internet connections, or iffy Wi-Fi connections can cause a lot of trouble due to which many students might lose out learning opportunities. Efforts should be taken by institutions to ensure that every student and faculty is having access to the required resources. They must also ensure that all the educational apps work on mobile phones as well, in case students do not have laptops. Therefore, steps must be taken to reduce the digital divide.

Practice makes a man perfect is a famous and very true proverb. Students and teachers across various universities have never really practiced e-learning. Most of them are complacent and are stuck with traditional modes of teaching. The Corona Virus outbreak is the chance to make out the best from the current situation. We can learn a lot in this challenging situation. A lot of tools are available, teachers are required to choose the best tool and implement it to impart education to their students. A step-by-step guide can be prepared by academic institutions that can guide the teachers and students on how to access and use various e-learning tools and how to cover major curriculum content via these technologies thereby reducing the digital illiteracy. Teachers can present the curriculum in various formats, that is, they can use videos, audios, and texts. It is beneficial if educators complement their lectures with video chats, virtual meetings, and so on to get immediate feedback and maintain a personal connection with the students.

Conclusions and Suggestions

Ayebi-Arthur (2017) conducted a case study of a college in New Zealand which was badly affected by seismic activities. In her study, she found that the college became more resilient to online learning after that disastrous event. Technology helped them overcome the barriers in those difficult times. But they suggest that robust IT Infrastructure is a prerequisite for online learning. Infrastructure needs to be so strong that it can provide unhindered services during and after the crisis.

As per the World Economic Forum, the Covid-19 pandemic also has changed the way how several people receive and impart education. To find new solutions for our problems, we might bring in some much-needed innovations and change. Teachers have become habitual to

traditional methods of teaching in the form of face-to-face lectures, and therefore, they hesitate in accepting any change. But amidst this crisis, we have no other alternative left other than adapting to the dynamic situation and accepting the change. It will be beneficial for the education sector and could bring a lot of surprising innovations. We cannot ignore and forget the students who do not have access to all online technology. These students are less affluent and belong to less tech-savvy families with financial resources restrictions; therefore, they may lose out when classes occur online. They may lose out because of the heavy costs associated with digital devices and internet data plans. This digital divide may widen the gaps of inequality.

This terrible time of fate has taught us that everything is unpredictable and we need to be ready to face challenges. Although this outbreak did not give us much time to plan we should take a lesson from this that planning is the key. We should plan everything, no matter if plan A fails, we should have plan B ready. This can only be done if we do scenario planning. There is a need to prioritize all the critical and challenging situations which may occur and plan accordingly. This pandemic has also taught us that students must possess certain skills such as skills of problem-solving, critical thinking, and most importantly adaptability to survive the crisis. Educational institutions must build resilience in their systems to ensure and prioritize the presence of these skills in their students.

The key lesson for others may be to embrace e-learning technology before disaster strikes!" (Todorova & Bjorn-Andersen, 2011). Today, we are forced to practice online learning, things would have been different if we have already mastered it. The time we lost in learning the modes could have been spent on creating more content. But it is better late than never. This virus surely has accelerated the process of online learning. For instance, this e-application called ZOOM is making a lot of news because of its viable features. It allows conducting live online classes, web-conferencing, webinars, video chats, and live meetings. As most of the schools, colleges, universities, companies are closed due to lockdowns/curfews and most of the people are working from home, this app helped in keeping people connected via video conferencing. This application is trending on Google play store amidst the ongoing crisis. People are practicing social distancing so this application gave them a sigh of relief. ZOOM also allows conducting business meetings.

Digital-friendly government policies

The ruling government has launched several programmes under the initiatives such as

‘Digital India’ and ‘Skill India’ to spread digital literacy, create a knowledge-based society in India, and implement three principles ‘access, equity and quality’ of the Education Policy.

• e-Basta (schools books in digital form)

• e-Education (all schools connected with broadband and free wifi in all schools and develop MOOCs – develop pilot Massive Online Open Courses)

• Nand Ghars (digital tools as teaching aids)

• SWAYAM (MOOCs based on curriculum taught in classrooms from 9th class till post-graduation)

• India Skills Online (learning portal for skill training)

In order to establish digital infrastructure, the government has also launched National Optical Fibre Network (NOFN) which aims to expand broadband connectivity and faster network.

E-learning has a promising future; it could be on its way to become the next sunrise industry. However, it is highly unlikely that it will replace traditional learning; rather both models will work in tandem. The trio of Content, Delivery and Access will act as a change-agent in shaping up online education.

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Online Digitalization Of Teaching During And Post Covid-19

Gurmeet Singh- B.com(GNIM)

Abstract-

Due to Corona virus , in march2020, across the country began shutting down schools and colleges temporarily as a measure to contain the spread of the novel coronavirus. It's close to a month and there is no certainty when they will reopen. So online education is the only solution.

Lockdown is a crucial time for the education sector—board examinations, nursery school admissions, entrance tests of various universities and competitive examinations, among others, are all held during this period. As the days pass by with no immediate solution to stop the outbreak of Covid-19, school and university closures will not only have a short-term impact on the continuity of learning for more than 285 million young learners in India but also engender far-reaching economic and societal consequences.

The structure of schooling and learning, including teaching and assessment methodologies, was the first to be affected by these closures. Only a handful of private schools could adopt online teaching methods. The low-income private and government school counterparts, on the other hand, have completely shut down for not having access to e-learning solutions. The students, in addition to the missed opportunities for learning, no longer have access to healthy meals during this time and are subject to economic and social stress.

The pandemic has significantly disrupted the higher education sector as well, which is a critical determinant of a country's economic future. A large number of Indian students—second only to China—enroll in universities abroad, especially in countries worst affected by the pandemic, the US, UK, Australia and China. Many such students have now been barred from leaving these countries. If the situation persists, in the long run, a decline in the demand for international higher education is expected.

The bigger concern, however, on everybody's mind is the effect of the disease on the employment rate. Recent graduates in India are fearing withdrawal of job offers from corporates because of the current situation. The Centre for Monitoring Indian Economy's

estimates on unemployment shot up from 8.4% in mid-March to 23% in early April and the urban unemployment rate to 30.9%.

Needless to say, the pandemic has transformed the centuries-old, chalk– board teaching model to one driven by technology. This disruption in the delivery of education is pushing policymakers to figure out how to drive engagement at scale while ensuring inclusive e-learning solutions and tackling the digital divide.

Strategy

A multi-pronged strategy is necessary to manage the crisis and build a resilient Indian education system in the long term.

One, immediate measures are essential to ensure continuity of learning in government schools and universities. Open-source digital learning solutions and Learning Management Software should be adopted so teachers can conduct teaching online. The DIKSHA platform, with reach across all states in India, can be further strengthened to ensure accessibility of learning to the students.

Two, inclusive learning solutions, especially for the most vulnerable and marginalized, need to be developed. With a rapid increase of mobile internet users in India, which is expected to reach 85% households by 2024, technology is enabling ubiquitous access and personalization of education even in the remotest parts of the country. This can change the schooling system and increase the effectiveness of learning and teaching, giving students and teachers multiple options to choose from. Many aspiration districts have initiated innovative, mobile-based learning models for effective delivery of education, which can be adopted by others.

Three, strategies are required to prepare the higher education sector for the evolving demand–supply trends across the globe—particularly those related to the global mobility of students and faculty and improving the quality of and demand for higher studies in India. Further, immediate measures are required to mitigate the effects of the pandemic on job offers, internship programs, and research projects.

Four, it is also important to reconsider the current delivery and pedagogical methods in

school and higher education by seamlessly integrating classroom learning with e-learning modes to build a unified learning system. The major challenge in EDTech reforms at the national level is the seamless integration of technology in the present Indian education system, which is the most diverse and largest in the world with more than 15 lakh schools and 50,000 higher education institutions. Further, it is also important to establish quality assurance mechanisms and quality benchmark for online learning developed and offered by India HEIs as well as e-learning platforms (growing rapidly). Many e-learning players offer multiple courses on the same subjects with different levels of certifications, methodology and assessment parameters. So, the quality of courses may differ across different e-learning platforms.

Five, Indian traditional knowledge is well known across the globe for its scientific innovations, values, and benefits to develop sustainable technologies and medicines. The courses on Indian traditional knowledge systems in the fields of yoga, Indian medicines, architecture, hydraulics, ethno botany, metallurgy and agriculture should be integrated with a present-day mainstream university education to serve the larger cause of humanity.

Conclusion-

In this time of crisis, a well-rounded and effective educational practice is what is needed for the capacity-building of young minds. It will develop skills that will drive their employability, productivity, health, and well-being in the decades to come, and ensure the overall progress of India.

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Article on "Online digitalization of teaching

During and post covid-19"

DEBARATI BHATTACHARYA

PGDM 4ThSEMESTER

Abstract

Coronavirus disease (COVID-19) is a newly discovered infectious disease caused by a virus named "coronavirus." The lockdown due to COVID 19 has largely affected the lives of students as they no more get to interact on a one on one basis with their teachers.The shift in education system from traditional classrooms to digital classrooms is one of the largest educational experiments done till date. As online learning is most important at this time, it is important to know its growth during coming times and to know whether it is actually helping the students in their studies or not. The study is thus designed to know about students' perspective, understanding about the online classes conducted at the institute level. The study is based upon participant observation. The study was carried out with 100 students recently studying through online classes. I not only observed participants, but I was also actively involved in the online teaching activities.

This article explores the various problems related to online teaching patterns and recommends various suggestions to improve such problems.

GROUND REALITY

The Coronavirus Disease (COVID-19) hit the World very hard. First identified in December 2019 in Wuhan, China home to 11 million people, the COVID-19 has become a pandemic in a short span of 3 months, spreading to 188 countries and territories, infecting more than a million, and killing more than 11,000 at the time. The pandemic has caused global social and economic disruption, including the largest global recession since the Great depression and global famines affecting 265 million people.

Covid-19 is highly contagious, hence the extremely quick spread. In order to curtail the spread, many governments such as Australia, china, Italy us etc. have enacted a shutdown, partial and complete. At the global level, it has surely caused a virtual shutdown of almost all economic, commercial, and government activities. The government and different communities are working worldwide to control the situation and to limit the spread of this virus. As a result of this, people are advised to do nothing. As social distancing might help in limiting the spread of this virus, there has been lockdown in the country, and people are asked to sit at home. Where on one hand tourism, entertainment and ride sharing industry have virtually halted, on the other hand, online meetings/teachings platform like zoom, Google classrooms, swiggy, zomato are still functioning properly. The coronavirus pandemic has affected teaching-learning in academic institutions across the globe. India is no exception. Traditionally, teaching-learning happens in brick-and-mortar universities and there have been efforts during the last decade to adopt online education. The MOOC developed by various universities, NPTEL and Swayam platforms of MHRD, Government of India, are some examples. This is the first time students are not in a physical environment where they can interact with teachers, and also they are not in a fear of getting punished on not completing their homework. So students are taking the online classes for granted as the teachers fail to maintain the same discipline through online classes which they can maintain in a four wall classrooms. College is an inherently social time — for many of us it's where we meet lifelong friends. The social energy of a physical classroom can help with learning: There's lively discussion, people bouncing ideas off each other, forming groups, lifting each other up. However the in-person dynamic is hard to capture in an online course. In a traditional classroom setting students interact not only with their teachers but also with their classmates. But what has been observed during Zoom sessions was that they could ask or respond only to their teachers but they are not able to interact with their fellow members. It's easy to underestimate how much teacher interaction students get on a physical campus. There's scope for conversation right before and after class, all these opportunities aren't available for online learning. Teachers need to make little extra effort to be available for online courses. It is necessary tomake a class-specific chat account for students and setting hours during which they can expect a prompt response. It's important to answer email quickly as well. This will improve teacher- student interaction. I observed that in online teaching somewhere teacher student contact is missing.We tend to take it for granted that everyone has access to a recent-model laptop or desktop computer. However, even for a generation of digital natives, not every student has the same access to technology. Many rely on their smartphone or a tablet

for all of their online activity. Some will have limited access to broadband or Wi-Fi, even — all of their data comes through their phone plan. Even the study material sometimes cannot be downloaded in the smartphones because the file format cannot be supported in the smartphones. Almost 50% students have only laptops with them and only 15% of students in the study are able to access the technology. The quality of **connectivity** is usually affected by the devices used, and how well they are aligned to the mainframe of the college. This can be avoided by ensuring that the institution hires the staff best suited to their requirements. Most institutions, however, are unable to do so, because of the biggest problem in all industries. (1.https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/)

At present digital videos on various subjects are not prevalent and are not considered as alternative to physical teaching. The education imparted through physical system is rigid and is time and plan bound. The methods adopted in physical teaching are very conventional and restrictive in nature, without any modern teaching applications. Imparting knowledge to the target student at a particular intended time with due interactions is quiet cumbersome. Proper planning , management and execution of alternate system of imparting lessons is a challenge.

In response to COVID 19 lockdown, many online platforms have been launched to help the children in their studies like Swayam. Many universities have launched their own teaching platforms where study material can be shared with the students related to subjects, online assignments can be shared with the students, online face to face doubt sessions are organized by the universities etc.

Time is of ultimate essence when it comes to creating additional online resources in response to Covid-19, with universities identifying it as the top challenge in the delivery of education. One academic noted that the “time needed to learn how to use technologies” was an issue. Creating new resources can take almost three times as compared to traditional format technologies. Survey stated that students fail to submit online assignments as they do not take the assignment seriously. A switch to online assessment could cause a breakdown of constructive alignment between the teaching, learning activity and assessment task.

(2. https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/)

The Covid-19 pandemic presented opportunities for online collaboration between academic peers, both within and between institutions to gain “insight and inspiration” from others that “are facing similar challenges.

The current Covid-19 crisis may cause an increased risk of isolation, anxiety, and boredom among the students. Generally students do not take the online teaching seriously as they don’t find the same environment like they get in the physical classes .This reduces the students’ involvement during online classes. Maintaining the teacher–student relationship was considered a threat as online resources lead to a perceived improvement in the online instructor social presence.

As digital videos witness enormous popularity, incorporating them into the eLearning process would bring a versatile and convenient flare to education. Thus, videos should never be overlooked as they are an asset for teachers, students, and educational institutions too.Now, when learning online, students do have the convenience of studying at their own pace, but chances are that the lesson plan might still be conventional. Instead of sticking to the old-school rules, courses need to explore flexible lesson plans curated according to the specific needs of the student. Immediate measures are essential to ensure continuity of learning in government schools and universities. Open-source digital learning solutions and Learning Management Software should be adopted so that teachers can conduct teaching online. The DIKSHA platform, with reach across all the states in India, can be further strengthened to ensure accessibility of learning to the students.This includes sending message to all students, by video if possible, to welcome them to online learning and reassure them.Use video chat rather than basic instant message when interacting with students. Get the students talking by beginning discussions in the discussion board, and then contributing rapid, regular, and open responses to questions.Use non-verbal communication such as emojis. (3. https://www.thehindu.com/education/teaching-in-the-time-of-covid-19/article31766432.ece)

Teachers must request regular feedback and be mindful of misinterpretation, they should check in with their students to see how things are going. They can do formal or informal surveys to assess attitudes, workload and challenges. Make course correction necessary, use ad hoc quizzes to assess learner comprehension of material. Instructing students online is different from instructing them face-to-face. As students move to this method of learning, teachers can discuss with them the norms that support effective learning. This might include discussing topics such as appropriate attire, when to mute/unmute, when to use chat, raising your hand to contribute, using backgrounds, how to clap, and what to do when classes are recorded**. (4.** https://journals.sagepub.com/coronavirus)

The digital method of teaching should be made more popular by all the concerned people. Proper measures should be taken to make lesson plan more acceptable to the students. Modern teaching applications should be used in imparting the online education. There is no option but to overcome the problem of imparting online education to the target student with the help of authorities, teachers, students and parents. The help should be sort from the experts of the government of India for proper planning, management and execution of alternate system of imparting lessons.

Conclusion

If Covid-19 school closures and their related challenges with distant learning has taught has anything, it is that we must separate learning from outdated curricula and the disproportionate emphasis on information transfer through physical teaching. The present and future education system belongs to the era of online teaching and we must endure to innovate on this issue as efficiently as possible for the future of our next generation.

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Research Techniques & Data makes Marketing Superhero can deliver valuable customer insights for business

Japjot Kaur, MCA Student, GNIM, Delhi, jyotacademy321@gmail.com
Dr.Shipra Jain, Associate Professor, GNIM, Delhi, jainshipra11@gmail.com

Abstract - Market research has a broad scope and includes all aspects of the business environment. It asks questions about competitors, market structure, government regulations, economic trends, technological advances, and numerous other factors that make up the business environment. Sometimes the term refers more particularly to the financial analysis of companies, industries, or sectors. In this case, financial analysts usually carry out the research and provide the results to investment advisors and potential investors. Quantum is a very sophisticated computer language having English like interface which is designed to extract information from a set of questionnaires. Thus it forms an important part of market research. If Market Research is thought as a train then quantum forms the basic parts of the train, which not only ensures the mechanism but also delivers the ultimate output.

Quantum is a very flexible language which performs a variety of tasks. It can:

- check and validate your data
- edit and correct your data
- produce different types of lists and reports of data
- produce new data files
- recode data and produce new variables
- generate tables
- Perform statistical calculations.

There are a few basic steps performed for Quantum run. Firstly the data is read onto a disk. Data on disk can come from punched cards or tape. It may also be entered directly via a terminal by a telephone interviewer using a data entry clerk using a data entry package.

Next, the tasks to be performed are defined using the Quantum language which is the job of the analysts. Then, Quantum translates these tasks into instructions that the computer can understand. Finally, the computer itself uses this program to run your job.

Quantum comprises two sections – an edit and tabulation section.

- The edit section checks and validates the data, generates lists and reports, corrects data, produces new data files, and recodes data and creates new variables.
- The tabulation section produces tables and performs statistical calculations.

1. DEFINITION OF THE PROBLEM

Market research should ideally be the starting point of any marketing exercise. Conducting any marketing exercise - be it related to pricing, promotion or distribution of a product or service, without researching the potential market is as sensible as setting out to sell sand in the Sahara Desert. There are many questions that generally occupy the minds of marketers at every stage of the marketing process.

- Will there be a demand for my product or service?
- What should be the ideal price of my offering - one that ensures that I earn the maximum profit?
- Should I place my product only in urban markets or distribute even in the rural areas?
- What should be the preferable media to promote my offering?
- Would it be better if I replaced the pale green packets with bright yellow ones?
- Is the fourfold growth in my sales figures a consequence of our latest television commercial?
- How satisfied are our customers with the after sales services we provide?
- What image comes to the minds of consumers when hear our company's name?

It's really crucial to understand your target market before undertaking any marketing exercise, unless you don't mind risking your hard-earned money and precious time on activities that might not get you the results you want.

1.1. POSSIBLE SOLUTIONS:

Market research provides the answers to all the questions that generally occupy the minds of marketers, at every stage of the marketing process. Market research has a broad scope and includes all aspects of the business environment. It asks questions about competitors, market structure, government regulations, economic trends, technological advances, and numerous other factors that make up the business environment. Sometimes the term refers more particularly to the financial analysis of companies, industries, or sectors. In this case, financial analysts usually carry out the research and provide the results to investment advisors and potential investors. So whenever a company decides to launch a product in the market it

is necessary to determine whether the market really needs the product, or there is demand of the product in the market. If they produce some product which has no need in the market then the entire effort and money gone for the production will be in vain. This is to give efficiency to the process so that best product can be delivered in optimum time in appropriate period so that both consumer and manufacturer get benefited in the same process. From manufacturers' side it's that they get the maximum profit from the product they have launched, their product will be more sorted after in the market so to draw them the maximum revenue. From the consumer side, they can get the best product in proper price, when the demand is maximum. Thus market research helps both consumer and manufacturer in both ways.

2. IMPORTANCE OF MR IN DAILY LIFE:

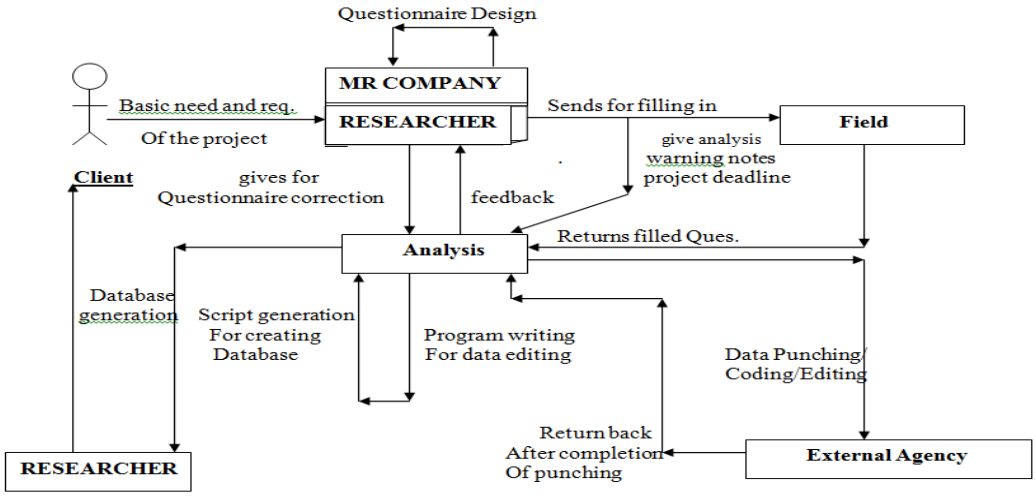
Whenever a company decides to launch a product in the market it is necessary to determine whether the market really need the product, or there is demand of the product in the market. If they produce some product which has no need in the market then the entire effort and money gone for the production will be in vain. This is to give efficiency to the process so that best product can be delivered in optimum time in appropriate period so that both consumer and manufacturer get benefited in the same process. From manufacturers' side it's that they get the maximum profit from the product they have launched, their product will be more sorted after in the market so to draw them the maximum revenue. From the consumer side, they can get the best product in proper price, when the demand is maximum. Thus market research helps both consumer and manufacturer in both ways.

3. PROJECT CYCLE OF MARKETING RESEARCH:

- Client understands the need of a research.
- Client proposes to the market research company about a research to cater the requirement.
- Researcher understands the project type and identifies the type of questionnaire pattern needed for the research.
- Researcher designs a questionnaire needed for the particular project type.
- Researcher sends the questionnaire to the analysis for checking the questionnaire format for trapping the data.
- Analysis sends back the questionnaire to the researcher with necessary feedback.
- With the feedback researcher makes adequate changes in the questionnaire.
- Researcher sends the questionnaire to the field for field work.

- Researcher sends analysis warning note to the analysis department giving the tentative date of questionnaire arrival and date when the database is required. It also states that what are the types of databases required viz.Magic, SPSS or Quantum for the project.
- Field starts doing the field work.
- Analysis department writes data cleaning program called Edit program using some specialized market research tools like Quantum.
- Filled in questionnaire starts coming to the analysis department in lots.
- Researcher gives an analysis plan describing some basic designs of the database to be prepared and naming conventions.
- Analysis department contacts the punching agencies to do the punching of the filled questionnaires for preparing the database.
- Analysis department supplies the punching agencies with the data cleaning program to check the consistency of the data
- If there are open ended questions then coders are contacted for coding.
- Analysis department designs the database according to the project.
- Analysis department makes up the basic tables needed for the project.
- Analysis department supplies the database to the Research.
- Researcher makes up the research report with aid from the database
- Report presented to the client.

That means every project initially starts with the client and ultimately ends with the client, it is the client who is the sole descriptor of a project. But for the Analysis team the Research department actually acts like a client. The following figure should clarify it more clearly-



4. SPECIALIZED TOOLS:

4.1 QUANTUM:

It's a very sophisticated computer language having English like interface which is designed to extract information from a set of questionnaires. Thus it forms an important part of market research. If Market Research is thought as a train then quantum forms the basic parts of the train, which not only ensures the mechanism but also delivers the ultimate output.

Quantum is a very flexible language which performs a variety of tasks. It can:

- check and validate your data
- edit and correct your data
- produce different types of lists and reports of data
- produce new data files
- recode data and produce new variables
- generate tables
- Perform statistical calculations.

There are a few basic steps performed for Quantum run. Firstly the data is read onto a disk. Data on disk can come from punched cards or tape. It may also be entered directly via a terminal by a telephone interviewer using a data entry clerk using a data entry package.

Next, the tasks to be performed are defined using the Quantum language which is the job of the analysts. Then, Quantum translates these tasks into instructions that the computer can understand. Finally, the computer itself uses this program to run your job.

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The edit section checks and validates the data, generates lists and reports, corrects data, produces new data files, and recodes data and creates new variables.

The tabulation section produces tables and performs statistical calculations.

4.2 SPSS:

SPSS stands for Statistical Package for the Social Science Produced by SPSS, Inc. in Chicago

It can be used for following:

- conducting statistical analyses
- manipulating data
- generating tables
- generating graphs

SPSS can do a variety of jobs, biz;

- Import data from Spreadsheets (e.g. Excel)
- Import data from Databases (e.g. Access)
- Import data from ASCII Files which are tab, comma, space separated can also read the ASCII file by defining the column numbers in the syntax editor e.g.

It basically provides a spread sheet like structure which is used for defining, entering, editing, and displaying data. Here the rows represent the cases and columns represent the variables.

A SPSS data file has .sav extension. This file can be opened in the SPSS data editor window. It gives two views, one data view and one variable view.

Data view is actually the collection of respondents and variables where each cell of the excel sheet is the intersection of the data and variable.

4.3 ADL:

ADL is “Advanced Definition Language”. It is quite powerful to handle different types of data. Generates different kind of outputs through Magic using same data in very user-friendly manner. The syntax is basic and very English like. Basic command-line instruction to be given to run ADL is ADLIMRB.

The Magic Database is generated in the same name as ADL File. It is purely DOS-Based programming tool. Its importance in market research is immense.

ADL is a language for describing how a data file is structured and how to convert it into an Information Tools formatted database. There are a number of other tools that are used for manipulating data (before running ADL) and for working with Information Tools formatted

databases once they have been created (after running ADL). In either case, ADL is a key part of the process because it encodes data into the Information Tools special format.

5. SUMMARY AND CONCLUSION:

To conclude it is the process of finding out which products and services people want and what they are likely to spend to get them. Market research is therefore a scientific investigation into marketing problems through the systematic gathering, recording, and analyzing of data. All activities that enable a business to obtain the information about the market conditions, the product mix, and present or potential customers and their preferences.

Market research provides the answers to all the questions that generally occupy the minds of marketers, at every stage of the marketing process. Market research - Market research has a broad scope and includes all aspects of the business environment. From manufacturers' side it's that they get the maximum profit from the product they have launched, their product will be more sorted after in the market so to draw them the maximum revenue. From the consumer side, they can get the best product in proper price, when the demand is maximum.

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The Hike of Online Education during The Covid 19 Pandemic

ISHA GARG,B.com

Abstract-The COVID-19 has resulted in shut down of all schools and colleges across the world. This resulted in a drastic change in the education system, with the distinctive rise of e-learning, whereby teaching is undertaken remotely and on digital platforms. Across the globe there are at different points in COVID-19 infection rates, worldwide there are children in 186 countries affected by school closures due to the pandemic. Stakeholders like government and private organizations are trying to assist each other by smart up their existing online platforms, apps, and providing training to teachers to use these apps and platforms to the optimum level. Moreover, efforts are being made by both government and non-government organizations and ed-tech companies to support the school system to make a smooth transition to the virtual world. Upskilling and motivating teachers, organizing counselling sessions for stakeholders such as teachers, parents, and students are some of the important measures taken by the administration in the recent past.

In order to to provide customized teaching-learning material suitable for online classes is another way of facilitating the schooling of children. The Central government has recently launched the PM e-VIDYA platform, with 12 new DTH channels, one for each class to reach out to all strata of society. All these attempts are proved to be favourable to a huge groups of the school-going population.

Students and teachers have their struggles while accessing these online platforms. Due to financial constraints, students are not able to access the internet and are devoid of electronic gadgets and laptops, phones or computers, or even radio and TV. Those students who have facilities to attend online classes face barriers in terms of unavailability of physical space, which is equally applicable to teachers who are supposed to conduct online classes from their homes. There are also social barriers such as discrimination against girls as they are expected to do household chores instead of attending online classes in the mornings. In rural areas, boys are often expected to work on the family farmlands. In homes where TV and radio are available, the question of who has control over these gadgets is important. Most of the time, girls are not allowed to watch educational programs.

It should be noted here that missing from all the narratives of online education is the question of equity and equality, the cornerstone of the Constitution of India. Envisioned in the Constitution of India is the aim of providing equality of educational opportunities to all citizens irrespective of caste, class, gender, and religion. Similarly, the Right to Education Act 2009, mandates to provide equitable quality education to all children from six to 14 years of age.

From politicians to bureaucrats to private companies, all are concerned with completing the syllabus, assessing students, and conducting entrance tests for medical and engineering courses through online mode in a haste, ignoring the issues and concerns of the marginalized section of the society. When only 24 percent of the households of students in India have internet access and in urban areas, 42 percent of households have access to the internet as compared to 15 percent in rural areas, this online education is catering to the needs of a chosen few.

Moreover, in terms of rural-urban, rich, and poor and gender divide the COVID 19 pandemic has put the spotlight on the ever-increasing structural imbalances in school education. There are reports in the media about teachers and principals of low fee private schools from across all over the country who are forced to change their job to survive and support their families as most of the schools have their shutters down due to plummeting revenues as their students have either dropped out from the school or have migrated to their native places due to joblessness and subsequent poverty of their parents. The schools which have managed to sail through such difficult situations are finding it difficult to acquire resources and upskilling their teachers to teach online. Some of the insights emerging from this scenario are the gaps in addressing the needs of students as well as teachers belonging to the marginalized sections of society.

Technology has been considered central to the reform of school education, It is being perceived as a panacea to combat all the education/schooling related issues, hence the hurry to transfer classrooms into the virtual world without taking into consideration the reach to all learners. In a country as diverse as India in terms of regional, linguistic, caste, class and gender, and socioeconomic status, the school system is also characterized by stratification from elite to low fee private schools as well as government schools, creating a plethora of issues about specific educational, psychosocial and financial needs of students as well as teachers based on gender, caste, class, and socioeconomic status.

There are some lessons to be learned from countries like Syria, and Kenya, and other African countries for reasons such as conflict, refugee, and recurring epidemics like Ebola have the experience for making certain provisions for the education of children during difficult times. Over the years they have developed strategies to keep the schooling of students going. There is evidence to show that for children belonging to disadvantaged groups, low tech mediums such as radio, television is useful. The country has implemented a plan to provide education to its children which includes radio broadcasts as well as the distribution of pen, pencil, and books to students. With 80 percent mobile phone penetration, the country is trying to capitalize on it by developing a mobile phone-based educational intervention.

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Debit credit payment application (NEXGO G2 POS)

Nikhil Kumar, MCA student, GNIM, nk1200881@gmail.com

&

Mrs. Ekata Gupta, Associate professor, GNIM Delhi, ekata.gupta78@gmail.com

Abstract –The electronic payment system has grown increasingly over the last decades due to the growing spread of internet-based banking and shopping. As the world advances more with technology development, we can see the rise of electronic payment systems and payment processing devices. As these increase, improve, and provide ever more secure online payment transactions the percentage of check and cash transactions will decrease.one of the best method for online payment by cards is POS (point – of – sale) terminal.The **point of sale** (**POS**) or **point of purchase** (**POP**) is the time and place where a retail transaction is completed. At the point of sale, the merchant calculates the amount owed by the customer, indicates that amount, may prepare an invoice for the customer (which may be a cash register printout), and indicates the options for the customer to make payment. It is also the point at which a customer makes a payment to the merchant in exchange for goods or after provision of a service. After receiving payment, the merchant may issue a receipt for the transaction, Which is usually printed but can also be dispensed with or sent electronically.

1. Introduction

NEXGO G2 POS terminal is used for various transaction where it is integrated with ATOM Middleware. POS application will be used to perform all contact & contactless transactions of VISA, MasterCard &RuPay. Also, it has capability of Auto settlement where merchant don't have to do any special

Efforts for batch settlement. This application will also support international affiliate's cards like Discover, Dinners, JCB and UPI. This POS terminal application also has capability to secure all sensitive transaction data. This terminal perform following transactions –

- Sale
- Sale with cash
- Cash at POS
- Void
- Reversal
- Money load
- Balance update
- Settlement
- Tip adjust

2. Objective

Point of sale (POS) **system** is the spot where your customer makes the payment for goods or services that are offered by your company. **Point of sale systems** are **systems** that enable the business transaction between the client and the company to be completed.

3. Basic theory

3.1. ISO 8583

ISO 8583 message format is one of the most widely used format for financial messages. When a purchase is made at the point of sale or cash is withdrawn from an automated teller, it's highly likely that an ISO 8583 formatted message has been used behind the scenes.

ISO 8583 is a complete specification which not only allows card originatedtransactions including purchase, withdrawal, deposit, refund, reversal, balance inquiry, payments and

inter-account transfers but also defines system-to-system messages for secure key exchanges, reconciliation of totals, network sign-on/sign-off and other administrative messages.

3.2. What and why ISO 8583?

So what is ISO 8583? It is one of the many standards describing how to pack certain data fields such that it could reliably be unpacked as well and is mostly relevant for the financial transaction processing world.

So this standard helps the electronic system which reads the card number, the transaction amount and other relevant data fields to pack it all up so that it could be transmitted electronically to a transaction processing system where it could then be unpacked back into individual data components and then processed. It also helps the transaction processing system pack and send the response back to the initiating device where it could again be unpacked and the customer be intimated of the transaction response.

4. Introduction of POS

4.1. What is POS(point of sale)?

A point-of-sale (POS) terminal is a hardware system for processing card payments at retail locations. Software to read magnetic strips of credit and debit cards is embedded in the hardware. Portable devices (i.e., not terminals anchoredto a counter), either proprietary or third-party, as well ascontactless capabilities for emerging forms of mobile payments, represent the next generation of POS systems.

4.2. How a POS (point of sale) terminal works

When a credit card or debit card is used to pay for something, a conventional point of sale (POS) terminal first reads the magnetic strip to check for sufficient funds to transfer to the merchant, then makes the transfer. The sale transaction is recorded and a receipt is printed or sent to the buyer via email or text. Merchants can either buy or lease a POS terminal,

depending on how they prefer to manage cash flows. Buying a system involves higher upfront costs while leasing levels out monthly payments, though total lease payments may end up being more than a one-time purchase over the useful life of the system.

The current trend is away from traditional proprietary hardware and toward software-based POS systems that can be loaded into a tablet or other mobile device. To stay ahead of the curve, POS terminal makers are introducing their own versions of portable and mobile POS devices.

Such devices can be seen at busy retail stores and restaurants where owners are cognizant of the fact that customers generally do not like waiting around to pay for a product or meal. Price, function, and user-friendliness are important criteria for POS system purchasers. Extremely important in the growing interconnected world is the security of the systems. Some high-profile hacks of customer data have occurred through POS terminals that did not have updated operating systems.

4.3. Type of POS

There are following types of POS-

- Mobile POS
- Tablet POS
- Terminal POS
- Online POS
- Self-service kiosk POS

5. Terminal initialization

For Terminal initialization, we first need to install the application in the POS terminal. Before terminal initialization we also need to make sure basic REV file present in the Terminal.

Before Initialization, POS machine will have

1. POS Terminal Application
2. Serial Number
3. Basic REV File

ForInitialization,fieldengineerwillpressInitializemenu.IfPOShasnotstoredATOMTID previously,itwillpop-upandinputboxwherethe engineerwillenteran8-digitnumeric ATOMTID (this is uniquely defined in Middleware database and represents a physical terminal).

We are using ISO 800 network messages for Initialize POS, GetTMK, GetTPK-DEK & GetREVDatabutweareusing differentprocessingcodeforeachofthefourprocesses.

InMiddlewareresponsetoPOSforanyfinancialtransaction, Middlewarewillsendthe following mandatory data:

1. Bank Code—According to smart routingmechanism
2. Receipt footer Message (If not blank in Acquiring BINtable)
3. Scheme Name(Visa/MasterCard/RuPay)

Foreverytransaction,POSmachinewillsendMTI100i.e.DMStransaction&Middleware willcheckfirstSixdigitofPANforthattransactionintheIssuerBINtable&thensendSMS&DM S transaction to respectiveschemes.

OtherthanInitializationAPI,foreverytransactionPOSmachinewillsendATOMTID& ATOMMID to theMiddleware

GPRS POS machine will be connected to one of network like Vodafone, Airtel, and Lyra etc. & willuseprivateI.PtoconnectwithPOS&Middleware.InGPRSPARfileall APN,I.P&Port details store in POSmachine. For PSTN terminal. We shall be using existing Atom NACarrangement. Engineerneedstoenterthe8-digitATOMTIDnumberforinitializingPOS.Forre-initialization engineer/Merchant need not to enterATOMTID.
InallAPIs,thePOSterminalneedstocontacttheNACnumberforPSTNterminalsorthe specific IP address and PORT for GPRSterminals. Foreverybatchstart,terminalneedsto

sendthesignonforgenerationofTPK.Responseof sign on will generate the TPK &DEK. IfTerminaldon’treceivetheresponseinexpectedtime,thenterminalwillautogenerate thereversal .POS must generate unique and progressive number for STAN for everytransaction

6. Transactions

There are following transaction performed by POS machine –

6.1. Sale transaction

A sale/purchase transaction is a transaction in which pos machine initiate the fresh transaction where merchant account is credited and customer account is debited.

6.2. Sale with cash transaction

In sale and cash transaction machine initiate fresh transaction on a new batch where customer has to input two amount one for purchase and another for cash that he/she wants. In this transaction merchant account is credited and customer account is debited and merchant give cash to the customer.

6.3. Void transaction

A void transaction is a transaction that is canceled by a merchant before it settles through a costumer's debit or credit and it perform on the old transaction which is not settled. It may appear as a pending transaction when the customer checks their account online.

6.4. Reversal transaction

A payment reversal is when a customer receives back the funds from a transaction. This process can happen in a couple of ways; customer disputes, authorization reversal, and refunding payment. Each of these reversals takes place at different stages of the payment process and for different reasons. We will take an in-depth look at what merchants need to know about each type of payment reversal

6.5. Cash at POS transaction

In cash only transaction machine initiates the fresh transaction where merchant account is credited and customer account is debited and merchant give cash to customer.

6.6. Money load transaction

In money load transaction machine initiate the fresh transaction perform on new batch where merchant loads money to the customer's card.

6.7. Balance update transaction

Balance update is a transaction in which is used to get the balance of the customer account. There is no credit and debit of any amount to any transaction.

6.8. Tip adjust transaction

In tip adjust merchant can add tip amount before the settlement of the original transaction by entering the invoice number of the transaction on which tip adjust transaction is performed.

6.9. Settlement transaction

A Settlement transaction is the transaction through which a merchant receives money paid by their end users for a particular product/service. This transaction settle all the transaction in the batch and clear that batch.

7. TransactionFlowwithKeyencryption&decryptionprocess

- Cardholder enter the PIN on the POS terminals. POS Terminal will encrypt the PIN by usingTPK.POSterminalapplicationwillalsoencrypttransactiondata(mainlyTrack2&PAN)byDEK.WhenPOSterminalwillsendencryptedPIN&encryptedtransactiondata (mainly Track 2 & PAN) to ATOMMiddleware.

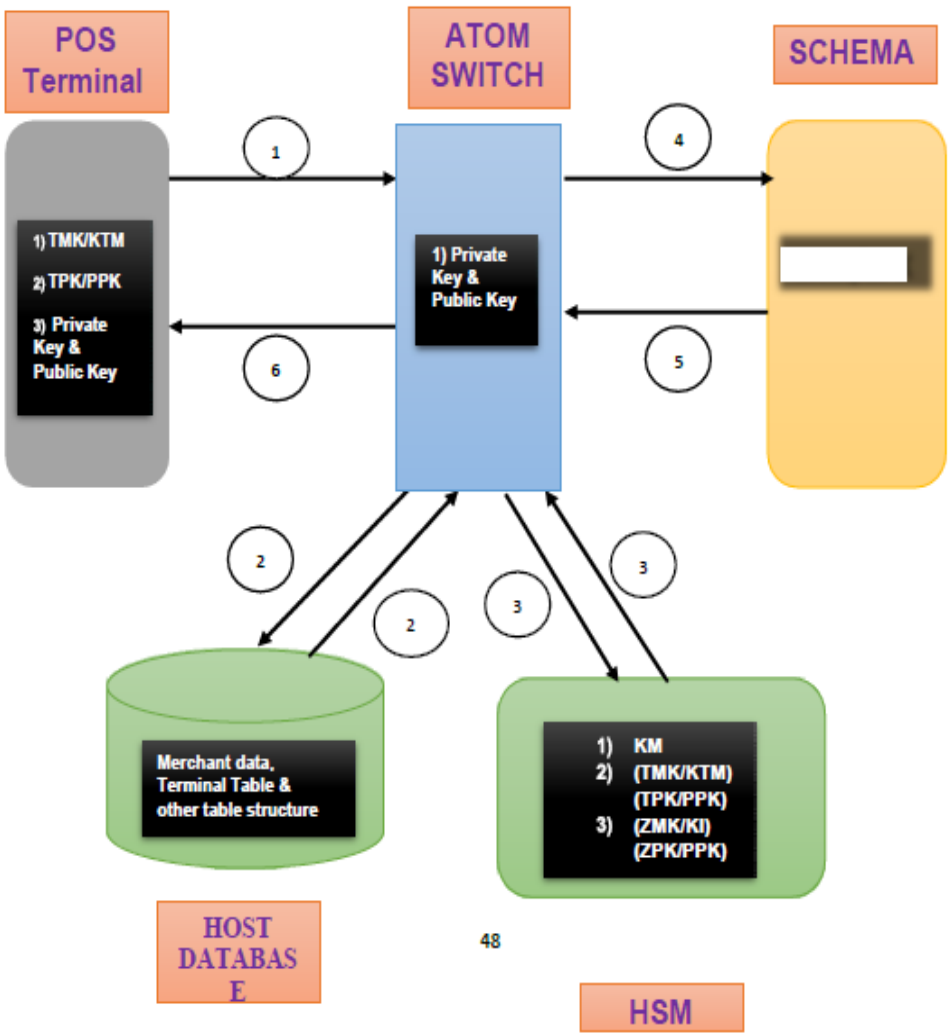
- Middlewarewilldecrypttheencryptedtransactiondata(mainlyTrack2&PAN)byDEK which is stored in Middleware memory. Post that Middleware will perform the validation & transactionprocessing.

- Thereafter,MiddlewarewilldothePINtranslationfromTPKtoZPKby usingHSMAPI.

- AtomMiddlewarewillsendthePINencryptedonlinemessagetorespectiveschemesfor authorizations.

- Atom Middleware will receive the response ofscheme.

- AtomMiddlewarewillsendtheschemeresponsetoterminalwheretransactionis initiated



Conclusion

POS is an efficient method to automate the checkout process, providing faster and better customer experience. It can be found almost in every Retail store, Restaurants, Clubs and Bars, Supermarkets**.** Comet methodology proves useful in building system from requirement modelling to design modelling. Future work includes developing the adding self-checkout functionalities.

The project titled as “debit credit payment application” is a payment application. This machine provides facility for online payments. This application is developed with scalability in mind. Additional modules can be easily added when necessary. The application is developed with modular approach. All modules in the system have been tested with valid

payment conditions and everything work successfully. Thus the system has fulfilled all the objectives identified and is able to replace the existing system.

The project has been completed successfully with the maximum satisfaction of the organization. The constraints are met and overcome successfully. The system is designed as like it was decided in the design phase. The project gives good idea on developing a full-fledged application satisfying the user requirements.

Features –

- Support magnetic, smart, and contactless card.
- Support GPRS, WIFI, 3G, and Bluetooth for communication
- Removable battery
- Highly secure
- Use friendly
- High speed thermal printer
- Water proof and dust proof pin pad
- Fully certify from various organization

Limitations-

- Depending on your type retail business, your choices can be very limited. Which means you might be giving up some important time saving and money making POS software features.
- Your other retail software applications might not run on Linux. In my experiences, almost every retail business wants to use other applications that will not run under Linux.
- Not as many computer techs know how to work on Linux. Depending on your location, sometime this can cause problems because you can't find anyone to work on your system quickly. Or you'll have to pay someone that actually knows Linux big bucks.

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Online Digitalization of Teaching during and Covid-19

From

Naveen Gupta

PGDM 4th semester

Abstract

The purpose of this research is to understand the technology adoption, teaching and learning process, student engagement and faculty experience towards virtual classrooms during Lockdown due to COVID 19, India. Inductive reasoning used in this study and qualitative research methods are used to collect the data from faculties associated with Higher education institutions in Delhi and teaching courses such as PGDM, BBA.etc. The finding of the study suggests that during the lockdown period faculty have undergone the process of technology adoption and students are involved with various online modes of learning. There was lots of fear, anxiety and consciousness among students and faculty regarding COVID 19. This study is confined to the positive side of COVID 19 and change in the education sector by adapting to technology and engaging students with various virtual sessions. The current study is limited to the sample frame of 20faculty from Higher education institutions at Delhi, India, hence finding of this study cannot be generalized for entire India. The emotions and perceptions of faculty towards the usage of technology and experience are different for different users. Even though COVID 19 has created cognitive dissonance in students and faculty mind towards various situations they have faced in their day to day life in association with the society, family, and teaching and learning. It has created the revolution in Indian higher education, as there was lots of resistance in teaching fraternity towards adapting to technology and virtual engagement of students. Due to the situation, most of the higher education in Delhi has widely adopted the technology and students' involvement is more than the regular class engagement.

Introduction

India‘s fight against the COVID- 19 outbreak has been unique. The “JanataCurfew” was a positive step for further awareness and preparedness about the quarantine and provided the doorway for implementation of lockdown in several states. India is now locked down and loaded

in its fight against the corona virus. Prime Minister NarendraModi announced a 21 days 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 global war. COVID 19 pandemic is first and foremost a health crisis. When it comes to the education sector, manycountries have closed down schools and universities. It is the creativeness and mastermind of policymakers how they can bridge a gap for this in a positive way or negative way. However, we have some of the higher education institutions in Delhi supported by management and faculty to go for technology adoption. Hence teaching is moving online on an untested and unprecedented scale. Students’ assessments are also moving online. Educators, faculty, students are doing their part to support each other. And these disruptions are a time to rethink and reflect on the education sector. Technology has a key role in educating the future generations.

In a world where knowledge is a mouse –click away, the role of the educator must change too.

This study demonstrates on following research question:

- How technology adaption, teaching, learning, students’ engagement and faculty experience influenced during COVID19- Lockdown?

Based on our research question, the research objective is developed.

- To understand the technology adoption, teaching, learning, student engagement and
- To understand the technology adaption, teaching, learning, student engagement faculty experience influence during COVID19- Lockdown.

To arrive at the conclusion following research methods are used to collect the data from respondents and to understand the technology adoption, teaching, learning, student engagement and faculty experience influence during COVID19- Lockdown. Methodology: The study is based on qualitative data collected from 20 teaching fraternity teaching in higher education institutions in Delhi. Telephonic interview was conducted among respondents. Faculty have been asked open-ended questions based on four categories.

Such as technology adaption, teaching and learning, student's engagement and faculty experience towards virtual classrooms during COVID19- Lockdown. The following are the opinions shared by faculty based on their experience of the virtual classroom, teaching and learning and student engagement.

COVID 19: Technology Adaption

People resist change without understanding the need and importance of it and when a situation arises all should adapt to change willingly and unwillingly. This was the situation which occurred to teaching fraternity too. Indian higher education institution has used various pedagogy for innovation, development, and engagement of students. Many faculties have resisted the change when they had been asked to take virtual classes for students. And a couple of training was provided by the management of the institutions hence faculty will not face any difficulties on the same. As everything is your mindset, the faculty has to change their mindset towards the virtual classroom and adopt technology for the betterment of students.

Technology adaption was bliss and we never thought it going to be so smooth in functioning, was one of the key opinions from faculty at ISBR Business School, Delhi. After the adaption of technology; faculty are using virtual modes for meetings, guest sessions, faculty development programs, students mentoring, club activities online and various competitions for faculty and students. Technology hascreated the revolution in the Indian higher education system and it is widely accepted by all due to the crisis.

COVID 19: Teaching and learning

Teaching and learning are always in demand and when faculty heard about lockdown due to COVID 19, it was a challenge for faculty to look this as an opportunity to go for virtual classrooms, virtual learning and teaching. With the crisis there is a wide adaption of technology in teaching; learning process. The higher educational institutions in Delhi have opted for online classes. The tools used by faculty during lockdown for teaching and learning through

online modes are Zoom, Google Hangouts, Skype meet up, Google classrooms, LMS, ICT, YouTube, etc. Many institutions conducted Faculty development programs online to gear up the positivity among faculty during the crisis. Faculty feel there is no much difference between online and offline sessions as they can share PPT, play videos and use board and marker as regular classrooms. One interesting part, one of the respondents was handling an analytics course

for PGDM students and even she can run all the codes online and students were very positive towards the learning and course. And faculty have also done online role-play, group presentations, guest sessions by experts in the field and CEO talk online. This has created a revolution in the higher education institutions and proved the hybrid system of teaching through offline and online mode.

COVID 19: Students Engagement

Student engagement is a challenge today, tomorrow, whether offline or online. Initially faculties had lots of dissonance towards student's engagement during a lockdown. When faculty started taking sessions online, they were shocked to see students' attendance is 20 times better than regular class sessions and it was almost 100 percent ttendance while engaging them virtually. There is a various initiative from the Ministry of Human Resources Management (MHRD), an offering of free Swayam courses. Many institutions subscribed to online free courses for students during the lockdown period. E-Library sources and EBooks' have been shared with students. Apart from regular virtual class engagement, there are various initiatives taken for students' engagement. Prof. Shenoy, ISBR Business School

said, ISBR HR club, Convergence Namma club has taken the initiative of collaborating for coffee online and share your gratitude on every
Friday at 5 pm during the Lockdown period. This was a form where students will have social interaction with each other, as humans are social animals they need to collaborate, exchange their
views and experience with each other whether they are offline or online. Hence this was the forum created to exchange their ideas and give gratitude. And she also added that Club has also proposed for Case writing competition for students and faculty on COVID19: Lockdown, HR perspectives.

COVID 19: Faculty Experience

Faculty experiences directly and indirectly influence faculty engagement and commitment. Initially there was lots of disturbance in the minds of faculty when they have adapted for technology and virtual classrooms. As they started experiencing it, it becomes like a habit, they started loving teaching students online. In the word of Prof. Sridhar, teaching online is better than regular sessions, as you can focus on your family, no traffic, no travelling and mental peace. To add on Prof.Mahindra said it going to be difficult for all teaching fraternity to adjust to normal regular sessions after having experience in online mode. Prof. Vijay shared her views it was the first time am teaching online and when I started, I thought it is going to be difficult and my experience is opposite and am happy to teach online than offline. Prof.Alexander was focusing on a student's perspective, as students are experiencing it for the first time even there response to it good and involving. Overall, all are happy with technology adoption, teaching and learning methods adopted in higher education institutions in Delhi.

Limitations and future Scope for study

This study is confined to the positive side of COVID 19 and change in the education sector by adapting to technology, teaching and learning and engaging students with various

virtual sessions. The current study is limited to the sample frame of 20faculty from Higher education
institutions at Delhi, India, hence finding of this study cannot be generalized for entire India. The emotions and perceptions of faculty towards the usage of technology and experience are different for different users. As all of us know, we are not the United States when it comes to data consumption and usage. In India we have lots of echnical issues when it comes to data consumption and usage. Future searchers considered this as a research gap and focus on various other modes to collect through empirical support and analysis for better results. And also focus more on a hybrid system of education that is a combination of both online and offline.
classrooms, our intention was to project the innovation adopted by higher education institutions
during the crisis. The teaching fraternity doing a great job and be proud of our profession.

3 Ways The Coronavirus Pandemic Could Reshape Education

1. Education - nudged and pushed to change - could lead to surprising innovations

The slow pace of change in academic institutions globally is lamentable, with centuries-old, lecture-based approaches to teaching, entrenched institutional biases, and outmoded classrooms. However, COVID-19 has become a catalyst for educational institutions worldwide to search for innovative solutions in a relatively short period of time.

To help slow the virus' spread, students in Hong Kong started to learning at home, in February, via interactive apps. In China, 120 million Chinese got access to learning material through live television broadcasts.

Other simpler - yet no less creative - solutions were implemented around the globe. In one Nigerian school, standard asynchronous online learning tools (such as reading material via Google Classroom), were augmented with synchronous face-to-face video instruction, to help preempt school closures.

Similarly, students at one school in Lebanon began leveraging online learning, even for subjects such as physical education. Students shot and sent over their own videos of athletic training and sports to their teachers as "homework," pushing students to learn new digital skills. One student's parent remarked, "while the sports exercise took a few minutes, my son spent three hours shooting, editing and sending the video in the right format to his teacher."

With 5G technology becoming more prevalent in countries such as China, US and Japan, we will see learners and solution providers truly embracing the 'learning anywhere, anytime' concept of digital education in a range of formats. Traditional in-person classroom learning will be complemented with new learning modalities - from live broadcasts to 'educational influencers' to virtual reality experiences. Learning could become a habit that is integrated into daily routines - a true lifestyle.

2. Public-private educational partnerships could grow in importance

In just the past few weeks, we have seen learning consortiums and coalitions taking shape, with diverse stakeholders - including governments, publishers, education professionals, technology providers, and telecom network operators - coming together to utilize digital platforms as a temporary solution to the crisis. In emerging countries where education has predominantly been provided by the government, this could become a prevalent and consequential trend to future education.

In China, the Ministry of Education has assembled a group of diverse constituents to develop a new cloud-based, online learning and broadcasting platform as well as to upgrade a suite of education infrastructure, led by the Education Ministry and Ministry of Industry and Information Technology.

Similarly, the Hong Kong-based readtogether.hk forum (China Daily video here) is a consortium of over 60 educational organizations, publishers, media, and entertainment industry professionals, providing more than 900 educational assets, including videos, book chapters, assessment tools, and counseling services for free. The consortium's intention is to continue using and maintaining the platform even after COVID-19 has been contained.

Through examples like these, it is evident that educational innovation is receiving attention beyond the typical government-funded or non-profit-backed social project. In the past decade,

we have already seen far greater interest, and investment, coming from the private sector in education solutions and innovation. From Microsoft and Google in the U.S. to Samsung in Korea to Tencent, Ping An, and Alibaba in China, corporations are awakening to the strategic imperative of an educated populace. While most initiatives to date have been limited in scope, and relatively isolated, the pandemic could pave the way for much larger-scale, cross-industry coalitions to be formed around a common educational goal.

3. The digital divide could widen

Most schools in affected areas are finding stop-gap solutions to continue teaching, but the quality of learning is heavily dependent on the level and quality of digital access. After all, only around 60% of the globe's population is online. While virtual classes on personal tablets may be the norm in Hong Kong, for example, many students in less developed economies rely on lessons and assignments sent via WhatsApp or email.

Moreover, the less affluent and digitally savvy individual families are, the further their students are left behind. When classes transition online, these children lose out because of the cost of digital devices and data plans.

Unless access costs decrease and quality of access increase in all countries, the gap in education quality, and thus socioeconomic equality will be further exacerbated. The digital divide could become more extreme if educational access is dictated by access to the latest technologies.

Conclusion

It has created the revolution in Indian higher education, as there was lots of resistance in teaching fraternity towards adapting totechnology pre-COVID 19 crisis and due to the situation most of the faculty at higher education institutions in Delhi has adapted technology and started taking virtual classes and their experience is great. Virtual engagement of students better than normal classrooms and attendance is almost 100 percent. Hence, educationalists, policymakers take this as innovation and creation from these institutions and start implementing a similar approach to other educational sectors such

as under-graduate colleges and universities. We would like to conclude with the statement that this study is not creating hype for virtual

our intention was to project the innovation adopted by higher education institutions during the crisis. The teaching fraternity doing a great job and we are proud of them.

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Online Digitalization Of Teaching During And Post Covid-19

SHWETA VERMA

PGDM 4th Sem.

ABSTRACT

The process of knowledge dissemination has been interrupted by the COVID-19 pandemic. However, given the fact that societies all over the world need to get back to classrooms in some form or the other, and that as of now, social or physical distancing has become mandatory in almost every aspect of our lives, including education, this will have to be done gradually and carefully. One positive outcome of the lockdown is the acceleration in adoption of digital technologies and this can upgrade the education system, both for students as well as for teachers. However, both groups will have to make serious adjustments to get the most out of online education since at present both students and teachers have an incomplete understanding of the tools and technology they need to use.

Well, the thought of skipping college and studying from home has always sounded exciting—until you consider the logistics. How feasible it is to take a class at home while spending time with the family, instead of travelling far to attend college? Though e-learning is not a new phenomenon, the outbreak of covid-19 and the country going under lockdown shifted the whole education system into a virtual mode.

Since the COVID -19 pandemic has disrupted the normal lifestyle of people across the globe, the virtual world has come to the rescue. Various stakeholders such as government and private organizations are trying their best to assist each other by sprucing up their existing online platforms, apps and providing training to teachers to use these apps and platforms to the optimum level. Moreover, efforts are being made by both government and non-government organisations and EdTech companies to support the school system to make a smooth transition to the virtual world. Upskilling and motivating teachers, organising counselling sessions for stakeholders such as teachers, parents and students are some of the

important measures taken by the administration in the recent past. Making a continuous effort to provide customised teaching-learning material suitable for online classes is another way of facilitating the schooling of children.

COVID-19 is here to stay. Even after an effective vaccine is found, it will continue to be with us. It has affected all aspects of our lives, and the education sector is no exception. The current situation has forced us into a revolution in the education sector, the widespread adoption of digital technology that can not only cater to the current pandemic, but it is also important when aiming to provide quality training to a country of 1.35 billion people. Although we are not completely trained and equipped to do so just now – this is the alpha version – this is just the beginning. If this opportunity is properly used, the future will be an era of technology-driven higher education in India.

Current challenges in online system for education in India

In India, the major challenge in rural areas is still a reliable and continuous supply of electricity. A second hindrance is network reach and connectivity. When focusing on higher education, though, a small percentage of people in rural areas opt for this, and those who are interested typically move to urban areas.

The University of Hyderabad carried out an in-house survey with about 2,500 students on issues related to online teaching. Though 90 per cent of the respondents have a mobile phone, about 63 per cent of them could only access online classes infrequently or not at all. Interestingly, among the concerns raised about online instruction, 40 per cent reported unreliable connectivity as being a major deterrent while 30 per cent cited the cost of data. Significantly, 10 per cent reported uncertain electricity supply as a concern.

According to data, there are 121 crore mobile phones users in India, 45 crore of which are smart phone users, with 56 crore (41%) being internet users [1,2]. In 2019 it was reported that the average broadband download speed in India is 34.07 Mbps [3]. This bandwidth may be sufficient for online streaming of lectures, but data shows that connectivity issues cannot be

ignored even in urban areas. There are many households that have access to smart phones but not to broadband connections.

Access to the internet does not necessarily mean that a household has internet at home as less than half of the households that have any access to the internet own a computing device. Some have access to mobile phones but students and teachers owning a computer and laptops are very few. Teaching on a mobile phone is very hectic for instance conducting lectures for 50 students on a mobile phone is a struggle in itself, teachers even won't be able to see students.

Although about 78 per cent of India's 1.3 billion population has mobile phones, in rural areas is around 57 per cent, according to the Telecom Regulatory Authority of India. Nearly 68 per cent of the students in higher classes have access to a smartphone — a more staggered and online approach has been adopted for them. As soon as a child joins class 12, preparation for the board exams or competitive exams begins.

Teachers and students lacking digital skills

The main bottleneck is in the need for teachers to adapt their teaching methods to the instrument. The institutions with distant learning programs and e-courses already have access to the e-learning services, the syllabus is also designed likely with online recorded lectures and study
material in the form of pdf and docs.
Full-time students and teachers don't have accounts on digital platforms, and most of them had never used the system before.

In a physical classroom, setting interaction is more dynamic and course instructors can stimulate feedback from students more easily but with online classes, teachers need to find more creative ways to make the conversation interesting.

Accessibility to internet

In a country like India where access to the internet is pitifully low, this new education model may fail miserably hence, the Internet comes out to be the biggest challenge of e-education. In the last two decades, there has been a conscious effort on the part of the government to improve access
to the internet in every sector. But still,India has to face the internet challenge.
The Niti Aayog, in its "Strategy for New India@75" report, highlighted the quality and reliability of the internet as a major bottleneck. It also pointed out that 55,000 villages in the country are without mobile network coverage.

Holding classes for those students who have gone home during the crises is most problematic. Students belonging to urban households are more likely to have internet access, while students belonging to rural households merely have an internet connection. Among students from rural
households, only 28%are likely to have internet access at home.

While Kashmir doesn't have access to 4G internet, students are still reeling under a double whammy of slower internet and it's tough for them to keep pace with their counterparts in other states. College institutions are finding it difficult to reach out to students with 2G internet.

From coping with basic issues like internet connectivity and India's notoriously undependable power supply to more issues like e-tests and e-exams, students have come under tremendous stress. Final year students are the worst affected. They haven't passed out the course yet and preparation for placement and applications to Universities for higher education have all ground to a hault.

Device Availability

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Struggle for parents

E-education turned out to be a new thing for school kids and more than them, their parents are struggling to help them understand the e-assignment. Many school students haven't received their school course yet and without textbooks, it's difficult for them to keep up with the virtual classroom activities. According to parents e-education isn't helping their kids much and they fearif students will get enough time to prepare for exams, with so many lost schooling days.

School students of age 4- 12 hardly own mobile phones or know how to use them. Generally, teachers are connecting with them through their parent's phones which ultimately indulges parents in the process and it consumes their time. Mostly parents who are working from the home struggle between their work and child's education.

Privacy concerns

Over the past two months, the teleconference software Zoom has seen explosive growth, its easy and convenient in use. But the convenience has also come with increased scrutiny and a slew of uncovered security screwups. Privacy concerned people are finding it difficult to use such software.

The current situation is, of course, an unpredicted one. However, we should always be prepared for such situations. The issue is not of a few weeks of online teaching and online exams. The real question is why our education system in such a digital era is lagging so behind. The need for e-education isn't confined to only such situations, our education planner needs to adopt more technological advancement in the curriculum.

Positive impacts of online digitalization of teaching during covid-19.

- **Flexibility:**

In times like these, when self-isolation, social distancing and self-quarantine are essential protection measures, online education offers students, flexibility in terms of being physically present in a classroom.

Pupils have to simply sign in at the scheduled time slot & enter the virtual class via a cell phone or personal computer and viola – the classroom session comes on.

Additionally, with the virtual sharing of syllabi and online videos along with a support help desk that answers doubts, students become privy to education at the mere click of a button.

- **All relevant information in one place:**

With remote classrooms, educators can share useful information over the internet and keep it securely preserved in an electronic archive.

This covers items such as live explanation videos, textbooks and even correspondences between the school, teacher and students. Doing so ensures that if something needs further explanations, the learner can easily view these records and resolve doubts instantly.

- **Education right to your home:**

Online students often find that their family, friends and/or boy-girl-friends get involved in the course. Oftentimes, a student will study with that special someone present. Children may take an interest in the online environment. Parents may look over the shoulder of an online student while they are surfing across the web. In short, everyone in the household gets involved in learning. Having the support of your family and friends makes you more likely to succeed.

- **Interactivity gets a boost:**

While there are niggling network connectivity issues causing interruptions during a live class or increased screen time challenges, by and large, online learning offers students the opportunity to virtually interact with their peers and teachers.

Moreover, with remote classrooms, students are urged to continue the momentum of learning by way of sharing learning materials via email and video recordings. Through such channels, there is the creation of an ‘online’ link between the children and educators which in turn empowers them to communicate and interact with one another.

- **Computer-savvy skill sets:**

The growing transition to online learning and interactive classrooms has also made vast improvements in the resourcefulness of students.With the advent of new learning technologies, students gain more computing capabilities and develop aptitudes in the usage of technology for reasons other than just gaming and entertainment.

Besides, with technological creativity becoming exceedingly prevalent in many nations around the world, the idea of ‘anywhere, anytime’ education gets the impetus it deserves.

Conclusion

COVID-19 will be with us for a long time. The current situation has accelerated our use of digital technology and can transform our education system for the better. There is also no looking back from here. It is essential that the government should invest more in education, health and research sectors. Special funds need to be allocated for digitization and to raise digital learning platforms. The private sector also needs to participate, and should enhance research capability in order to develop proposed solutions. Finally, it is essential that the government offer financial support to all students in order to lessen the digital divide.

Face-to-face interaction in classroom teaching will take time to return, and almost surely, it will return with new norms such as a blended mode, or with changes in student-teacher ratio so as to maintain proper social distancing. Meanwhile we can use this time to experiment and deploy new tools and technology to make education meaningful to students who are not able to go to campuses. We can also devise plans to increase access – Education for all – in both rural and urban areas.

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Digitalisation Of Teaching During And Post Covid

Dr Archana Deshpande (GNIM, Punjabi Bagh)

ABSTRACT

The outbreak of corona pandemic has created immediate and unprecedented challenges in the field of education. Digitalised education is playing an important role globally. The revolutionary change has undergone the process of technology adoption and students are involved with various online modes of learning. The purpose of this article is to incorporate the predictions for how our post pandemic pedagogy will be altered across the higher education and economic system. The study concludes with five high impact principles for online education. The new technology, attracted students as they need not get ready, travel distances, waste time and energy. The digitalised education has proved a source of gaining revenue for the government. Governments come up with myriad schemes to bring rural schools up to date by providing them with gadgets.

KEY WORDS

Digitalisation, Online education, technology, strategies.

OBJECTIVES OF STUDY

1. To study the advantages and disadvantages of digitalised education.
2. Finding out the strategies to improve students learning, concentration and engagement in order to achieve a smooth transition to online learning.
3. How digital learning needs to revamp and prepare our young learners for future.
4. To study the initiates taken by government for promoting digitalised education in India.

INTRODUCTION

The global pandemic has taken a massive hit on all the sectors of the economy. The need for reimagining and reinventing the education systemis transforming the traditional education system, into modern digitalised system. [1]

Digital learning is not only allowing students to access more and more information but also ensuring that the information in question is customizable and suited to their personal needs. The opportunity to help every student learn at the best pace and path for them is the most important benefit of digital learning. [2]

Teachers in rural areas may face certain challenges, such as limited training in using digital tools, exposure to technology, and apprehension of new modes of teaching. Therefore, it is crucial to impart adequate technology training to teachers. This can be done by means oftraining programmes initiated by the government as well as by non-governmental organistaions (NGOs) and Corporate Social Responsibility (CSR) arms of corporates.[3]

MERITS OF DIGITALISED LEARNING

1. **ENHANCEMENT OF STUDENTEMPLOYABILITY SKILL :** The use of internet and technology for providing education to students really improves their talents in dealing with computers and network. The practical knowledge gained by those students who are explored to digitalised learning will be much more than who are explored to traditional way of learning.

2. **WORLDWIDE SHARING OF KNOWLEDGE:** With the emergence of internet students are able to explore various digitalised learning apps even sitting from their home itself. The students can make use of dictionary.com, money control.com, TED talk, BYJU's- The Learning App for improving their knowledge.

3. **VIDEO RECORDINGS:** Digitalised learning enables students to record and download videos of their favourite instructors and to save it for the purpose of

[1]https://www.financialexpress.com/education-2/covid-19-how-smart-classrooms-are-transforming-indias-education-system/1948670/)

[2].(www.panworldeducation.com/2017/03/23/benefits-of-digital-learning-over-tradition…)

[3]https://www.forbesindia.com/blog/education/digital-education-among-students-in-rural-areas/

viewing it later. This method helps the students to refresh the topics whenever they get time.

4. **MOBILE LEARNING:** Learning is even possible for students using smart Phones. The information regarding various Public Service Examinations are available to mobile Applications. This type of learning helps students to make learning process more enjoyable.
   - **a.** Duolingo
   - **b.** Khan Academy
   - **c.** LinkedIn Learning
   - **d.** Photomath
   - **e.** Solo Learn
   - **f.** Youtube
   - **g.** Udemy
   - **h.** Udacity

DRAWBACKS OF DIGITALISED LEARNING

1. **NOT ACCESSIBLE TO POOR STUDENTS:**Digitalised learning is a way of technology enabled learning which further increases the gap between the rich and poor who are having access to digitalised learning tools.
2. **LACK OF SELF MOTIVATION:** Digitalised learning issuitable forstudents who are self-motivated to explore various learning apps and technologies.
3. **NO INTEREST IN LEARNING ALONE:** Some students find it as a great opportunity to go to class rather than to sit at home and to learn alone. School going is the biggest opportunity to build a group of friends.
4. **GOVERNMENT INITIVATES FOR PROMOTING DIGITALIZED LEARNING**

1. **SWAYAM:** Swayam is an online portal which is designed for providing online courses for students from all subject categories. It is estimated that more than 28000 students were registered for MOOCs courses through the online portal.

2. **SWAYAM PRABHA:** Under this scheme the government has introduced 32 education channels throughDTH that helps to share knowledge to the students.

3. **NATIONAL DIGITAL LIBRARY:** National Digital Library is a programme initiated by government for providing online access of materials to the students. The website provides online access to several e-books and documentsthat makes learning easy for the students.

4. **NATIONAL ACADEMIC DEPOSITORY:** National Academic Depository is a programme initiated by Ministry of Human Resource and Development in collaboration with for the digitalisation of academic certificates. The programme was introduced to enable digital storage and disbursement of certificates. [4]

FINDING OUT STRATEGIES TO IMPROVE STUDENTS LEARNING CONCENTRATION AND ENGAGEMENT IN ORDER TO ACHIVE A SMOOTH TRANSITION TO ONLINE LEARNING.

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 present case study will focus on those problems presented above, and discuss how faculty can implement effective instructional strategies to prevent negative learning attitudes of college students and ensure the effectiveness of online education.

INSTRUCTIONAL STRATEGIES

[4](https://www.researchgate.net/publication/334636025_Digitalisation_Of_Education_In_21_ST_Century_A_Boon_Or_Bane)

Based on observations of online teaching at Peking University, this paper classifies six instructional strategies to improve students' learning concentration and engagement in order to achieve a smooth transition to online learning.

1 | First, making emergency preparedness plans for unexpected problems Since all the courses were switched to online education mode, the computer servers may not be able to host such a large scale of new users, the online education platform may often shut down because of overload. In order to solve all kinds of unexpected issues timely, faculty need to prepare Plan B or even Plan C before classes start and inform students in advance.

2 | Second, dividing the teaching content into smaller units to help students focus Many Chinese college students have shown weak persistence in online learning, which seriously restricted their learning effectiveness (Li, Wu, Yao, & Zhu, 2013). In order to ensure that students concentrate on online study, faculty should reasonably break down the content of the in-class teaching into different topics and adopt a modular teaching method. In other words, on the basis of ensuring a clear knowledge structure in the curriculum, faculty divide the teaching content into several small modules with each lasting approximately 20–25 min.

3 | Third, emphasizing the use of “voice” in teaching In traditional in-class teaching, body language, facial expressions, and teachers' voice are all important teaching tools. However, once a course is switched to online teaching, body language and facial expressions are under restrictions as it is difficult to use these tools through screens, and only “voice” could be fully functioned. Therefore, in online teaching, faculty should appropriately slow down their speech to allow students to capture key knowledge points.

4 | Fourth, working with teaching assistants and gain online supports from them The technical requirements of online teaching are far greater than traditional in-class teaching for inexperienced faculty members. In view of the fact that most of the faculty at our university are insufficiently trained or supported to operate online education platforms, the support from teaching assistants is particularly important. Faculty should fully communicate with the teaching assistants before the class to make sure that they understand the objectives, knowledge framework, and teaching activities of each class. In this way, the teaching assistant can provide effective support in online teaching. In addition, teaching assistants can also provide consultations and answer questions for academically underprepared students by using email, WeChat, and other social platforms after class.

5 | Fifth, strengthening students' active learning ability outside of class Compared with traditional in-class lectures, faculty have less control over online teaching, and students are more likely to "skip the class". Therefore, the progress of online teaching and its learning effectiveness largely depend on students' high-level active learning outside of class. To this end, faculty should use various methods to moderately modify students' homework and reading requirements to strengthen students' active learning outside of class.

6 | Sixth, combining online learning and offline self-learning effectively Insufficient pre-class study preparation, limited participation in class discussions, and inadequate discussion depth are common 114 BAO phenomena in traditional in-class teaching, similarly, those issues should not be overlooked in online teaching. In order to solve such problems in online teaching, faculty should consider two phases of teaching, the offline self-learning phase and the online teaching phase.[5]

HOW TO EDUCATE FUTURE GENERATIONS[6]

The COVID-19 crisis may well change our world and our global outlook; it may also teach us about how education needs to change to be able to better prepare our young learners for what the future might hold. These lessons include:

1. **Educating citizens in an interconnected world:** COVID-19 is a pandemic that illustrates how globally interconnected we are – there is no longer such a thing as isolated issues and actions. Successful people in the coming decades need to be able to understand this interrelatedness and navigate across boundaries to leverage their differences and work in a globally collaborative way.
2. **Redefining the role of the educator: T**he notion of an educator as the knowledge-holder who imparts wisdom to their pupils is no longer fit for the purpose of a 21st-century education. With students being able to gain access to knowledge, and even learn a technical skill, through a few clicks on their phones, tablets and computers, we will need to redefine the role of the educator in the classroom and lecture theatre. This may mean that the role of educators will need to move towards facilitating young people's development as contributing members of society.

[5]**.** https://doi.org/10.1002/hbe2.191 BAO 1

[6]https://www.weforum.org/agenda/2020/03/4-ways-covid-19-education-future-generations/

3. **Teaching life skills needed for the future**: In this ever-changing global environment, young people require resilience and adaptability – skills that are proving to be essential to navigate effectively through this pandemic. Looking into the future, some of the most important skills that employers will be looking for will be creativity, communication and collaboration, alongside empathy and emotional intelligence; and being able to work across demographic lines of differences to harness the power of the collective through effective teamwork.
4. **Unlocking technology to deliver education:** The COVID-19 pandemic has resulted in educational institutions across the world being compelled to suddenly harness and utilize the suite of available technological tools to create content for remote learning for students in all sectors. Educators across the world are experiencing new possibilities to do things differently and with greater flexibility resulting in potential benefits in accessibility to education for students across the world. These are new modes of instruction that have previously been largely untapped particularly in the kindergarten to Grade 12 arena.

Government Intervention

In response to the challenge of colleges and schools being shut, central government, state governments and private players have come up with various initiatives to support and benefit the students. Ever since the lockdown started, the government has taken numerous measures to ensure that the impact of the crisis on education is the least. To help students continue their learning during the pandemic, various e-learning portals and apps have been launched by the government and education bodies such as DIKSHA portal, e-Pathshala, Swayam, STEM based games, etc.[7]

CONCLUSION

1. Digitalised education is playing an important role in India. The revolutionary change which has been created in the educational sector is due to the technological

[7]https://www.financialexpress.com/education-2/covid-19-how-smart-classrooms-are-transforming-indias-education-system/1948670/

development, digital education is a boon for students as they can learn at home even using their laptops, smart phones, tablet or computers.

2. 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.
3. Creativity, communication and collaboration will be some of the most required skills that employers will be looking for in the coming times. Not only these, but empathy and emotional intelligence and capability to work across demographic lines of differences to harness the power of the collective and effective teamwork, will also be some of the important skills that employers will require.
4. The digitalised education has a source of gaining revenue for government. Governments come up with myriad schemes to bring rural schools up to date, by providing them with gadgets.

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Global Challenges Of Education During Covid-19 Pandemic

ROHAN SINGH, VIKAS KUMAR MISHRA

(PGDM 2nd semester)

ABSTRACT

This study primarily focusing on Global challenges of education during COVID-19 Pandemic. The COVID-19 pandemic is a huge challenge to education systems. As the days pass by with no immediate solution to stop the outbreak of Covid-19, school and university closures will not only have a short-term impact on the continuity of learning for more than 285 million young learners in India but also engender far-reaching economic and societal consequences. Sometime in the second week of March, state governments across the country began shutting down schools and colleges temporarily as a measure to contain the spread of the novel coronavirus. It's close to 6 months and there is no certainty when they will reopen. Every school closure week would result in a huge loss of the human capital growth with major long-term economic and social consequences.

To overcome this disruption of classroom education because of COVID-19 pandemic, the next course of action is to move to E-Learning through digital platform by teachers and students while parents acting as facilitators. India is having a student strength of 34 Crore and 99% of these are imparted education through physical classroom method of learning. Schools around the world are implementing existing platforms from Google Classroom, Microsoft education and Conference application such as Zoom, Google Meet, Google Hangout, Skype and Cisco WebEx. This revolution in educational delivery is forcing policy makers to find out how to accelerate on scale participation while maintaining inclusive e-learning approaches and resolving the digital divide.

This case study tries to throw light on the E-Learning initiatives taken by the government and other concerned ones during the COVID-19 Pandemic so that the process of education is not hampered.

Keywords: education, online education, online teaching, online learning, corona, coronavirus.

1. INTRODUCTION

Globally, most education campuses are now closed which affects an astonishing 1.5BN students, or approximately 20% of the world's population, and their families. Many institutions globally were forced to transform into 100% digital learning providers in a matter of days.

On 31st December 2019, the WHO was formally informed by the CHINA about a few Pneumonia cases in WUHAN city, having a population of 11 million. By January 5 2020 , 59 cases were known with nil fatality. On 15 th Jan 2020, 282 confirmed cases were reported including 4 cases from Japan, South Korea and Thailand. The cause of this Pneumonia like acute respiratory syndrome that became to be known as COVID-19 was a novel coronavirus, SARS-COV-2. The new virus can be spread by droplets or by touching surface metals or other materials contaminated by a person with respiratory problems in just minutes.

The pandemic has significantly disrupted the higher education sector as well, which is a critical determinant of a country's economic future. A large number of Indian students—second only to China—enroll in universities abroad, especially in countries worst affected by the pandemic, the US, UK, Australia and China.

In ramping up capacity to teach remotely, schools and colleges should take advantage of asynchronous learning, which works best in digital formats. As well as the normal classroom subjects, teaching should include varied assignments and work that puts COVID-19 in a global and historical context. When constructing curricula, designing student assessment first helps teachers to focus. Finally, this Viewpoint suggests flexible ways to repair the damage to students' learning trajectories once the pandemic is over and gives a list of resources.

The last 50 years have seen huge growth worldwide in the provision of education at all levels. COVID-19 is the greatest challenge that these expanded national education systems have ever faced. Many governments have ordered institutions to cease face-to-face instruction for most of their students, requiring them to switch, almost overnight, to

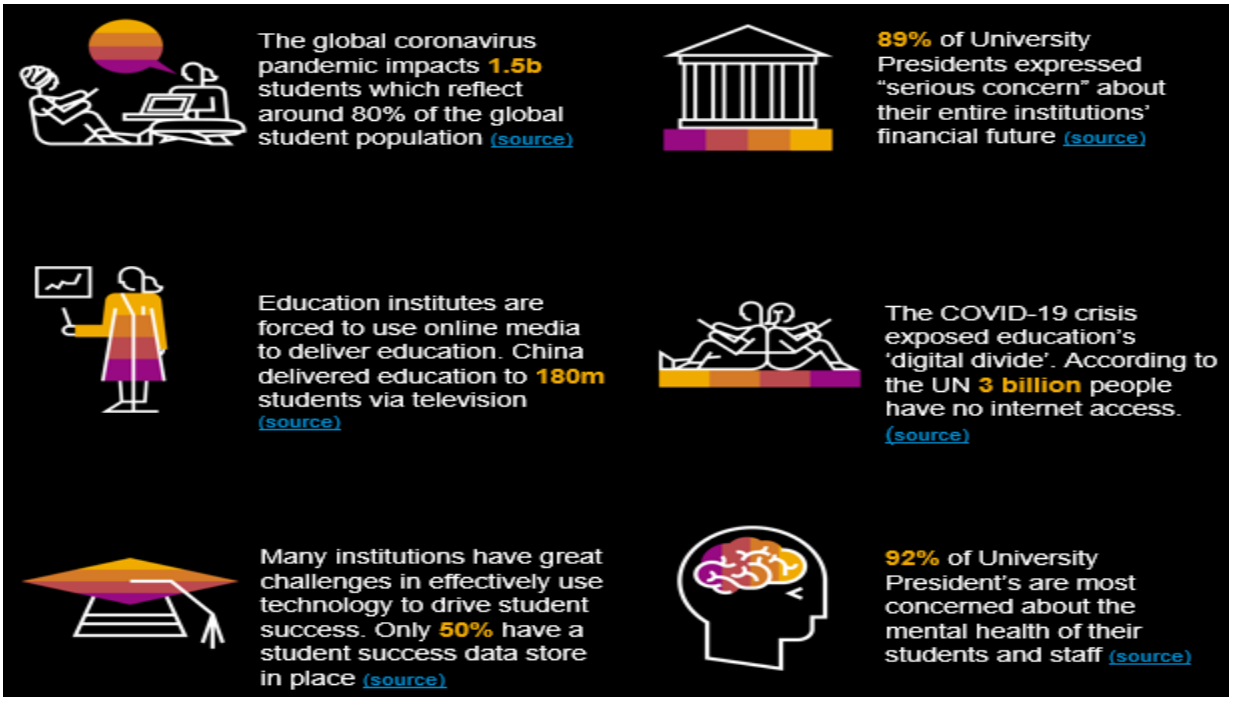
online teaching and virtual education. This brief note offers pragmatic guidance to teachers, institutional heads and state officials who must manage the educational consequences of this crisis.

The purpose of this edited book is to investigate the impact of COVID-19 on higher education. Efforts should be made by this edited volume to identify and investigate the challenges that presently our higher education system is facing due to COVID-19 disruption. The opportunities will be explore for the future of global higher education in the post-COVID-19 world.

2. CHALLENGES

Starting the school year late or interrupting it (depending on if they live in the southern or northern hemisphere) completely disrupts the lives of many children, their parents, and teachers. A lot can be done to at least reduce the impact through remote learning strategies. Richer countries are better prepared to move to online learning strategies, although with a lot of effort and challenges for teachers and parents. In middle-income and poorer countries, the situation is very mixed and if we do not act appropriately, the vast inequality of opportunities that exists – egregious and unacceptable to start with – will be amplified. Many children do not have a desk, books, internet connectivity, a laptop at home, or supportive parents. Others do. What we need to avoid – or minimize as much as possible – is for those differences in opportunities to expand and cause the crisis to have an even larger negative effect on poor children's learning.

The COVID-19 pandemic has disrupted the lives of students in different ways, depending not only on their level and course of study but also on the point they have reached in their programmes. Those coming to the end of one phase of their education and moving on to another, such as those transitioning from school to tertiary education, or from tertiary education to employment, face particular challenges. They will not be able to complete their school curriculum and assessment in the normal way and, in many cases, they have been torn away from their social group almost overnight. Students who make the transition to tertiary education later this year are unlikely to take up offers to sit their year-end school exams (e.g., the International Baccalaureate) in a later session.



- The educational institutions are focused on integrating and adapting interactive and remote learning in response to COVID-19. But what about monitoring the growth, commitment and encouragement of the students who are actually slipping through the cracks? This will be critical in helping students complete their course work and ultimately graduate with success.
- It is a big challenge to remain linked with teaching staff and students as educational institutions move rapidly to digital and remote learning. Staying connected to all students in these times and acting rapidly on their remote learning experiences and feedback is critical to the mission.
- Education institutions have large back office operations which effectively 'run the institution & from finance to procurement to human resources. The in-person contact is suddenly gone with working remotely which causes delays and slows down business processes, advancement of research projects, etc.
- Once digital and remote learning replaces physical lectures and classroom work, the next challenge arises how to assess the knowledge gained and provide remote digital exams with the highest degree of validity, is it safe and authentic?

- In today's situation where the COVID-19 pandemic has a major impact not just on education but also on many other industries, sectors and so on, it is important to ensure that the institution is able to

  continue its daily operations. Especially in cases where key research projects (the key research facilities are often still open) it is vital to continue the critical & supply chain (lab and research) equipment.
- For organization workers now needing to operate remotely, the implementation of this new paradigm would be difficult. Educating the workers to direct them through these times of crisis is crucial to keeping them informed and empowered. In order to tackle this challenge effectively , it is important to make e-learning content easy to access and meet workers of the 20th century on their terms: interactive, online and on any platform.
- Distance learning will reinforce teaching and learning approaches that we know do not work well.
- The protection and safety of children will be harder to safeguard.
- Poor experiences with ed-tech during the pandemic will make it harder to get buy-in later for good use of ed-tech.
- Teachers especially at lower level are not techsavvy and are unable to learn the tricks of net technology overnight leading to great stress.
- Second big challenge is how to keep students onboard and to avoid distractions from other social networking sites during ongoing learning periods.
- Another challenge is digitalization of teaching material at short notice as few teachers have digital and ICT skills
- Both teachers and students are facing connectivity issues.

3. PROBLEMS

The petrifying and severe impact of COVID-19 has shaken the world to its core. Further, most of the Governments around the world have temporarily closed educational institutions in an attempt to contain the spread of the COVID-19 pandemic. In India too, the government as a part of the nationwide lockdown has closed all educational institutions, as a consequence of which, learners ranging from school going children to postgraduate students, are affected.

In the aftermath of some of the natural calamities such as floods, cyclones, earthquakes, hurricanes, and so on, knowledge delivery becomes a challenging task. These hazards disrupt the educational processes in schools and colleges in several ways. Sometimes, it leads to closure of schools and colleges which creates serious consequences for students and deprives them of their fundamental right to education and poses them to future risk.

The world changed in the blink of an eye as the COVID-19 breakthrough progressed. Schools and colleges closed overnight, students were liberated from schools and colleges but confined to their homes and parents had to grapple with keeping children productive at home. Out of the blue the teachers were asked to take the bull by its horns but more than anything else online classrooms have brought up the issue of classroom management. Teachers already have enough trouble keeping their classroom in-order but managing students online proved to be much more worse. Several arguments are associated with e-learning. Accessibility, affordability, flexibility, learning pedagogy, life-long learning, and policy are some of the arguments related to online pedagogy.

This is a situation that demands humanity and unity. There is an urgent need to protect and save our students, faculty, academic staff, communities, societies, and the nation as a whole.

There are *n* number of technologies available for online education but sometimes they create a lot of difficulties. These difficulties and problems associated with modern technology range from downloading errors, issues with installation, login problems, problems with audio and video, and so on. Sometimes student finds online teaching to be boring and unengaging. Online learning has so much of time and flexibility that students never find time to do it. Personal attention is also a huge issue facing online learning. Students want two-way interaction which sometimes gets difficult to implement.

Educators or teachers in the form of facilitators face a lot of trouble while working on these EdTech start-ups in the form of how to start using it when to use it, how to reduce distractions for students, how to hone students' skills via EdTech. The participation by students is not enough, educators must put considerable effort to increase student engagement, retain their attention, take feedbacks, and assess them in several ways. This will create an effective and meaningful learning environment. EdTech cannot replace a teacher but it can enhance instruction. During such tough times, when Covid-19 has forced schools and colleges to remain completely lockdown for few weeks due to the seriousness of the situation, EdTech companies can prove to be of great help to students.

4. SOLUTION OF THE CORE PROBLEM

These are anxious times for students and parents. Uncertainties about when life will return to “normal” compound the anxiety. Even as institutions make the changes required to teach in different ways, all should give the highest priority to reassuring students and parents—with targeted communication. Many teachers and counsellors will have to provide this reassurance without clear information from examining bodies and institutions about the arrangements for replacing cancelled examinations and modifying admissions procedures. Institutions should update students and parents with frequent communication on these matters. Teachers and school counsellors may be better than parents at assuaging the anxieties of students in deprived situations. All, however, can access help lines and resources outside the school system that specialize in addressing emotional and psychological challenges.

To make e-learning effective in such difficult times, we need to focus on the use of technology more efficiently, that is, the usage of that technology which has minimum procurement and maintenance costs but can effectively facilitate educational processes. Before bringing in and adopting any e-learning tool or technology, its pros and cons need to be weighed. Institutions should conduct plenty of research when bringing the right technology for different educational initiatives. There should be proper clarity on the purpose and context of technology adoption. As several factors affect the choice of a particular technology such as security features, availability and condition of laboratories, internet speed, internet access, digital literacy levels of the beneficiaries, and so on.

As per the World Economic Forum, the Covid-19 pandemic also has changed the way how several people receive and impart education. To find new solutions for our problems, we might bring in some much-needed innovations and change. Teachers have become habitual to traditional methods of teaching in the form of face-to-face lectures, and therefore, they hesitate in accepting any change.

5. RECOMMENDATIONS FOR HIGHER EDUCATION

5.1. Education - nudged and pushed to change - could lead to surprising innovations

The slow pace of change in academic institutions globally is lamentable, with centuries-old, lecture-based approaches to teaching, entrenched institutional biases, and outmoded classrooms. However, COVID-19 has become a catalyst for educational institutions worldwide to search for innovative solutions in a relatively short period of time.

To help slow the virus' spread, students in Hong Kong started to learning at home, in February, via interactive apps. In China, 120 million Chinese got access to learning material through live television broadcasts.

Other simpler - yet no less creative - solutions were implemented around the globe. In one Nigerian school, standard asynchronous online learning tools (such as reading material via Google Classroom), were augmented with synchronous face-to-face video instruction, to help preempt school closures.

5.2. Public-private educational partnerships could grow in importance

In just the past few weeks, we have seen learning consortiums and coalitions taking shape, with diverse stakeholders - including governments, publishers, education professionals, technology providers, and telecom network operators - coming together to utilize digital platforms as a temporary solution to the crisis. In emerging countries where education has predominantly been provided by the government, this could become a prevalent and consequential trend to future education.

In China, the Ministry of Education has assembled a group of diverse constituents to develop a new cloud-based, online learning and broadcasting platform as well as to upgrade a suite of education infrastructure, led by the Education Ministry and Ministry of Industry and Information Technology.

5.3. The digital divide could widen

Most schools in affected areas are finding stop-gap solutions to continue teaching, but the quality of learning is heavily dependent on the level and quality of digital access. After all, only around 60% of the globe's population is online. While virtual classes on personal tablets may be the norm in Hong Kong, for example, many students in less developed economies rely on lessons and assignments sent via WhatsApp or email.

Moreover, the less affluent and digitally savvy individual families are, the further their students are left behind. When classes transition online, these children lose out because of the cost of digital devices and data plans.

6. RESEARCH METHODOLOGY

The study is descriptive and tries to understand the importance of online learning in the period of a crisis and pandemics such as the Covid-19. The problems associated with online learning and possible solutions were also identified based on previous studies.

This study is completely based on the secondary data. A systematic review was done in detail for the collected literature.

Secondary sources of data used are (a) journals, (b) reports, (c) search engines, (d) company websites and scholarly articles, (e) research papers, and other academic publications.

7. CONCLUSION

The present study revealed that maximum students are against of studying through online classes, and they feel that there is a lack of co-curricular activities in the online mode of conducting classes. The universities should design a plan, so that along with studying their regular course, students also get to participate in some fun-loving activities so that they wholeheartedly continue to have an interest in the online lectures.

Higher education institutions must take the opportunity to improve their evidence-based policies, provide affordable mental health-related resources, and transform the curriculum responsive to changing times & needs.

At this point in time, where the entire nation is fighting to win over Corona, it is very important to keep an effective education process continuous, which the students enjoy and gain from.

We need a high level of preparedness so that we can quickly adapt to the changes in the environment and can adjust ourselves to different delivery modes, for instance, remote learning or online learning in situations of pandemics such as Covid-19. Institutions and organizations should prepare contingency plans to deal with challenges such as pandemics and natural disasters. Reliability and sufficient availability of Information Communication Technology infrastructure, learning tools, digital learning resources in the form of Massive Open Online Courses, e-books, e-notes, and so on are of utmost importance in such severe situations. Instruction, content, motivation, relationships, and mental health are the five important things that an educator must keep in mind while imparting online education. Some teaching strategies (lectures, case-study, debates, discussions, experiential learning, brainstorming sessions, games, drills, etc.) can be used online to facilitate effective and efficient teaching and learning practices

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Exploring Mental Stress in Employees during Covid'19 Using Machine Learning

Ms. Hasgun Kaur (Assistant Professor, GNIM)

Ms. Ekata Gupta (Associate Professor ,GNIM)

Abstract :

The research paper endeavours to identify and analyse the stimulating factors contributing to the mental stress experienced by the employees on account of the global pandemic of Covid-19.

We have gathered information via google form survey from a sample of 200 people working in different profiles across the world. The data was studied in dual approach : 1) Individual factors being taken into consideration while other being ceteris paribus ; 2) Combined factors analysed simultaneously from the various combinations created.

The analysis was conducted using the distinctive technology of machine learning by inputting the data and the multiple factors involved under study.

Key words :

Pandemic, Covid-19, Lockdown employees, Digitalisation, VUCA world, SOP, Mental Stress, Salary cut, Layoffs, Efficiency, Work Life Balance, Stress Management Therapy, Exertion, Machine Learning

1. Introduction :

The pandemic scenario on account of Covid-19 has created a series of problems and impacted multiple domains in a trickle down effect. All economic activities came to a sudden standstill due to the lockdown being administered in the initial phase of controlling the spread of this pandemic. What kept major activities up and going in a sustained manner was the digitalised mode of operating via work from home.

Work from home came to the rescue of the business organisations but consequently enhanced the working hours and increased pressure on the employees. Employees saw layoff threats, fostering themselves ahead of clock in an attempt to maintain a niche in their positional capacity.

Work life balance became a further extensive challenge and the added health concern on the global scale with additional precautions in this VUCA (Volatility, Uncertainty, Complexity and Ambiguity) world made the situation both physically and mentally exhausting.

Resuming back to the office in some cases during the unlocking stage of lockdown with notified SOP (Standard of Procedure) made people feel insecure in travelling to their workplace amidst the pandemic stress. Having to work with delayed salary payments has been putting increasing pressure on the fixed deposits and savings of the employees.

This entire plethora of overlapping issues has magnified the situation and burdened employees with psychological issues and mental stress.

This paper urges to highlight the factors significantly contributing to mental stress among employees during Covid-19.

2. **Objective :**

- To identify the variables that affect employees' stress level during Covid-19.
- To test and predict these variables using machine learning.

3. Literature Review :

[1]In this paper by Salima Hamouche, the impact of coronavirus COVID-19 outbreak on employees' mental health with special emphasis on psychological distress and depression has been examined using the method of literature review in the similar domain. The paper focussed on identifying the major stressors during and post COVID-19, examining the main moderating factors which are likely to mitigate or aggravate the impact of COVID-19 on employees' mental health.

The paper concluded the existence of a negative impact of COVID-19 on individual's mental health. It highlighted the stressors including perception of safety, threat and risk of contagion, infobesity versus the unknown, quarantine and confinement, stigma and social exclusion as well as financial loss and job insecurity. The paper brings out the impact of COVID-19 on employees' mental health, from a social sciences and human resource management perceptive.

[2]The paper by Donald W. Benson and Katherine S. Dix brings forth to the research domain the idea of how employers are expected to be creative and flexible beyond their enlisted duties of employment to help employees and comprehensively maintain stability amongst the workforce.
As employers become more acquainted with the significant risks of pandemics, practical planning for such contingencies will become an inherent part of their emergency preparedness.

[3]This Review conducted by Brooks SK, Webster RK, Smith LE, et al. indicated the psychological impact of quarantine being wide-ranging, substantial, and long lasting. The Paper also highlighted an important fact as follows: “Health officials charged with implementing quarantine, who by definition are in employment and usually with reasonable job security, should also remember that not everyone is in the same situation. If the quarantine experience is negative, the results of this Review suggest there can be long-term consequences that affect not just the people quarantined but also the health-care system that administered the quarantine and the politicians and public health officials who mandated it”

[4]Using a web-based cross-sectional survey, the authors of the paper Yeen Huang and Ning Zhao identified a major mental health burden on the public during COVID-19 epidemic in China. It concluded the following fact “Young people, people who spent too much time on the epidemic, and healthcare workers were at high risk for mental illness. Continuous surveillance and monitoring of the psychological consequences for outbreaks should become routine as part of preparedness efforts worldwide.”

[5]The paper by Byron Kiiza Yafesi Bitanihirwe brought to the forefront the vitality of mental health at the time of the Ebola outbreak in 2014-2016 in West Africa. A key point pivoted around this research work has been stated as follows :“The importance of mental health service delivery and policy implementation in addition to public health funding resources will prove integral in tackling this issue in the long run. With this in mind, adopting a political ecology approach towards health and disease will be crucial in order to depathologize the clinically significant mental distress related to Ebola.”

4. Machine Learning Approach

A Machine Learning system learns from historical data, builds the prediction models, and whenever it receives new data, predicts the output for it.

There are three major types of machine learning algorithms namely: supervised algorithms, unsupervised learning algorithms and reinforcement learning. The supervised machine learning algorithms use past data or labeled examples to make predictions or identify patterns in the new unseen data. The past data or the labeled examples are known as training sets and the new data on which predictions are to be made compose the test set. A supervised learning algorithm tries to produce an inferred function that makes closest possible predictions on the new unseen data .In contrast, unsupervised machine learning algorithms are used when the data or examples used to train is neither classified nor labeled. The system doesn't figure out the right output, but it explores the data and draws inferences from datasets to identify hidden structures or patterns or trends from unlabeled data. Reinforcement machine learning algorithms interact with its environment by producing actions and discovering errors or rewards.

Some of the popular ML models are Linear Regression, Logistic Regression, and Decision Tree. Support Vector Machine, Naive Bayes, Neural Networks,K-Means,Random Forest etc. In this paper, we have used supervised machine learning techniques for predicting mental stress of an employee certain variables.. The supervised learning models work by taking a set of labeled examples (training set) and discovering a function f that predicts the class for a new example (test set). The implementations of these models are done in python.

4.1 Decision Variables

The following are the variables used in the study. Table describes all the variables. The study adopted the quantitative research approach with the use of questionnaire instrument to elicit data from the target population; thereafter 200 employees were systematically selected from various fields

Table 1.1 :decision variables

S.No	Decision variables
1	issue of salary cut
2	Longer working hours than usual
3	Issue of layoffs
4	balance between work life and home life
5	work pressure being created by your superiors
6	efficiency of work
7	excessive exertion because of smart device
8	insecurity to travel to office
9	Affect on health

Based on the above given variables the hypothesis under mined are

H_0 : Issue of salary cut and affect on health have a high impact on stress

4.2 Data scaling

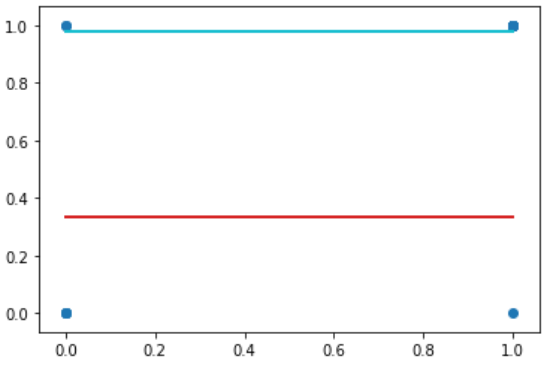
Since we have used decision tree classifiers as our predictive model it works only on numeric data. So the entire dataset was scaled to numeric data using label encoder.

4.3 Binary Logistic Regression

Binary Logistic Regression is a classification algorithm which is used to predict a categorical dependent variable. The response variable here has binary responses like yes or no, pass or fail, male or female, defective or non-defective etc. that can be labeled as 0 or 1.The independent variables can each be either binary or continuous variables. If Y be a binary response variable and X = (X1, X2...Xk) be a set of explanatory variables which can be discrete, continuous, or a combination.

Graph showing impact of stress based on salary cut and toll on health

Salary cut &Toll on health



stress

4.4 Decision Tree

Decision trees are one of the popular supervised machine learning algorithms. They have been widely used for classification and regression problems.[6] Decision trees can be used for both categorical and continuous predictor and response variables. Classification decision trees can be applied when the target response variable is categorical or discrete whereas Regression decision trees are used when the response variable is continuous. Decision trees work in a manner that is very similar to the way the human brain thinks by dividing the problem into sub problems which makes them easy to understand. They work in a recursive manner by partitioning the dataset into smaller datasets on the basis of feature values until the final output is obtained. At every step, the aim is to partition the set in the best possible manner i.e. that gives the maximum amount of information (or reduces the level of uncertainty). A CART (Classification and Regression Trees) algorithm is used to build the decision tree model by recursively splitting the dataset around a feature that gives maximum reduction in the heterogeneity of the response variable. At every step, the heterogeneity of a node is determined using the Gini Index.

$$Gini = 1 - (x/n)2 - (y/n)2 \qquad (1.1)$$

Where x is the number of positive answers ,n is the number of samples, and y is the number of negative answers ("NO")

5 Results & Conclusion

The decision tree classifier was used to predict the binary outcome of stress in the employee. The model was initially trained using the data set. Then various test data was used to predict

the outcome. The model showed us that working for longer hours and travelling to the office in this difficult time had no stress on the employee. The training data targeted employees working in different sectors and it resulted that cut in pay and toll on health had the severe stress level. So the hypothesis is true.

The data set could be evaluated using various models and confusing matrix also needs to be worked on.

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Online Digitalization Of Teaching During And Post Covid-19

ANKSHIT SINGHAL

KAPIL KUMAR

(PGDM 1)

Abstract

The outbreak of the coronavirus pandemic has created immediate and unprecedented challenges in the field of education. The COVID-19 has resulted in schools shut all across the world. Globally, over 1.2 billion children are out of the classroom. As a result, education has changed dramatically, with the distinctive rise of e-learning, whereby teaching is undertaken remotely and on digital platforms. All around the world, schools are leveraging existing platforms from the likes of Google classroom, Microsoft Education and conferencing apps like Zoom. For students, various engaging resources are available such as Khan Academy, TEDed and Minecraft Education. But there are certain concerns to be addressed. The first and foremost is the non-availability of desktop/laptop to participate in the online lecture. The percentage of students using Android mobile in online classes is 75%. Immediate measures are essential to ensure continuity of learning in government schools and universities. Open-source digital learning solutions and Learning Management Software should be adopted so teachers can conduct teaching online.In this time of crisis, a well-rounded and effective educational practice is what is needed for the capacity-building of young minds.

The Coronavirus pandemic has created an unprecedented situation around the world with states struggling to curb the spread of infection and treat the already infected people. The outbreak of the coronavirus pandemic has also created immediate and unprecedented challenges in the field of education. As of 31st March, 185 countries around the globe have implemented or announced the closure of schools and universities. In India, schools were among the first of many organizations which started shutting down as a precautionary measure to prevent the spread of the virus. As schools after schools shut down in the face of

the crisis, the whole education system was confronted with adversity when on 24th March, Prime Minister Shri. Narendra Modi ordered a nationwide lockdown.

The COVID-19 has resulted in schools shut all across the world. Globally, over 1.2 billion children are out of the classroom. As a result, education has changed dramatically, with the distinctive rise of e-learning, whereby teaching is undertaken remotely and on digital platforms. Research suggests that online learning has been shown to increase retention of information, and take less time, meaning the changes coronavirus have caused might be here to stay.

The concept of education changed overnight and in these times of crisis, digital learning has emerged as an indispensable resource for education. Digital technology is providing all sorts of remote learning opportunities for students across the globe and enabling teachers to create intriguing (virtual) experiences.

All around the world, schools are leveraging existing platforms from the likes of Google classroom, Microsoft Education and conferencing apps like Zoom. For students, various engaging resources are available such as Khan Academy, TEDed and Minecraft Education. Similarly, ministries of education in dozens of countries are providing remote learning resources for students while schools are closed.

In India, where schools mostly focus on physical learning or more of the conventional face-to-face mode of learning, the Ministry of Human Resource Development, to promote digital learning has released a list of key Digital / E-Learning platforms under the initiatives of the Government of India, covering both school and higher education in multiple subjects.

But there are certain concerns to be addressed. The first and foremost is the non-availability of desktop/laptop to participate in the online lecture. The percentage of students using Android mobile in online classes is 75%. Further, virtual labs require a laptop/personal computer and it is proposed to hire and provide computing devices in the cloud so that the learning can be hassle free. It is also appropriate for AICTE to think of a shift in the policy of insisting on a minimum number of computers in the institution.

The second concern is the transparency in conducting assessment online for which we should go by the “honour-code” way or limiting the time for closed book examination or encouraging open book examination.

Needless to say, the pandemic has transformed the centuries-old, chalk–talk teaching model to one driven by technology. This disruption in the delivery of education is pushing policymakers to figure out how to drive engagement at scale while ensuring inclusive e-learning solutions and tackling the digital divide.

Immediate measures are essential to ensure continuity of learning in government schools and universities. Open-source digital learning solutions and Learning Management Software should be adopted so teachers can conduct teaching online. The DIKSHA platform, with reach across all states in India, can be further strengthened to ensure accessibility of learning to the students.

In this time of crisis, a well-rounded and effective educational practice is what is needed for the capacity-building of young minds. It will develop skills that will drive their employability, productivity, health, and well-being in the decades to come, and ensure the overall progress of India.

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Online Digitalization Of Teaching During Covid-19 Pandemic

VAIBHAV DEWANI

RAJAT SAXENA

(PGDM 1)

The COVID-19 has resulted in colleges shut all across the globe. Globally, over 1.2 billion kids area unit out of the room. As a result, education has modified dramatically, with the distinctive rise of e-learning, whereby teaching is undertaken remotely and on digital platforms. Research suggests that on-line learning has been shown to extend retention of data, and take less time, that means the changes coronavirus have caused could be here to remain. While countries area unit at completely different points in their COVID-19 infection rates, worldwide there area unit presently over one.2 billion kids in 186 countries plagued by faculty closures because of the pandemic. In Denmark, kids up to the age of eleven area unit returning to nurseries and colleges once ab initio closing on twelve March, however in South Korea students area unit responding to roll calls from their academics on-line. With this explosive shift aloof from the room in several components of the world, some area unit curious whether or not the adoption of on-line learning can still persist post-pandemic, and the way such a shift would impact the worldwide education market. Even before COVID-19, there was already high growth and adoption in education technology, with world edtech investments reaching US$18.66 billion in 2019 and therefore the overall marketplace for on-line education projected to succeed in $350 Billion by 2025. whether or not it's language apps, virtual tutoring, video conferencing tools, or on-line learning computer code, there has been a big surge in usage since COVID-19. How is that the education sector responding to COVID-19? In response to vital demand, several on-line learning platforms area unit giving free access to their services, together with platforms like BYJU'S, a Bangalore-based instructional technology and on-line tutoring firm supported in 2011, that is currently the world's most extremely valued edtech company. Since asserting free live categories on its suppose and Learn app, BYJU's has seen a 2 hundredth increase within the range of latest students victimization its product, in line with MrinalMohit, the company's Chief operational Officer. Tencent room, meanwhile, has been used extensively since period of time once the

Chinese government taught 1 / 4 of a billion regular students to resume their studies through on-line platforms. This resulted within the largest “online movement” within the history of education with or so 730,000, or eighty one of K-12 students, attending categories via the Tencent K-12 on-line faculty in metropolis. Other corporations area unit bolstering capabilities to produce a one-stop buy academics and students. as an example, Lark, a Singapore-based collaboration suite ab initio developed by ByteDance as an indoor tool to satisfy its own exponential growth, began giving academics and students unlimited video conferencing time, auto-translation capabilities, period of time co-editing of project work, and sensible calendar planning, amongst alternative options. to try and do thus quickly and during a time of crisis, Lark ramped up its world server infrastructure and engineering capabilities to make sure reliable property. Alibaba’s distance learning answer, DingTalk, had to arrange for the same influx: “To support large-scale remote work, the platform abroachAlibaba Cloud to deploy over one hundred,000 new cloud servers in exactly 2 hours last month – setting a replacement record for fast capability enlargement,” in line with DingTalk corporate executive, Chen Hang. Some faculty districts area unit forming distinctive partnerships, just like the one between The Unified administrative district and PBS SoCal/KCET to supply native instructional broadcasts, with separate channels targeted on completely different ages, and a variety of digital choices. Media organizations like the BBC are powering virtual learning; Bitesize Daily, launched on twenty April, is giving fourteen weeks of curriculum-based learning for teenagers across the united kingdom with celebrities like Manchester town jock Sergio Aguero teaching a number of the content.

What will this mean for the longer term of learning? While some believe that the unplanned and speedy move to on-line learning – with no coaching, scarce information measure, and small preparation – can lead to a poor user expertise that's unconducive to sustained growth, others believe that a replacement hybrid model of education can emerge, with important edges. “I believe that the combination of data technology in education are additional accelerated which on-line education can eventually become associate degree integral part of college education,“ says Wang Tao, vp of Tencent Cloud and vp of Tencent Education. There have already been booming transitions amongst several universities. for instance, Zhejiang University managed to urge quite five,000 courses on-line simply period into the transition exploitation “DingTalk ZJU”. The Imperial school London started providing a course on the

science of coronavirus, that is currently the foremost registered category launched in 2020 on Coursera. Many square measure already touting the benefits: Dr Amjad, a faculty member at The University of Jordan UN agency has been exploitation Lark to show his students says, “It has modified the method of teaching. It allows Pine Tree State to succeed in dead set my students additional with efficiency and effectively through discussion groups, video conferences, ballot and additionally document sharing, particularly throughout this pandemic. My students additionally realize it's easier to speak on Lark. i will be able to continue Lark even when coronavirus, i feel ancient offline learning and e-learning will go hand by hand." The challenges of on-line learning There are, however, challenges to beat. Some students while not reliable web access and/or technology struggle to participate in digital learning; this gap is seen across countries and between financial gain brackets inside countries. for instance, while ninety fifth of scholars in Switzerland, Norway, and European country have a pc to use for his or her assignment, solely thirty fourth in land do, in keeping with OECD information. In the US, there's a big gap between those from privileged and deprived backgrounds: while nearly all 15-year-olds from a privileged background aforesaid that they had a pc to figure on, nearly twenty fifth of these from deprived backgrounds didn't. whereas some faculties and governments are providing digital instrumentation to students in want, like in New South Wales, Australia, several square measure still involved that the pandemic can widenthe digital divide. Is learning on-line as effective? For people who do have access to the proper technology, there's proof that learning on-line are often more practical in a very range of the way. Some analysis shows that on the average, students retain 25-60% additional material once learning on-line compared to solely 8-10% in a very room. {this is|this is often|this will be} principally thanks to the scholars having the ability to be told quicker online; e-learning needs 40-60% less time to be told than in a very ancient room setting as a result of students can learn at their own pace, going back and re-reading, skipping, or fast through ideas as they opt for. Nevertheless, the effectiveness of on-line learning varies amongst age teams. the overall agreement on kids, particularly younger ones, is that a structured atmosphere is needed, as a result of children square measure additional simply distracted. to urge the complete good thing about on-line learning, there must be a united effort to supply this structure and transcend replicating a physical class/lecture through video capabilities, instead, employing a vary of collaboration tools and engagement ways that promote “inclusion, personalization and intelligence”, in keeping with Dowson Tong, Senior government vp of Tencent and President of its Cloud and good Industries cluster. Since

studies have shown that kids extensively use their senses to be told, creating learning fun and effective through use of technology is crucial, in keeping with BYJU's MrinalMohit. “Over a amount, we've ascertained that clever integration of games has incontestable higher engagement and multiplied motivation towards learning particularly among younger students, creating them actually fall infatuated with learning”, he says. A dynamic education imperative It is clear that this pandemic has completely noncontinuous associate degree education system that several assert was already losing its relevancy. In his book, twenty one Lessons for the twenty first Century, scholar Yuval patriarch Harari outlines however faculties still concentrate on ancient tutorial skills and memorisation, instead of on skills like essential thinking and flexibility, which is able to be additional vital for achievement within the future. might the move to on-line learning be the catalyst to form a replacement, more practical methodology of teaching students? Whereas some worry that the hasty nature of the transition on-line might have hindered this goal, others attempt to build e-learning a part of their ‘new normal’ when experiencing the advantages first-hand. The importance of scattering information is highlighted through COVID-19 Major world events square measure typically associate degree inflection purpose for speedy innovation – a transparent example is that the rise of e-commerce post-SARS. Whereas we've nevertheless to envision whether or not this may apply to e-learning post-COVID-19, it's one among the few sectors wherever investment has not dried up. What has been created clear through this pandemic is that the importance of scattering information across borders, companies, and every one components of society. If on-line learning technology will play a job here, it's incumbent upon all folks to explore its full potential.

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Online Digitalization Of Teaching During & Post Covid-19

MANSI SHARMA

GNIM

PGDM 4th Semester

Abstract - The purpose of this paper is to understand the technology adoption, teaching and learning process, student engagement and faculty experience towards virtual classrooms during Lockdown due to COVID 19, India. Inductive reasoning used in this study and qualitative research methods are used to collect the data from faculties associated with Higher education institutions in Bangalore and teaching courses such as PGDM, M.B.A, M.Com, M.C.A etc. The finding of the study suggests that during the lockdown period faculty have undergone the process of technology adoption and students are involved with various online modes of learning. There was lots of fear, anxiety and consciousness among students and faculty regarding COVID 19.

The Coronavirus pandemic has created an unprecedented situation around the world with states struggling to curb the spread of infection and treat the already infected people. The impact of this pandemic is even higher in the South-East Asian Region where spending per capita on health is very low. The same is true for India, with an additional attribute of being the top Asian Country in terms of the spread of Coronavirus infection. Just like every crisis, the marginalized communities are suffering aggravated hardships. This is not just in terms of risk of infection, but also in their inability to cope with preventive measures that have been implemented by the government.

On 24 March 2020, the Government of India declared a nationwide lockdown, which has been estimated to be the largest and most stringent lockdown in the world, as per the reports from Oxford Covid-19 Government Response Tracker. To curb the spread of Covid-19 most educational institutions were the first ones to be shut down in mid of March. It's still difficult

to predict when schools, colleges, and universities will reopen and function normally. Administrations have shifted themselves to digital platforms for classroom learning and, as per directions of UGC, the system has to row forward with virtual lectures and digital libraries. However, owing to the hasty nature of such decisions and the lack of proper digital infrastructure, both teachers and students are facing a plethora of difficulties.

The Issue of Digital Access: Major Hurdle in eLearning-

The Covid-19 pandemic has brought to light the deep-rooted that society's structural imbalances exist even in the digital world. The major issue with remote learning that students have univocally raised is the problem of access to internet, electricity, and proper devices like a laptop, computer, or smartphone to access the content being made available. The government has clearly ignored the economic status of students and has taken up an over-optimistic view on the availability of proper infrastructure with students.

The structure of schooling and learning, including teaching and assessment methodologies, was the first to be affected by these closures. Only a handful of private schools could adopt online teaching methods. Their low-income private and government school counterparts, on the other hand, have completely shut down for not having access to e-learning solutions. The students, in addition to the missed opportunities for learning, no longer have access to healthy meals during this time and are subject to economic and social stress.

Immediate measures are essential to ensure continuity of learning in government schools and universities. Open-source digital learning solutions and Learning Management Software should be adopted so teachers can conduct teaching online. The **DIKSHA platform**, with reach across all states in India, can be further strengthened to ensure accessibility of learning to the students.

Inclusive learning solutions, especially for the most vulnerable and marginalized, need to be developed. With a rapid increase of mobile internet users in India, which is expected to reach 85% households by 2024, technology is enabling ubiquitous access and personalization of education even in the remotest parts of the country. This can change the schooling system and increase the effectiveness of learning and teaching, giving students and teachers multiple options to choose from. Many aspirational districts have initiated innovative, mobile-based learning models for effective delivery of education, which can be adopted by others.

The Digital India program gave India the required push towards digitalization, but has not had much success. As per National Statistical Office reports, only 24% of Indian households have an internet facility. Almost 66% of India's population lives in rural areas and only a little over 15% among them have access to internet connections. In cities, only 8% households with members between 4-24 years age have computers with functional internet.

The COVID-19 pandemic has forced K-12 school districts and universities to close and send students home. This reality has forced a crash course for online learning plans and technology for students and faculty.

In many respects, the education industry's move to remote instruction rhymes with the work-from-home move in enterprises. Video conferencing platforms such as Zoom and WebEx are being used heavily as are learning management systems like Instructure's Canvas**,** Blackboard and Google Classroom. In addition, there are enabling software such as Proctorio**,** a Google Chrome extension that monitors students taking exams online.

In this time of crisis, a well-rounded and effective educational practice is what is needed for the capacity-building of young minds. It will develop skills that will drive their employability, productivity, health, and well-being in the decades to come, and ensure the overall progress of India.

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Online Education in the time of Covid-19

Himanshu Bisht & Abhishek Arora
(PGDM 1)

ABSTRACT

THE Coronavirus pandemic has created an unprecedented situation around the world with states struggling to curb the spread of infection and treat the already infected people. The impact of this pandemic is even higher in the South-East Asian Region where spending per capita on health is very low. The same is true for India, with an additional attribute of being the top Asian Country in terms of the spread of Coronavirus infection. Just like every crisis, the marginalized communities are suffering aggravated hardships.

This is not just in terms of risk of infection, but also in their inability to cope with preventive measures that have been implemented by the government.

On 24 March 2020, the Government of India declared a nationwide lockdown, which has been estimated to be the largest and most stringent lockdown in the world, as per the reports from Oxford Covid-19 Government Response Tracker.

To curb the spread of Covid-19 most educational institutions were the first ones to be shut down in mid of March. It's still difficult to predict when schools, colleges, and universities will reopen and function normally. Administrations have shifted themselves to digital platforms for classroom learning and, as per directions of UGC, the system has to row forward with virtual lectures and digital libraries. However, owing to the hasty nature of such decisions and the lack of proper digital infrastructure, both teachers and students are facing a plethora of difficulties.

Online education is not so easy as speaking into the microphone at one end, and connecting a laptop and listening in on the other, there are challenges faced at both ends of the spectrum. While learning online has become inevitable, we will not be successful until we understand that teaching online doesn't mean taking the entire classroom on Zoom and continuing with the same delivery approaches. This may be a subtle point, but has deep implications. Holding

online classes for those students who have gone home during the crisis will be a big challenge.

Covid-19 has forced universities across India, and the world indeed, to suspend physical classrooms and shift to online classes. In India, while this transition has been smooth for most private universities, the public ones are still adapting. There have also been debates on the nature of classes, and the future of examination and evaluation — whether they could be conducted online or not.

The major problem this revamping to make education go online is the fact that teachers and administrations have equated this with effective imparting of education. If we address the issue of the digital divide, will that mean that this system of education would be perfected? The answer is a simple no. This is because in online education how students learn and communicate is totally dependent on their readiness.

Many justify it by quoting the open schooling system. However, they fail to take note of the very essential fact that the onus of learning shifts to the student in this form. This needs a lot of discipline, the presence of which again is a very ideal assumption.

The problem also lies on part of teachers who are not used to the e-education platform and often find it difficult to express themselves. This coupled with their technical inaptness leads to delivery of sub-par level lectures.

Also, in a country where 37% of people dwell in one-roomed houses, it would be nothing less than a luxury for students to afford a peaceful environment to study. In the absence of government-funded infrastructure and of any plans to reimburse data costs, the cost implications will fall on financially weaker students. All this has come at a time when people are losing jobs and family incomes are tumbling, which leads us to fear a rise in drop-out rates as a consequence.

Online education is conducted in two ways. The first is through the use of recorded classes, which, when opened out to public, are referred to as Massive Open Online Course (MOOCs). The second one is via live online classes conducted as webinars, or zoom sessions. Universities require high-speed internet and education delivery platforms or learning

management systems, besides stable IT infrastructure and faculty members who are comfortable teaching online.

Students also need high-speed internet and computers/mobiles to attend these sessions or watch pre-recorded classes.There are many platforms created to enable online education in India. These are supported by the Ministry of Human Resource Development (MHRD), the National Council of Educational Research and Training (NCERT), and the department of technical education.

There also are initiatives like e-PG Pathshala (e-content), SWAYAM (online courses for teachers), and NEAT (enhancing employability). Other online platforms aim to increase connectivity with institutions, and accessibility to content. These are utilised for course materials and classes, and running of online modules. They include the National Project on Technology Enhanced Learning (NPTEL), National Knowledge Network, (NKN), and National Academic Depository (NAD), among others.

The National Law University of Delhi was among the first to have an open MOOC among the law schools in India, and in March, after the Covid-19 crisis broke out, it opened the course out to the public. Students can avail of study materials in law as well as digital resources as entrusted by the University Grants Commission (UGC) and MHRD.

Can you hear me? Can you see me? This has become a common refrain since lockdown post-COVID-19 when talking to anyone given digital has become *the* only mode of connectivity. For those who were using the smartphone and other gadgets earlier to just conduct a conversation, an interview or to watch a film have had to forcefully jump on to the digital bandwagon since the pandemic before it eclipsed them from reality. All subjects can't be taught online: Construction in math, for instance, is difficult to teach online, said a math teacher, Vidya Ganeshan who has been teaching the subject for over a decade.

"It is difficult to teach a few new concepts in an online classroom though we use an interactive app as students focus at home is an issue besides the complexity of the topic. Earlier, the mute button was at the teacher's end and we could mute students who interrupted class but with the new Microsoft Teams for education app, some children play truant and won't answer when a question is asked as the mute button is in their hands now!".

The online education space in India has been catching up for a few decades now. But it has been largely used for skilling and is buoyed by self-learning. Schools and colleges have rarely had to teach solely online unlike post-March 2020 when coronavirus changed the education paradigm and everyone, irrespective of their exposure to learning online, have had to adapt and learn.

The current crisis has turned the focus on the flaws in the system -- lack of access to quality education for all, lack of inclusive education, scarcity of qualified teachers and low focus on life skills. For 12-year-old Rahul Oak, studying in a government-aided school that caters to underprivileged and the migrant community children in Mumbai, school time now means he has to run out of his house to the end of the lane a few minutes before class starts so that he can tap into the signal that will rev up his parent's mobile phone and he can see his teacher online.

"There is no signal at home," says Shingare. "I do not want to miss my daily sessions and so now it has become a practice to be ready and run to the end of the lane and sit outside and listen to the teacher," says the 7th grader.

There are sets of parents who appreciate online classes, while others have spoken against it, according to a national survey conducted by Local Circles, a social media and community platform, which received 8,287 responses from 204 districts of the country. Citizens were asked what should be the way forward as some states in the country have banned online classes.

In response, 31 percent parents said that the ban on online classes should continue, while 49 percent said online classes should be started but limited to two hours per day. Around 15 percent said online classes should be started and run for the duration of regular school hours which could be 4-6 hours while around 3 percent were unsure.

In the push for online education post-pandemic, what needs to be factored in is that the poorest of poor students are not left out as they do not have the resources to access it.

One way of doing that suggested Mahmaya Navlakha of Arthan is for government to step in to make this new system of learning possible for all.After all, civic society has its limitation.

The government can devise a programme which ensures standardisation and quality by working with experts in the field and create a framework that creates inclusion.

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Employee Monitoring System in New Era Due to COVID-19 Pandemic

Aman Srivastava, MCA Student, GNIM, Delhi, amansrivastava996@gmail.com

Dr. Shipra Jain, Associate Professor, GNIM, Delhi, jainshipra11@gmail.com

Abstract - The objetive of "Employee Management System" is designing a scheduling system for a work center. Scheduling is such a tool with which the process of intimating activities and notifications will be easy and even online in the organization where it is installed. But these task of scheduling the different activities if manually done whether they may be personal or official is time consuming and also may lead to confusion if not properly scheduled. Employee Management System is a distributed application, developed to maintain the details of employees working in any organization. It maintains the information about the personal details of their employees. The application is actually a suite of applications developed using PHP. It is simple to understand and can be used by anyone who is not even familiar with simple employee's system. It is user friendly and just asks the user to follow step by step operations by giving him few options. It is fast and can perform many operations of a company or organization. This software project has been developed using the powerful coding tools of HTML, CSS and PHP at Front End and Microsoft Sql Server at Back End. The software is very user friendly. The project contains modules like Employee and Admin. This version of the software has multi-user approach. For further enhancement or development of the package, user's feedback will be considered.

Keywords: employee management system, employees, staff, human resources, leaves management, task management, dbms, php, html,css.

1. INTRODUCTION

The objective of "Employee Management System" is designing a scheduling system for a work centre. Scheduling is such a tool with which the process of intimating activities and notifications will be easy and even online in the organization where it is installed. But these

task of scheduling the different activities if manually done whether they may be personal or official is time consuming and also may lead to confusion if not properly scheduled. Employee Management System is a distributed application, developed to maintain the details of employees working in any organization.

It maintains the information about the personal details of their employees. The application is actually a suite of applications developed using PHP. It is simple to understand and can be used by anyone who is not even familiar with simple employee's system. It is user friendly and just asks the user to follow step by step operations by giving him few options. It is fast and can perform many operations of a company or organization. This software project has been developed using the powerful coding tools of HTML, CSS and PHP at Front End and Microsoft Sql Server at Back End. The software is very user friendly. The project contains modules like Employee and Admin. This version of the software has multi-user approach. For further enhancement or development of the package, user's feedback will be considered.

1.1. Objectives

Paperless: To make existing system paperless and save lots of bunching logs of files on the shelf which makes the later on access of the record not at all easy task and overhead to peoples.

Automatic: Making the existing system fully automatic which will save lots of human resources work. As the current system is all human resource work is needed to maintain and keep the record and details of every employee under and organization to keep track of every employee in staff working in an organization.

2. EXISTING SYSTEM

The problem definition for designing the system is to maintain data of employee, to make easy controlling employees, to divide jobs and access control of employees, to use technology for accurate and timely processing by fully privacy and full authority access. The objective of the project is to set up employee information system about status of employee and attendance of employee and monthly salary process and delivery. To eliminate or reduce as much as possible the hardships of existing system and avoid errors while entering data. In existing method employee management are employee record are

maintaining in records. It’s a manual process. Complicated to search the employee salary

Disadvantages:

- Needs for extra manual effort.
- In existing system is standalone process normal employee cannot track their employee status.
- Less Accuracy Danger of losing some files.
- Certain required report is not available Time- consuming process.

3. PROBLEM STATEMENT

Manual handling of employee information poses a number of challenges. This is evident in procedures such as leave management where an employee is required to fill in a form which may take several weeks or months to be approved. The use of paper work in handling some of these processes could lead to human error, papers may end up in the wrong hands and not forgetting the fact that this is time consuming. A number of current systems lack employee self-service meaning employees are not able to access and manage their personal information directly without having to go through their HR departments or their managers. Another challenge is that multi-national companies will have all the employee information stored at the headquarters of the company making it difficult to access the employee information from remote places when needed at short notice. The aforementioned problems can be tackled by designing and implementing a web-based HR management system. This system will maintain employee information in a database by fully privacy and authority access. The project is aimed at setting up employee information system about the status of the employee, the educational background and the work experience in order to help monitor the performance and achievement of the employee through a password protected system. This report’s documentation goes through the whole process of both application program and database development. It also comprises the development tools have been utilized for these purposes. This system should consist of an application program, on one hand, and a database (repository of data) on the other. The program should perform the basic operations upon the database as retrieving, inserting, updating and deleting data. Any additional

functionality is a goal of a further module development. It is a kind of strategy to start the development from designing and constructing the database, as this structure will determine the further structure of the application program. The logical database model (tables, their content and the relationships between them) should respond tothegiven task and cover the basic requirements. The Interface of the program should be user-friendly, and the program should be as easy for use as it is possible. Both controls and forms should logically and functionally be related within the program and fully respond to the structure of the database.

Another problem is establishing the connections with the database, every time, when a query is needed to be performed upon it. Exception-handling should also be taken into an account during the system's development due to eventual exceptions that may occur.

4. PROPOSED SYSTEM

This chapter builds on the work done in the Analysis Chapter and gives documentation for the Design of the Employee Management System. The EMS is modelled in terms of objects and classes and their interactions with each other. Explanation of the proposed system is done as well structure of the Entity Relationship Diagram (ERD). Design of the User Interface is also discussed.

The proposed system is designed to eliminate all the drawbacks of the existing employee management software. The system shall be responsible for maintaining information about employees, thus their personal profile. The system shall incorporate leave management all the way from application to acceptance/rejection of leave requests as well as all employee projects with close monitoring of the projects from creation to completion and trainings to assist in monitoring active and inactiveemployees.

The main features to be added include:

- Employee profiles
- Leave management
- Task management

- Notifications

- Employee Self-Service (ESS)

Consistent- The website should have a similar look and feel on every page. Every page should have the same header/logo, heading style, fonts, navigations etc.

Efficient and easy to maintain- This refers to the fact that there is need to separate content from layout, so that you can easily change your page design without editing every page on the site.

Layout-The layout of each page should have a good contrast between the text and background area. This helps considerably with visibility as it will be difficult to

Read the text if it is almost the same color as the background. Monitor size should also be taken into consideration.

Easy to navigate and use- Users should not have a hard time trying to navigate the site. Navigation links should be consistent and clearly labeled. All navigation links should also be working properly and should point to the intended page/site.

Browser compatible- When designing the site considers different browser environments. Extensive testing should be done on each page in all the major browsers and the design changed appropriately to cater for all.

Visually appealing- The use of color, text, fonts and graphics should be carefully considered and used to ensure that the site is visually appealing to its visitors.

4.1.Features

- Portability

- Compatibility

- Secure

- UserFriendly
- Generosity
- Runtime Compactness andSpeed

4.2. Advantages

- Transparency to all the user of system.
- Less paper use and removal of redundancy.
- Less prone to errors.
- The whole system is interactive.

5. IMPLEMENTED SYSTEM

All these features include the ability to add user, update (edit), and retrieve through search results. It also contains a report generation system that can be saved in a pdf file format. The system works in the following manner, accessing the system various companies and organizations may have different employee structures and hierarchy. Being generic, the developed System has four main access levels whichare:

- Employee
- Head of Department (HOD)
- Human Resource Manager (HR)
- Administrator

All users are presented with the same login interface. User must login the system by means of valid username/password combination. After access is granted to the system, the admin can add a new user to the system by entering the basic information which are the full names and email address. The admin also assigns the new user a role which will determine the access level. During the process of user registration, the all users are issued with a unique username and password combination. Seeing that the system holds private employee information, the admin has the ability to monitor all activity logs into the system by date andtime.

The newly added user logs into the system with a default password which can later be

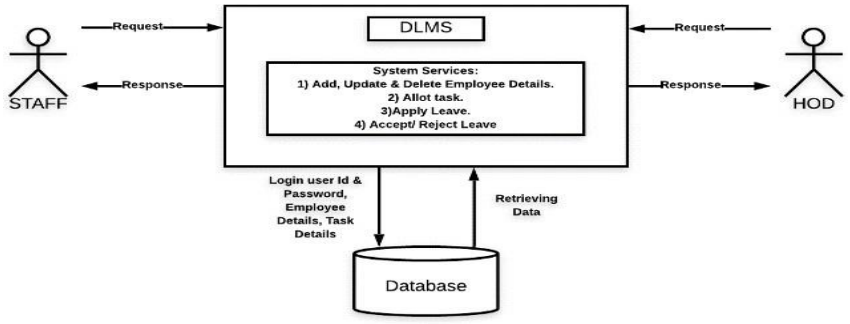

Fig. System Architecture

changed to a more secure password. All employees can edit basic information such as newly acquired technical skills and emergency contacts. Employees can apply for leave by filling in a form as well as submitting an attachment to support their leave request. The HOD has the ability to view all employees under his/her department, assign a task and trainings. The HOD can also create a project, add members to the project and create a work breakdown structure. Being an employee, the HOD can apply for leave as well as check leave days accrued. Upon logging in to the system, the HR manager gets notifications on the leave applications submitted and has the ability to approve or reject leave requests as they are submitted. The HR carries out all employee tasks which include the ability to view and edit basic details, view pending tasks, projects and trainings. The HR also has to the ability to generate employee reports in PDF format. When you use a statement that makes change to the table but does not use INSERT, DELETE or UPDATE statement, the trigger is not invoked. For example, the TRUNCATE statement removes the whole data of a table but does not invoke the trigger associated with thattable.

6. WORKING FROM HOME- AN ALTERNATIVE WAY OF WORK:

Practically any business, regardless of industry, has opportunities to benefit from telecommuting, so avoid the temptation to quickly reject the idea. Similarly, some jobs do not lend themselves well to remote workers, including positions that require specialized equipment or face-to-face interactions with customers.

Employees working from their home office can be happier and more loyal than their office-bound counterparts.

Online tutors, for example, can feel all the benefits of online tutoring. They have a very flexible schedule and can work from almost any place in the world.

6.1 Valid Reasoning:

Why does an employee want to work from home? As an employer, you should make sure that your employees have good reasons for wanting to telecommute. Discovering such reasons, however, may require you to exert both effort and patience. Moreover, understanding the factors that motivate a telecommuting request can help you decide whether to approve or deny it.

Some employees want to work from home because they think that they can earn their paycheck with less time and effort. Such a motivation, however, should cause you to keep them closely supervised in the office. Of course, some people do not intentionally think this way. Before becoming judgmental, remember that some employees might not have a clear understanding of their latent desires.

6.2 Available Tools:

Telecommuters must have essential tools at their disposal before they have a chance to succeed. If we approve a request before checking to see if an employee either is or can be properly equipped, we set the stage for failure. As our telecommuting policy evolves, update it with appropriate considerations.

In most cases, for example, a telecommuter must have a viable internet connection. Remote workers must have the ability to access vital tools such as email, instant messaging and chat as well as the applications out firm uses for customer service and support. Every job, however, has particular requirements, so make sure we include them as part of our detailed telecommuter policy.

6.3 A Home Office:

Remote workers need a dedicated area of their home to use for work. Also, they need the ability to set boundaries within their home so family members and friends do not interfere with their work. Remote workers should get dressed for work and report to their home office in the morning. There, they must have enough space to do their work. Discuss the home office situation with your employee before approving a telecommuting request.

7. CONCLUSION

Working remotely is a great way to improve the lives of your employees while boosting the profitability of your business. Use the above tips to learn how to handle your employee's request to work remotely and then enjoy the challenges and the perks that the new employment model brings. Overall, the system is useful for all the users to maintain information at various levels. It connects admin and employee and thus easy to maintain. Now admin can easily set the task or any notifications to the respective employees without having a person to send to employees and employees can apply for leave or reply with task allotted to them. It has been a great pleasure for me to work on this exciting and challenging project. This project proved good for us as it provided practical knowledge of not only programming in PHP, HTML, CSS and Oracle MySQL Server Developer working of web- based application, but also about all handling procedure related with Advance and new technology. It also provides knowledge about the latest technology used in developing web enabled application and client server technology that will be great demand in future. This will provide better opportunities and guidance in future in developing projects independently.

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Online Digitalisation Of Teaching During & Post Covid-19

Vivek Kumar, Inderpreet Singh

(PGDM 1)

Abstract

Coronavirus disease (COVID-19) is a newly discovered infectious disease caused by a virus named "coronavirus." The lockdown due to COVID 19 has largely affected the lives of students as they no more get to interact on a one on one basis with their teachers. This shift in education from traditional classroom learning to computer-based learning might be one of the largest educational experiments to date. As the online teaching-learning process has become more prevalent in India due to COVID 19 pandemic, it becomes particularly important to know its growth and to know whether it's helping the scholars achieve what they expect out of school. The present study was therefore designed to understand the student's perspective, attitudes, and readiness about online classes being conducted at the university level. An Observational, Descriptive study was conducted. The data was collected using a Question bank. The present study was carried out amongst 200 students. After analysing the results, it was found that 74% of the students liked studying through online classes. The most common reason (49%) as to why the students like studying online were that the study time becomes flexible, and they can study anytime they want. Lack of co-curricular activity was the most common issue (34%) of online classes, as reported by the students. Most of the students were found satisfied with the content and procedure of online teaching. About 30% of the students reported that they prefer their lecture being delivered through a PPT with an audio recording. The present study that was conducted among college students revealed that maximum students are in favour of studying through online classes, but they feel that there is a lack of co-curricular activities in the online mode of conducting classes. As the students are in favour of online classes, such classes must be continued with some interventions. Education Ministry must develop certain rules and guidelines wherein certain online activity sessions can be made compulsory along with regular lecture sessions.

Online has become the default mode of education during this long lockdown period within the wake of Covid-19. What does this mean for the institutions and academic leaders, administrators and students, within the end of the day, is getting clearer.

The COVID-19 pandemic is about to vary the planet before we all know. The way our governments, institutions, organizations, and other people think and performance, will transform – perhaps for the future.

Among many economic sectors, the upper education sector is undergoing a tectonic shift immediately. What several futurists and education technologists have been forecasting for long, is now happening.

At least for 2 decades now, EdTech (short for Education Technologies) enthusiasts are predicting that technology will become the most important intermediary of teaching-learning processes. In the wake of the Covid-19 pandemic, millions of students across the globe have been driven out of their university spaces, and professors are confined to their homes. Higher education stands disaggregated, and faculty and students are grappling with the sudden new norm of completely tech-mediated teaching and learning.

About 60 million students across the world, are limited to home during the crucial months of February to April - which generally see a flurry of curricular and assessment activities. Institutions and students alike are struggling to not lose academic time and re-invent their teaching-learning within the only possible way – go completely online. What does this mean for the institutions and academic leaders, administrators and students, within the end of the day, is getting clearer.

The new, total technology-mediated education are often termed as Education 4.0, after the primary three waves of education systems that evolved over 2000 years of civilization - the Gurukula system (one master to a few pupils), the traditional university system (one to many learners) and distance learning (one to very many learners across the spectrum).

Main Text

Introduction

Coronavirus disease (COVID-19) is a newly discovered infectious disease caused by a virus named "coronavirus." This disease is highly infectious. (World Health Organization, 2020)

As this disease is highly infectious, it can be easily transmitted from person to another via their respiratory droplets and different contact routes like hands, nose, and mouth. Liu et al., 2020

Transmission through droplets can occur when the infected person is nearby (within 1 m) with a normal individual. At such a time, the person having some respiratory symptoms like sneezing and coughing can easily pass the infection to a non-infected person with whom he is in close contact. The infection can also be transmitted through objects like utensils and clothes used by the infected person. Ong et al., 2020

The pandemic has hit around 211 countries of the world, affecting 1282931 people and claiming 72,774 lives across the world. (World Health Organization, 2020)

India is not left behind. India reports 5194 cases and around 149 deaths. World Health Organization, 2020

The government and different communities are working worldwide to control the situation and to limit the spread of this virus. As a result of this, people are advised to do nothing. As social distancing might help in limiting the spread of this virus, there has been lockdown in the country, and people are asked to sit at home.

India has the second-largest education system within the world after China. Cheney, Ruzzi, &Muralidharan, 2005

Different sectors, including the education sector, have seen a setback due to the COVID 19 being at a rise.

The lives of every individual are the country that has been largely affected by various organizations becoming shut after the directions of honourable Prime Minister of India Shri Narendra Modi Ji. As every other individual's life getting affected, the life of a student is no less affected. The schools and colleges have since a lot many years practiced classroom teaching, which includes a one on one interaction of students and teachers. The lockdown due to COVID 19 has largely affected the lives of students as

they no more get to interact on a one on one basis with their teachers.
At this time of crisis, it becomes challenging to keep the education continuous and unaffected due to this disastrous pandemic. There has to be a system where there is togetherness between the students and teachers without actually being together. Distance learning is seen to have become widespread from the past 10 years. Harper, Chen, & Yen, 2004

Various studies have been conducted where it appears that different institutions have been adopting and doing well with this new learning environment. Oblinger& Kidwell, 2000
In this time of crisis, various educational organizations have come together and developed a variety of platforms to participate in online teaching-learning projects. Dutton, Dutton, & Perry, 2002; Epper&Garn, 2003. As a result of this approach, more and more students now have the facilities to progress in their educational field while being safe in the home premises. Robinson, 1996; Wojciechowski & Palmer, 2005
The students already working and having family responsibility can largely benefit from the online learning method as this gives them a greater flexible schedule that they can adapt and learn from. Mansour &Mupinga, 2007.
Apart from the different advantages, there are certain challenges which the online mode of teaching and learning throws at faculty members as well as the students. Palloff& Pratt, 2003

Different online courses have been developed by various agencies like SWAYAM and MOOCs Ataizi, 2005; Ministry of human resource development, 2020. And students have been taking up different courses to gain more knowledge. But the system of taking online classes in colleges for regular course completion was never adopted by various institutions. This has led to a more digital system of teaching as well as learning. Digitalization in the learning and teaching process has largely affected the present state of education in our country. The disruption caused by COVID 19 somehow forced the institutions to conduct classes online. As COVID 19 spread like fire in the forest, all educational institutions were shut down as the country followed quarantine policies and lockdown, which could prevent the spread of CoVid-19. This has led to a change of face of education from traditional classroom teaching to technology-based online teaching.

Learning is a continuous process, and amidst the lockdown of 21 days, the government and private institutions transformed from classroom teaching to online teaching to keep the learning process on the go.

Many government and private institutions, including IITs and IIMs, have leaped conventional classroom teaching to digital teaching. They have started teaching their students through online classes so that the global COVID-19 pandemic does not affect the student's education.

The future and the sustainable triumph of this tectonic shift will depend upon seven major elements of online learning.

1. Online learning isn't a library of video lectures and e-books that converts class-notes into PDFs. Creating high quality digitized learning content must be contextualized and 'byte-sized' to make learning interesting and engaging. Doing this takes a rare skill set which few organizations within the world can boast of. Universities got to collaborate with such organizations for his or her digital pivots to achieve success.

2. Subject matter covered in the classroom is to be delivered online, but with technology as the intermediary. Blind replication of the same is a bad idea; it requires a great deal of understanding & application of learning science and digital pedagogy. Every teaching faculty must be enabled with this data, alternatively, collaboration with experts is that the way forward.

3. Classrooms have typically diverse learner groups. In classical pedagogy, the simplest of teachers and material experts derive a content-context cluster as a mean of the class' collective ability and prior knowledge. Then the teaching-learning transaction is crafted consistent with that constructed mean. This will not and cannot work in online learning. Institutions got to spend the maximum amount of time on the context for the various learner profiles, as on the content and weave it into the program design.

4. New technologies including the emerging sciences of artificial intelligence and deep learning models can help us create customized learning plans and methods. Higher education institutions must embrace these quickly to beat the ills of current digital education.

5. Online learning is not about ONE pedagogical model but an aggregation of various models. And it is indeed a specialized learning science that combines learning psychology, behavioural analytics, content delivery, and assessments to gauge and measure individual

learner's journey and progress. Working with specialists and 'hand-stitching' a delivery mechanism is a key.

6. Put learning science, and not technology, at the forefront. Very many models being created today seek to use technology and tools as a panacea and equate online 'delivery' with online 'learning'. The former is teacher-centric, and therefore the latter is learner-centric. 'Learning' is about gradually inducing changes in learner's actions and behaviour. The learning process, in incremental steps, induces a change in thinking and mental models of the learner through deep understanding and conceptual strengthening. After each learning episode, the learner is going to be ready to apply the acquired knowledge in practical situations in life, profession, or workplace. Each teaching faculty must be massively re-trained and oriented for online teaching-learning mode. While they could be content experts or great classroom teachers, they need to place equal importance on 'learning sciences in digital media'.

7. Of course, even within the post-COVID-19 era, offline or conventional education models won't become obsolete. They will survive. However, blended learning (a combination of classroom and online modes) will be the norm. Institutions and teachers will blend the 2 judiciously consistent with the context and therefore the content.
The campuses have been shut down, but professors are busy working from home, preparing effective study material for their students so that there isn't any halt in the teaching-learning process. Teachers are working hard and are available for students at all times of the day to reduce the hardship and disruption being caused to the students across

the country at this point due to the COVID 19 pandemic.

This shift in education from traditional classroom learning to computer-based learning might be one of the largest educational experiments to date.

A teacher's job is not just making their students learn. Their job is to overall groom their students letting them know what is right and what is wrong.

Learning online through online lecture sessions has a lot of advantages over traditional classroom learning. Online learning involves the use of less paper, and it involves saving time with easy and quick access to a wide source of information. Along with this, it also saves time for travelling. Online learning gives a big advantage to the students as the student can study anywhere and at any time he wants with a few exceptions. Carnevale, 2000; Dutton et al., 2002

Digital learning has led to a reduction in cost and has taken the impact and reach of resources for students as well as teachers to another level.

However, it has been observed that the things taught through online mode have a lot many challenges for the educator as well as the learner. Howell, Williams, & Lindsay, 2003

Very shortly, learning digitally will be the new face of Indian education. It will be a very useful and constructive means for both teachers and students in the coming years.

The government is working with various agencies to build up new platforms where students, teachers and parents can closely connect.

There has been a recent acceptance of the online teaching-learning process by the students across the country today. Teachers and students are now largely joining different platforms through which e-learning can be easily done.

As the online teaching-learning process has become more prevalent in India due to COVID 19 pandemic, it becomes particularly important to know its growth and to know whether it's helping the students achieve what they expect out of school.

The present study was therefore designed to understand the student's perspective, attitudes and readiness about online classes being conducted at the university level.

Methodology

An observational, descriptive study based on a question bank designed was conducted amongst the students' studying across Indian Universities.

The study population was selected randomly.

The question bank was prepared in the form of Google docs and the link was sent to the students through the mail. A total of 200 students participated in the study.

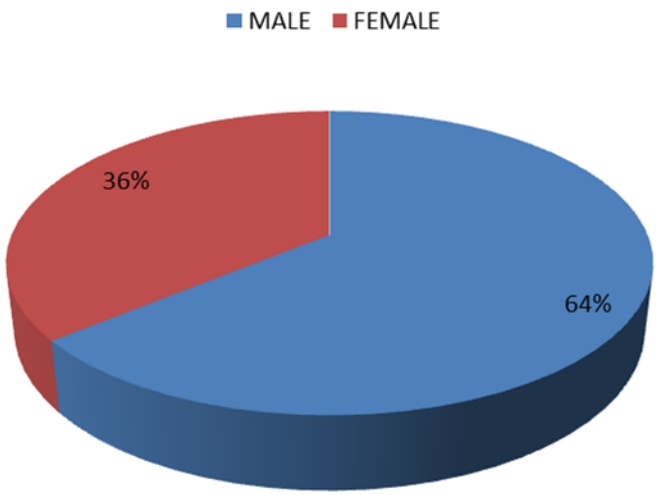
The question bank designed for the students consisted of 8 questions regarding the socio-demographic characteristics and questions to assess whether they are like studying online and what are the reasons for their like and dislike about online classes.

The raw data which was obtained through the survey were analysed using SPSS for statistical analysis and the results were calculated.

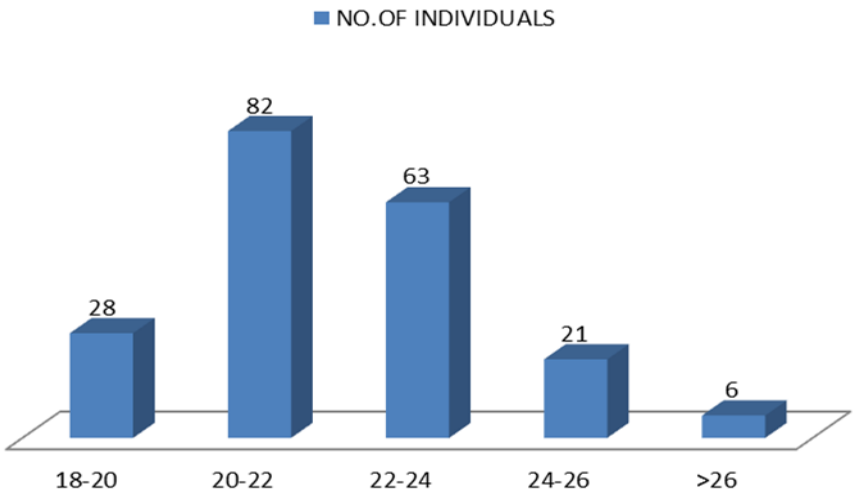
Results and Discussion

During the study period, a total of 200 students participated in the study.

Out of the entire study population, 128 were males and 72 were women, as shown in Figure 1.

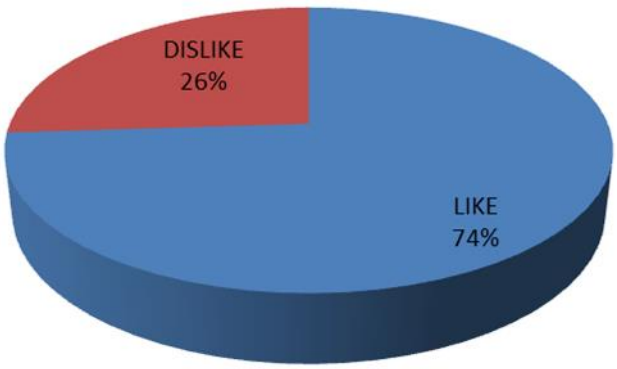


The study population was the students enrolled in various courses of Universities across India. Maximum respondents were from the age group of 20-22 years (41%) followed by individuals belonging to 22-24 years (32%), as shown in Figure 2.



The students were from various departments highest being from the Management (59%), followed by the Pharmacy department (13%), Computer Applications (10%) and BTech (8%).

From the data collected, the study population reported that maximum students like studying through online classes. A large bulk of 74% of students reported that they enjoy e-learning, as shown in Figure 3 and Table 1.



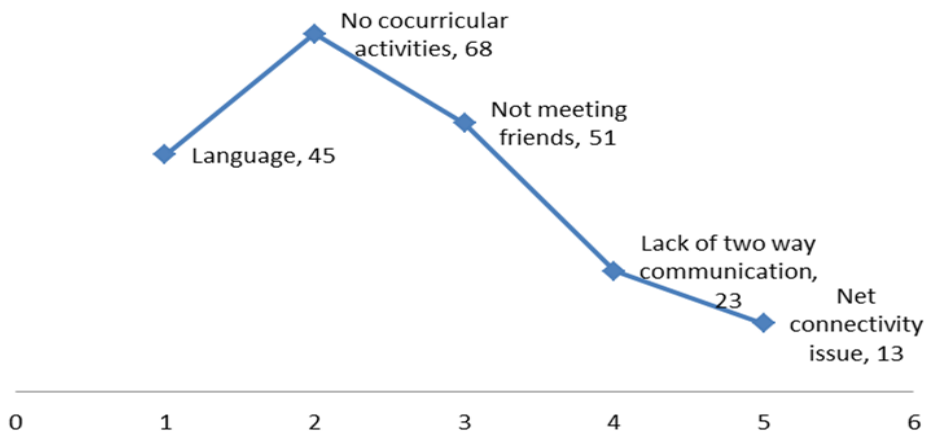
Perception	No. of Individuals	Percentage %
Like	148	74
Dislike	52	26

“Study time becomes flexible” (49%) with online classes was the most common reason found of students liking online classes. The above-stated reason was followed by "Study location becomes flexible" (32%), "Face to face interaction becomes limited" (10%), "No need to visit the campus" (5%) and other miscellaneous reasons (5%). The result has been depicted in Table 2.

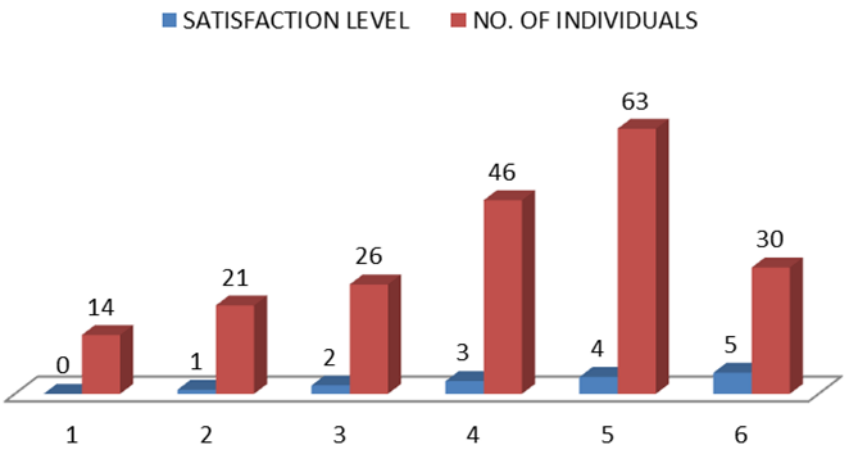
Reason	No. of Individuals	Percentage %
Face to face interaction is limited	20	10
Study time becomes flexible	98	49
Study location becomes flexible	63	32
No need to visit the campus	10	5
Other reasons	9	5

Certain reasons were identified, which could play a negative role for students when it comes to online classes. The most commonly stated problem with online class was "A lack of co-curricular activities" (34%), followed by "Not meeting friends" (26%), "Language issue" (23%), Lack of two-way communication" (12%) and "Problems with net connectivity" (7%). Table 3 and Figure 4 clearly describe the above-stated reasons.

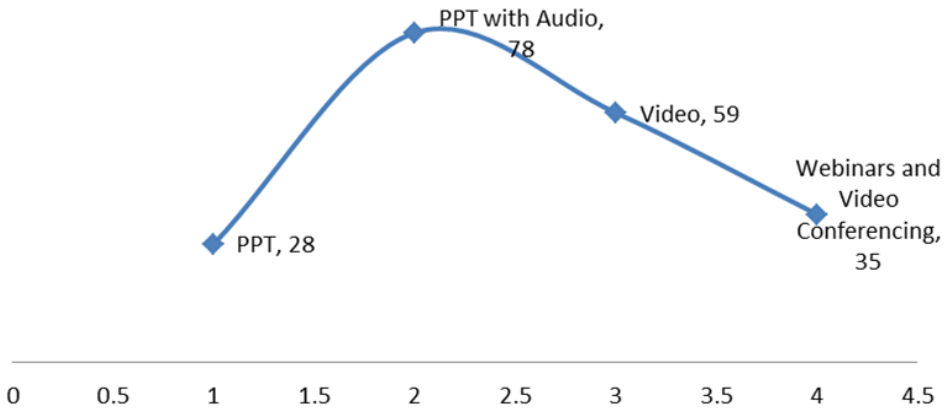
Drawback	Percentage %
No cocurricular activities	34
Not meeting friends	26
Lack of two-way communication	12
Net connectivity	7



The satisfaction level of the students was rated on a scale of 0 to 5. 0 being "completely unsatisfied" and 5 being "completely satisfied," with 1 being "mostly unsatisfied," 2 being "somewhat unsatisfied," 3 being "somewhat satisfied" and 4 being "mostly satisfied." After analysis of the result that 35% were "mostly satisfied" 23% were "somewhat satisfied," 15% were "completely satisfied," 13% were "somewhat unsatisfied," 11% were "mostly unsatisfied," and 7% were "completely unsatisfied" as shown in Figure 5.

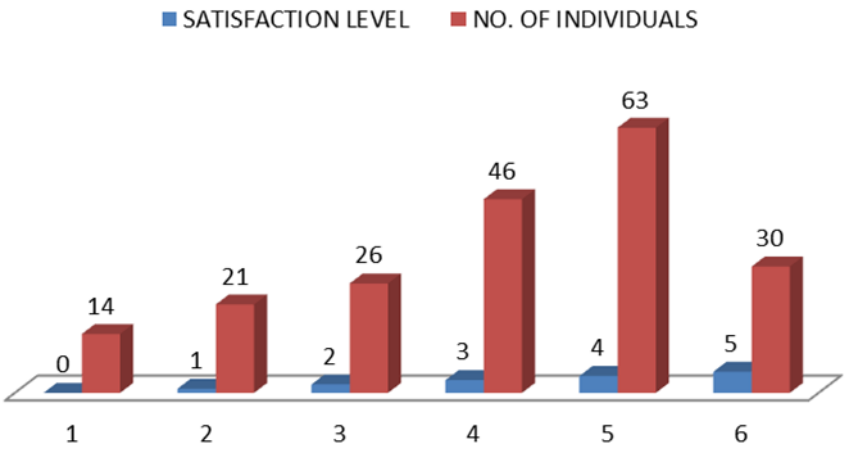


There are different means available through which online teaching can be effectively carried out. After analysing the results, the most common source of the online classes mentioned by students was “PPTs with Audio” (34%), followed by “Videos” (26%), Webinars and Video conferencing (23%) and PPTs (6%) as clearly described Figure 6 and Table 4.



Source	Percentage %
PPT	14
PPT with Audio	39
Video	30
Webinars and Video Conferencing	17

From the data collected, it was reported that a good number of students (59%) prefer the online continuity mode of teaching and the same is depicted in Figure 7.



Conclusion

The present study revealed that maximum students are in favour of studying through online classes, but they feel that there is a lack of co-curricular activities in the online mode of conducting classes. The universities should design a plan, so that along with studying their regular course, students also get to participate in some fun-loving activities so that they wholeheartedly continue to have an interest in the online lectures.

Future Scope

As everyone knows that when talking about surveys so larger, the sample size more precise will be the result. Keeping this point in view, the study can be carried out in a larger group of students to understand their beliefs and perception of online classes.

At this point, where the entire nation is fighting to win over Corona, it is very important to keep an effective education process continuous, which the students enjoy and gain from.

Such a study would help the Education Ministry develop certain rules and guidelines wherein certain online activity sessions can be made compulsory along with regular lecture sessions.

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Online Digitalisation Of Teaching During Covid-19 Pandemic

SIDAK SINGH, KAWALDEEP SINGH

(PGDM 1)

ABSTRACT

Information technology has transformed each sector it has grasped and it is currently in the promising stages of altering the academic world. In the coming eras if information technology has its approach, education will be quite changed, more immersive and hopefully more beneficial to the people than it is today. Digitization in education sector has actually completely changed the learning and the teaching process to a very great degree. With the ongoing Covid-19 pandemic scenario, all the schools and universities around the world are moving towards probably a new opportunity for alternative education systems, i.e., implementing the usage of existing online tools for conference education such as Zoom, Google Meet, Cisco WebEx, Jio Meet and Skype for the sake of betterment of the society and the students even in such rough conditions. Teachers are more than ready to take on every challenge they face until their purpose of providing education to all their students who wants to continue with their studies, gets fulfilled. The benefits of online teaching are countless and thus, it's been proven certain during this pandemic now.

The relationship between students and teachers has endured a complete transformation ever since the dawn of technology. Digital education among students and teachers is a revolutionary method of imparting knowledge, especially since it levels the playing field for all students. Since India is the home to the largest population of children in the world, with an estimated 430 million children in the age group of 0-18 years, the state of education in the country, especially in rural areas has been inacceptable, with challenges such as ancient teaching methods, shortage of teachers, highly inconsistent student-teacher ratio, and inadequate teaching materials plaguing the sector. We are in an era of digitization and technological advancements have an impact on almost every aspect of our lives on an

ongoing basis. The impacts of digitization are also visible in the field of education from the way we communicate to how businesses are run; and have effected major changes in how education is being imparted and consumed.Since today's students has access to a variety of sources for information, as opposed to simply learning what is being taught at school,the methodology of teaching for such inquisitive minds, therefore, is developing as well, and becoming more and more interesting and interactive, thanks to the digitization.

The Future seems Digital.

Some researches by the World Economic Forum estimates that about 65% of children entering primary school will find themselves in occupations that today do not exist. It is domineering, therefore, for the education sector to prepare the talent needed for the digital economy, by adapting as fast as the increasing demand for IT skills.Digitization of education helps in providing software teaching tools to the teachers and fetching students with learning methods that utilize digital tools, such as smartboards, laptops, mobile phones, video-learning and many other means.

Here's why digital education is the way forward:

- **Offline Learning:** Connectivity is still an issue in India, especially in rural areas, but because of the e-learning and m-learning facilities, everybody can access the content offline as well, that can be synchronizedwhenever the internet connectivity is available.It also makes it possible for one teacher to deliver information remotely across several locations, keeping in mind the scarcity of teachers in the country.
- **Personalized Courses:** A good Learning Management System can help shape information and add learnability quotient to it. With the right 'knowledge management tools' it is possible to design 'student-centered courses' to impart education.
- **Free educational materials for all:** Open source is an important part of online education that consists of free data for learning, teaching and research purposes. This allows students to gain access to awide range of study material nurturing an ecosystem of free learning.

- **No Linguistic Barriers:** Majority of India's population is unable to read, writeor speak in English, but thanks to technology, learning material can digitally be made available in regional languages as well.

With the digital transformation, we must fundamentally alter both how we learn and what we learn.Digital education can inspire aself-governing inclination to learn amongst today's youth and engage themselves in the vast sea of knowledge available to them.

Digital education making way into Education System:

There was a time when classroom training was restricted to textbook learning, teachers using the blackboard to students writing notes in copies. It's more chalk and walk in most schools and colleges. Online/Digital education is making its way into the education system of India and is giving a tough competitionto the traditional classroom training.

Few points that are clearly depicting the picture of how digital education is fixing the entire education system in India:

Distance education beyond boundaries:

Technology has made it possible for the students who fell off the traditional path to jump back on and finish what they have spent most of their childhood working on. This may be in the form of taking distant classes from home, educative classes in on-campus computer labs or even by enrolling in full-time online schools, public or private.

Flexible learning environment:

A student who needs some extra attention on a particular topic does not need to hold up the entire class/session, or feel embarrassed asking for that help, when there is all kind of data on computers and onmobile applicationsis available for individual learning experiences.
Teachers who spot a weak area with a particular student can push that teen towards more convenient and complex exercises to master the topic. Of course, technology cannot work

magically to fix all the problems, but it does allow to ease the learning process.Many schools now come with a TV or a smart class where it is easy to shift from a normal classroom session to an interactive digital session. This can make students even pay more attention as we are now in the digital era where Google is our go-to place.

Field trips turned to Online Webinars:

If a school or a college does not have the resources to send students on field trips, they can always opt for webinars related to their course work, enabling all students to engage in commenting and participating in surveys and questionnaires can help them stay alert. It is very essential that students engage in seminars and the lectures which involve the two-way communication.

Usage of VR and AR for learning:

Virtual Reality and Augmented Reality are already quite hyped words in the technology space. VR allows students using online learning platforms on mobile devices to directly interact with study material. This keeps their engagement levels really high and motivates them. Their arrival in e-learning has immensely impacted the efficiency with which it is offered to students and the way it evaluates their performance.

Globalized learning, maximized exposure:

With the internet, it has become possible for students to connect with students from other parts of the world. This has made it really easy to learn foreign languages and expand their exposure. Video conferencing is a boon to students who want to communicate or meet with their global equals.

Today, India has become one of the world's top countries for providing excellent education. Where the education is all about the smartboards where teachers can drag and drop shapes, voice out the text they want to see on the board, bring in online calculators on the board, etc.It is time to team upthe teaching methods with technology and make education and classroom sessions sparkling and way more interesting!

Opportunity for teachers to diversify:

Nonetheless, the situation appeared as an opportunity for teachers (to diversify) and for students (to consume). The most relieving advantage that online mode offers is its super flexibility on timing and delivery.

A typical online course needs contents preparation and modern educational technology (Video/audio/mixed) to appeal the students. For example, all IITs have such educational technology infrastructure to run online courses (e.g., NPTEL, the technical version of SWAYAM). Alternatively, even teachers can also use personalized tools and methods for teaching. Definitely the conversion of offline courses may require additional effort to make it online but with that, teachers are now on the driver's seat and providing online lectures. The advantage and opportunity of the online course is now felt by the multitudes.

Conclusion:

The importance of spreading knowledge is highlighted through Covid-19 scenario. Digitization has no doubt changed our education system especially during the Covid19 situation, but we still cannot say that it has lessened the value of our old-time classroom learning. The best part about taking the education system online in the 21st century is that it is combined with the features of both; classroom learning as well ase-learning methods. Both hand in hand act as a support system to each other, which gives a stronghold to our modern students. What has been made clear through this pandemic is the importance of spreading knowledge across borders, companies, and all parts of society. If online learning technology can play a role here, it is requiredamong all of us to explore its full potential.Digitization in the traditional education system has also proven to be the right method for saving scarce resources. Online examination platforms have restricted the perky usage of paper, directly limiting the cutting down of trees. And this is how, the digitization of education industry in the 21st century should be considered a boon to our society.

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Online Digitalization Of Teaching

Yug Garg
B.com (H)
2nd Semester

ABSTRACT

Sometime in the second week of March, state governments across the country began shutting down schools and colleges temporarily as a measure to contain the spread of the novel coronavirus. It's close to 6 months and there is no certainty when they will reopen. This is a crucial time for the education sector—board examinations, nursery school admissions, entrance tests of various universities and competitive examinations, among others, are all held during this period. As the days pass by with no immediate solution to stop the outbreak of Covid-19, school and university closures will not only have a short-term impact on the continuity of learning for more than 285 million young learners in India but also engender far-reaching economic and societal consequences.

Introduction

The structure of schooling and learning, including teaching and assessment methodologies, was the first to be affected by these closures. Only a handful of private schools could adopt online teaching methods. Their low-income private and government school counterparts, on the other hand, have completely shut down for not having access to e-learning solutions. The students, in addition to the missed opportunities for learning, no longer have access to healthy meals during this time and are subject to economic and social stress.

The pandemic has significantly disrupted the higher education sector as well, which is a critical determinant of a country's economic future. A large number of Indian students—second only to China—enroll in universities abroad, especially in countries worst affected by the pandemic, the US, UK, Australia and China. Many such students have now been barred from leaving these countries. If the situation persists, in the long run, a decline in the demand for international higher education is expected.

The bigger concern, however, on everybody's mind is the effect of the disease on the employment rate. Recent graduates in India are fearing withdrawal of job offers from corporates because of the current situation. The Centre for Monitoring Indian Economy's estimates on unemployment shot up from 8.4% in mid-March to 23% in early April and the urban unemployment rate to 30.9%.

Needless to say, the pandemic has transformed the centuries-old, chalk–talk teaching model to one driven by technology. This disruption in the delivery of education is pushing policymakers to figure out how to drive engagement at scale while ensuring inclusive e-learning solutions and tackling the digital divide.

A multi-pronged strategy is necessary to manage the crisis and build a resilient Indian education system in the long term.

One, immediate measures are essential to ensure continuity of learning in government schools and universities. Open-source digital learning solutions and Learning Management Software should be adopted so teachers can conduct teaching online. The DIKSHA platform, with reach across all states in India, can be further strengthened to ensure accessibility of learning to the students.

Two, inclusive learning solutions, especially for the most vulnerable and marginalized, need to be developed. With a rapid increase of mobile internet users in India, which is expected to reach 85% households by 2024, technology is enabling ubiquitous access and personalization of education even in the remotest parts of the country. This can change the schooling system and increase the effectiveness of learning and teaching, giving students and teachers multiple options to choose from. Many aspirational districts have initiated innovative, mobile-based learning models for effective delivery of education, which can be adopted by others.

Three, strategies are required to prepare the higher education sector for the evolving demand–supply trends across the globe—particularly those related to the global mobility of students and faculty and improving the quality of and demand for higher studies in India. Further, immediate measures are required to mitigate the effects of the pandemic on job offers, internship programs, and research projects.

Four, it is also important to reconsider the current delivery and pedagogical methods in school and higher education by seamlessly integrating classroom learning with e-learning modes to build a unified learning system. The major challenge in EDTech reforms at the national level is the seamless integration of technology in the present Indian education system, which is the most diverse and largest in the world with more than 15 lakh schools and

50,000 higher education institutions. Further, it is also important to establish quality assurance mechanisms and quality benchmark for online learning developed and offered by India HEIs as well as e-learning platforms (growing rapidly). Many e-learning players offer multiple courses on the same subjects with different levels of certifications, methodology and assessment parameters. So, the quality of courses may differ across different e-learning platforms.

Five, Indian traditional knowledge is well known across the globe for its scientific innovations, values, and benefits to develop sustainable technologies and medicines. The courses on Indian traditional knowledge systems in the fields of yoga, Indian medicines, architecture, hydraulics, ethnobotany, metallurgy and agriculture should be integrated with a present-day mainstream university education to serve the larger cause of humanity.

In this time of crisis, a well-rounded and effective educational practice is what is needed for the capacity-building of young minds. It will develop skills that will drive their employability, productivity, health, and well-being in the decades to come, and ensure the overall progress of India.

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The Rise Of Online Learning During And Post Covid-19

DAMANPREET KAUR
PGDM (4TH SEM)

Abstract: The purpose of this article is to create awareness about how teachers and students accepting the digital learning method. This digital teaching makes everyone learn new things each day either it's a student or a teacher. Exploratory research is used in this research. This kind of research has the primary objective of development of insights into the problem. It studies the main area where the growth and problem lies and also tries to evaluate some appropriate course of action. The research methodology for the present study has been adopted to reflect these realities and help reach the logical conclusion in an objective and scientific manner. There is lot of anxiety, fear and conclusion among all of us in this pandemic covid-19.

When everything was running smoothly, a virus known as corona virus has completely changed the way the world was operating — the education system, the working styles, the family dynamics, and personal routine.

Each and every sector got impacted because of this pandemic; one of the most affected sectors is the teaching sector. There is a major change in the delivery of content between the teachers and the students. Now everyone started taking classes on zoom, Google classroom or any other medium whichever is convenient to them. No one is used to online classes. Especially teachers are facing lots of problems. Basically now they have to do twice of the work of what they used to do in offline teaching. These platforms were new, and now they have made the lifestyle of kids and their parents super comfortable. . A six-year-old kid is able to operate Zoom and a nine-year-old can easily do her homework on Google Classroom. This pandemic has taught us so many things, one of which is that this lockdown will end soon but till then parents, teachers, and students will get handy with these applications.

These changes in learning patterns have been furthered by the fifth package under Aatmanirbhar Bharat. India is now focusing on technology-driven online education supported by TV channels to reach those who do not have access to the internet. A provision has been made to telecast the expert sessions live on 15 channels, with the focus on providing educational content.

In addition to this, to drive education with equity post-Covid, the government has launched PM E-Vidya programme — a scheme for multi-mode access to digital/online education that

has content for school education in states/Union Territories. For the very first time, higher education institutions have permission to start online courses.

As the classroom size is being reduced to computers, laptops, tablets or mobile phones, the future will see a surge in online content being delivered through multiple channels. Where learning apps like Byju's have already made their mark, we will see many more such start-ups building online content.

Learning for the elderly has also become easy. People are now learning new recipes on Facebook and WhatsApp.. Some even prepare candidates for entrance exams on such apps. People are now accepting the reality and started learning something new each day. The success of such initiatives is yet to be seen. However, the point to note is that content is now available everywhere. From Google to any of the social media applications, learning is right at our thumb now. What we need is sound judgment, as it will be a major challenge to assess the quality and reliability of the content.

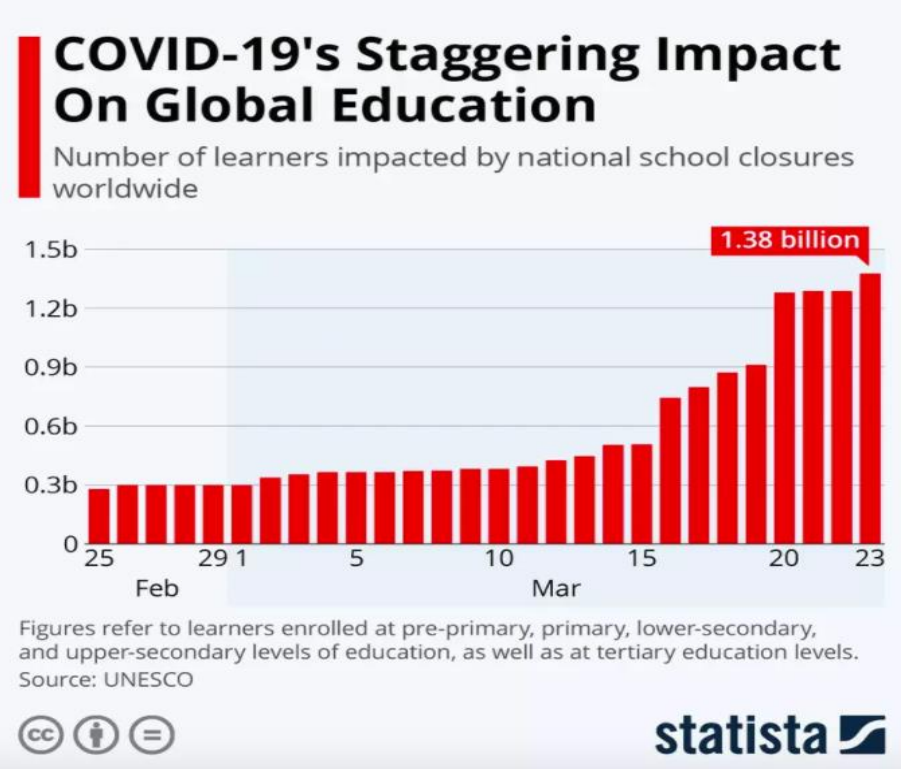
There will be a lot of scope of personalising learning strategies, moving the focus from rote memorisation to understanding complete concepts. Project-based learning with a focus on the process, rather than on the results, will further enhance learning. Students can now choose to learn the subjects that they are most interested in. As routine tasks are taken over by computers, workers will be valued for the creativity and intuition that only the human mind can offer (for now). Effective communication, the ability to collaborate, manage time, critical and creative thinking, problem-solving, etc., are all valuable assets going into the future of learning.

However, these new styles of learning come with their own sets of challenges. This needs to be neutralised with offline workshops, worksheets and smart games. The focus should be on practical understanding, internships, and certificate-based learning, to act as a promising tool for career readiness. While the future of work is about being more creative and empathetic, online learning can teach the content. However, moral values can only be taught by people. And thus, the structure of the schools, the training of the teachers and the content has to be modified and developed accordingly. Schools will have to shape up to enhance the creativity of their students and design their critical thinking.

Spending too much time on the screen also has its limitations. We are in a fortunate situation to have the technology, resources and opportunity to experiment with the ways education is delivered. It is essential that we prepare the next generation to create an impact on society. With technology in hand and the amount of exposure that comes with it, it is important that we keep the students rooted and give them the wisdom to choose what’s right for them.

Parents and teachers needs to educate kids that everything is not right on internet. So, if there are benefits of online teaching so there are drawbacks also for the same.

The places will also be structured to accommodate multi-disciplinary peer-learning. A good example of this is a SuperLab in London. With 280 individual workstations, this SuperLab is considered one of the largest and most advanced educational facilities in Europe. It is the first open-plan SuperLab in the world to enable scientific research and learning to be carried out simultaneously at such a scale. Just like Finland, the schools should prepare for phenomenon-based learning with an emphasis on communication, creativity and critical thinking, and better prepare students to apply their knowledge in the 21st-century workplace.



How is the education sector responding to COVID-19?

In response to significant demand, many online learning applications are offering free access to their services, including platforms like BYJU'S, a Bangalore-based educational technology and online tutoring firm founded in 2011, which is now the world's most highly valued edtech company. Since announcing free live classes on its Think and Learn app, BYJU's has

seen a 200% increase in the number of new students using its product, according to Mrinal Mohit, the company's Chief Operating Officer.

Tencent classroom, has been used the most as it is observed by them, since mid-February after the Chinese government instructed a quarter of a billion full-time students to resume their studies through online platforms. Other companies are bolstering capabilities to provide a one-stop shop for teachers and students. For example, Lark, a Singapore-based collaboration suite initially developed by ByteDance as an internal tool to meet its own exponential growth, began offering teachers and students unlimited video conferencing time, auto-translation capabilities, real-time co-editing of project work, and smart calendar scheduling, amongst other features. To do so quickly and in a time of crisis, Lark ramped up its global server infrastructure and engineering capabilities to ensure reliable connectivity.

For example, Pearl Academy - an established institute offering education in design, fashion, business, and media studies, has taken many steps to offer seamless services to both current and prospective students. Pearl Academy is now QS I.Gauge E-Lead certified for E-Learning excellence for academic digitization with a perfect score of 150/150. It is the only Indian Design institute with this distinction For the current students, it is business as usual with 1300+ weekly online classes held by Pearl Faculty, and even opportunities to expand their learnings by providing online courses in collaboration with Coursera and Business of Fashion. The institute is taking classes digitally from 18th july.

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Enabling digitalization in global india
During covid-19

Vipin Sharma[1]MoumitaBanerjee[2]Utkarsh[3]Nilesh Dokania[4]

[1]Researcher,MastersOfComputerApplication,GuruGobindIndraprasthaUniversity,

vipinsharma0050@gmail.com

[2]Researcher,MastersOf ComputerApplication,GuruGobindIndraprasthaUniversity,

moumi.b95@gmail.com

[3]Researcher,MastersOfComputerApplication,GuruGobindIndraprasthaUniversity,

utkarsh201994@gmai.com

[4]Assistant Professor, Department Of Computer Application, Assistant Professor of Gurunanak Institute of Management,nileshvansh@gmail.com

Abstract

The purpose of this paper is to understand the technology adoption, teaching and learning process, student engagement and faculty experience towards virtual classrooms during Lockdown due to COVID 19, India.During the lockdown period faculty have undergone the process of technology adoption and students are involved with various online modes of learning. There was lots of fear, anxiety and consciousness among students and faculty regarding COVID 19. This study is confined to the positive side of COVID 19 and change in the education sector by adapting to technology and engaging students with various virtual sessions. The current study is limited to the sample frame of faculty from Higher education institutions.The emotions and perceptions of faculty towards the usage of technology and experience are different for different users. Even though COVID 19 has created cognitive dissonance in students.

Keywords-

Video Conferencing, E-Learning, Technology Adoption

1. Introduction

India‘s fight against the COVID-19 outbreak has been unique. The “JanataCurfew” was a India’s fight against covid19 outbreak has been unique. “The Janata Curfew “was a positive step for further awareness and preparedness about the quarantine and provided the doorway for implementation of lockdown in several states. India is now locked down and loaded in its fight against the corona virus. Prime Minister Narendra Modi announced a 21 days 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 global war.

COVID 19 pandemic is first and foremost a health crisis. When it comes to the education sector, many countries have closed down schools and universities. It is the creativeness and mastermind of policymakers how they can bridge a gap for this in a positive way or negative way Hence teaching is moving online on an untested and unprecedented scale. Students’ assessments are also moving online. Educators, faculty, students are doing their part to support each other. And these disruptions are a time to rethink and reflect on the educationsector.https://www.worldbank.org/

1.1 Applications Used For Online Classes & Official Work

1. Google Classroom-The Google Classroom is an app designed for students and teachers with features like assigning classwork, creating classes, grading assignments, class comment and more. The app also has a video calling feature which is supported by Google Me
2. Skype For Business-The business counterpart for the famous video calling app-Skype is great for conducting online classes with your students. The platform has a free variant but you can get a monthly subscription for Rs 130/person or if your institute has an Office

3. Zoom- Schools and other institutions are conducting online classes via the video conferencing app Zoom. However, the latest reports of 'Zoom Bombing' and other security-related issues with the Zoom platform, has sent teachers looking for an alternative
4. Hangout-Hangouts is available on mobile devices, tablets, and computers. So your students can video conference with you anywhere, even if they don't have a PC at home.
5. Microsoft teams-The future of Microsoft's video conferencing- Microsoft Teams. There is a free variant but it has limited functionalities. Your Office 365 comes with a Microsoft Team subscription and that will allow you to make simultaneous group video calls to 250 participants.
6. Go To Meeting-From the makers of LogMeIn, the GoToMeeting is the standalone web conferencing platform which provides audio and video chats. It is mobile friendly and can also be used on PC and Mac.
7. Blue Jeans-This platform provides cloud-based video conferencing and is usable on IOS, Android, PC and Mac making it very flexible. This service, however, does not have a free variant however, you can try it for free for 30 days.
8. Web Room-is the classroom and free part of the I Teach World virtual school and LMS. If you really want to get serious about creating a 100% online school then this is the tool to choose.

https://www.indiaeducation.net/

1.2.Technology Adaption

People resist change without understanding the need and importance of it and when a situation arises all should adapt to change willingly and unwillingly. This was the situation which

Occurred to teaching fraternity too. Indian higher education institution has used various

pedagogy for innovation, development, and engagement of students. Many faculties have resisted the change when they had been asked to take virtual classes for students.

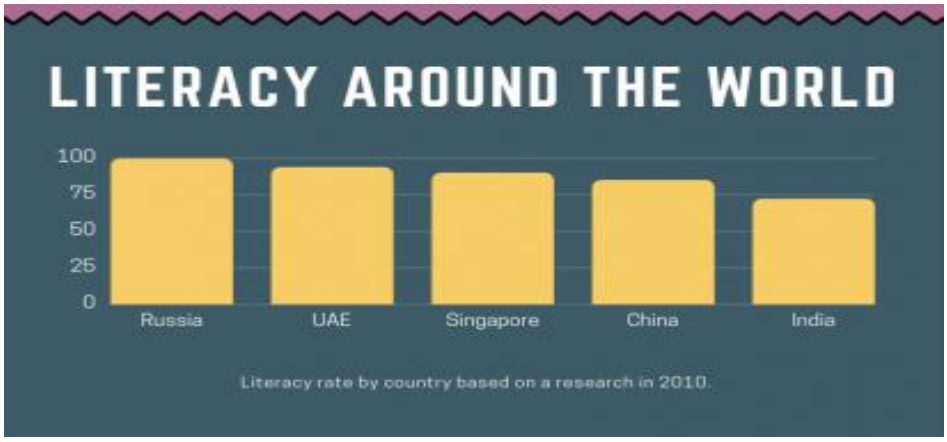


Fig1.1-Literacy Around The World

2 . COVID 19: Teaching and learning

Teaching and learning are always in demand and when faculty heard about lockdown due to COVID 19 .The higher educational institutions have opted for online classes. The tools used by faculty during lockdown for teaching and learning through online modes are Zoom, Google Hangouts, Skype meet up, Google classrooms, LMS, ICT, YouTube, etc. Many Faculty feel there is no much difference between online and offline sessions as they can share PPT, play videos and use board and marker as regular classrooms. One interesting part, one of the respondents was handling an analytics course for PGDM students and even she can run all the codes online and students were very positive towards the learning and course this has created a revolution in the higher education institutions and proved the hybrid system of teaching through offline and online mode.https://en.unesco.org/

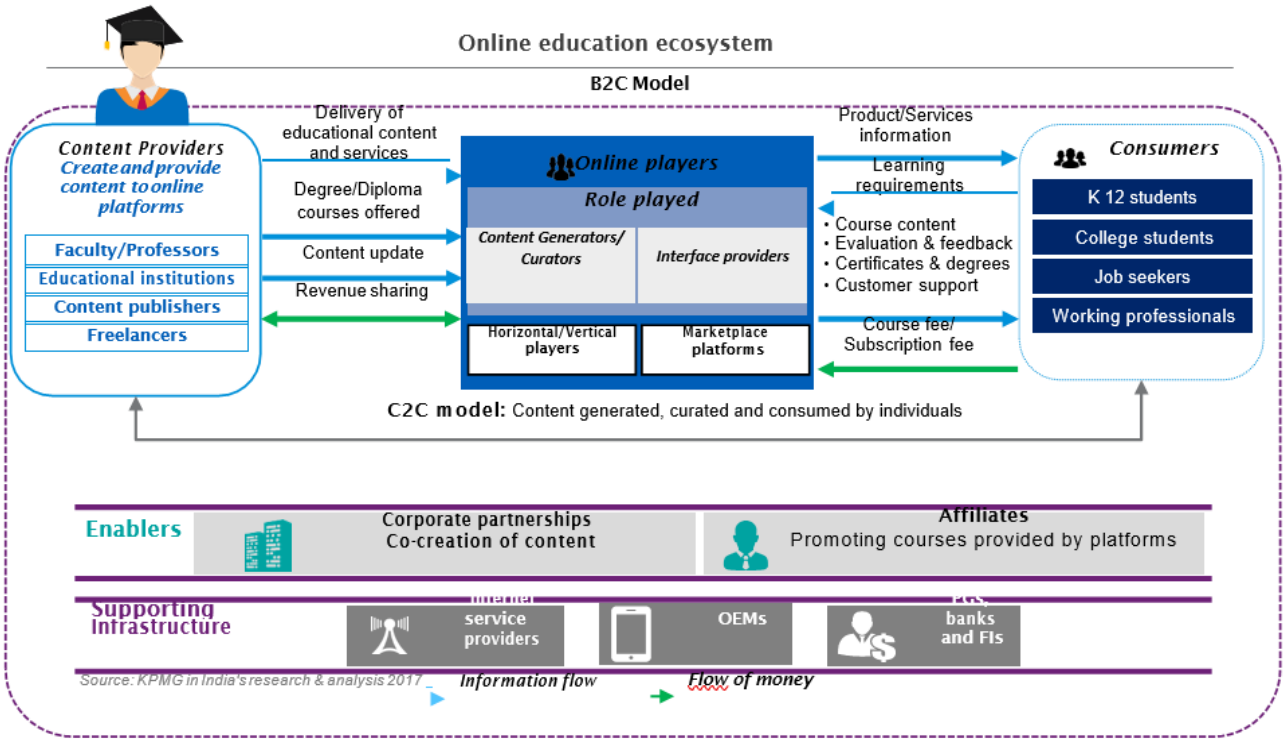


Fig2.1-Education Ecosystem In India

3.1 Advantages Of Online Learning In India

- Learn from anywhere, at any time
- Since online education only requires a laptop or a smartphone with an internet connection. This flexibility helps working professionals to pursue new courses without giving up their jobs. They can learn at weekends or in their free time.
- Save Money and Time

Online education is much more cost effective than doing a regular on-campus degree. It helps students who cannot afford a regular college degree to accomplish their dream without spending a fortune on college education.https://www.w3schools.com/

- Learn at your own pace

Everyone learns at a different pace. In a classroom where everyone taught together. Students can clarify their doubts by live chats or forums as well.

Fig3.1 Advantages of online learning

- Recognition of online degrees

Online degrees are accepted by many companies and employers in India as long as it is accredited and approved by Distance Education Council (DEC) of India. Many of them are encouraging their employees for getting online education as well.

3.2 Disadvantages of Online Learning in India

- Chances of distraction are very high

Students can easily lose track of their studies in online education since there are no face-to-face lectures and classmates to remind you about assignments. Until and unless you keep yourself motivated it takes a long time to complete your course or abandon your entire course.

- Fraudulent Online courses

There are many websites that offer online courses without the accreditation of any educational authority or in the name of fake authorities. Such courses will not help you to get any job. So it is very important to choose an accredited online/distance program before you spend money on it.

- Cannot do courses that require Labs/Workshops

You cannot do an engineering course or any other course that requires labs or hands-on workshops online. Also in courses like MBA you miss the chances of professional networking, overseas experience etc. Which is considered an important part of the course.https://en.unesco.org/

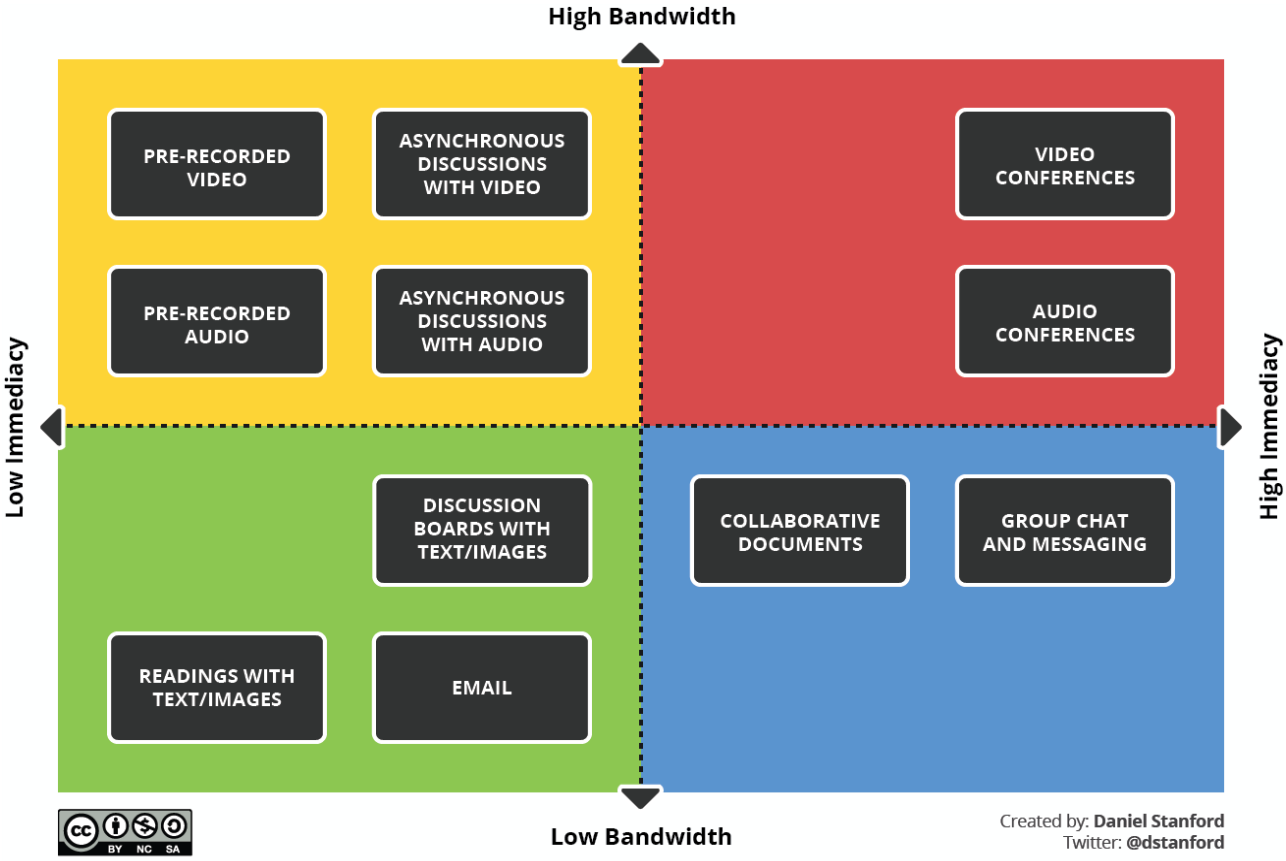


Fig3.2-Process Of Online Learning(Bandwidth)

4. A rarity turns commonplace – overnight

When unexpected events strike the world, one could find humanity accepting unusual things at an unforeseen pace. COVID-19 is a tsunami that turned our world upside down and forced us to change the way we live, work, shop, play, entertain, socialise… and the way we learn too. Forever. Having ourselves, and our family members, locked inside homes for safety, everything suddenly revolved around the only connection we had with the rest of the world: the

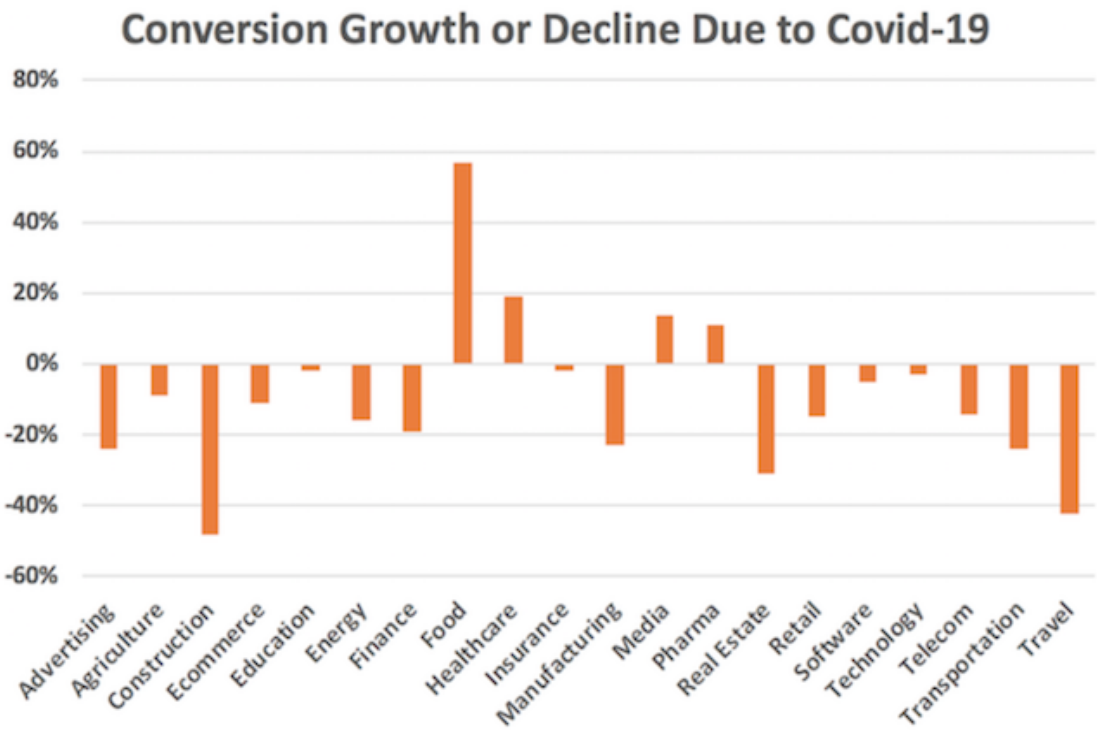
Internet. Parents too had to accept that education of their children, which was hitherto believed as something that can't be taken out of a physical classroom, had to go virtual. So, in no time all schools leapfrogged onto the online bandwagon and the teacher-centric pedagogy turned to student-centred lesson plans and delivery mechanisms including virtual classrooms, online assignments & tests, webinars & e-forums and video meetings with parents, to name a few. https://www.marketwatch.com/

Fig4.1-Online Education Market MarketIn India

Educational Infrastructure		
Schools (K-12) 1.5 mn	Colleges: 35,539 Universities*: 751	Vocational Training Centers 22,000
Govt. 1.1 mn | Private 0.4 mn	Govt. 8,000 | Private 28,283	Govt. ITI: 2,571 Polytechnics: 9,900 | Pvt.ITI 9,673
No of Students: 260mn	No of Students: 29mn	No of Students: 4.5mn
Annual Intake 18 mn	Annual Intake 5 mn	Annual Intake 3 mn
Additional Capacity Required 40 mn	Additional Capacity Required 20 mn	Additional Capacity Required 20 mn
Additional Requirement for Teachers- 2 mn	Additional Requirement for Faculty- 1.7 mn	Additional Requirement for Trainers- 1 mn
Additional Resources US$60 bn	Additional Resources US$100 bn	Additional Resources US$40 bn

5-Educational Infrastructure Fig5.1-Educational Infrastructure In India

5.2The new normalcy



The changes brought about by the threat of Covid-19 is so revolutionary in education that even 3 decades of deliberation would not have managed what has been achieved in less than 3 weeks of lockdown. Teachers prepared lesson plans on spreadsheets while schools helped them make illustrative PowerPoint presentations using graphics and videos to help students understand new concepts. Innovative education techniques such as Flipped and Collaborative Learning, touted as part of Education 4.0, were being practised with much ease across all schools today. https://www.weforum.org/

Fig5.2-Conversion Growth Or Decline

The coronavirus pandemic will plunge the world into a severe recession, the deepest since World War II, shredding per capita incomes and pushing millions into poverty, the World Bank said on Monday.https://www.coursera.org/The global economy is expected to shrink 5.2% in 2020, it said. Declines in economic growth across region will be driven by severe disruptions to “domestic demand and supply, trade and finance”, the bank said in a

report, Global Economic Prospects, which contains an assessment of economic shocks from pandemic shutdowns.In India, the bank forecast that Gross Domestic Product (GDP) will shrink 3.2% in the fiscal year 2020-21, when the "impact of the pandemic will largely hit". GDP, or the value of all goods and services produced, is the broadest measure of incomes generated in an economy. The International Monetary Fund has slashed its 2010-21 growth projection for India to 1.9% from 5.8% estimated in January. Barclays said it saw 0% growth, while the World Bank cut India's growth forecast to 1.5-2.8% from 6.1% earlier.The World Bank in its note on India said: "Stringent measures to control the spread of the virus will heavily curtail activity, despite some support from fiscal and monetary stimulus. Spill-overs from weaker global growth and balance-sheet stress in the financial sector will also weigh on activity."

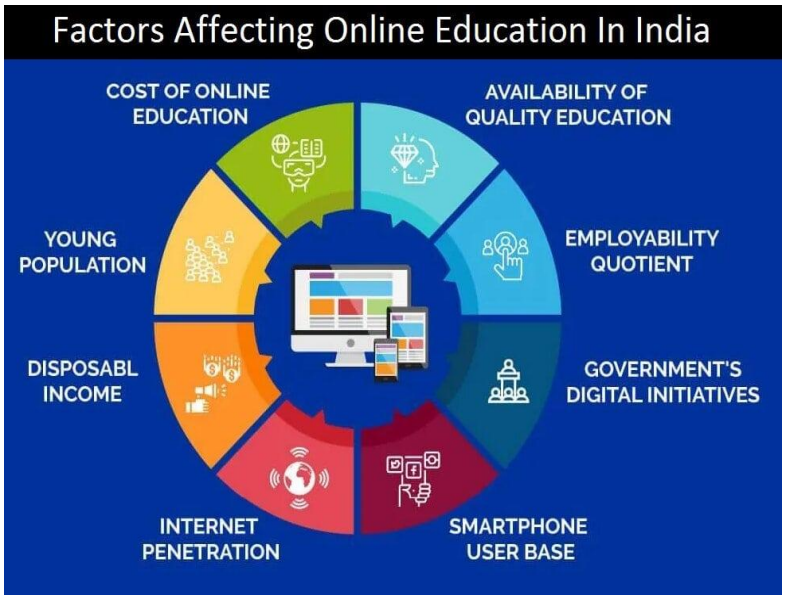


Fig5.3-Factors Affecting Online Education In India

6.Segment Insights

The online education market is segmented into primary and secondary supplemental education, test preparation, reskilling and certification, higher education language, and casual learning. The online primary and secondary supplemental education segment was valued at INR 11.99 Bn in 2018 and is expected to reach INR 123.65 Bn by 2024, expanding at a CAGR of ~46.48% during the 2019-2024 period. The change in consumer behavior towards detailed learning and surge in demand from tier II and tier III cities are driving the growth of

this segment.The online test preparation market is expected to reach INR 94.75 Bn by 2024, expanding at a CAGR of ~50.84% during the 2019-2024 period. This segment is expected to be the fastest-growing segment in the online education market, owing to growth in career-focused population, enhanced Internet infrastructure and increased penetration of digital payment methods. https://www.futurelearn.com/

Fig7.1Segments insights

8. Limitations and future Scope for study

This study is confined to the positive side of COVID 19 and change in the education sector by adapting to technology, teaching and learning and engaging students with various virtual sessions. The current study is limited to the sample frame of faculty from Higher education institutions at India, hence finding of this study cannot be generalized for entire India. The emotions and perceptions of faculty towards the usage of technology and experience are different for different.Data consumption and usage. In India we have lots of technical issues when it comes to data consumption and usage. Future researchers considered this as a research gap and focus on various other modes to collect through empirical support and analysis for better results. And also

Focus more on a hybrid system of education that is a combination of both online and offline.https://www.codecademy.com/

		Computer	Internet facility	Able to operate computer	Able to operate Internet	Used internet in last 30 days
Rural	Bottom Q1	1.7	5.7	7.3	8.3	6.1
	Q2	1.8	8.8	8.1	9.6	7.4
	Q3	2.4	11.6	9.2	11.1	8.3
	Q4	4.2	18.4	13.4	14.6	10.9
	Top Q5	9.5	29	20.1	20.6	16.5
	Total	4	15	11.7	12.9	9.9
Urban	Bottom Q1	6.6	18	21.9	22.1	16.8
	Q2	8.8	26.5	27	27	21.9
	Q3	15.6	38.7	31.6	31.1	26.7
	Q4	23.3	50.1	38.2	37.5	32.9
	Top Q5	48.9	68.3	51.3	50.2	45.8
	Total	28	39.8	33.6	33.2	28.4
Overall	Bottom Q1	3.1	9.3	11.6	12.3	9.2
	Q2	3.7	13.7	13.2	14.3	11.4
	Q3	6	19.1	15.3	16.5	13.3
	Q4	9.1	26.6	19.8	20.5	16.6

Fig8.1-Database

9. Conclusion

It has created the revolution in Indian higher education, as there was lots of resistance in teaching fraternity towards adapting to technology pre-COVID 19 crisis and due to the situation most of the faculty at higher education institutionshas adapted technology and started taking virtual classes and their experience is great. Virtual engagement of students better than normal classrooms and attendance is almost 100 percent. Hence, educationalists, policymakers take this as innovation and creation from these institutions and start implementing a similar approach to other educational sectors such as under-graduate colleges and universities. We would like to conclude with the statement that this study is not creating hype for virtual classrooms, our intention was to project the innovation adopted by higher education institutions during the crisis. The teaching fraternity doing a great job and be proud of our profession.https://www.indiaeducation.net/

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Online Digitalization Of Teaching During And Post Covid -19

By Himani Mittal And Vaishali Wadhwa

Covid-19, the novel pandemic

Human history is observing a very strange time fighting an invisible enemy; the novel covid-19 coronavirus. Initially observed in the wuhan province of china, now fastly spreading around the world. Various journals are offering to freely publish the articles about coronavirus. As this pandemic is very new and very less scientific material is available on the topic, various paid journals and companies are offering free materials published about the coronavirus.

Mankind has observed various pandemics throughout the history where some of the were more disastrous than the others to the humans. We are observing a very tough time once again fighting an invisible enemy; the novel covid-19 coronavirus. Initially observed in the wuhan province of china, now fastly spreading around the world.

As of today, 20th march, 2020, there are 270,069 coronavirus cases, with 11,271 deaths while 90,603 has been recovered. In the total coronavirus patients died, very interestingly the highest number belongs to Italy i.e. 4,032 deaths.

Abstract

Post covid-19, the world will be a different place. There will be visible changes across a range of behaviors, from shopping and eating out to travel. Understandably, the impact of the pandemic has already been felt on education sector too. It is reasonable to assume that this impact will be here to stay for a fairly long time. This pandemic is clearly a sign of changing times and human behave or. It is also an event that has given rise to push to digitalization of businesses, specially in the education sector.

We have to prepare ourselves to bring the best of online education into the classrooms - a blended learning approach - and in the process, offer the students a powerful learning experience, who lacked good education or quality resource access.

Blended learning will become a reality: the classroom will be supplemented by online coursework. This way, students may be required to physically attend classes on fewer days and will be free to study at their own pace. This will also give them adequate time to assimilate information.

Training of teachers will be qualitatively different: all the teachers will have to be trained for online teaching as well. This will go a long way to ensure that they are comfortable with technology and will be able to seamlessly switch between online and offline modes of teaching the curriculum. And above all, teachers will feel empowered to deliver a more impactful lecture than before.

Digitalization of teaching:

We are running into the 21st century where technology knows no bounds. This is the phase of radical development where technology is taking over every niche and corner. Smartphones, laptops, and tablets are no more unknown words. During this phase the education system is evolving for the sake of betterment, as this generation's students are not born to be confined by the limits of simple learning; their curiosity is vast and cannot be catered with educational systems that were designed earlier. If we kept on teaching our children the way we taught them yesterday, we would deprive them of their tomorrow. Our old educational system lacks the capability to stand a chance in the 21st century. So we are compelled to use digitization in our educational system.

Digitization is the term

“Digitization is the integration of digital technologies into everyday life by the digitization of everything that can be digitized.”

Yes! Digitization is the trending term, describing the 21st century in the most precise manner as possible. We are in the era where unprecedented ideas are unfolding in our education industry and creating the advancement that can’t be matched by lagging behind in terms of technology.

Online resources: connecting students with their educators

With a high increase in the student population in recent times, pedagogy is being compromised. Because of that, online resources are being developed in a way that makes them always available to teachers to educate the masses. Which, in turn, improves the quality of education and increases the number of literate students.

Internet: making digitization possible

After the United States and China, India has been rated as the third largest internet consumer. The core existence of online education platforms is being possible with the internet. Most schools and colleges in india make use of the internet and they basically use it for conducting online exams and quizzes.

Administrative activities: an integral part of the education industry

With digital systems being prevalent in education we are experiencing different levels of ease in online education, but the administrative part is not off the table. Keeping the records of students and maintaining their attendance and roll number is a big headache, that too when the students are outnumbering the administrative heads. So colleges and schools are adopting more hassle-free computerized methods and avoiding the old manual methods of maintaining the records.

It is a boon or bane:

We often hear that the education system is broken. While specific issues vary from one school to another, the core of the problem remains the same everywhere. Lack of funding restricts both teachers and students from trying new learning methodologies. This trend has continued for long and applies to a majority of schools.

Offline learning also overlooks the magical ingredient of ‘engagement’ among its different stakeholders. Engagement functions similar to the game of ‘tag your partner’ which facilitates strong communication and connection while achieving a collective goal. In this case, an enhanced learning experience.

Students find ‘irrelevance of the curricula for their development’ as one of the problematic parts, apart from financial issues, peer pressure and the lack of interest. The present form of schooling falls short on motivation and hence, as a strategy to engage students. And, because of repetitive teaching-learning methodologies, both students and teachers lose enthusiasm. The students need to know how to analyse, find solutions, and adapt rather than tying them up with text-bookish knowledge that gives no practical skills to lead their lives.

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The rise of online learning

We don't need to wander far off to look for instances wherein online learning platforms have lent a helping hand to learners. With schools and other educational institutes shut, the recent outbreak exemplifies the spirit of new-age continuous-learning platforms.

According to similar web data, online learning platforms in India have seen a surge amid the nationwide lockdowns. They drew up to 4 per cent of the total web-traffic. Brainly itself accelerated growth from 150 million to over 250 million worldwide (may 2019 vs. May 2020), while successfully garnering more than 25 million users in India. This marks the acceptability and popularity of interactive learning methodologies and depicts exactly what the modern learner wants.

With more students using personal computers and mobile phones to resume virtual classes, the share of online learning will see a dramatic rise. Though it may not completely overtake

the offline market, it is expected to see a sizable growth of 20-40 percent—a notch above the pre-covid levels.

The other side of online education:-

- Covid may also turn the things topsy-turvy for the online education sector. Limited resources to fight the pandemic, a huge population, economic downturn, and rising cases can affect the financial stability of both individuals and institutions.
- Students who don't have access to technology in their homes may see a slump in their education because of the lack of resources. The academic gap between students who can and cannot afford technology and digital devices will grow further. Once considered a level-playing field, the technology will itself discriminate amongst its beneficiaries.
- Educators don't have the tools to help students from lower economic backgrounds learn from home. Teachers aren't able to connect with the ones who don't have access to devices.

So who wins: offline or online?

The game isn't about whether online learning is better than learning in-person. Online learning is not an alternative but a supplement to traditional education. Schools will continue to act as the primary source of education but online modes can help the process become more enjoyable and insightful for students. It's about how the two can coexist and function in a symbiosis.

For the model, or say, education to succeed, we need to encourage students and their parents to learn from home and seek help whenever they need it. Online learning has the power to reduce the education gap in qualitative and quantitative terms. The technology ensures customized training modules for all students. They can learn at the pace they are comfortable with.

To put things in perspective, both offline no cultures can go hand in hand. Tech-based education is based on decoding how to engage students and how to continue education in the absence of traditional classrooms, thereby helping students master topics on their own.

The development of a hybrid learning model will be observed across the globe. It will ensure that our students enjoy the best of both physical and digital worlds.

Conclusion:

Online learning is a growing and exciting new way to learn about almost anything. If there is a course you have always wanted to take or a skill you have always wanted to learn, but you have not had the time to attend a traditional face-to-face class or there hasn't been an opportunity near you, then online learning might be your answer.

Today's online learning opportunities offer everything from one-hour live workshops to online degrees. There is virtually something for everyone, all you have to do is find it.

However, learning online is different from learning in a face-to-face setting, and it is important to think about your goals, your needs and your interests before committing yourself to something. You also need to think about the time you have available, your comfort level with using technology and the equipment that is at your disposal. As we all become more familiar with computers and computer access becomes increasingly common, online learning will continue to open doors and offer learning opportunities for those who are interested..

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An Exploration Of Potential Impact Of Inventory Management Implementation On Warehouse

EKATA GUPTA, Associate Professor, GNIM

NEERAJ KUMAR, Student MCA, GNIM

ABSTRACT

Inventory management is a simple concept-don't have too much stock and don't have too little. Since there can be a substantial costs involved in staying above and below the optimal range, careful inventory management can make a huge difference in the right balance can be quite a complex and time consuming task without the right technology.

Inventory management system project that allows user to manage and maintain his inventory with ease. The inventory management system has been developed to allow users to add an inventory, delete an inventory, enter inventory quantity and other details, update inventory status and more. The inventory management system has its own intelligently managed support system that allows user to view and manage various inventories added in the system.

The system provides following features:

- User may add/update/delete inventory.
- User may add/update inventory details.
- Details include cost, quantity and description.
- Includes forms for inventory inwards and outwards.
- An interactive user interface.
- A flexible inventory management system.

INVENTORY MANAGEMENT

Inventory Management is a high performance tested application. It allows the user to manage products in different warehouses. With the help of this application, staff user can also manage purchase, sales, return products and owner can analyse the stock effectively.

Inventory management is primarily about specifying the size and placement of stocked goods. Inventory management is required at differ locations within a facility or within multiple locations of a supply network to protect the regular and planned course of production against the random disturbance of running out of materials or goods.

SCOPE OF THE PROJECT

The scope of inventory management also concerns the fine lines between replenishment lead time, carrying costs of inventory, asset management, inventory forecasting, inventory valuation, inventory visibility, feature inventory price forecasting, physical inventory, available physical space for inventory, quality management, replenishment, returns and defective goods and demand forecast.

OBJECTIVES OF INVENTORY CONTROL

The main objectives of inventory control are:

1. To maintain a large size of inventory for efficient and smooth production and sales operation.

2. To maintain a minimum investment in inventories to maximize profitability.

3. To ensure a continuous supply of raw materials to facilities uninterrupted production.

4. To maintain sufficient stocks of raw materials in periods of short supply and anticipate price change.

5. Maintain sufficient finished goods inventory for smooth sales operation and efficient customer services.

6. Minimize the carrying cost and time.

7. Control investment in inventories and keep it at an optimum level.

SYSTEM REQUIREMENTS

Software Requirements

Supported Operating Systems	Supported browsers	Supported Mobile Specifications
Windows Windows 10, Windows 8, Windows 8.1, Windows 7, Windows Vista, Windows XP SP2, SP3. Mac OS Macintosh OS X 10.6 and above. Linux Linux - all versions Android Lollipop 5.0 and above. iOS Version 9.O and above(Compatible with iPhone, iPad and iPod touch). Chrome OS Chrome version 16.0 and above.	Internet Explorer version 11 or above Google Chrome version 30 or above Mozilla Firefox 27 or above Safari 7 or above	Google Android version 4.1 or above IOS 5.1 or above Windows Phone 8.1 or above

Hardware Requirements

Processor Speed	Minimum: x86 Processor: 1.0 GHz x64 Processor: 1.4 GHz Recommended: 2.0 GHz or faster
Processor Type	x64 Processor: AMD Opteron, AMD Athlon 64, Intel Xeon with Intel EM64T support, Intel Pentium IV with EM64T support x86 Processor: Pentium III-compatible processor or faster
Screen Resolution	Minimum: 1024x768
Bandwidth	Minimum 128 kbps (256 kbps and up recommended)

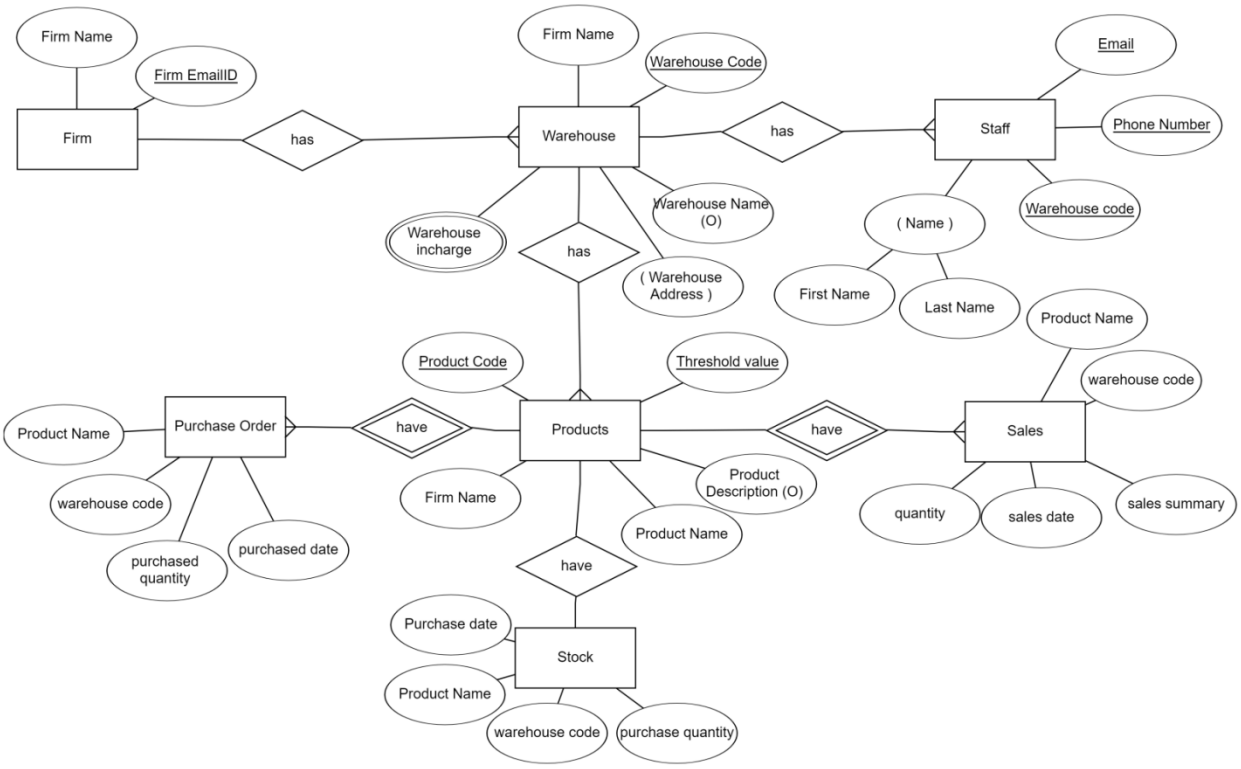

Fig-(ER-Diagram)

INTRODUCTION TO ZOHO CREATOR (SOFTWARE TOOL)

Zoho Creator is a cloud software to create custom applications on your own without any prior coding experience or IT expertise. Zoho Creator enables you to create custom business applications. You can collect data, automate business processes or workflows, analyze the data in reports, and collaborate with your application users.

Zoho Creator lets you concentrate on automating your business process without worrying about maintenance, hosting, and scalability. With our native mobile apps, you can access realtime data from anywhere, anytime and on any device.

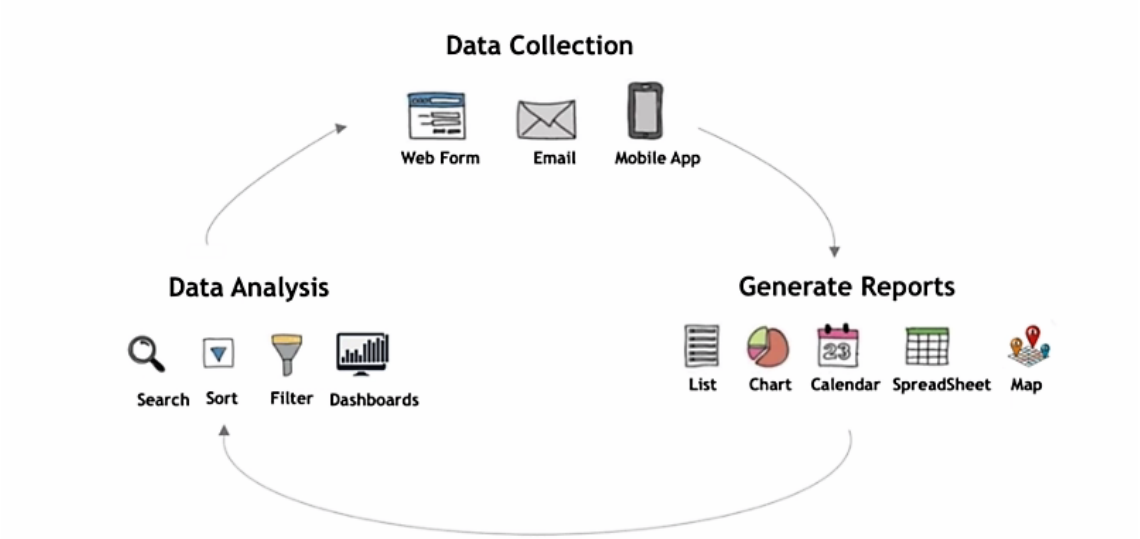

Fig-(Zoho Application Architecture)

DELUGE - ZOHO'S LANGUAGE

Deluge, or Data Enriched Language for the Universal Grid Environment, is an online scripting language integrated with Zoho services. It enables users to add logic to their applications incrementally, making it more powerful and robust.

UI-based actions like point-and-click are limited in their scope. After a certain point, if we want something to be very complex, we need custom scripts to perform custom actions.

MAJOR COMPONENTS OF THE PROJECT

The major components of Inventory management include forms, reports and pages. FIRM, PRODUCTS, STOCKS, STOCK OUTFLOW, STOCK INFLOW and STAFFS are main modules of the project.

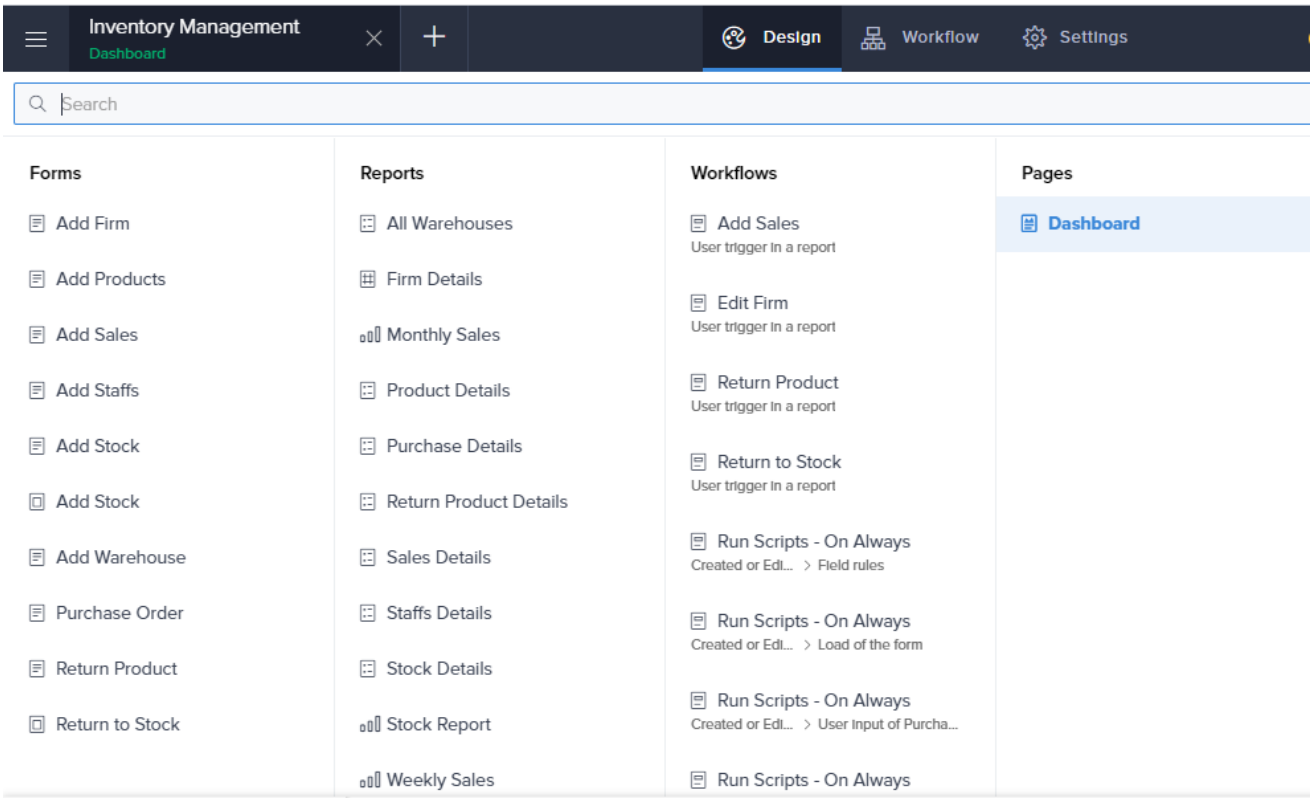

Fig-(Major Components of project)

CONCLUSION

It has been a great pleasure for me to work on this exciting and challenging project. This project proved good for me as it provided practical knowledge of not only programming in zoho creator but also about all handling procedure related with **"Inventory Management".**

It also provides knowledge about the latest technology used in developing web enabled application and client server technology that will be great demand in future. This will provide better opportunities and guidance in future in developing projects independently.

WHAT HAVE I LEARNT ?

In the development of this project we have learnt many lessons. Some of them includes, It is very hard to extract technical specifications from the abstract descriptions of users. Find solutions for the errors when it was hard to find them.

FUTURE SCOPE

The system is made in all possible way to meet the user requirement using latest version of available software and hardware. But as user requirement and operating environment keep changing further extension can be made on this. In future some more schemas can be added in the application and make it more better. Hence these schemas are to be included in the software development.

The services provided to the user can be extended in the following ways :

- **Inventory forecasting** is the process of calculating the inventory needed to fulfil future customer orders based on how much product you predict you will sell over a specific period of time. These estimates take historic sales data, planned promotions, and external forces into account to be as accurate as possible.
- Know when supply prices change and adjust inventory accordingly.

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Conventional vs. Online learning

Deepak Bhatt(deepakbbhatt999@gmail.com) MCA Student, GNIM, Delhi,
Simarpreet Kaur(simarvirdi.007@gmail.com) MCA Student, GNIM, Delhi,
Prof.(Dr.) Shubhra Saggar Professor, GNIM, Delhi

Abstract

Traditional/Conventional education is also called customary education or conventional education. The main motive of traditional education is to pass on the values, manners skills and the social practice to the next generation which is necessary for their survival. In traditional education the student learns about the customs and tradition of the society in which he lives. The students simply sit down together and listen to the teacher or another who will recite the lesson. In this type of learning the physical touch is needed i.e., the teacher and the student both should be physically present.

Online education is a form of education where students use their home computers through the internet. Online education is electronically supported learning that relies on the Internet for teacher/student interaction and the distribution of class materials. For many non traditional students, among them all those who want to continue working full time or raising families, online graduations and courses have become popular in the past decade. Often online graduation and course programmes, some of which are conducted using digital technologies, are provided via the online learning portal of the host university.

Introduction :-

1. Traditional/Conventional Learning

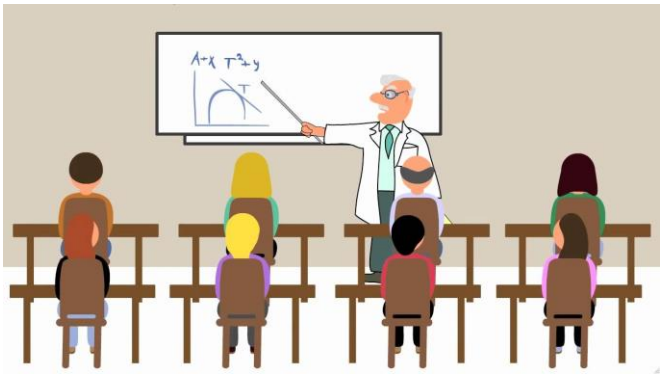
Conventional learning takes place in a classroom setting. There is a teacher who moderates and regulates the flow of information and knowledge. In a traditional classroom, students can directly share their views and clarify their own queries with the teacher, thus getting their questions answered right away.

Most of the time books and classroom notes are very useful for studying and passing exams. Understanding the Question & Answer pattern, and with suggestions provided by experienced teachers, students can find it more helpful to learn than when using generalized online notes and suggestions available on the internet.

Also, classroom learning is more helpful due to a continuous interaction between students and teachers, as it helps students to get rid of their fears regarding exams, which can rarely happen with online guidance.

Multiple benefits students typically gain from traditional learning aren't limited to study only. While on campus, students get to hone their social skills while interacting with both their teachers and colleagues. It creates a routine which the students have to follow, and in turn, this will bring punctuality and discipline.

Lastly, interactions with good teachers help motivate students to achieve higher marks.



1.1 Advantages :-

1.1.1. Active Learning: Traditional campus life can benefit a student's life by having contact with professors and instructors. With online learning, the options are limited. On-campus, students can set up face-to-face meetings with their professors to discuss the class, their performance, or a project.

1.1.2. Learning is Scheduled: There are some school experiences you won't gain in any other place. Field trips, school activities, and different clubs, part of which you can be are just

some of those experiences. From each of those activities, you'll take life lessons that will be beneficial in your future.

1.1.3. Promotes Collaborative Learning: Collaborative learning increases a student's self-awareness about how other students learn and enables them to learn more easily and effectively, transforming them into keen learners inside and beyond classroom.

1.1.4. Social Benefits: School is where children learn how to socialize and make friends. Going to school is a fundamental building block in a person's life. School is where children learn how to socialize and make friends. School is where we meet some of our best friends and make memories of a lifetime. Unfortunately, it is also where negative social experiences take place. These experiences also prove to be valuable learning experience.

1.1.5. Builds organisational skills: Classroom teaching teaches students how to develop organizational skills, beginning with the basics, such as arriving to school on time.

1.1.6. Keeps students stimulated: The physical presence of a teacher keeps students stimulated through the interactive and interesting activities. This enables students to retain more from what they have learned during a session.

1.2 Disadvantages :-

1.2.1. Students Focus is Set in the Wrong Direction: In taking notes instead of understanding and engrossing new ideas. under studies powerlessness to handle key thoughts and ideas, failed exercise objective.

1.2.2. Teacher's Lecture is generally one-size-fits-all: Only one out of every odd understudy has a similar pace of learning. While a few understudies can pursue the educator's address with accommodation, the vast majority of the others expect time to chow on the data that they are getting. Additionally, every understudy has an alternate learning style. You can't anticipate that a sensation student should ace an idea by simply tuning in to an address. In the event that a visual student deteriorates grades than a sound-related student, it doesn't imply that the previous is moderate or dull; it may basically imply that the classroom techniques were intended for the sound-related student as it were.

1.2.3. Travel time and cost.

1.2.4. Students need to buy compulsory textbooks.

2. Online Learning :-

- The COVID-19 has resulted in schools shut all across the world. Globally, over 1.2 billion children are out of the classroom.
- As a result, education has changed dramatically, with the distinctive rise of e-learning, whereby teaching is undertaken remotely and on digital platforms.
- Research suggests that online learning has been shown to increase retention of information, and take less time, meaning the changes corona virus have caused might be here to stay.

Online learning/teaching has been very effective and helpful in this pandemic time as students cannot go to schools or colleges, they can learn from home without the fear of covid-19 virus. It is also easy to learn through online learning as students just need a phone and internet connection. With online classes students can learn from anywhere without any concern. Online classes has been very helpful for the students as the students should always learn and grow.

In online classes, the students/ learner is not directly interacting with the faculty. So in case of having any questions, they may find it difficult to ask their online teacher/instructor, as communication is often very impersonal. However, these courses often offer alternatives to live query resolution like online forums, emails, and chatrooms, using these alternatives can be helpful for individuals to get their queries answered.

People often think that interacting with a teacher/instructor live is the best way to learn, as it is interactive and allows for two-way communication. For such types of people, synchronous online courses will be more appropriate.

Thus online learning is also suitable for grownups who are continuing their education while they're working in their regular jobs as they can do both the things simultaneously without affecting the other one. The best thing about online learning is that individuals can take a course from the comfort of their office or home. Even with a busy schedule, one can find some spare time to take a course or study for it.

Students can fit them around their existing responsibilities and commitments, and can engage with multimedia content and learning materials at whatever time is most convenient to them. Even better: they don't have to travel anywhere to study, they can simply log in to the virtual campus from the comfort of their own home or office.

By online learning/e-learning, students have access to new technology which helps them learn and retain information in a far better manner. Which means, it is time for educational institutes to bring some changes to its teaching methods.

Online education in India is at an early stage. Yet, India is full of passionate youth who can enhance the probabilities of Indian Education System. watching the present trends, we will expect growth in enrollment rates in distance online teaching programs. It'll evolve the continual learning process. In learning, different platforms like Skype, Zoom, Microsoft Team, Jio Meet, etc. has also been very helpful.

2.1 Tools Available for Online Learning :-

2.1.1. Google Classroom

Google Classroom helps classes communicate, save time and stay organised. It also makes teaching more productive by allowing you to streamline assignments, boost collaboration, and foster communication. You can create classes, distribute assignments, send feedback, and see everything in one place. Google Classroom also seamlessly integrates with other Google tools like Google Docs and Drive, helping to keep you organised and most importantly, save time. Google Classroom consumes a lot of data compared to other platforms.

2.1.2. Skype

Skype has helped countless online educators bring language and culture to life in their classrooms.

Skype video has traditionally been very popular for video calls to family and friends but Skype is also increasingly being used by businesses these days and it is an excellent option if you are looking to provide both teaching and training online. Skype also, by the way, integrates nicely with Microsoft teams

Skype is also excellent for Groups. In addition to being an excellent option for team meetings and online co-working space, you can use Skype Groups for teaching and training employees and staff from afar.

Wherever in the world you physically are, you can provide external or in-house training online, for up to 50 people at a time.

But like Zoom, Skype video does not have the option to record the meeting otherwise both have same features.

2.1.3. Zoom

In addition to Skype, another free video conferencing tool called Zoom has recently come on the scene. It functions similarly to Skype, but offers a number of extra features that lend themselves exceptionally well to collaboration. Its unique “Zoom rooms” make group calls a breeze, facilitating collaborative work as well as conversations with other classrooms around the world. Another advantage that Zoom has over Skype: you can record conversations to use for later assessment and feedback, an invaluable tool for helping your students improve. But with zoom, previously there were concerns for data security.

2.1.4. Microsoft Teams

Microsoft Teams is always easy even for those people not used to working and collaborating online. Microsoft Teams make it possible to have up to 250 people in a single video call. Zoom is more preferable for teaching online but for team meetings and office chats, this is as good as any option (although not the cheapest).

2.1.5. Jio Meet

Jio Meet is a new video conferencing app. Unlike Zoom, JioMeet is absolutely free right now and comes with features such as video calls with up to 100 participants, screen-sharing, scheduled meetings, etc.

When using Zoom, you only get 40 minutes of free video conferencing at once for up to 100 participants, but with JioMeet, there's no such time limit and the service is free for up to 100 participants. However, JioMeet is still at a very early stage and to better compete with Zoom, it still needs to add a tonne of extra features such as the ability to record meetings via the computer app, or the ability to share your screen via the web client, or changing your background.

2.2 Advantages :-

2.2.1. E-learning is environment friendly: Scientifically, learning online is certainly one of the most effective options for students, but it’s also better for the environment. A research of

The Open University in Britain has discovered that E-learning lead to an average of 90% less energy and 85% fewer CO2 emissions per student than the traditional classroom courses.

2.2.2. Lower costs: Many online courses are completely free of charge Free courses don't usually come with certificate of completion, but they are still more than useful for anyone who wants to learn from prestigious educators.

2.2.3. Comfort: You can pick the program of your dreams in traditional education, too, but that would involve traveling away from home, living in a completely unknown city, and struggling in an extremely competitive learning environment. With online education, you can take any program or course present in traditional four-year universities.

2.2.4. Access to Expertise: An online college education might give students access to specialized degree courses that may not be available in an easily accessible or local institution of learning. Online classes allow the sharing of expertise that helps more people have access to education that is not readily available in certain geographic locations.

2.2.5. Flexibility: Students have the liberty to juggle their careers and faculty . the general public who choose online learning tend to own other commitments, and like this mode of learning because it gives them power over how they'll delegate their time towards their different projects.

2.3 Disadvantages :-

2.3.1. Online Student Feedback is Limited: In traditional classrooms, teachers can give students immediate face-to-face feedback. Students who are experiencing problems within the curriculum can resolve them quickly and directly either during the lecture or during the dedicated office hours. Personalized feedback includes a positive impact on students, because it makes learning processes easier, richer, and more significant, all the while raising the motivation levels of the scholars.

2.3.2. E-Learning can cause Social Isolation: With E-Learning as students have to be in a home to learn which can lead to a habit of being isolated from the world, which is not good for mental health of students.

2.3.3. Lack of Communicational Skill Development in Online Students: E-Learning methods are proven to be highly effective at improving the academic knowledge of the students. However, developing the communicational skills of the students is an area often neglected during online lessons.

2.3.4. Cheating Prevention during Online Assessments is Complicated: Compared to on-campus students, online students can cheat on assessments more easily as they take

assessments in their own environment and while using their personal computer. The students cannot be directly observed during assessments without a video feed, making cheat detection during online assessments more complicated than for traditional testing methods.

2.3.5. Online Instructors Tend to Focus on Theory Rather than Practice: The problem is that a large portion of E-Learning training providers choose to focus largely (in many cases entirely) on developing theoretical knowledge, rather than practical skills.

Conclusion

The traditional government-funded educational system and classroom practices are a long way from impeccable. The duty happens to the shoulders of us educationists that we survey the elements which make the present educational system ineffectual. At exactly that point would we have the option to correct these issue territories so as to make classrooms that convey. In the coming days, I will post more on these issues, and offering down to earth answers for them.

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GURU NANAK INSTITUTE OF MANAGEMENT

Approved by AICTE, Ministry of HRD, Govt of India,

Affiliated To Guru Gobind Singh Indraprastha University

Road No-75, West Punjabi Bagh, New Delhi-110026

Website : www.gnim.ac.in

Email Id : gnimconference2020@gmail.com