POST COVID EDUCATION SCENARIO IN INDIA

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POST COVID EDUCATION SCENARIO IN INDIA

by

Dr. Pargat Singh Garcha, Dr. Manu Chadha, Dr. Jasleen Kaur, Dr. Ramandeep Kaur Sidhu, Dr. Jagjit Singh & Mr. Guru Trisha Singh

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MESSAGE

The globe has witnessed an unprecedented crisis in the past two years which has shook the economies all over the world. No doubt it was the worst phase witnessed by the 21st century, leading to loss of human life, rendering thousands of people unemployed and triggering depression in human hearts and economic sphere. Despite all the adversities, there was a silver lining to this dark period, which ushered a new era in the history of human being -Post Covid Era. This post covid era has brought with it some adverse memories/ challenges but greater abilities and opportunities to handle these challenges.

Out of all the spheres affected during Covid, education was the most significant as it had put to stake the future of our children and youth. But the 'nation builders' as they are truly called- the teaching community geared themselves up and launched the online education platform with greater vigour, innovative tools and a commitment to serve mankind as never before. New trends have been set up worldwide and there has been an exponential growth in the givers and takers of online education in diverse subjects and fields. But pros and cons always go hand-in-hand. Hence the educationists in India also need to ponder upon the Post Covid Educational Scenario.

It is indeed a commendable effort that G.H.G. Khalsa College of Education, a premier institute of Teacher Education has volunteered to take up this pivotal issue by inviting inputs from teachers-nationwide and colligating them into a book appositely titled- Post Covid Education Scenario in India. I congratulate The Principal, Editorial Staff and Faculty of the college for this much needed initiative. I thank all the teachers and educationists who have contributed in generating this shared pool of thoughts which can serve as a guide to plan education in these demanding times.

S. Manjit Singh Gill
President
Governing Council
G.H.G. Khalsa Colleges, Gurusar Sadhar

MESSAGE

G.H.G. Khalsa College of Education has a rich heritage of imparting quality education to its students. It has always remained committed for/or to promote excellence in research and publications along with providing quality teaching. The Covid-19 pandemic has caused unprecedented disruption to educational institutions and learners. The prolonged closure of educational institutions has highlighted some underlying vulnerabilities in the education system. A major shift has been witnessed from classrooms to computer screens, format of instructions, attendance, evaluation, role of technology etc. However, the pandemic and the resultant disruption have provided an opportunity to stand back and reflect on the weaknesses inherent in our education system. A great need has been felt for reimagining the education system by all the stakeholders of education. There is now a growing sense of urgency for the need to 'recover' both the education system and 'lost learning' among students. With a majority of the educational institutions experimenting with digital learning and teachers having to learn to adapt to technology, teacher training will also need to be revamped to include practical aspects of technology in education. Along with updated pedagogy, the impactful use of technology will be an important part of teacher training programs in future. In this backdrop, I am extremely delighted to know that the G.H.G. Khalsa College of Education, Gurusar Sadhar is making every possible effort to rise up to the occasion. One such endeavour of the College includes the publication of this book containing research papers and articles related to recent trends in Post Covid Education Scenario in India. It is hoped that the readers will find the contents not only academically enriching, but also of practical value. I sincerely congratulate the Principal, Editorial team and the academicians who have given their valuable contributions in this publication.

Best wishes for your future endeavors.

Dr. S.S. Thind
Secretary
Governing Council
G.H.G. Khalsa Colleges, Gurusar Sadhar

MESSAGE

Since the past seven decades, G.H.G. Khalsa College of Education, Gurusar Sudhar has been rigorously marching on its mission of serving the cause of Teacher Education and has catered to the Educational, Cultural, Social, Moral, Spiritual needs of the rural youth. The institution always encourages its faculty and prospective teachers to keep themselves abreast with changes taking place across the globe and prepare themselves for constructive world citizenship. One drastic change we all witnessed in past years i.e. COVID-19. The sudden upheavals have changed our routines, lifestyles, working environment and our education system. The past two academic years were a challenging time for students, teachers and parents. However the importance of education remains consistent. Teachers as well as students made their efforts in making things possible in the new normal. The teachers delivered curriculum with the adaptation of new technology and the students received it sitting in the safe corners of their homes. Both the teachers as well as the students resisted the adverse situation, hence displayed resilience.

In the context of Post- Covid trends in education, G.H.G. Khalsa College of Education, Gurusar Sadhar has come up with a humble endeavour in the form of a book publication on the theme: Post Covid Education Scenario in India. I assure you that this book will be an add-on to the enriched catalogue of college publications and academic literature. I would like to wholeheartedly congratulate all the contributors for contributing in this conscientious endeavour of the college. I am equally appreciative of the meticulous efforts of the editorial team in bringing out this publication. Let's accept the change and challenges coming on our way with a smile on our face and faith in our hearts. Let's always remember

"To improve is to Change; to be perfect is to change often" — Winston Churchill

Dr. Pargat Singh Garcha
Principal
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PREFACE

Learning options in normal, new normal, and next normal

Dr. R.C. Sharma

Dr. B.R. Ambedkar University Delhi, New Delhi

Teaching and learning in India during the COVID-19 Pandemic and the Shift to Digital Learning

The outbreak of the COVID-19 pandemic induced a significant shift to digital learning in India. This was necessitated by the closure of schools and colleges across the country to contain the virus's spread. The coronavirus pandemic forced universities worldwide to re-evaluate their instruction methods and offer more courses online. The pandemic has also resulted in a decrease in international student enrollment at many universities. To continue their education, students have had to rely on online resources. A general observation, as also reported in the media about theperception and preference for online education of students in India during the pandemic has revealed that most students were satisfied with online education and would prefer to continue it even after the pandemic. However, a significant minority of students were not satisfied with online education and would prefer to return to in-person instruction.

There are several advantages to digital learning, including the ability to reach a more significant number of students, the flexibility to learn at one's own pace, and the convenience of accessing course material from anywhere. However, some challenges need to be addressed, such as ensuring that students have access to the necessary technology and can engage with the material in a meaningful way. The transition to digital learning must be managed carefully to ensure that students can benefit from the advantages that it offers.

Learning options in normal, new normal, and next normal

The pandemic has disrupted the education sector, which continues to be disrupted. The distance learning option was introduced in a very ad hoc manner. The online education sector, on the other hand, took off. In India, the online education sector was valued at Rs 1,430 crore in 2019 and is expected to reach Rs 40,000 crore by 2025. The impact of COVID-19 has been such strong that now we have a great of reset of time with new definitions of BC (Before COVID-19) and AC (After COVID-19). The AC world is not

going to be the same as BC world. The education sector will have to evolve to meet the needs of the new world.Here are some of the options that will be available in the "new normal":

1. **Online Education:** Online education will continue to grow in popularity. The advantages of online education are:
   — It is flexible and can be accessed from anywhere.
   — It is cheaper than traditional education.
   — It offers a wide range of courses.

2. **Blended Learning:** Blended learning is a mix of online and offline learning. It is a flexible and effective way to learn. The advantages of blended learning are:
   (i) Blended learning can provide the best of both worlds for students, combining the flexibility and convenience of online learning with the personal interaction and hands-on experience of traditional classroom instruction.
   (ii) Blended learning can be tailored to the individual needs of each student, providing a more personalized learning experience.
   (iii) Blended learning can use technology to create engaging and interactive learning experiences.
   (iv) Blended learning can help students learn at their own pace, allowing them to review the material as needed and move on when they are ready.
   (v) Blended learning can provide opportunities for students to learn in different ways, such as through audio, video, and text.
   (vi) Blended learning can supplement traditional instruction, providing additional resources and support for students.
   (vii) Blended learning can connect students with experts in their field, providing them with real-world experience and advice.
   (viii) Blended learning can be used to assess student progress and understanding in real-time, allowing for immediate feedback and adjustment of instruction.
   (ix) Blended learning can be more cost-effective than traditional instruction since it can use existing resources and eliminate the need for expensive classroom materials.

Recent trends in teaching and learning in India for the post COVID-19 period

There has been a shift in the way teaching and learning is being approached in India post COVID-19. The traditional methods of teaching in a classroom setting are being replaced by more innovative and technology based methods. Teachers are now using a variety of

digital tools to engage students in learning. Some of the popular trends in teaching and learning in India post-COVID-19 include:

1. **Use of digital tools and resources**: Teachers are now using various digital tools and resources to engage students in learning. Some popular tools include online learning platforms, video conferencing tools, and mobile apps.

2. **Flipped classrooms**: The flipped classroom model is becoming popular in India post-COVID-19. This model gives students assignments and tasks to complete outside class. This allows teachers to use class time for more interactive and engaging activities.

3. **Project-based learning**: Project-based learning is another popular trend in India post-COVID-19. This approach enables the students to develop skills such as critical thinking, problem-solving, and collaboration and learn by working on real-world projects.

4. **Gamification**: Gamification is used by many teachers in India post-COVID-19 to make learning more fun and engaging.

Educational Evaluation, Assessment, and Accountability in times of Pandemic Crisis

The current COVID-19 crisis has made us realise that theeducational evaluation, assessment and accountability (EAAA) systems are more important than ever before. EAAA systems can help decision-makers in all education systems assess the pandemic's impact on educational outcomes and identify and address any potential negative consequences. Globally the education systems have been restructured. Many countries had closed schools to contain the spread of the virus, which is likely to impact educational outcomes negatively. In addition, the pandemic is expected to significantly impact the ability of education systems to deliver quality education. EAAA systems can help decision-makers identify the impact of the pandemic on educational outcomes and to identify and address any potential negative consequences. EAAA systems can also help decision-makers to identify and address any possibleadverse effects of the pandemic on the quality of education. EAAA systems are more critical than ever before in times of pandemic crisis.

Possibilities and Challenges of Digital Education in India

The possibilities of digital education in India are many and varied. India has a large population with a vast majority of young people. This creates a huge potential market for digital education. India has a growing economy and is home to many leading global companies. These factors make India an attractive destination for digital education providers. The challenges of digital education in India are also significant. The country has a large number of illiterate adults and a high drop-out rate among school children. Additionally,

infrastructure and connectivity issues are major challenges in India. These factors make it difficult for digital education providers to reach and engage with potential students.

Learning options with us then?

The COVID-19 pandemic has changed the way we learn. It has impacted the way we teach, the way we assess, the way we interact, and the way we think about education in our post-pandemic world.The pandemic has forced us to rethink education and has forced us to reimagine learning in the 21st century. The pandemic has also made us realize the importance of technology in education. The pandemic has forced us to think about the future of education and how we can make learning more accessible, equitable, and affordable for all. In the normal world, learning takes place in physical classrooms. Students attend school, attend classes, and interact with their teachers and classmates. In the new normal, learning is no longer limited to physical classrooms. With the advent of technology, students can now learn from anywhere at any time. Many online learning platforms offer courses and programs that students from anywhere in the world can access. In the next normal, learning will be more personalized and tailored to the individual learner's needs.

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THE USE OF OPEN EDUCATIONAL RESOURCES IN THE TEACHING-LEARNING PROCESS

Mr. Bohar Singh*

Abstract

In the digital age, the teaching-learning process in higher education uses various resources which help the teacher to effectively deliver the lecture and to engage the students in learning. These resources are easily available on the internet due to rapid advancements in technology but teachers want to use only those resources, which are free to use, reuse, adapt or modify, for commercial purposes such resources known as OERs. OERs are widely used in the teaching-learning process in higher education to access high-quality content under creative commons (CC) license. This paper discusses the concept of OERs, the types of licenses associated with OERs, and various OER repositories. In the end, both teacher and student can use the OERs for teaching-learning in higher education.

Keywords: *OER, Higher Education, MOOCS, CC*

Introduction

In higher education, government and private agencies both produce various educational resources for the teaching-learning process which may be free or copyrighted. These resources can be in the form of print or electronic material. In the digital era, various educational resources are available on the internet, teachers use them to create an effective classroom environment and to deliver high qualitative E-Content to students. These educational resources can be in the form of text, images, audio, videos, graphics etc. But if any teacher wants to share or remix or modify the content it may cause a violation of copyright. So, to support the teaching-learning process open educational resources (OERs) repository provides open access to anyone under an open license. OERs are free to use, remix, and integrate with other resources. E-learning and MOOCs are other terms widely used in teaching-learning but are not OERs. We need to be aware of how to create OER content and share OER content in the public domain. So, it is one of the biggest challenges for the teacher to identify a free educational resource on the internet and share it with students.

OER Definition

OER consists of three terms: Openness, Educational and resources. Openness often means free to use or free of cost, free to reuse or distribute the resources under a common creative license which we will discuss earlier in this paper. Educational resources term define material used for the teaching-learning process, not limited to the only educational institution; rather anyone can access

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the OER online on the internet. It includes textbooks, assignments, lecture notes, audio, videos, animations, lesson plans, syllabus, case studies etc. The definition of OERs is provided by Wiley, Bliss and Mcewen (2014) as Educational materials which use a Creative Commons license or which exist in the public domain and are free of copyright restrictions are OER. Similarly, another definition is given by UNESCO(2019) as OER are teaching, learning and research materials in any medium digital or otherwise that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions.

William and Flora (2022) state that OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.

In a nutshell, the OERs are the teaching-learning resources that are available under an open license or public domain.

OER different from other related concepts

OERs are available under creative commons license but it is often confused with E-learning or E-content. E-learning is a broader term in the teaching-learning process to support higher education and E-content available in electronic, can be paid or free. Every OER can be E-content but every E-content is not OER. Other terms Massive open online courses (MOOC) are also confused with OERs. MOOC provides free courses online for teachers and students but they cannot remix, modify and redistribute the materials. So, MOOCs are not OERs. But all these are used to empower the quality of content and boost the digitization of higher education with the help of computer-aided technology. OERs are used to bridge the gap between formal, informal, and non-formal education.

OER creative commons (cc) Licenses

OERs materials are associated with legal rights known as creative commons license that gives information on the rights of an individual to reuse them. Thus, OERs can be modified, reused and redistributed depending on the type of rights associated with them. So the Creative Commons (CC) license for OERs can be applied for textbooks, audio, videos, articles, case studies etc. As a teacher you can create E-content such as lecture notes, case studies, practical plans etc and use them in the classroom for teaching. A teacher can share their own content with others or on the internet with no restriction or limited restriction under the concept of a creative commons license. So, while sharing, the content owner has to decide what rights he wants to attach with the resources which come under the concept of a creative commons license. So creative commons has designed a license system to put the rights while sharing the educational material. A creative commons license has four types of rights based on which different types of licenses are attached with content. CC has four conditions to define the degrees of openness:

- **Attribution (BY)** means you must give credit to the owner or attribute the work you are using.

- **SHARE ALIKE (SA)** means you can distribute any modified derivate under the same license.

- **NON-COMMERCIAL (NC)** means you cannot use the materials for commercial purposes.

- **NO DERIVATES (ND)** means you cannot modify the materials.

These four components combined to produce six types of CC licenses.

- Attribution CC BY - This license allows others to distribute, remix, adapt and modify the content, even commercially. It is a most recommended license for maximum sharing of resources.

- Attribution-Share Alike CC BY-SA -This allows others to modify, remix and distribute the content for commercial purposes under the same license.

- Attribution-No Derivs CC BY-ND -This allows others to redistribute the content for commercial and non-commercial purposes without any modification.

- Attribution-Non Commercial CC BY-NC -This allows others to redistribute, remix the content non commercially and modified work must be acknowledged to the original author, no need to give license to modified work on the same terms.

- Attribution-Noncommercial-Share Alike CC BY-NC-SA - This allows others to remix, adapt, and build upon your work non-commercially, as long as they credit you and license their modified content under identical terms.

- Attribution- Noncommercial - No Derivs CC BY-NC-ND-This allows you to redistribute the content or to download the content as long as they credit you, but you can't change the content in any way or use them commercially. Among all of the six licenses, it is the most restrictive.

As we also use open-source software which includes source code and methodologies, can be licensed in a different way (General public license GPL) but is not covered under CC licenses.

How to assign the license to OER content

For teaching-learning purposes when educators create teaching material and attach an open license to it then it becomes an open educational resource (OER). The Public can reuse, redistribute, remix and modify the resource depending upon the nature of the license attached to it. Now let us discuss how to assign the license to OER content. You can choose a creative commons website to

assign CC license to your content. You need to first visit the home page of a creative commons website and then click on 'share your work link'. Thereafter click on 'Get Started' under 'choose a license' then you may choose the option for two questions first is 'allow adaptations of your work to be shared' and the second is 'allow commercial uses of your work'. When you click on Yes or No button depending upon the options, the website automatically creates a license that you may use. As you can see in the following figures

Step1 "Click on Share your Work"

Step2 "Click on Get Started"

Step3 "Choose an Option"

OERs Websites/Repositories

As we learned about OERs, types of Open Licenses, creation of OERs and hosting of content on the internet for public use. There are various websites or repositories where OERs or education material can be hosted or available for public use. These repositories or websites are developed and owned by public or private organizations to improve the quality of content and enhance the utilization of digital content in higher education. Various countries across the world have created OERs repositories for teaching-learning purposes. In India center and state governments have developed their own OER website. Some of OERs websites or repositories are

● **National Programme on Technology Enabled Learning (NPTEL)-** NPTEL (National Programme on Technology Enhanced Learning) was launched by the Ministry of Education (MoE) Government of India in 2003. It is run by the collaboration of IITs and IISc. It provides various courses in different disciplines across the country. It is the largest repository of courses in engineering, basic sciences and selected humanities and management subjects. It distributes the content under creative commons Attribution ShareAlike (CC-BY-NC-SA). You can go through the NPTEL website https://nptel.ac.in/

● **E-Gyankosh-** E-Gyankosh is a digital repository of educational resources which can be accessed by anyone but the user has to acknowledge the IGNOU. It is maintained by the Indira Gandhi National Open University, New Delhi (IGNOU) and collection of IGNOU self-learning material, IGNOU SWAYAM course content, SWAYAM Prabha channels and other content. You can go through the website https://egyankosh.ac.in/

● **OER Commons-** OER Commons is a collection of educational resources including school and higher education. Everyone can search and download OER content, and share it with others. OER Commons also provides OER workshops and training programs. OER Commons have a partnership with different organization to provide high-quality OER. The OER content on this site is licensed under a Creative Commons Attribution-Non Commercial-Share Alike (CC BY NC SA) 4.0 License. You can visit ORE common website https://www.oercommons.org/

- **MERLOT-** MERLOT (Multimedia Resources for Learning and Online Teaching) was started in 1997 at the international level and stored educational resources for online teaching and learning in higher education. It is an international community of educators, learners and researchers and has various partners such as educational institutions, professional organizations, and industries across the world. Anyone can create their own content and upload it on the merlot website for free education. You can also browse the content discipline-wise, ISBN-wise, material-wise and membership-wise. It is a community of staff, volunteers, and members who work together in various ways to provide users of OER (Open Educational Resource) teaching and learning materials with a wealth of services and functions that can enhance their instructional experience. So it is an international educational community for teaching learning in higher education. You can access the OERs at https://www.merlot.org/merlot

- **Teacher Tube-** Teacher Tube is an online free educational video sharing website where teachers, as well as students, are allowed to upload educational videos. It is similar to Youtube but it provides only educational material including videos, audio, educational news, documents and photos. It was created in 2007 to provide free educational videos for the community in various disciplines science, social studies, math, history, language arts, physical education, computer science etc. Teacher Tube provides videos from the school level to higher educational level. You can upload the video to the Teacher Tube website by attaching it with a creative commons license. You can browse and upload videos at https://www.teachertube.com/

- **Wikimedia-** Wikimedia Commons is part of the Wiki technology family which is an online free repository of educational resources images, videos, audio, and documents for the public under a creative commons license. Everyone can upload the content to Wikimedia commons and download, and share it with others. Everyone is allowed to edit, copy and share the content depending upon the license attached to it. It provides educational material in various languages. The Wikimedia Commons database itself and the texts in it are licensed under the Creative Commons Attribution/Share-Alike License (CC BY SA). You can visit the website to download and upload the educational resources https://commons.wikimedia.org/wiki/Main_Page

- **National Digital Library of India (NDLI)-** It is developed by the Indian Institute of Technology (IIT) Kharagpur and funded by the Ministry of Education, Government of India, through its National Mission on Education through Information and Communication Technology (NMEICT). It is a huge collection of free educational resources for schools, colleges, and researchers. You can search and browse the content By Type, By Subject, By source, and by Learning Resource, even you can filter the content more and more with minimum effort. It is 'one library all of India' which provides various services in different disciplines such as engineering, science, humanities, literature, Law, Management and entrance exam preparation, competitive exam preparation etc. You can search different educational resources such as Books, Audio Books, lecture notes, presentations, question papers etc from primary level to postgraduate levels. One of the most important things in NDLI is the user interface available in widely used Indian languages. You can visit the website https://ndl.iitkgp.ac.in/

Conclusion

The OERs are created under creative commons license and released to the public for free access. So, teachers and learners are free to reuse the educational material otherwise you have to

take consent of the owner due to copyright issues. Today the use of OERs in higher education is increasing day by day worldwide. The owner has a choice to attach different CC licenses to OERs material while hosting on the internet. Several OERs websites and repositories are available to deliver high-quality content for the teaching-learning process at the national level and international levels. In the end, due to lack of high-quality teachers and high-quality educational resources is a key challenge for the Indian education system which can be improved with the use of OERs in higher education.

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THE INFLUENCE OF DIGITAL EDUCATION TODAY AND TOMORROW – EMERGING CHALLENGES IN E-LEARNING

*Dr. G.K. Patnaik Karakavalsa**

Abstract

There is transition of the current education scenario into digitization which has gained momentum with the advent of COVID-19. Now students, parents, institutions and technological platform providers are preferring the internet as a medium of instruction irrespective of language. Household social consumption on Education is doubling its figures according to the researchers. Access to digital devices has grown in a massive way including rural areas in-spite of the prevailing challenges in administering the setup. Delivering effective education through digitization is what made the teaching fraternity to learn from the grass root level and contribute their best towards the overall development of students' education. Government and stakeholders of education together have to work on providing uninterrupted learning under a sustainable ecosystem that enables the growing India as a developed economy and digital educational hub. In this context online platforms are more engaging for learners and educators. The present paper in its efforts tries to understand digital education and how it impacts the coming generation and the corresponding challenges.

Keywords: *Digitization, COVID-19, social consumption, digital devices, learners, educators, developed economy*

Introduction

In the world of change and turbulence there are continuous technological ramifications taking place even in online education and its implementation. Aman and Bhupender (2020) have acknowledged penetration of internet access. Imparting low cost of online learning, simplicity in doing the course, inventiveness by government, employer's identification to bridging gap are the key elements enabling the growth of online education. Presently it can be observed that certain factors which are creating a hindrance in this growth include insufficient digital infrastructure, reliability and communication used during online education.

Pre and post pandemic situations both have resulted into the rigorous implementation of E-learning which has been adopted as a means of use of information technology in education institutions and become an integral part of the entire learning process. With e-learning initiatives, anyone can access information without being limited by distance, time, space and so on.

This COVID-19 crisis has impacted immensely the education sector of India. While many challenges have emerged, new opportunities have also evolved. To safeguard education from the drastic effects of the pandemic situation, it is extremely important to revisit the future of learning and the change that could be done by equal access to quality education. India is not sufficiently

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prepared to provide education to all regions of the country via digital channels. This is because the students who are not fortunate, like the rest, will suffer from the choice of digital channels. But various universities and schools with the help of the Government of India are still trying to grasp various solutions to solve these issues and dilemmas. It's only through digital technology or e-learning that quality learning can be made available to everyone without being validated in actual classroom space. The lack of capability, technology infrastructure, and financial assets are major limitations in the implementation of e-learning in India.

In this connection, E-Learning is so powerful that it can change the whole future scenario in education if it is implemented in joint collaboration with industry, universities, institutions and government bodies. Strong changes in curriculum and design of the course are necessary to link the gap so that students in industry are ready after qualifying their degrees. Education process needs to be changed by making it more practical with the use of technology. Moreover courses should be available in different languages to increase their reach and create opportunities for youth in rural areas of India as well. Innovations are required to devise means to enhance the social skills of e-learners.

Objectives of the Study:
1) To study the concept of Digital Education
2) To understand the opportunities and challenges in imparting E-Learning
3) To know the essentials of online education
4) To provide suggestions after observations

Need for the Study:

The development of technology has brought remarkable change in nearly every area of life. Knowledge in technology has also influenced the course of action pertaining to education through online mode. It is observed that face to face education has gone through a notable change in the last decade and more. Even though face to face education is considered the norm even today, consent on e-learning and online courses are increasing particularly in the field of management, engineering science and technology. The reasons for the exponential intensification of online education are that it is instantaneous, online, everywhere accessible, self-driven, self pace and on the go due to which there is a need to study and understand digital education and its future challenges.

Methodology:

Any research cannot be supported effectively without proper methodology. This study includes the following methodology:

- **Primary Data:** It can be referred to as the data which is collected for the first time from the target respondents, by using structured questionnaires or schedule will be the basis for collecting Primary Data. In a specified universe, a certain number of respondents will be selected as a sample to whom the schedule can be implemented.
- **Secondary Data:** This study has mainly considered the data from various books, journals, web portals and internet etc. After receiving the information, from various secondary sources, the details have been analyzed and constructed.

Review of Literature:

Many definitions of online learning have been coined and according to Khan (1997) online learning is the delivery of instruction to a remote audience using the web as an intermediary. Whereas

Allen and Seaman (2011) have defined Online courses as those in which minimum 80 percent of the course content is delivered online and Face-to-face instruction are those courses in which less than 30 percent of the content is delivered online. In the perspective of Steven (2015), online education has proliferated in the last decade. This research has not found any major difference in the scores of the students taking education through online courses or in face to face classes' education.

Another research done by Fahad (2009) investigates the students' attitudes and perceptions of 186 University Student's from different colleges towards effectiveness of mobile learning in their studies. Their research findings indicate that students perceive Mobile technologies as an effective tool in improving their communication and learning.

Herman and Banister (2007) had done research on comparison of cost and learning outcomes of traditional and Online coursework. Their findings show that online courses engage students in the learning process, support strong student learning outcomes, and save cost for the university also.

According to a report by Google and KPMG, the online education market in India at the end of December, 2016 was $247 million and it will reach $1.96 billion by 2021. Also India's online education market is the second largest market after the US. The findings of the report also states that the paid user base for online education services will also grow at least by six times i.e. approximately 9.6 million users by 2021

Factors influencing Online Education
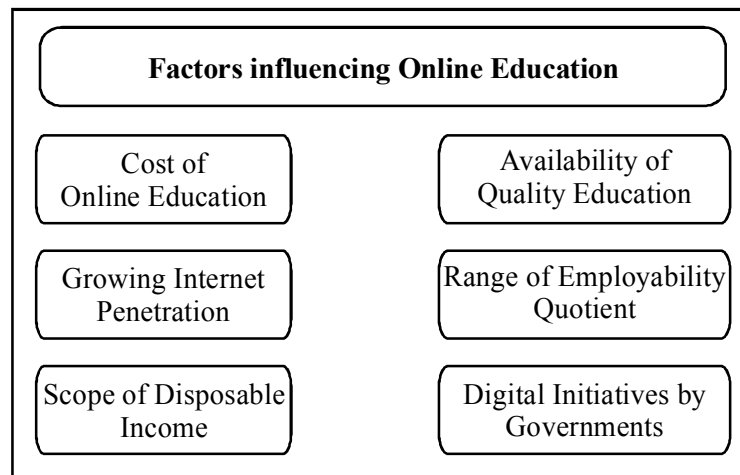
Cost of Online Education

In common, online learning is a more inexpensive option, as one can get a high-quality education at a much lesser cost due to the lower operating cost needed to function these programs. It is not only that the tuition is inclined to be lower, but many other additional operating expenses, such as transportation costs and course materials, are avoided typically in an online education program. Though, it's important to make a note that the average cost of an online academy is still a significant deal to be met with. Most of the candidates who go into their search for a degree program online assume that online learning will be very economical, and are often amazed when they discover that e-education is still relatively not high.

Availability of Quality Education

The changeover from the traditional face-to-face classroom type of learning to online learning can be effectively achieved and excellence can be ensured if numerous key factors are strictly examined. According to Palloff and Pratt (2000)online learning ensures the access to and acquaintance with the technology used, ascertains relatively loose and free flowing guiding principles and measures, determines the highest participation of participants, encourages two-way learning, and facilitates online participants to replicate their learning.

Range of Employability Quotient

Recently in the World Economic Forum (WEF) it was discussed that the unemployment rate of Indian youth has increased from 10.4 percent to 23.0 last year. The usual conventional education system does not actually extend skills in youth that makes them ready for the job but a lot of new age edutech platforms provide tailor-made solutions to upgrade their skills and make them grab a job in the job market. Edutech platforms are in fact playing a significant task in bridging the gap in terms of skills required between university education and industry necessities so that the young minds can be transformed into a more job-ready state.

Digital Initiatives by Governments:

The following are the major initiatives undertaken by the Indian government to improve digital education:

1. National Digital Educational Architecture (NDEAR)- It was presented in the Union Budget 2021-22, that the Indian government initiated the National Digital Educational Architecture (NDEAR) to reinforce digital infrastructure and support activities connected to planning of education. The NDEAR intends to offer distinctive educational ecosystem architecture for progression of digital infrastructure in the nation and guarantee autonomy of stakeholders, especially states and UTs.

2. PM eVIDYA Programme- In its unique initiative, the government has introduced the PM eVIDYA programme in May 2020. The objective is to make e-learning more accessible for Indian students and teachers and promote by strengthening digital education in our country. The programme endeavors to join all activities related to online or digital education and is anticipated to provide benefits to 25 crore school students in India. The programme will also include designing unique e-content for hearing and visually impaired students and offering radio/podcasts and QR-coded digital textbooks to school students (Classes 1 to 12) on the DIKSHA portal. Under this, top 100 universities have been allowed to begin online courses, offer better learning prospects to 3.7 crore higher education students and develop e-learning by relaxing the regulatory framework for distance/open/online education modes.

3. DIKSHA- It was introduced in September 2017 by the government. The acronym DIKSHA stands for Digital Infrastructure for Knowledge Sharing. It is a national portal for school education, meant to offer school curriculum based on engaging learning materials to students, teachers, and parents. The portal supports more than 18 Indian languages and has been implemented by 35 states/UTs.

4. SWAYAM- It was launched in the year 2017; SWAYAM stands for Study Webs of Active Learning for Young Aspiring Minds. It aimed to offer an integrated platform for online courses at affordable costs to all citizens, in particular the underprivileged section in the nation.

Officially this portal is responsible for hosting Massive Open Online Courses (MOOCs) to offer quality education on various subjects and study areas for students (ranging from Class 9-12 to Under Graduates and Post Graduates).

5.   **SWAYAM PRABHA-** In the year 2017, SWAYAM PRABHA was launched, it comprises a group of 34 DTH (Direct-to-Home) channels devoted to broadcasting educational programmes 24x7. These channels broadcast new content for a minimum of 4 hours every day, and this is repeated five times in the same day for students to decide on a convenient slot.

6.   **e-Pathshala Portal-** This came in the year 2015, as the government launched the ePathshala portal with its objective to build a resource store for educational videos, audios, flipbooks and so on. A knowledge repository comprising resources on this portal are available in Hindi, English and Urdu which can be accessed via smart-phones, laptops, desktops and tablets as well.

7.   **NISHTHA-** It came in the Financial Year 2021, named as the National Initiative for School Heads and Teachers' Holistic Advancement (NISHTHA) - Phase II. It was launched at the secondary level to tailor modules for online learning. As per the Union Budget 2021-22, about 5.6 million teachers will be trained under the NISHTHA training programme in Financial Year 2022.

8.   **OLabs-** To offer students lab learning experience via the internet, the government introduced Online Labs in November 2014 for those who do not have access to physical labs.

9.   **Virtual Labs-** The Government of India introduced a pilot virtual lab in the year 2009 and the main one in 2010 to enable undergraduate and post-graduate students who are pursuing science and engineering courses a remote access to the labs and enhance their studies in practical experience. In the virtual labs students are offered with a Learning Management System and various study aids such as video lectures, web resources, self-evaluation and animated demonstrations.

Growing Internet Penetration

In the current scenario the internet has paved an impetus to the rising education sector. With this new dimension of accessibility and interactivity there is an enhanced quality of educational resources and the quantity of relevant data that can be impeccably transferred even from one point to another. Such a drive can be predicted to rise as more internet-enabled devices and data accessibility becomes routine in rural locations and to all socio-economic communities.

Smartphone User base

According to researchers and Vidyasaaradhi report, it is a known fact that smartphones are the primary means for online learning for 79% of students in India, while only 17% have access to laptops and 4% to tablets for learning purposes or attending online classes. Sale of refurbished laptops, tablets and smartphones also picked up even after the lockdown was lifted to meet the work and online learning related necessities. Due to the higher cost of laptops as compared to smartphones, the penetration among students is still observed as low.

Scope of Disposable Income

Better internet connectivity and digital payment options, coupled with the Impact of innovative learning methodologies such as blended learning and flipped learning is driving the growth of the online education market in India. In general the online education market in India is segmented into the categories such as primary and secondary supplemental education, test preparation, reskilling and online certifications, higher education, and language and causal learning. Test preparation market

is expected to be the largest growing segment due to the increase in the number of students opting for competitive exams such as engineering medical exams, and also due to rise in the number of exams for working professionals such as bank probationary officer (PO), union public service commission (UPSC), common admission test (CAT) and graduate management admission test (GMAT) among others.

The potential impact of Covid-19 on e-learning enrolments
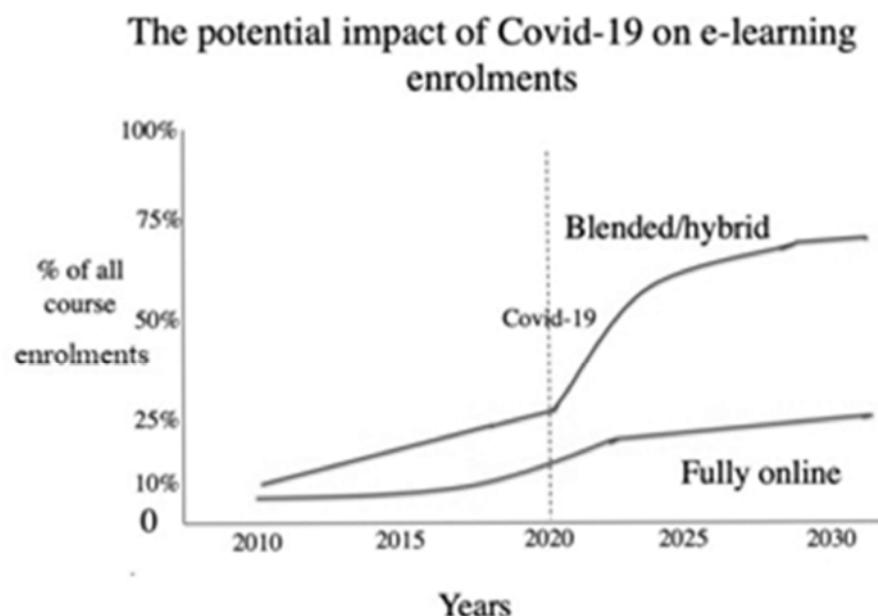
Source: adamsuniversity.ac.in

Young Population

According to the study conducted by the International Labour Organization (ILO) it was observed that because of the pandemic more than 70 per cent of youth who study or combine study with work has been badly affected due to the closing of schools, universities and training centers.). The pandemic is inflicting multiple shocks on young people. It is not only destroying their jobs and employment prospects, but also disrupting their education and training and having a serious impact on their mental well-being. We cannot let this happen," said ILO Director-General Guy Ryder.

Online Learning and Future

The worldwide online learning market is expected to grow at a rate of 9.23% within the following five years, taking the overall market share to $319 billion by 2025 as per CAGR, growing from $187.87 billion in 2019. This is an incredible amount that is full of potential. It is authoritative for currently existing market players as well as new entrants to grab this opportunity and usher in a modern era in the field of education. The following factors are expected to play a central role in this rapidly ongoing transformation:

- The rise of AI (Artificial Intelligence) and Robotics
- Cloud-based solutions
- Massive investments by major market players

- Use of VR (virtual reality) technology in education
- Growth of IoT (Internet of Things) and so on.

Findings

- It is important that the time spent on online learning and student's inclinations towards pushing the course forward should not have any interruption.
- To facilitate online education proper Infrastructure/support services should be provided for the potential learners.
- Motivation is necessary to process online education that causes students to persist in meeting their learning goals.
- Students can master Prerequisite skills and become ready in the future for the emerging job markets.
- Students must be comfortable with the online system and the software/hardware that is being used in online learning.
- Learning online should be friendly and social, and one in which learning is promoted.

Suggestions:

The following suggestions can be tried to improve online education.

- Conducting student surveys and getting the student perception for the future improvements of online education.
- Not all the students have high speed internet access and if the government can provide it for free, a greater number of students can be benefited.

Conclusion:

As the attractiveness of the Internet grows along with the changing times, the potential for online learning is also growing. There is a great substance of indication in the present viewing that no major differences should be expected regarding the effectiveness of well-designed online learning against well designed in person learning. In spite of this, significant differences still are present in the way students recognize their online understanding during their learning. To the degree that these students' perceptions are unenthusiastic regarding their past, present, or future online learning experiences, the students' perceptions may add to such outcomes as higher dropout rates, low motivation levels of students to learn, and low level of student satisfaction with the learning experience. Such challenges can be managed through various learning initiatives and alteration of mindset towards growth of online education in the coming future. To recapitulate, online learning is one of the most life-changing innovations of the present century. Education is the biggest asset of the modern era and online learning has provided a medium to distribute it among the whole population. This offers a state full of potential, which if properly connected, can catapult the entire world into a novel dawn of development and affluence.

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- Global Initiative on Decent Jobs for Youth: Guy Ryder announces Global Youth Initiative (ilo.org)
- www.adamsuniversity.ac.in

DIGITAL INDIA – OPPORTUNITIES AND CHALLENGES

Ms. Halimabi M.C*

Abstract

Everything is going online these days and education is also not lagging behind, and online education is very convenient in today's world of technology. The following lockdown situation due to COVID-19 has taught us the importance of online education and we are already observing several schools and colleges conducting classes online and the students can also study at their own pace with the help of several online courses offered by different companies. The schools and colleges have understood that online education is the best way to deliver knowledge and educate students by keeping them safe at their homes.

Keywords: *Digital education, Digital Empowerment, Projects under digital India*

Introduction

Digital education has a lot of potential. At present scenario, digital education in India is kind of gloomy. The future of digital education in India may speed up in the next few years or a decade, but in the present time digital education is not popular among all classes of the society, at least in India. There are many challenges in the path of digital education before it becomes an essential part of all the classes of society. Digital education is somehow the main component in urban areas but in rural areas it still has a long way to go to take any position, because there are a number of challenges that need to be overcome have proper access digital education in rural areas.

The Digital India movement was started by the PM Narendra Modi on 1 July 2015 with an objective of connecting rural areas population with high-speed internet facilities and for improving digital literacy of the Indian population by providing digital resources and services that are available in all Indian languages. The objectives of digital India programme is knowledge-based transformation and delivering good governance to citizens of India with the help of both Central and State Government. The vision of Digital India is centred on digital infrastructure as a utility to every citizen. As per this vision of digital India, the Indian rural population are digitally connected through broadband and high-speed internet so that they can easily access all electronic government services, target social benefits and financial inclusion can be achieved in reality.

Digital Empowerment of Citizens of India

Digital Empowerment of citizens of India is:

- Universal digital literacy
- All digital resources universally accessible

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- All government documents/certificates to be available on the Cloud
- Availability of digital resources and digit services in Indian languages
- Collaborative digital platforms for participative governance in different Departments
- Portability of all entitlements for individuals through the cloud.

Several Projects under digital India programme: There are various digital Programmes in which technology will play a central role to achieve easily accessible, more effective and most economical governance services. Several projects/products have already launched by government of India or ready to be launched as below:

- **e-Books Platform (eBasta)**– It is an electronic platform of e-Books for schools and currently, this e-Books platform has 501 e-Contents and 15 eBasta are available.
- **e-Sign**- This is to facilitate digitally signing a document through an online authentication mechanism. So far, 1.75 lakh e-Signatures have been issued by the government. For example e-Mudhra and CDAC are empanelled to offer e-Sign services for their customers.
- **e-Greetings Portal**– It is being used to send e-Greetings by Government departments on various occasions like Gandhi Jayanti, Diwali, Teachers Day, Independence Day, etc. through this portal. About 10 lakh e-Greetings have been sent through this portal. About 42 greeting categories and 450 cards are available on the portal to send greetings in electronic form for individuals to use them.
- **Digital Locker System**– Digital Locker facility will help citizens to digitally store their important documents like PAN card, passport, mark sheets and degree certificates. It aims at eliminating the use of physical documents and enables the sharing of verified electronic documents across government agencies. Currently, in India approximately 10 lakh digital lockers have been opened and over 11.8 lakh documents were self-uploaded by citizens and 52.09 lakh documents have been issued through digital locker facility.
- **Jeevan Pramaan**– Pensioners can now easily submit their life certificates online through Jeevan Pramaan portal. These certificates are stored in the Life Certificate Repository for access anytime and anywhere for pensioners and concerned Pension Disbursing Agencies. Approximately 8 lakh pensioners are already registered on Jeevan Pramaan portal.
- **e-Hospital Facility**– This facility is helpful to reduce the anxiety of patients and their attendees by accessing various online services such as appointment, diagnostic reports, payment of fees and enquiring blood availability. This e-Hospital facility is currently functional in many Central Government hospitals such as AIIMS, Dr. RML Hospital, Safdarjung and NIMHANS hospitals and being implemented in other Government hospitals.
- **National Scholarships Portal**– It is a one stop solution for end-to-end scholarship process right from submission of student application, verification, sanction and disbursal to end beneficiary for all the scholarships provided by the Government of India. Nearly 67 lakh applications have been submitted through this portal for 19 registered varied scholarship schemes under 7 Ministries/Departments.
- **National Digital Literacy Mission**– It aims to provide IT training to enable the citizens to use IT and related applications for their livelihood learning and employability has been approved. The Scheme was started by Prime Minister Modi at Ranchi, Jharkhand on 21st

August, 2014.

- **Digitize India Platform**– This platform allows government organizations in the country to digitize its records and documents through contributions of citizens of India. Nearly 14,088 contributors, 2.6 lakhs documents and 24.1 Lakh snippets have been utilized for digitization through this portal.
- **MyGov Platform**– It acts as a medium for citizens to exchange ideas/suggestions with the Government. With the help of this platform, the Government of India gets varied feedback, inputs, various advice and new ideas from citizens for new policy decisions, new government initiatives like Digital India movement, Swachh Bharat scheme, Clean Ganga mission, Make in India scheme, Skill Development movement etc.
- **Approval of new Mission Mode Projects**– 13 new Mission Mode Projects have been approved by the government to provide citizens a wider range of electronic services. These projects include Financial Inclusion, Rural Development, Social Benefits, e-Vidhan, Agriculture 2.0, Roads and Highways Information System, Central Armed ParaMilitary Forces, Women & Child Development, National Mission on Education through ICT, National GIS, e-Bhasha and Urban Governance.
- **Rural BPO Scheme**– To provide ICT enabled services to employment generation throughout the country, BPOs schemes would be set up in the north-eastern states under North East BPO Promotion Scheme and in Tier II and Tier III cities of the country under the India BPO Promotion Scheme. The India BPO Promotion Scheme will create an employment opportunity for nealy 1,45,000 persons.
- **DISHA (Digital Saksharta Abhiyan)** – Main objective of the programme Disha is to make an additional 42.5 lakh persons digitally literate in a period of four years in india. Under the Disha and National Digital Literacy Mission, nealy 12.25 lakh persons have been trained through this portal and 4.75 lakh candidates have been certified by NIELIT by this portal.
- **Revamping of Existing Mission Mode Projects (MMPs)** – A number of existing MMPs were developed in previous years. Applications are being assessed by this software and revamped by leveraging new technology platforms, such as Cloud, Mobile, GIS, etc and these projects are helpful to facilitate delivery of integrated services involving multiple departments and enhance the quality of services that can efficiently cater to the needs of citizens.

Nine Pillars of Digital India

1. **Broadband Highways** - This pillar covers 3 sub components as Broadband for All Rural, Broadband for All Urban and National Information Infrastructure.
2. **Universal Access to Mobile Connectivity** - This pillar is to focus on network penetration and fill the gaps in connectivity throughout the country.
3. **Public Internet Access Programme** - This pillar has 2 sub components as Common Service Centres and Post Offices as multi-service centres.
4. **e-Governance-Reforming Government through Technology-** Re-engineering using IT to improve transactions is the most critical for transformation across government and therefore needs to be implemented by all ministries/departments through this portal.

5. **e-Kranti - Electronic Delivery of Services-** There are 31 Mission Mode Projects under different stages of e-governance project life cycle in India. Further, ten new Mission Mode Projects have been added to e-Kranti by the Apex Committee on National e-Governance Plan headed by the Cabinet Secretary in its meeting held on 18th March 2014 regarding this facility.

6. **Information for All** - Open Data platform and online hosting of information and documents that would facilitate open and easy access to information for citizens.

7. **Electronics Manufacturing**- Target NET ZERO Imports is a striking demonstration of intent through electronic manufacturing.

8. **IT sector for Jobs** - Nealy one crore students from smaller towns and villages will be trained for IT sector jobs. DeitY is the nodal department for providing IT sector jobs under this scheme.

9. **Early Harvest Programmes (IT Platform for Messages) -** A Messaging Application has been developed by DeitY department that will cover elected representatives and all Government employees. Nearly 1.36 Cr mobiles and 22 Lakh emails are part of the IT Early Harvest Programme database.

Challenges faced by Digital Education:

- **Problems with electricity**- Indian government shows the electrification data is different from how it actually needs to be interpreted. Electricity is the basic requirement for digital literacy like desktops, laptops or mobile phones need the power to work and if a country is not completely electrified, it becomes the biggest challenge for digital education. In the present scenario, to become 100% digital literacy, India first has to cross the hurdle to electrification completely. Power cuts are another problem that also needs to be addressed simultaneously with increasing the electrification scenario.

- **Lack of Internet connection:** The number of villages with a broadband connection is also not satisfactory in India. However, in the last few years, mobile network penetration has gained some pace and the students might rely on network data for online education. The school makes necessary arrangement to hold virtual classes but owing to the bad broadband connectivity, the whole setup of digital education in that particular village will fail.

- **Internet connection plans and the speeds:** Communication with teachers directly through video calls or watching online video lectures require high-speed data with a stable internet connection. Even after the lockdown is lifted, the cellular internet speed is not going to skyrocket and it will still be a hindrance that will always pull digital education back. People living under the poverty line in the country not able to afford the expansion packs that offer more data in a single day.

- **Lack of devices for digital education:** To attend classes online and to watch video lectures, we all need a computer, laptop, tablet, or smartphone. Only around 30% of the population in India has access to smartphones. Hence, if we dream of digital education, there should be a way to bridge the gap and offer some form of smart device to the remaining population so that they can get the benefits of online education. There are more than one child in a family and all of them want to access online classes or watch video lectures online, the family might not be able to afford a smartphone for every child, that is another issue. School going kids want to

have access to the internet for attending virtual classrooms, they will need their parent's help to attend these online classes and the same is also applicable for students of higher classes if they do not know how to operate a computer.

● **The fear of parents:** Small kids use the smartphone for other purposes like playing and not for studying only. Digital literacy in India is not upto the mark, mostly parents are not willing to give their smartphone to their kids due to fear. Their parents know that their kids will misuse the independence of using the smartphone.

● **Experienced teachers and online classrooms:** A number of experienced teachers in India, have dedicated their whole life to build the future of India. They provide new models for teaching digital education. But on the other hand, those teachers are not competent enough to teach students in virtual classrooms. These teachers need a lot of training to become more capable of teaching students through online classes. For this purpose, more experienced teachers should come forward to online platforms and make this mode of education a successful one for imparting education.

● **No Standard Policy:** Digital education is not only videos lectures by teachers on the internet. Digital literacy involves a number of aspects such as appropriate platforms, technology, tools, interactivity, curation, content and a lot more. In India, the government lacks proper policy making on digital education, infrastructure for the online classes, content for online classes, interaction as well as multiple languages.

● **Lack of Social Cohesion:** Public educational institutions also play an important role in social inclusion and relative equality in social context. Public educational institutions are the place where all people of different genders, classes, castes and communities can meet without one group being forced onto others.

● **The distraction of students in online education:** School students in India are not serious enough but this is not their problem. Small kids will always tend to use those applications and games that are according to their interests and students are not interested in the studies. Excess use of computer and smartphone displays can have a bad impact on the eyesight. To solve these problems, the teachers can give problem solving as well as critical thinking skill based assignments to the students so that they do not get enough time to be distracted. One more aspect is that these digital courses can be created to be more interesting for the students, and the teachers must try to make the process of learning more interesting and that will help the students to get interested in studying and through through this way students can be kept away from distraction and they will keep learning with the benefits of digital education.

● **The unfriendly situation in homes:** In our country, there are a number of homes where the students do not have enough space to study in a comfortable zone. Studying by students at home with the help of online education platforms is also not possible. This is a problem which cannot be solved very easily. It has nothing to do with the penetration of the Internet in India because of the poverty situation in India. A peaceful atmosphere is always the essential condition for smooth studying and that is not the part of many houses in India. There are several challenges for digital education in India. The COVID-19 situation has taught us the importance of digital education and the government has also come forward to improve the existing infrastructure so that digital education can flourish in our country India.

How to Overcome the Challenges for Successful Implementation of Digital India

- **Digital Literacy:** Despite the rising number of smartphone penetration and number of internet users, digital literacy in India has been very low. To get benefits of the Digital India programme to reach all sections of the society, improving digital literacy is imperative to all sections of the society.

- **Skill Building:** A strong skill is required to support the initiative and services that are provided under the Digital India umbrella. Development of technical skills within central and state governments will be helpful to enable the spread of e-governance services, maintenance and upgradation of e-governance services and decision making on all the digital initiatives in India.

- **Digital Adoption**: For making digital India to be successful, all parts of Indian society need to adopt digital technologies at an advanced level. This will not only create new demands in the field of Digital India but also help to achieve its vision of empowering all citizens.

- **Defining the role of the private sector:** A new framework needs to be created for participation in all the private sector through skill development programs which defines the terms and conditions for the private sector, expectations in terms of investments in the private sector, content and job guarantees in these sectors.

- **Introduction of digital skill programs at an institutional level:** Skill training programmes and digital literacy schemes should be introduced as part of institutional training in schools, colleges and universities across India. Curriculum and interactive programmers should be mandated to ensure adequate digital skills of all graduates.

- **Increase availability of digital infrastructure at rural and remote locations:** The speed at which digital infrastructure is being developed needs to be increased. Existing government infrastructure assets should be further leveraged for provision of digital services at remote locations.

- **Increase Accessibility-** The pandemic situation taught us a number of adjustment to changes in new and creative ways. Inclusion in distance learning programs, especially for students coming from low-income groups or the presence of disability is a very important step toward digital education. Government needs to provide support for digitalization to teachers as well as students by making such platforms with ease and content available for free of cost. They must be assured of the required basic infrastructure for online learning such as desktops, laptops and mobile phones.

Conclusion

Digital education is learning for all academic levels and especially effective for child learning as the innovative audio-video feature that boosts the cognitive aspects in a child's brain. Digital learning makes learning more practical applicable and relatable to our kids' lives and surroundings in an interesting manner for the kids. Students also perceive it as a flexible option to study them as per their time and pace. Teachers also find it convenient to prepare their learning plans with well developed technology aids. Teaching becomes an excellent experience with perfect packages having a blend of animations, gamification and elaborate audio-visual effects. So, online methods of teaching and learning deserve our highest level to supplement, support and amplify the techniques of face-to-face education.

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A STUDY ON ATTITUDE OF SECONDARY SCHOOL STUDENTS TOWARDS ONLINE LEARNING DURING COVID-19

Ms. Harpreet Kaur*

Abstract

Education is a purposeful activity directed at achieving certain aims such as transmitting knowledge or fostering skills and character traits. The aim of the present study is a study on the attitude of secondary school students towards online learning during COVID-19 in Ludhiana District. The study used a random sampling and a sample consisting of 100 secondary school students of Ludhiana district. The questionnaire was self- administered and developed through a comprehensive literature search. The result revealed that Gender has no significant effect on the attitude of students towards online learning and Locality has a significant effect on the attitude of students towards online learning.

Keywords: *Attitude, Secondary School Students, Online Learning.*

Introduction

Education is a purposeful activity directed at achieving certain aims such as transmitting knowledge or fostering skills and character traits. It is the root cause for any change, which takes place in the social, cultural, spiritual, political and economic aspects of human beings. Education has been greatly affected by the COVID-19. COVID-19 is an infectious disease caused by the SARS-CoV-2 virus. The virus can spread from an infected person's mouth or nose in small liquid particles when they cough, sneeze, speak, sing or breathe. The COVID-19 spread from China to almost all countries. Novel Virus Covid-19 has spread over the whole world and compelled human society to maintain social distance, stay at home and work from home. Almost all schools, colleges and universities will close in March 2020. Then online learning for children's study was started. This online learning was processed by children through WhatsApp, YouTube, Zoom etc. classes. Teachers created WhatsApp groups for students and guardians to share content and solve the problems facing the students. The outbreak of COVID-19 has created many challenges and negative impacts on education. Online learning is a method of education whereby students learn in a fully virtual environment. It refers to an internet-based learning environment that can connect students of diverse backgrounds who boast different perspectives. First introduced in the 1990s with the creation of the internet and utilized in distance learning. It is also called e-learning. According to UNESCO (2006), in many developing countries, online learning emerged as a profound way of teaching and learning, thus making the ratio of trained teachers towards negative directions.

E-learning success is significantly determined by the quality of learner autonomy or learner independence that learners have because they are the ones who control their own learning and are

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accountable for it (Zimmerman, 2002). Thus, a vital feature in online distance learning is learner autonomy (Lynch and Dembo, 2004). Within the context of the COVID-19 pandemic, online learning has taken the status of interim remote teaching that serves as a response to an exigency. However, the migration to a new learning space has faced several major concerns relating to policy, pedagogy, logistics, socioeconomic factors, technology, and psychosocial factors (Donitsa-Schmidt & Ramot, 2020; Khalil et al., 2020; Varea & Gonzalez-Calvo, 2020).

Objectives

- To study the attitude of secondary school students towards online learning during COVID-19.
- To compare the attitude of secondary school students towards online learning during COVID-19 with regard to gender.
- To compare the attitude of secondary school students towards online learning during COVID-19 with regard to locale.

Hypothesis

- There exists no significant difference between attitudes of male and female secondary school students towards online learning during COVID-19.
- There exists no significant difference between attitudes of urban and rural secondary school students towards online learning during COVID-19.

Delimitations

- The study was limited to secondary school students.
- The study was restricted to 100 students only.
- Only Ludhiana district was selected for the study.

Methodology

Sample

In the present study, the random sampling was used. A sample consists of 100 secondary school students of Ludhiana district.

Tools used

Investigators distributed questionnaires using Google form. The questionnaire was self-administered and developed through a comprehensive literature search. It consisted of 15 questions and the responses were based on five – point scale viz. 1 (Strongly Disagree), 2 (Disagree), 3 (Undecided), 4 (Agree) and 5 (Strongly Agree).

Statistical Techniques used

- Descriptive statistics like mean, median, mode, SD.
- Inferential statistics like t-test.

Results and Discussion

Table -1
Scores of Attitude of Male and Female Secondary School Students towards Online Learning

Gender	N	Means	S.D.	t-value
Male	50	52.52	3.10	1.82
Female	50	53.56	2.66	

Table 1 shows the Scores of Attitude of Male and Female Secondary School Students towards Online Learning during COVID-19. Result revealed that t-value is 1.82 which is non-significant at both the levels of significance i.e. 0.05 and 0.01. Hence, there exists no significant difference in the mean scores of Attitude of Male and Female Secondary School Students towards Online Learning during COVID-19. Hence, both male and female students possess a positive attitude towards online learning.

Table -2
Scores of Attitude of Rural and Urban Secondary School Students towards Online Learning

Locality	N	Means	S.D.	t-value
Rural	50	50.7	2.99	2.95
Urban	50	52.62	3.50	

Table 2 shows the Scores of Attitude of Rural and Urban Secondary School Students towards Online Learning during COVID-19. Result revealed that t-value is 2.95 which is significant at both the levels of significance i.e. 0.05 and 0.01. Hence, there exists a significant difference in the mean scores of Attitude of Rural and Urban Secondary School Students towards Online Learning during COVID-19. In the context of mean scores, urban students were found having greater mean scores of attitudes towards online learning than their counterparts. This shows that urban students have a more favorable attitude towards online learning than their counterparts.

Conclusion

Online education is a form of education where students use their home computers through the internet. Gender has no significant effect on the attitude of students towards online learning. However, male students have a slightly positive attitude towards online learning than female students. In addition, Locality has a significant effect on the attitude of students towards online learning. Urban students have a more favorable attitude towards online learning than Rural students.

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IMPACT OF COVID-19 ON TEACHING LEARNING PROCESS

Dr. Jagdish Singh*

Abstract

In late December 2019, a previous unidentified Corona virus emerged from Wuhan, China, and resulted in a formidable outbreak in many cities in China and expanded globally. This disease is officially named as Corona virus Disease-2019 (COVID-19) by WHO on February 11, 2020). It is a fifth category communicable disease which is also known as Severe Pneumonia with Novel Pathogens on January 15, 2019 by the Taiwan CDC, the Ministry of Health. COVID-19 is an impending zoonotic disease with low to moderate (estimated 2%–5%) mortality rate. Individual to individual transmission may happen through droplet or contact transmission. It may put at risk the first-line healthcare workers in case of lack of stringent infection control and if there is no proper personal protective equipment available. The World Health Organisation (WHO) declared the Corona virus disease 2019 a Pandemic. Pandemic has been steering the education sector forwarded with technological innovation and advancements. In every sector around the world, its impact can be observed. It has badly affected the education sector of India as well as of the world along with a very bad effect on students' life, working as a catalyst for the educational institutions to grow and go for platforms and techniques which have never been used before. In nutshell, to wash away the hazard and to digitise the challenges of this pandemic, different approaches are being used. This Article highlights both the positive and negative impacts of COVID-19 with some useful suggestions to carry out educational activities during the pandemic situation.

Keywords: *Covid-19, Pandemic, Teaching – Learning process, Digital learning platforms*

Introduction

Corona virus Disease-2019 (COVID-19) which is also named as Severe Pneumonia with Novel Pathogens is a potential zoonotic disease with low to moderate mortality rate. The World Health Organisation (WHO) declared this disease a Pandemic. A Pandemic is defined as, occurring over a wide geographic area affecting an exceptionally high proportion of the population. Pandemic has been steering the education sector forwarded with technological innovation and advancements. Every aspect of human life around the world has been affected badly by the pandemic COVID-19. Not only this but the education sector of our country along with all other countries in the world have been affected by this pandemic. It has enforced the world wide lock down leaving a very bad effect on the students' life. Around 32 billion learners stopped moving schools/colleges, all educational activities halted in India. On the other hand it has played a role as a catalyst for the educational institutions to grow and search for new techniques and platforms which have not been used before this situation. The Education sector has been combating till now to face such challenges with different approaches to survive the teaching learning process without any problem. No doubt we have to face

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different challenges like lack of knowledge of technological devices by the students and parents.

The outbreak of COVID-19 has created immediate and unparallel challenges in the field of Education. 185 countries around the world made announcements for the closure of schools as well as universities as of 31st March. In India, the whole education system was confronted with adversity, when on 24th March; Prime Minister Sh. Narender Modi ordered nationwide lockdown. Lockdown limits the movement of the entire 1.3 billion population of India, compelling both private and government educational institutions all over the country to suspend classes for indefinable time. According to the UNESCO Report, COVID-19 has affected 68% of the total world's student population as per the data taken during the 1st week of June 2020.

Undeniable lockdown created an unpredicted pressure on the system to secure the Education of nearly 300 million schools in the country. Concept of Education in teaching learning changed overnight and in this time of crisis, digital learning emerged as an indispensable resource for education. All around the world education institutions are influencing existing platforms from the likes of Google Classroom, Microsoft Education and Conferencing apps like Zoom, Google Meet. The Ministry of Education in dozens of countries are providing remote learning resources while education institutions are closed.

According to a survey report of the Ministry of Human Resource Development (MHRD) government of India conducted on Higher Education, it was observed that there are 993 universities, 39931 colleges and 10725 institutions listed on the portal, which contribute to education. In order to continue the teaching learning process, MHRD promoted Digital learning E-Learning platforms under the initiatives of government of India, covering both school and higher education in multiple choices as under:

- **DIKSHA:** It has more than 80,000 E-books for Class I to XII created by CBSE, NCERT and State/UT along with mobile apps available for the platform.
- **E-PATHSHALA:** It has a collection of around 1886 audios, 2000 videos, 696 e-books and 504 flipbooks for Class I to XII in different languages.
- **PM - e- Vidya:** This package was introduced to boost digital education, which includes the DIKSHA Portal (One Nation, One digital platform) to provide quality content to researchers and students. Main component of the programme is the "One Class One Channel '' Initiative where classes will be conducted on a dedicated channel in television. 12 DTH Channels dedicated to those who do not have access to the Internet.
- **ATAL INNOVATION MISSION (AIM), NITI AYOG:** It comes under the Atal Tinkering Lab, (ATL) programme to fuel the Innovation Learning Journey of Young Students from home.
- **AIM:** It is empowering the youngest minds with the modern technologies through experiential Learning. Students can improve new concepts and methods from various online modules including AI programming, designing and 3d modelling. Additionally, for teachers AIM has introduced a series of Webinars promoting digital literacy and how to foster creativity among students in the teaching learning process.
- **NROER:** National Repository of Open Educational Resources portal provides a host of resources for students and teachers in multiple languages including books, interactive modules and videos including a host of STEM-based games. Subject matter is mapped to the curriculum for classes 1st to 12th including related resource material for teachers.

NROER has 14527 files together with 401 collections, 1664 audios, 1345 interactive, 2779 documents, 2586 metaphors and 6153 videos in different languages.

- **Swayam:** It is the national online education platform hosting 1900 courses covering both school (classes 9 to 12) and higher education (undergraduate, post graduate programs) in all subjects like management courses, law, engineering, social sciences and humanities. The unique feature has been integrated with conventional education. There is only a maximum 20% credit transfers available.

- **Swayam Prabha:** It has 32 DTH TV channels transmitting educational contents on 24 x 7 bases. These channels are available for viewing all across the country using DD Free Dish Set Top Box and Antenna. In this portal channel plan and other details are available covering both education at school level for 9th to 12th classes and higher education including undergraduate, postgraduate, occupational courses, teacher training, engineering in different streams like Arts, commerce, Science and humanities subjects along with technology, law, medicine and agriculture etc.

Productive Impact of COVID-19 on Teaching and Learning

In spite of the negative impact of the outbreak of COVID-19 on Indian education, educational institutions, India has faced this challenge and has provided flawless support services to the students during the pandemic. The Indian education system got the opportunity for transformation from the traditional system to a new era. The following mentioned points may be considered as the constructive impacts.

1. **Moving towards Blended Learning**: COVID-19 has accelerated adoption of digital technologies to deliver education. During this pandemic, blended mode of learning has encouraged all the students as well as the teachers to make proper use of technology in educational institutions. In the area of pedagogy and curriculum development, major revolution has been brought by the enormous opportunities of new techniques of content delivery and evaluation. At a time, It has also given access to huge pools of students.

2. **Rise in use of Learning Management Systems**: Use of learning management systems by educational institutions became a great demand. Many opportunities have been created for those companies which have already been developing and reinforcing learning management systems for many educational institutions.

3. **Enhancing the use of soft copy of learning material**: During this pandemic situation in lockdown most of the students have to use soft copies of their learning material for reference as they were not able to get study materials in the form of hard copies.

4. **Improvement in collaborative work:** There is a new opportunity where collaborative teaching and learning can take on new forms. Collaborations can also happen among faculty/teachers across the world to benefit from each other.

5. **Rise in online meetings**: The pandemic Rise in online meetings- The pandemic has created a massive rise in teleconferencing, virtual meetings, webinars and e-conferencing opportunities.

6. **Enhanced Digital Literacy**: The pandemic situation introduced people to learn and use digital technology and resulted in increasing the digital literacy

7. **Demand for Open and Distance Learning (ODL):** During the pandemic situation

most of the students preferred ODL mode as it encourages self-learning providing opportunities to learn from diverse resources and customized learning as per their needs.

Unconstructive Impact of COVID-19 on Education

Due to the outbreak of COVID-19, the education sector has been affected badly and it has to suffer a lot. It has created many negative impacts on education and some of them are as pointed below:

1. **Educational activity hampered**: Due to the lockdown situation, different level examinations have been delayed along with suspension of classes. Not only this but the admission process, entrance tests and annual examinations have already been postponed by diverse boards. Due to the consistency in lockdown, learners had to suffer a loss of nearly three months of the complete academic year of 2020-21 which has been going further, making the situation of continuity in the education sector worse. The learners have to face so many difficulties in attending the schooling again after a gigantic gap.

2. **Impact on employment**: Due to the pandemic situation during COVID-19, students' placements have been badly affected as most of the recruitment processes got postponed and unemployment rate is expected to be increased. Fresh graduates have to face the fear of withdrawal of their job offers from the private sectors because of this undesired situation. The Centre for Monitoring Indian Economy's estimates on unemployment turned up from 8.4% in mid-March to 23% in early April along with the urban unemployment rate to 30.9%. Due to the increase in unemployment, the education gradually decreases because people move violently for food rather than education.

3. **Unprepared teachers/students for online education**: Teachers/students are good at it or at least not, all of them were ready for this sudden transition from face to face learning to online learning. The lectures being conducted by most of the teachers on Google meet, Zoom and on different video platforms may not be real online learning without any dedicated online learning platform.

4. **Increased responsibility of parents to educate their wards**: Some educated parents are able to guide but some may not have the adequate level of education needed to teach children in the house.

5. **Access to digital world:** As many students have limited or no internet access and many students may not be able to afford computers, laptops or supporting mobile phones in their homes. According to various reports about this situation in India, most of the learners have remained unable to explore online learning because the lockdown has badly affected the education of poor learners. In this way, during the pandemic COVID-19, the online teaching-learning method may increase the gap between rich/poor and urban/rural.

6. **Access to global education**: The pandemic has significantly disrupted the higher education sector. A large number of Indian students already enrolled in many Universities abroad, particularly in most unpleasant exaggerated countries are now leaving those countries. In the long run, if the situation persists, there will be a significant demur in the demand for international higher education.

7. **Payment of Schools**, **Colleges fee got delayed**: During this lockdown most of the parents will be facing the unemployment situation so they may not be able to pay the fee in time that may affect the educational institutions run by Private owners.

Suggestions

Following are some of the suggestions:

- The Indian policies must include the availability of e-resources to face the educational challenges during such crucial periods.
- The government should provide phone or laptop facilities to every child so the students can attend the online classes without any problem.
- Regular salaries should be given to the teachers (Govt. or private) during such situations so that they can manage their home properly.
- Parents as well as the students should be guided properly to prevent themselves from such disease.
- There should be no academic burden for the students. Less work load should be there so that they can do their work properly without any burden.

Conclusion

It can be concluded that no doubt COVID-19 has left a deep impact enormously on the education sector of our country. In spite of the creation of so many challenges, it gave birth to new opportunities to survive the educational system. To cope up with the present crisis of COVID-19, the possibility of Open and Distance learning (ODL) has been explored by adopting diverse digital technologies by the Indian government along with different stakeholders of education. It is a fact that we as Indians are not fully equipped with digital platforms for making education reach all corners of India. Due to the present choice of digital platform, most of the students who are not privileged like others are facing so many problems. To find out the solution of this problem, the government of India and universities are persistently trying. The priority should be to utilise digital technology to create an advantageous position for millions of young students in India.

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ROLE OF VALUE EDUCATION IN THE MIDST OF PANDEMIC

Dr. Jagjit Singh*

Abstract

Education is the tool through which effective transformation of knowledge, skills, attitude and overall behavioral pattern of an individual takes place in the right perspective. Taking into account the recent complex and competitive situations in the globalized world it's role has become much more important. Its aim is not only vocational rather it strives for holistic development of the individual. Now the focus of education truly is to promote a more and more equable social order by orienting to incorporate basic human values in the curriculum transaction in order to sustain Peace in present day society where conflicts, restlessness, threats etc. are the order of the day. Needless to say, the recent COVID-19 pandemic crisis has transformed the context of the curriculum implementation due to the use of vivid platforms of knowledge transaction which are relevant in the current context. The aim of this paper is confined to the issues and aspects with respect to the role of value education in promoting the human values for peaceful existence in the light of the pandemic which still persistent.

Keywords: *Education, globalised world human values, peaceful existence, COVID 19 pandemic.*

Introduction

Education aims to cater to the overall development of organizational personality of the student by enhancing knowledge so that cognitive, affective, and conative domains, values are the notions related to the aims of human life. They are our strong beliefs about how the world should be about how people should normally behave and preference over conditions of life. Our conduct is governed by values which mastermind and direct feelings, wants, interests, attitudes, preferences and opinions about what is right, just, fair or desirable. Right living is possible only through value education which only stands against cardinal sins as Mahatma Gandhi rightly cautioned as "Pleasure without conscience, politics without principles; prayer without devotion; Education without character; Wealth without work: Science without humanity; and commerce without morality". So values are a set of principles which guide the standard of behavior and are held in high esteem.

Why value education?

Value based education imparts moral guidance and advances the character building process among the student community. Assimilation of value through education will invigorate an individual's physical, mental, well-being. An existence without values is the same as transport without radar. Value based education not only helps the students to become responsible and sensible but they are able to deeply understand the different perspectives of life. Overall a person's character is above all

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his skills. Inculcation of this education can increase one's personality and make him aware of various aspects in life. This will in turn lead him to develop respect and dignity of an individual in life which will also help shape them for future by enhancing their thinking in a democratic way.

Need for value education

Today the young generation is in a confused state because of the changed social structure and its value system leading to many dilemmas. The so-called philosophical foundations of the world as a globalized society is degrading day by day due to internal and external disturbance and friction in the terms of conflicts, wars, fears, etc. It is now difficult to decide what is right and wrong and important for an individual. So, in this regard, need for value education is summarized below:

Value education leads to imparting of teaching and learning about the ideals of society among the learners so that these can be reflected in their attitudes and behaviour. Surprisingly, in spite of the increasing literacy rate, the crime rate and other associated destructive activities like terrorist attacks, wars, violence are not coming down. All these causes great loss of innocent human lives, stress and anxiety, fear, hopelessness among the population. Needless to say, all these destructive activities are credited to the poor inculcation of values. Had the people been thoroughly taught the values of human character they would refrain from such malicious activities. In this connection, the stakeholders must lay more stress on imparting human values and edification along with education. It is the need of the hour to continue value and prioritize it in the curriculum itself. The students must be indoctrinated to uphold the values of honesty, tolerance, sympathy, cooperation, brotherhood, peace, etc. right from their foundation. The young generation need not only to be taught to develop their skills, talents, and abilities rather they are to orient these for the welfare and betterment of society. Once values become every one's priority and culture of life, automatically all the negative dimensions will end. The world is in urgent need of people having high values to make it a better place to live in. When a person comes to know about value education he/she becomes analytical towards the situation and extremely observant. It makes one careful to take decisions and recognize problems and solve them. Again, it makes people responsible and know the consequences to his actions and shape his personality. It gives powerful positive vibes and energy to eradicate negativity and tends to be optimistic to grasp new knowledge and new opportunities to succeed in life.

Role of value education for student

1. It will encourage the students to develop their own personal codes and have a concern for others.
2. Reflect on experiences of life.
3. Generate self respect and honor the values of honesty, truthfulness and justice.
4. Ability to make social judgements and justification for decisions and actions.

Role of value education for teachers

1. Knowledge about theoretical, social, religious and economic values.
2. Influences higher moral values in teachers and students as well.
3. Co Curricular activities organized by teachers help in the internalization of value in thought, word and deed among the students.
4. Some aspects of human values can be dealt with practically in all spheres by teachers in organizations such as school prayer, social service camps, sports meet, festival days, special days in memory of great people, national days, etc.

Value based education in the context of the pandemic

The pandemic has transformed the contexts in which curricula are implemented, not only because of the use of platforms and the need to consider circumstances other than those for which it was designed originally, but due to certain knowledge and competencies are important in this present context. A lot many decisions need to be taken and resources made available that present a challenge for school systems, educational establishments and teachers concerned. This is of course true of curricular adjustments and prioritization and the contextualisation needed to ensure that the contents are relevant to the current situation based on the consensus among all stakeholders. Equally important, these adjustments must prioritize the competencies and values that have come to the fore today, namely solidarity, self-directed learning, care for oneself and others, socio-emotional skills, health and resilience, among others. Most importantly, the possibility to integrate the contents and learning objectives into interdisciplinary thematic clusters will allow various subjects to be addressed at the same time through topics that are particularly pertinent for pupils in the current context using project and research methodologies that allow for a joined up approach to learning. Under this approach, values must be attached to teachers 'independence and to developing complex competencies among them. When adjusting curricula and developing pedagogical resources, the needs of children with disabilities, linguistic and cultural diversity of migrant population, and indigenous communities gender aspects etc. must be addressed in order to overcome the educational inequalities in long run.

Conclusion

As such, after going through the above matter, it is quite crystal clear that values reflect one's personal attitudes and judgements, decisions and choices, behavior and relationships, dreams, and vision. They are like rails that keep us on track and help us to move smoothly, quickly and provide direction. They bring quality to life. In the light of the present devastating situations the world is facing where there is acute loss of human rights and values, the value of Will provides solace. It is inculcating in the children a deep sense of humanism, a deep concern for the well-being of others and the nation as well. These will act like compasses to behave consistently, guide direct our actions and determine what is justified for us and how we harmoniously interact with others. Besides developing physical and emotional aspects, value education teaches mannerism and Democratic duties effectively. So, in the present times value education may not be considered as a separate discipline but something that should be inherent in the Education system itself. Curriculum adaptation, flexibility and contextualisation should address elements like prioritization of learning objectives and content that enable a better understanding and response to the crisis, incorporating aspects with respect to health and care, critical and reflective thinking related to information and news, insights into the social and economic trends, encouraging empathetic behavior, tolerant and non-discriminating. A balanced approach is sought for identifying core competencies which are needed to continue learning through deeper comprehension and humanistic attitudes apart from giving strength to instrumental learning only. Naturally, all the issues and problems will end gradually. Value education thus goes a long way to equip the students with positive viewpoints and motivate them to become good, sensible and responsible human beings on whose shoulders rests the dignity of a nation. It should be noted that one needs to understand the value of education and knowledge in life and start working upon it then only Its practical application will be worth appreciating.

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INNOVATIVE ONLINE ASSESSMENT TOOLS

Dr. Jasbir Kaur*

Abstract

We all are living in a digital age and during pandemic and post pandemic the need to be connected digitally has increased in an exponential manner. Digital world has touched every aspect of human life and education is the most prominent among them. In fact the year 2020-22 in the field of education is the era of online education. Teaching and learning has been conducted through various online modes and so as the assessment and evaluation. From normal classroom evaluations to selection for various courses as well as marketing, business, industry, political and social campaigns, research and training, religious ceremonies and celebration of festivals were conducted in an online mode during the pandemic years and a trend is still going on. The use of online platforms for assessment and evaluation has given the opportunities to the learners as well as teachers to come together in ease.

***Keywords:** Online, Assessment, Evaluation, Education*

Introduction

Assessment and evaluation are an integral part of teaching and learning. To know the extent to which students are benefitting from the instructional process and activities, assessment and evaluation of their performance is required. The concept about what actual assessment is and criteria to be used for assessment must be identified.

Assessment has been cast about so routinely in recent educational discussions, debates, and deliberations, it would seem that everyone knows what assessment is (Cizek, 1997).

Berry (2008) in her book Assessment for Learning which was published by Hong Kong University Press and writes that assessment is an interconnected part of teaching and learning. The concept of assessment focuses firstly on description about student learning, secondly to identify where each student exists in his or her personal learning progression, thirdly diagnosing about difficulties that students may be having in their learning, and finally providing direction to the teacher and the student in the steps to be taken to enhance their learning. Assessment as conscious and systematic activities used by teachers and students for gathering information, analysing and interpreting of information, drawing inferences, making right decisions, and taking appropriate steps in the service of improving teaching and learning.

Miller, Linn and Gronlund (2005) in their book Measurement and Assessment in Teaching define assessment as a general term that includes the full variety of procedures helpful to collect information about student learning in the form of observations, rating of performances or projects, paper-and-pencil tests.

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Principles of Assessment

Phye (1997) in the epilogue of an edited book has also mentioned some principles of assessment referring to the National Forum on Assessment. Some of these principles are:

- The assessment should serve its primary purpose that is to improve student learning.
- Assessment system should be fair to all students and provide all students with optimum opportunities for learning.
- Communication about assessment should be regular and clear.
- Assessment systems at any level must be open to on-going, systematic review, and improvement.

The principles given by Nitko (2004) are

- Helpful to identify the desired learning targets.
- Ensure that the selected assessment technique matches the desired learning outcomes.
- Try to provide assessment opportunities that meet a learner's need.
- Implement multiple measurement techniques to assess each learning outcome.
- Consider the limitations of assessment techniques while interpreting their results.

Berry (2008) has also summarized the principles of assessment in ten points and these ten points are:

1. Bring into line assessment to both teaching and learning
2. Exploring multidimensional assessment methods
3. Selecting assessments susceptible (inclined) to learning
4. Drawing on joint-efforts amongst colleagues
5. Continuous students assessment
6. Allowing students' participation in assessment process
7. Using assessment techniques to unfold learning
8. Making marking criteria accessible
9. Providing feedback
10. Analysing and reporting results.

Baird, Hopfenbeck, Newton, Stobart and Steen-Utheim ((2014) has also emphasized that in the assessment process Students should know

- What they need to learn
- Feedback should give insight on how to improve performance
- Students should be involved in their own learning through activities such as self-assessment.

Types of Assessment

The primary goal of assessments is for students to demonstrate their achievement of the course learning outcomes (Boud, 2010). Basically assessment is divided into two categories:

- **Formative Assessment**: Low-stakes (or no stakes) assessments that provide information to students and teachers about the student's current understanding of course materials and learning progress. Formative assessment often has a feedback component (Dixon and Worrell, 2016).
- **Summative Assessment**: Assessments that capture students' learning up to a given point, and evaluate it against a criteria or standard. These are higher-stakes than formative

assessments and provide students with a grade (or a Pass/Fail). (Dixon and Worrell, 2016)

Online assessment a need of the hour

To define the term, it is a mode or strategy of evaluating students' performance through an online platform. Assessments can be either formative, designed to monitor students' progress in a low or no stakes environment, or summative, designed to evaluate students against a standard or criteria (Dixon and Worrell, 2016)

Online courses make learning accessible to students who cannot be on campus during regular hours or at all. Instructors can use online courses to accommodate increasing class sizes and reduce the associated high instructor workload (Amelung, Krieger and Rosner, 2011; Earl, 2013). Abubakar and Adeshola (2019) also note that online courses can have lower material costs than face-to-face courses, aside from the initial costs of implementing learning management systems (LMS) and software.

In online environments, students may incorrectly assume that they will not have to dedicate as much effort to learning course material or completing assessments, because they are no longer in a traditional course (Kebritchi, Lipschuetz and Santiague, 2017)

Online assessment can and should have the same academic rigour as face-to-face assessment; it still needs to align with course and program learning outcomes, provide valuable learning opportunities for students, and have a level of excellence for students to work toward (Vlachopoulos, 2016).

The online instructional delivery method should be used to facilitate teaching and promote learning. The obvious benefits of online courses may be convenience, flexibility, and "learning anytime, anywhere;" but teachers must ask if those benefits contribute to student learning outcomes. Online assessment must be used to measure learning objectives and application of knowledge in regard to a particular subject. The online educator should use varied assessment techniques to reflect the pedagogy of online courses with certain strategies. The number of current assessment techniques can be modified to use in online courses. There are also other skills, such as written communication, that may be enhanced due to the online delivery of instruction.

Online Assessment Strategies

Some of the strategies that can be used for the online assessment are as under:

- Concept Mapping/Mind Mapping: Creation of digital maps that connect various course concepts to one another and to further knowledge.
- Digital Media Projects: Students present course work in digital media form rather than submitting written work.
- Digital Posters: Academic poster created and presented on a computer. They may include interactive elements or links to online sources.
- Reflective Writing/Journaling/Blogging: Short written assignments reflecting on experiences and learning, often guided by a central question or topic.
- Research Projects: Large assignments in which students aim to answer a research question by disproving or failing to disprove a hypothesis.
- Simulation Activities/Virtual Laboratories: Online activities that model real-world scenarios, where students must complete tasks or solve problems related to course content.
- E-Portfolio: A multi-media collection of artefacts that demonstrate an individual's learning,

usually available online in a personal website. Artefacts can include assessments from a course, blog posts/journal entries, photos, videos, presentations, feedback, and any other evidence of learning.

- Learning Management System (LMS): A central online platform used to provide learning materials to students in an online course. Usually, institutions mandate that only the approved LMS (or multiple LMS platforms) be used within them (Ellis, 2009).
- Use of google forms and test Moz is also a popular technique for online assessment.

To conclude through online assessment techniques are used rampantly in the field of education but it can and should have the same academic rigour as face-to-face assessment; it still needs to align with course and program learning outcomes, provide valuable learning opportunities for students, and have a level of excellence for students to work toward (Vlachopoulos, 2016). Moreover for switching to a new type of strategy much of the research work is needed which is missing in our country. But seeing its benefits, the online mode of teaching learning and assessment should be taken care of and a sound technology based platform must be provided to our future learners.

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POSSIBILITIES AND CHALLENGES OF DIGITAL EDUCATION IN INDIA

Ms. Jaspreet Kaur*

Abstract

The technological change in the world has brought tremendous change in almost every sphere of life. Online education in India focuses equally on school and college-based courses as well as mid-level professional courses. The e-learning market in India is estimated to be around $3 billion. Covid-19 has accelerated the adoption of digital technologies to deliver education. The sudden closure of all educational institutions has put a new challenge on how to continue the teaching-learning process when students, faculties and staff could no longer be physically present on the campuses. The sudden shift from school teaching to online teaching due to the pandemic has put a lot of questions about the success of the teaching and learning process. It is time to test the effectiveness of the online modes of teaching and learning with respect to the learning outcome and learning satisfaction of the children and their parents too. Any change that is so disruptive is also likely to bring with it some new opportunities. This time could also become an opportunity to transform the education system. Curriculum design, academic collaborations, skill development and faculty training programs could help to transform education in the near future.

Keywords: *Education, E- learning, Covid-19, Digital Education*

> *"It is the birthright of every human being to receive at least the fundamental education without which he cannot complete his obligations as a citizen."*
> — Maulana Abdul Kalam Azad

A nation's internal development and its positive role in the global community are supported by educated individuals who actively participate in the democratic process. It encourages the expansion of production, income, and job possibilities as well as the advancement, use, and adaptation of science and technology to improve quality of life. Improvement in education is not only expected to enhance efficiency but also augment the overall quality of life (World Bank, 2004). Education promotes the social, economic, and personal development that are necessary for success in a market-driven society. As a result, education is the process through which society passes on its collected information, skills, attitudes, and customs from one generation to the next, influencing what a person believes, feels and acts (Mortimore, 2013). 'Education facilitates the social and economic progress of the nation. It is the most vital input for equipping youth with skills and knowledge and giving those means of entry to productive employment in future. Improvement in education not only enhances efficiency but also improves the overall quality of life. The Eleventh Five Year Plan has accorded the highest priority to education as it is a chief instrument for achieving speedy and inclusive growth. It has

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given a broad-based strategy for boosting the education sector covering all sections of the Education Pyramid (Planning Commission, 2011).

Digital Education in India

The technological change in the world has brought tremendous change in almost every sphere of life. The education sector in India is no longer bound to just classrooms as the online learning space in India is growing manifold. The central government's efforts to make digital learning available to students in every corner of the country are also aiding the sector. Currently, online education in India focuses equally on school and college-based courses as well as mid-level professional courses. The e-learning market in India is estimated to be around $3 billion. Many start-ups are already setting their foot in what they think will be the next big thing in India after e-commerce. While some companies like Simplilearn and Intellipaat look to generate content, especially aiming at mid-level professionals, others like Learnsocial plays more of an aggregator role. These companies also offer blended classes, integrating both online and offline experiences, along with self-take courses (Lone, 2017).

The major reason for the phenomenal growth in online education is MOOCs (Massive Open online courses). MOOCs are online courses aimed at unlimited participation and offer open access through the web (Kaplan and Michael, 2016). The government of India is supporting online education because of its potential to improve education quality and reach through the Digital India initiative. The government of India in Association with the Ministry of HRD has initiated a programme named SWAYAM (Study Webs of Active –Learning for Young Aspiring Minds) that is designed to achieve the three fundamental objectives of Education Policy i.e., access, equity and quality. The main objectives of this effort are to take quality teaching learning resources to all, including those who cannot afford them. Nearly 2000 online courses are offered through Swayam and approximately 150 million students across the globe are enrolled in different courses (Jindal and Chahal, 2020).

Digital Education: The Pandemic Experience

All the educational institutions including schools, colleges and universities across the world have responded to Covid-19 in different ways. During the lockdown, school education was a great real-time human experiment in teaching and learning. The transition to online teaching and learning has made sure that students do not lose any time in their studies and that their progress is monitored along with timely evaluation. According to UNESCO, approximately 1.26 billion children, or roughly 70% of all children worldwide, have had their education interrupted due to the pandemic, and a significant portion of these children are from the "low tech or no tech" phase, with India accounting for 300 million of the 1.26 billion children (Dhoot, 2020).

Covid-19 has accelerated the adoption of digital technologies to deliver education. The sudden closure of all educational institutions has put a new challenge on how to continue the teaching-learning process when students, faculties and staff could no longer be physically present on the campuses. The only solution for the institutions was to depend on online teaching-learning. Mobile applications or virtual meeting platforms like Zoom, Google meet, Webex etc became the virtual meeting hubs. Educational institutions directed teachers to engage in classes through online mode using the virtual meeting platforms like Zoom and Google meet. The higher education institutions have started conducting orientation programmes, induction meetings and counselling classes with

the help of different e-conferencing tools like Google Meet, Skype, Youtube live, Facebook live, WebEx etc. to provide support services to the students. This initiative has been taken to create an effective virtual environment for teaching learning and to create motivation among students for online activities (Jena, 2020).

Various Challenges

The sudden shift from school teaching to online teaching due to the pandemic has put a lot of questions about the success of the teaching and learning process. It is time to test the effectiveness of the online modes of teaching and learning with respect to the learning outcome and learning satisfaction of the children and their parents too.

The discourse of online teaching-learning

The sudden shift from classroom learning to digital learning has created the digital divide. While higher education institutions in industrialised nations have done a good job of implementing digital learning, on the other hand, institutions in African and South Asian nations still face significant obstacles before fully converting to digital forms of instruction (Bania and Banerjee, 2020). A lot of students were just joining the classes to mark their presence. They hardly paid attention to what was being taught by the teacher as factors like class control do not exist on these virtual platforms. Most of the students might not have the technical skills that are required to navigate through the online learning activities and at the same time the teachers who were not well versed with modern technology had a lot of difficulties participating in online lessons because of the abrupt transition. Massive Open Online Courses (MOOCs) have faced criticisms like the environment of learning is of an impersonal nature and the students may have to learn largely on their own. Without any personal attention from the teacher and also without interaction with the peer group the learning outcome would not be as wonderful as it might be. The sudden shift to online learning without any planning, especially in countries like India where the backbone for online learning was not ready and the curriculum was not designed for such a format, has posed various challenges to the system. It has created the risk for most of our students becoming passive learners and they seem to be losing interest due to low levels of attention span.

Digital Divide

Though during this tough time, the technology has proven itself as the savior of educational dreams of students to some extent. But in the case of a country like India where most of the population lives in rural areas (70 percent) and rural areas are still very much deprived of the technologies and internet connectivity, how it impacted the rural students to access the educational platforms is a cause of concern. Millions of children were left behind in India's digital gap as the country moved to remote learning in the midst of the pandemic. According to data from the recently released Annual Class of Education Report (ASER), although smartphone ownership among enrolled children has increased, it differs greatly depending on the socioeconomic status of the household. For instance, just 52 percent of households with both parents who have completed Class 5 (low parental education) have at least one smartphone, compared to 82 percent of households with both parents who have at least passed Class 12 (high parental education) (Pratham 2021). Attending online classes requires long hours of internet, peaceful space and one device/ phone dedicated to each student in a family, which might not be affordable for everyone. According to the Key Indicators

of Household Social Consumption on Education in India report, based on the 2017-18 National Sample Survey, less than 15 percent of rural Indian households have the Internet (as opposed to 42 percent of urban Indian households). The poorest households cannot afford a smartphone or a computer[1]. Online classes have added to the already existing feelings of vulnerability among students (Sarkar, 2020). The digital gap has not only prevented students from low-income and marginalised backgrounds from participating in digital learning, but it has also driven many disadvantaged students to suicidal ideation and even death. For example, a 14-year-old girl in Kerala committed suicide because she was unable to enrol in an online school. In the Chirang district of Assam, India, a 16-year-old kid (a student in class 10) from a very impoverished family committed suicide because he lacked a smartphone to participate in online classes and tests provided by his school.[2] . A 10th standard girl student, committed suicide at Bali in West Bengal because she had not been able to attend online classes and was afraid of failing her examination[3]. The pandemic has exposed the deeply rooted inequality in the Indian education system and the lack of digital access further pushed out students from the system. So, here the understanding of the concept of the digital divide is important to know how accessing the internet and the impact of the use of the internet is deeply rooted in the social conditions of a student's day-to-day life. Access to technological tools and infrastructure are some of the main barriers to digital education that enable the divide.

The Future Perspective

Any change that is so disruptive is also likely to bring with it some new opportunities. Digital transformation has become a new norm in educational institutions across the country. Technology adoption in education has sparked an unheard-of shift away from teacher-centric education and toward student-centric education. There will be a need to shift how instruction is delivered and how learning outcomes are assessed, which presents a massive opportunity for pedagogy and curricular development. Universities and colleges have a fantastic chance to start raising the calibre of the instructional materials utilized in the teaching and learning process. Currently, there is a chance for collaborative teaching and learning to evolve and perhaps become profitable. In order to gain from one another, faculty and teachers from all around the country can collaborate. There is an opportunity to rethink the traditional education system now. Digital learning is leading the charge as a mainstay, and many new trends are picking up momentum across the globe. Multidisciplinary and modular pedagogy that afford transferable skills and customised learning will succeed (Ramakrishna, 2021). Innovative new forms of collaboration and alternative paradigms are needed to drive learning, research and teaching. Sharing of knowledge between institutions globally through joint-teaching, virtual guest lectures, etc. could give students an enriched global perspective in these difficult times. Moving away from traditional pedagogies in most average institutions, the demand for quality educators will shape the way for higher education to move forward from this crisis. First-generation students and students from low-income households view classrooms and other informal learning spaces in educational institutions as a special place to learn, especially in creating the social and cultural capital that enhances wellbeing. The current governmental focus on digital learning may offer temporary relief from the ongoing teaching-learning crises, but in the long run, attention should be paid to hiring and training teachers, constructing school facilities, offering remedial coaching, etc. (Choudhury, Gill and Kumar, 2022)

Concluding Remarks

With the Digital India programme's vision to transform India into a digitally empowered society and knowledge economy, the education sector in India is poised to witness major growth in the years to come. The MHRD and University Grants Commission (UGC) have made several arrangements by launching many virtual platforms with online depositories, e-books and other online teaching/ learning materials, educational channels through Direct to Home TV, Radios for students to continue their learning. This time could also become an opportunity to transform the education system. Curriculum design, academic collaborations, skill development and faculty training programs could help to transform education in the near future. The quality of IT infrastructure and the training to use it by various stakeholders would help to make this change happen in the education sector.

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M-LEARNING: AN INNOVATIVE SOLUTION TO EDUCATIONAL CHALLENGES

Dr. Kamalpreet Kaur*

Abstract

As time passed and the use of mobile technologies for learning began to develop from an abstract concept to a confirmed method of supporting performance, the conversations around mobile learning shifted accordingly. Decades ago, the communication was done through the exchange of letter either formally or informally, near or far. With the advancement of science and technology, the useful and portable device is invented which serve many purposes and highly accepted. This device was purposefully discovered for communication with people. It also connects the people worldwide bringing close relation in nature though they are far apart from each other at any geographical locations. It has removed all the human barriers such as race, region, creed, caste and religion and so on. In the fast developing world, this device gave birth to m-learning technology. This technology changes the whole education system in an exciting way and got a highly acceptable response from the whole world. M-learning offer different Learning Avenue which is faster, cheaper and potentially better to all living humans.

Keywords: *Mobile technologies, Mobile learning, Innovative solution*

Introduction

The word "technology" is derived from the Greek word "Technico" means to carry out or do things and "logia" means science. So, technology is the science of doing things. It can be defined as "the application of scientific knowledge to do the practical tasks of life." Here the real knowledge of physics was put into application for the invention of technologies by physicians (Engineers). It was invented for other purposes to make the work done in a simple, faster and easier way in the fast developing countries globally. Later on philosophers, psychologists, scientists, great leaders and educationists realized the importance of technology and experimented to use it in the education field. They were moved by this great idea and took advantage of using it in the field of the education system in the 1980s and it gained momentum from 2000 onwards. In those days computers, printers and other devices such as wireless, telephone and the internet were used in the school office, education office and other offices for administrative purposes only. Slowly it emerged into the classroom. The electronic devices really added spicy tastes in the real classroom scenario, motivating both teachers and learners in the teaching-learning process. The teaching technology has advanced and valued, instructional technology has become systematic and skilled in giving clear instruction either in written or verbal form and the behavioural technology has modified classroom behaviour of both teachers and their subjects to a greater extent by creating a conducive learning environment

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with advanced and sophisticated additional resources.

The word "e-learning" exists since 1999 when it was first used at computer-based technologies (CBT) systems seminars. Other words began to spring up in search of exact narration like "online learning" and "virtual learning." E-learning is defined as "A learning system based on formal teaching but with the help of electronic resources." The teaching can be based in or out of the classrooms. The use of computers and the internet forms the major components of e-learning. It can be called as a network enabling the transfer of skills and knowledge. The introduction of computers was the basis of this solution. With the passage of time, we got addicted to smartphones, tablets, etc. These devices have played a significant role in classroom learning. Books are getting replaced by electronic educational materials like optical discs or pen drives. Knowledge can be shared via internet which is manageable round the clock (24/7), anywhere at any time.

Physical presence was idealistic within four walls; any type of learning was questionable since it does not lead to exposure and additional gain of knowledge where learning has been destitute. E-learning is a rapidly growing industrial technology in the 21st-century arena along with mobile learning gaining its momentum and its effects can be traced back to the early 1980s and before. Electronic devices got more advanced and shifted to digital technology as per the needs of the society. These digital technologies have advanced applications that could function in various ways and means with the passage of times. Technology has been very progressive that has bridged the geographical gap with the use of advanced and sophisticated tools which gives the feeling of a real classroom scenario to young hearts of all levels. It builds the capability to share materials in all kinds of formats such as videos, slideshows, word documents, PDFs and many more. Conducting webinars (online live classes) and communicating with facilitators/ professors/lecturers via chat in different apps and message forums is an option available to users. Today, in developed and fast developing countries, mobile phones are also rationalized to be used in classroom learning for the benefit of the pupils besides communication purposes. At this juncture, the smartphones of digital systems are floating in the market and are on the verge of being used at the climax.

Mobile Learning

Mobile Learning includes learning using smartphones, tablets etc. A mobile phone is an updated version of cellular or cell phones. Cellular refers to communication systems especially the Advance Mobile phone Service (AMPS) that distribute a geographical region into segments called cells. The intention of these segments is to make the most use of a limited number of transmission frequencies. Each linking or conversation requires its own devoted frequency. The cells can use the same frequency for different conversations. Similarly, tablets are mini computers and work compatible with phones as well. Mobile devices link to a wireless communication network through radio waves or satellite transmissions. Most mobile devices deliver voice communications, Short Message Service (SMS), Multimedia Message Service (MMS) and newer phones may also provide internet services such as web browsing, emails, games, audio, recorder, video recorder, wifi, various social media apps, calculator, radio, an online newspaper, online shopping apps, Google maps, Microsoft apps, print option, share it, upload, download and much more. Even features like camera, torch, hotspot, settings, play store, Wifi, Bluetooth, Locations, Mute, Flight mode, Power saving, Mobile data, Tools and many others are inbuilt into the smartphones.

Significance of Mobile Learning

With the passage of time, the use of mobile technologies for learning began to develop from an abstract concept to a confirmed method of supporting performance, the conversations around mobile learning shifted accordingly. Mobile learning is playing an inseparable role in a learner's life. The significance of mobile learning is as follows:

- **Continuous rise in learning:** Internet browsing from smartphones and tablets has increased drastically. Technology supports learning, performance and changes in human behaviour.
- **Provides an opportunity to learn:** It provides an opportunity for learning professionals to upgrade their skill sets to be effective.
- **Contextualize the changes:** It helps in understanding the changes around the world, contextualization and adaptation according to space and time.
- **Open new possibilities:** It helps to explore, understand and apply new possibilities in any given situation in life.
- **Changes the learning and performance:** It provides a huge opportunity to modify traditional learning into new directives in the years to come and upgrade the performance of learners.

Features of Mobile Earning

M-Learning or Learning has to conceptualize and contextualize learning outside four walls to have hands-on experience through exploration and works on the principle of enrichment in learning. Some of the important features of m-learning are:

- Highly portable and available for friendly use.
- Support individual learning for professional growth
- Support individual learning for skill-based ability.
- Can capture situations and retrieve knowledge.
- Easily available anywhere and anytime for communication with others.
- Adaptable to the context, skills and knowledge.
- Persistent to manage resources and knowledge for learning
- Accessible to the change in technology.
- useful for communication, reference, work and learning;
- easy to use by people

Some of the fulfilment of learner's adaptively have to be realized while others have become noticeable; markedly assist in collaboration and teamwork.

Mobile Devices: A Way to Effective Communication

Decades ago, communication was done through the exchange of letters either formally or informally near or far. During an emergency, the person was sent directly to drop the message or deliver the letter. The person has to travel all the way on his own risk with lots of difficulty and hardship through thick dense forests and swollen streams protecting him from wild animals. In those days, there were not many educated people and often misinterpreted the information which spoiled their relationships amonst themselves. With the advancement of science and technology, useful and

portable devices are invented which serves many purposes and are highly accepted. This device was purposefully discovered for communication with people. It also connects the people worldwide bringing them more closer even if they are far apart from each other at any geographical location. It is helpful to remove all the human barriers such as race, region, creed, caste and religion. Quinn (2000) defined that learning simply takes place with the help of mobile devices or the node of mobile computing (the use of small, portable, wireless computing and communication devices) and e-learning (learning streamlined and assisting the use of information and communications technology). Nowadays, mobile devices play a greater role in communication educating all people for effective communication with broader exploration on social media. People can either make calls or send messages where the responses are received within a second. Both literate and illiterate are able to use the system on their ability and on the basis of their need basis. Most of the office work is done from home as per the need of urgency. It has cut down the travel expenditure minimally fulfilling all the needs within a short span of time anywhere and at any time.

M-Learning is Effective and Portable

Mobile devices can be considered a mini-computer that are handy and user-friendly for all levels of age. It holds almost the same system equivalent to an actual computer and less string capacity. But computers and laptops remain in the office whereas mobile phones and tablets can be carried anywhere and everywhere. Even young children of all grades from lower kindergarten to high schools generate all the learning materials and other information using mobile devices. It acts as a facilitator to the learners in the absence of teachers in the class and outside the class. Children who are accustomed to using mobile phones can do a lot more in it. It has various apps and options that help learners in learning and upscale their performance for success. It has created an environment to develop the learning materials for learning. The information can be fetched from any webpage at the convenience of users. The data can be downloaded and uploaded. Baran (2014) conducted a study to review research on mobile learning in teacher education. It was proved that mobile is an attractive and portable learning device that is blended in the education context for rapid growth and greater impact in the usage of various approaches, strategies and pedagogical assistance in the education settings. It determined its implications in the field of development of mobile learning experiences in teacher education including program directions for integration and study. It has all facilities where children's boredom can be removed and replaced by learning through various recreational activities during leisure time.

Mobile Acted as Source of Knowledge

Smartphones and iPad are designed in different portable sizes that are handy to users to use as per their convenience. Some are designed in android and whereas others are designed in window systems. It can be a touch screen or a manually operating system. Most phones and iPad have multi-network connecting systems including Wifi. All smartphones, tablets and iPads have specifically designed software but the operating system remains the same more or less. But the screen of the tablet and iPad are much bigger than the smartphones. They hold various mobile apps making them very convenient. These varied devices are very useful and applicable in our real teaching-learning process. The teacher can plan his/ her lesson using information from online sources. Even the teaching-learning materials such as images like 2D and 3D, videos, lesson plans, teaching aids,

worksheets, simulations for science experiments, evaluation techniques, methods, supplementary readers and references, assessments and techniques are available online and the teacher can make his or her teaching very fruitful using it as per their need. There are various advanced teaching methods available at different sites for learning. It also helps in making the difficult concept into simple and easy to understand. These sources provides rich content for teachers who lack content knowledge. With quality teaching, rich content knowledge and transformed pedagogy not only grows professionalism but also enhances the skills and values of the lesson delivery system fulfilling the need and aspirations of the 21st-century learners. Even the learners get lots of solved model questions and other designed challenging tasks for their own practices to promote independent learning. It acts as an immediate source to the teacher during confusion so that correct iinformation is passed to the learners. Such type of teaching-learning will not only take place inside the classroom but will happen beyond the four walls as per the teacher and learners' choice. So, learning has no fixed place in the crisis. The learners gets motivated and enjoy different teaching modes. Melhuish and Falloon (2010) conducted a study on m-learning with the iPad. It was found that the iPad provides an exciting platform for consumers in consuming and creating content in a collaborative and interactive process by assisting learners in learning theory, contemporary articles and e-learning literature. It was proven to be effective in carrying out innovative practices with strong evidence of any tasks or assessments. Peng, Su, Chou and Tsai (2009) in their article on m-learning stated that the artistic learning from mobile devices must be readdressed to be understood by the practitioners with the formation of a theoretical framework of ubiquitous knowledge after developing curricula, theories and proper instructional guidelines for realistic field-based implementation and evaluation for accelerating the performance in future. Jeng, Wu, Huang, Tan and Yang (2010) conducted a study on the add-on impact of mobile applications in learning schemes. It focused on the probing of the add-on impact of mobile applications in teaching-learning strategies to incorporate pedagogical and technical strengths of the m-technology of the learning environment. It includes context awareness and pedagogical strategy-enhanced learning scenarios for collaborative and social networked mobile learning models. Chen, Kao and Sheu (2003) conducted a study on a mobile learning system to support bird-watching learning. It aimed to construct an outdoor m-learning using an up-to-date wireless mobile ad-hoc network through dual formative evaluation to explore the possible roles of scaffolding for bird watching activities after offering the mobile learning device to see the benefit from the mobility, portability and individualization through investigation. It improved children learning beyond expectation. The learning takes place beyond the boundaries through mobile learning but the traditional way of it was fixed which was fenced around. The learners did not get a chance to exhibit their talents independently and to explore different learning techniques of their own. It has doomed their performance resulting in a poor outcome in the end. It provides direct interaction with the environment, providing hands-on experience in practicality with skilled-based learning which can be applied in the real context.

M-Learning Is a Source of Innovation

M-learning has become a source of innovation for all individuals. Through mobile devices, the teachers and learners form learning groups. It can be in subjects or in particular grades or social groups where they can discuss their problems in any subjects. Even they can pose problems if necessary. They can also do webinar conferencing or video conferencing over the phone for face-

to-face interaction. Both synchronous and asynchronous learning will take place for any form of learning style at individual levels. For the upgradation of qualification and professionalism, there are lot of online certificate courses available for teachers, students and other office goers in different periods using the internet. They need to register and appear online only. The reading materials and e-content books, journals, magazines, articles and dissertations are available in the soft form of data. Kukulska-Hulme, Sharples, Milrad, Arnedillo-Sánchez and Vavoula (2009) conducted a study on mobile learning from a European perspective. It says that the theoretical perspective of m-learning must be a digital future through strategic planning for the application of INTERNET allowing wireless based technologies. Mobile learning will face new challenges arising from learning activities over multi-dimensions of virtual and physical contexts, spanning formal and informal learning. It requires a technical blend of pedagogical and sociological expertise to make the wisdom of learning through the emerging style of mobile and blended learning. Traxler (2007) conducted a study to define, discuss and evaluate mobile learning and it was focused to explore the various learning styles, strategies and pedagogies to be designed and incorporate the evaluation techniques in mobile learning in the informal situation. Since the system is new and immature, it was difficult to begin the informal (distance) learning through mobiles since there was no appropriate tool, strategies or pedagogies put into place for proper guidance. The momentum between mobile learning and distance learning would gain automatically in future. It has partially met the demand for informal learning but needs exercises with better possibilities of learning forums for online learners from different locations with no geographical barriers in place. Then, the learning will happen as expected.

Future Network

At present, the fourth generation (4G) is playing a greater role in building the nations by connecting people at various locations but is often hindered by some barriers owing to the disturbance in the flow of the network. Most of the remotes and nooks and corners of the zones often remain poorly connected and do not fulfil the needs and aspirations of the people. In future, the upgraded network system of the 5G which will be known as the cloud network will come into action with high speed connecting all places which are left unconnected at this moment. The advanced technology of smartphones will emerge with simple operating systems of high performance which will be cheap and affordable for all levels of economic background. Mobile devices have the full capacity to replace notebooks and textbooks in schools. Most of the school offices and other government offices will function under an e-system and learning will be e-system.

Conclusion

The mobile phone is a lifelong partner to all individuals of different age levels, positions, and economic backgrounds. It never gets isolated for even a single minute from anyone. So everyone loves and inspires it for use. The mobile device has played a crucial role in building a well-balanced society. The different m-learning systems and approaches allow courses to be delivered. With the right tool, various processes can be automated as a course with set materials and automatically marked tests. It is cheap and affordable for all levels of learners. Even the free version is provided to the learners to explore their ability to learn according to their lifestyles and learning styles. The busiest person could enhance his/her profession to height their career with the gain of new knowledge through up gradation of qualifications. The utmost significant development in the field of education is

the launch of the internet. The use of advanced technology like smartphones, different types of apps and text message use the internet to participate in various online communication allowing learners to keep discussing related courses and providing a sense of community bonding. In the fast developing world, the m-learning technology in the education system is new and exciting. The course content should be updated quickly to give students the latest and vast information. The importance of m-learning offers a different Learning Avenue that is faster, cheaper and potentially better for all living humans. Now we can say "Life without mobile technologies and the internet is like a man without body parts."

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IMPROVEMENT OF TEACHERS' COMPETENCY WITH INNOVATIVE PEDAGOGY IN TEACHING AND LEARNING

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Abstract

Teachers' competencies are those skills and knowledge that help a teacher to be successful or expert master in teaching. Innovative pedagogy means methods of teaching that involve new ways of interaction between teacher and students, a certain innovation in practical activity in the process of mastering educational material. As per as innovation in teaching-learning is concerned, H.S. Bernath states that "an innovation is any thought, behaviour or thing that is new and is qualitatively different from the existing forms." The quality of education in the 21st Century has significantly changed. Hence, in order to cope up with the present trend and to meet the requirements of 21st Century skill based education, we do need to improve the teaching competency with innovative pedagogy. This article will highlight the improvement of teachers' competency with innovative pedagogy for teaching and learning.

Keywords*: Improvement, Teachers, Competency, Innovative, Pedagogy, Teaching and Learning.*

Introduction

Education as basic human needs opens unlimited possibilities calling for responses that are constructive, creative and challenging. It is also considered the most powerful force of social change. It is utmost essential to have good human beings and at the same time, we do need a good education system in order to produce quality human resources. The quality of education in the 21st Century has significantly changed. Hence, in order to cope with the present trend and to meet the requirements of 21st Century skill based education, we do need to improve the teaching competency with innovative pedagogy. Since teacher's competency only enables us to identify overarching goals for the educational system and lifelong learning.

Teachers' Competency and its importance

Competency is a term used extensively by different people in different contexts. Teacher's competency is very essential for the improvement of teaching professions. The National Commission on Teacher (1983-85) noted that Professional competence having an edge over the economic factor was necessary to improve the states of the teacher.

Teachers' competency are those skills and knowledge that help a teacher to be successful or master in teaching subjects. In order to enhance the learning of students, a teacher must have expertise in a wide range of teaching competencies so that they are able to deal with every student having different learning styles at a different level.

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A competent teacher is expected to possess the following qualities:-

1. He should be educated in the literal spirit of learning so that he may make his contribution as an individual and as a citizen.
2. He should be competent to represent the education profession and his subject matter field in the school and in the community.
3. He should be able to contrive and use a variety of effective teaching-learning.
4. He should be thoroughly grounded in the theory and practice of his subject matter and have the knowledge and skills necessary for teaching theory and practice in an integrated manner.
5. He should be capable of organising, supervising and participating in co-curricular activities.
6. He should be able to select and organise subject matter for instructional purposes.
7. He should be able to develop and use instructional materials including audio-visual aids.
8. He should be capable of functioning effectively as a teacher as evidenced by actual classroom performance.
9. He should be interested in continued growth through participation in professional associations, community activities, in-service education, research and experiment.
10. He should be able to use a variety of methods to evaluate pupils' progress and the effectiveness of his own teaching.
11. He should be able to select and use the appropriate equipment and determine supply needs.
12. He should be able to function effectively in the guidance programme of the school.

The 21st Century teaching competencies are:–

1. Teacher demonstrates leadership.
2. Teachers establish a respectful environment.
3. Teachers know the content they teach.
4. Teachers facilitate learning for their students.
5. Teachers reflect on their practice.
6. Teachers and national development.
7. Teacher as a character builder of students.
8. Teachers' knowledge of educational technology.
9. Teacher as a community manager.

Competency is essential to an educator's pursuit of excellence. Teachers need a wide range of competencies in order to face the complex challenges of today's world. The need and importance of teaching competency are –

1. Teaching competencies help to improve the quality of the teaching-learning process i.e. education as a whole.
2. Teaching competencies helps the teachers as well as the students to achieve the desired objectives of education.
3. Teacher competency helps to improve the status of the teachers.
4. Teaching competencies helps in the cognitive development of the pupils.
5. Teaching competencies helps in the personal development of the teachers.
6. Teaching competencies help the teachers to acquire knowledge of child development, to adopt suitable methods and materials for teaching.

Innovative Pedagogy and its importance

Innovative pedagogy means "methods of teaching that include the new ways of interactions between teacher and students, a certain innovation in practical activity in the process of mastering educational material." Focusing on the development of the concept of innovation pedagogy helps to understand how development of education takes place gradually and how it can simultaneously aim to respond to the demands of a sustainable future.

Pedagogy is not a new term in the field of education. Pedagogy helps in understanding the meaning of educational technology. Pedagogy is commonly understood to mean the science and art of teaching. True knowledge of teaching is achieved by practice and experience in the classroom. It deals with beliefs, values and attitudes with people and not statistics. Teaching is a complex phenomenon as its nature is artistic as a scientific pedagogical knowledge, teachers use their skills to impart the specialized content of their subject area. Effective teachers display a wide range of skills and abilities that lead to create a learning environment where all students feel comfortable and make sure that they can succeed both academically and personally. Pedagogy intends to provide knowledge, experiences and insights that result in learning.

Educational innovation has drawn increasing attention around the world and many countries have already embraced educational reforms that aim to change both the goals and practices of education. Expectations that such innovations can be leveraged or supported by incorporating ICT (Information and Communication Technology) into the learning and teaching process are widespread. Such innovations are fundamentally changing students' learning process. The important component for the competent teacher is pedagogical experience. Teacher preparation and professional development should be reworked to incorporate training in teaching. In the 21st Century workforce, teachers' competencies have been the knowledge skills and attitudes necessary for a competitive field. In the 21st century, a teacher needs to know how to provide technologically supported learning opportunities for students and how technology can support students' learning.

Technological skills develop knowledge of when and how to use current educational technology as well as the most appropriate type and level of technology to maximize students' learning. The development of computer technology has resulted in e-learning. It is a technology-based distance learning programme conducted online where students can communicate with peers and teachers. Teachers at one place can teach multiple students at different locations and students can receive constant feedback. With e-learning, distance education is conducted through electronic devices such as computer, mobile phones etc. This leads to the formation of the virtual university which means there is no actual classroom, no teachers, and no textbooks but it gives the impression of studying in a classroom.

Improving the quality of teacher education through the use of information technology:

●   **In-service programme**:- In-service teacher Education is "all those activities and courses which aim at enhancing and strengthening the professional knowledge, interest and skill of serving teacher." There are certain significant components such as professional knowledge, skill aspect, attitude towards the profession, a code of conduct on ethics of professional, professional skills i.e. administrative skills, management skills, organising skills, leadership skills, Interest in the teaching profession etc. Courses based on sound pedagogical and empirical as well as research findings. Activities such as seminars, symposiums, workshops, discussions, brainstorming, etc. The teacher

educator in services needs to understand how and in what ways information technology can be used to bring qualitative improvement in teachers' education.

● **Pre-service programme**:- While promoting the use of the tools and techniques of information technology as an integral part of the teaching–learning process, it should also find a place in the curriculum for pre-service teacher education. This is also suggested by the NCTE in its curriculum framework for quality teacher education. The present age is an information age. A tremendous flow of information is emerging in all fields throughout the world.

● **Integration of ICT in teacher education**:- Information and Communication Technology can help teachers to be more dynamic and integrative. In order to provide training to the teachers of schools and colleges in ICT, a number of short-term courses, refresher courses, workshops etc. are being organised in different parts of the country by various agencies like UGC, HRDC (Human Resource Development Centre), IGNOU, NCTE, NCERT, SCERTs and DIETSs etc. There is a technological revolution in teacher education. There is a shift from a Bachelor of teaching to a Bachelor of learning, that too, a Bachelor of e-learning. Smart classrooms are emerging, wherein we have e-learning and e-testing. Terms like Wi-Fi, iPad, e-Book, e-Reader, e-NewsLetter, and webinar are widely used. Digital Lesson Designs and e-Portfolios have become common features. The NCTE is expediting teacher education on e-Technologies through an MOU with Intel. There is wide scope for the transformation of teacher Education through Technology.

Due to hasty changing circumstances, the teaching-learning discourse has dramatically been changed or altered. New roles of the teaching process have been derived from the concept of knowledge, society and increased use of technology in teaching at all levels of education. In the context of information and knowledge-based societies and lifelong learning strategy, a new frame of Pre-Service and In-Service teacher education needs to be defined. The current level of learning technology development provides opportunities for collaborative engagement, access to information, interaction with content and individual empowerment. Rapid changes in communication technologies enable teachers to move from traditional classroom activities to online classrooms, or online activities in the traditional classrooms, interactions with the students discharging the role of a friend, philosopher and guide in the true sense of the term. Hence, different types of informative practices have been introduced in teacher education programmes at all levels to make them competent in the changing scenario of education.

Good education requires a good teacher which means that it becomes essential that the most capable and appropriate persons be recruited into the teaching profession, provided with a high-quality pre-service programme of teacher education, and then offered opportunities to upgrade their knowledge and skills over the full-length of their professional careers. Teachers' education needs to be adequately strengthened and upgraded to accommodate the changing role of the teachers so that teachers can effectively address contemporary issues regarding education. In addition to the importance of skills, we should insist on the education of 21st century teachers which is the knowledge and capacities to handle tools and machines of daily use in the classroom to enhance the personal and professional capacity and efficiency.

It is therefore clear that a new design of education should provide teachers with a significant mastery to know the tools or machines they encounter in their educational environment and put them to the best use of enhancing the effectiveness of teaching and learning. With the increased capacities of communication technology, language will become a powerful instrument. The teacher education

programmes need to be strengthened to develop language competency among our teachers. The modern times demands multilingual competency including the new computer languages that are bound to emerge with the expansion of computer technology.

Ways to improve teacher education with New Innovation

Innovation means the introduction of novelties and a change of what is established. H. S. Bernath states that "an innovation is any thought, behaviour or thing that is new and is qualitatively different from the existing forms." In the UNESCO Conference of 1971 innovation is observed as– "The introduction of a new idea, a new process or technique and its adoption for widespread use to replace an existing practice or technique. It is not a change for the sake of change. It is controlled and regulated by testing and experimentation. There is first invention or research then, it is testing out evaluation and development, then diffusion and lastly adoption for use."

Innovation in the teaching-learning process means introducing something new which deviates from the traditional method, which is being followed for a long time as the traditional system fails to cater to the needs of individual students. Changes in the traditional methods of teaching are required in the classroom. Due to knowledge explosion and population explosion, imparting a large quantity of knowledge in an overcrowded class is a challenge which hinders in qualitative improvement of the teaching-learning process.

To make children innovative, they have to be natural in such a way that it becomes their second nature. For this, the teachers have to be geared up for facing the upcoming challenges in the rigid classroom settings. Walking on a new and uncharted path, one has to overcome fears, take risks and be ready to face failure too. However, if the teachers think out of the box, there are many ways that teachers can gradually attempt to introduce innovation in the classroom. Some of these are–

1. Giving problem-solving activities to the students, providing opportunities to think differently and work independently.
2. Continuously providing challenges and problems to coax children to think differently.
3. Accommodate and accept multiple perspectives and diverse opinions.
4. Motivating the students continuously.
5. Using varied pedagogies like collaborative learning, storytelling, integrating art and music to interact and teach the students and not merely stick to the traditional process of teaching.
6. Creating an element of curiosity and encouraging students to ask questions for the answers collaboratively.
7. Providing ample time to the students to think, act, repeat and innovate.
8. Starting from what the students already know and making the entire teaching-learning process enjoyable.

To meet the challenges of the new millennium, teacher education in India needs a tremendous change. The teacher educators need intensive training in various areas related to new innovations. Therefore NCTE, SCERT/SIE and the Department of Education in Universities should take immediate action to make the education system innovative. The national vision mission will definitely nurture Innovations as evident through the emergence of the National Curriculum for Teacher Education (NCTE, 2009) and teacher Education: Reflections towards Policy Formulation (NCTE, 2009). There are Proposals for Integrated Innovative teacher education programs (Navrachna University, Vadodara, 2009 Carolex University, Ahmedabad, 2009). Attempts are being made to enhance the professional

competencies of teachers through the ICT approach. Compatible education for all is committed by all Indians which is being realised through the various dedicated programs, essentially innovative in nature.

NPE 1986 stated the existing system of teacher education needs to introduce an innovative teacher education system.

1. Establishment of NCTE by the government of India on 17th August 1995 as a statutory body responsible for the regulatory as well as professional aspects of teacher education.
2. Programme of Mass Orientation of School Teachers (PMOST) was launched as a centrally sponsored scheme in all the states and Union Territories during 1986-1990.
3. Special Orientation Programme for Primary Teachers (SOPT) was taken up in 1993-94 to provide orientation to primary school teachers.
4. In the light of the recommendation of NPE 1986, block and cluster resource centres were established for professional growth of elementary school teachers and heads.
5. Interactive teleconferencing has been successfully tried in Karnataka and Madhya Pradesh in an in-service training course.
6. Three National Curriculum frameworks on Teacher Education have been brought out by the national council of teacher education (1978, 1988 and 1998).
7. To acquire ICT literacy the NCTE has produced a CD-ROM entitled IT literacy.
8. NCTE has developed self-learning modules on human rights and national values with a view to familiarising new teachers with values enshrined in our constitution.

Conclusion

Teacher education is a continuous process and should go on throughout his career. There is a need to restructure the teacher education programme to improve the quality of education. The longer duration teacher education programmes would go a long way in giving fairly good training and strengthening the overall competencies of teachers. For this Tagore said that "He who dares to teach must never cease to learn." The central advisory board of education recommended that "Refresher courses should be provided at frequent intervals in order to keep train teachers up to date." The Indian Education Commission remarked - "In all professions, there is a need to provide further training and special courses of study on a continuing basis, after initial professional preparation. The improvement of teachers' competency is most urgent in the teaching profession because of the rapid advances in all fields of knowledge and continuing evolution of pedagogical theory and practice." It is clear from the above discussion that teacher education or teacher development is very essential and may be defined as "Continuing education of a teacher and other educators which commences after initial professional education is over and which leads to the improvement of professional competency of educators all throughout their careers."

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INDIAN EDUCATION SYSTEM DURING COVID-19

Ms. Mandeep Kaur* & Ms. Manpreet Kaur**

Abstract

In 2019, the worldwide education system had been affected by the epidemic. So, the majority of countries had to organize an online learning system. Coivd19 effects Indian education and changed the stereotype education system. It has been witnessing a massive transformation with changing or losing job landscape, technical disruptions and demand for quality education. After the pandemic, the Indian education system had to transform into a digital system and after that the government brought a new education policy (NEP, 2020). During this situation, schools are forced to shut down and students /teachers transition to online learning. In India, around 250 million students were affected due to school closures. It became a huge challenge for both students and teachers in order to learn online. Many teachers and students face some menaces during the new learning system. 23 March, 2020, starting time period of covid19, UGC organization held semester system examination, but owing to these issues, needed online resources provided like digital examination.

Keyword: *COVID-19, Education, NEP2020*

Introduction

Well, education plays a part and parcel role in our life. Education provides imagination power to learners. Through this power everyone can improve developing skills such as communication skills, art skills as well as professional skills. The human resource being an active factor of production, accumulates knowledge, builds social, economic and political organization and carries forward the project of nation. Role of education in developing economical benefits and the education imparts new ideas, values and attitudes and is helpful in behaviour transformation by making individual mass liberal and dynamic in outlook and action.

The impact of pandemic COVID-19 is observed in every sector around the world. The education sectors of India as well as the world are badly affected by this. In 2019, the worldwide education system had been affected by the epidemic. So, the majority of countries had to organize an online learning system. Coivd19 effects Indian education and changed the stereotype education system. It has been witnessing a massive transformation with changing or losing job landscape, technical disruptions and demand for quality education. After the pandemic, the Indian education system had to transform into a digital system and after that the government brought a new education policy (NEP, 2020). During this situation, schools are forced to shut down and students/teachers transition to online learning. In India, around 250 million students were affected due to school closures. It

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became a huge challenge for both students and teachers in order to learn online. Many teachers and students face some menaces during the new learning system. 23 March, 2020, starting time period of covid19, UGC organization held semester system examination, but owing to these issues, needed online resources provided like digital examination.

Significance of COVID-19

That period has affected global education, all services sections like primary, secondary, as well as tertiary. Apart from that, during this period every country authorities to temporarily close education institutions such as early childhood education and other services, universities and colleges as well as training centres. The influence was more severe for pupils and their families, nutrition, child care problems and economically cost to families who could not work.

Pros: A new survey finds that COVID-19 has sped up digital transformation and technologies by several years and that many of these changes could be here for the long haul. In pandemic education institutions converted into blended mode. The pandemic situation induced people to learn and use digital technology, and resulted in increasing digital literacy. Digital learning has been a challenge for teachers as well as students. Many universities and institutes organized digital learning courses for both teachers and students, so they become more technical savvy. Like online lectures, video conferencing, video calls, emails are distinct apps helpful during digital learning. Students are able to manage their time more efficiently in online education during pandemic. Teachers have also adopted new methods of teaching like through PPT's, video conferencing which are also considered as new education methods. Pandemic totally changes the old education system, so the government has to implement new education policy.COVID19 has accelerated adoption of digital technologies education. Educational institutions moved towards a blended mode of learning.

1. *Time flexibility:* online courses are convenient as students may log into the course material whenever it suits their schedule.
2. *Increased access and options:* online learning can happen in any place, as long as there is a device and connectivity. A physical class the students come to school but in this mode, the students can access lessons sitting anywhere in the world.
3. *Variety of programs and courses:* Students have a lot of options to choose an online education program. They can select subjects and topics of their interests very easily.
4. *No need to travel:* The beauty of these schools is that students can study easily from their houses. This can help to save time, money and fuel.
5. *Improves retention quality:* Online learning enhances retention among students. It explains concepts and theories in the form of videos, images, descriptions, documentaries, charts etc. So that they can remember easily. It makes it easier for students with respect to education, problem-solving etc.
6. *No age barriers:* Online classes are effective for all age groups. People can finish their studies via online available courses and school students can find their roles in the online applications.
7. *New way of teaching for teachers:* During pandemic teachers were also introduced with many new learning methods. Somehow teachers were not connected to digital technologies, but during online education methods, they found many applications and also improved and developed their teaching skills.

Cons: we know that COVID-19 affected badly on economic growth, leaving many people jobless. During the pandemic education suffered a lot due to the outbreak of COVID-19. It has created many negative impacts on education. Classes have been suspended and exams of different levels postponed. Admission process got delayed. Most of the recruitment got postponed due to COVID-19. Placements for students may also be affected with companies delaying the on board of students. Unemployment rate is expected to increase due to this pandemic. Another problem is also that not all teachers/students are good at it or at least not all of them were ready for this sudden transition from face to face learning to online learning. Moreover, online learning has also been a problem to poor or lower middle class students who do not have any internet facilities. As many students have limited or no internet access and many students may not be able to afford computers, laptops or supporting mobile phones in their homes, online learning may create a digital divide among students. The lockdown has hit the poor students very hard in India as most of them are unable to explore online learning according to various reports. Thus, the online teaching-learning method during pandemic COVID-19 may enhance the gap between rich or poor and urban and rural. As the schools were closed, there was no mid-day meal service which seriously impacted 115 million children who faced malnourishment due to school closure. There is no school and no food, the rural poor consider their girl child a burden to the family. They get them married, keeping 2.5 million more girls around the world at the risk of children enjoying a lot with their friends apart from studying and other extracurricular activities. An emotional relationship is created between teachers and students who are not there in digitized learning.

1. *Not appropriate for all:* It is a well known fact that students have a dominant learning style, some visual, some auditory etc. Online learning which requires a child to sit in front of a device and understand the lesson may not be suited to all learning styles. According to a national sample survey report many students may drop out leaving little scope for return unless affirmative and immediate actions are taken.

2. *Health issues:* Attending classes online requires sitting in front of a laptop or mobile for longer hours can give some health complications like headache, eyestrain, ear problems, bad posture and other physical problems.

3. *Lack of social interaction:* Human beings learn a lot by simply being around other human beings. Unfortunately, online learning takes away all physical interaction that students and teachers might have on the school premise. It is always better for students to be around after students to talk or discuss ideas, which is an essential part of learning.

4. *Cost:* Everyone cannot afford a computer or a smartphone. Internet prices are also increasing, hence online education is not affordable for everyone.

5. *Distraction:* Online learning also creates a lot of distraction. Many students open the mobile to learn something and end up using social media websites, chatting, sharing pictures or posts or playing video games. That type of distraction wastes one's time which could have been used to perform a meaningful task.

6. *Technical issues:* many students are not well equipped with a high internet connection that is required for online learning. Due to this, they face problems in going time for virtual learning and other platforms that require internet connection. According to a survey conducted by National Council of Education Research and Training (NCERT), between 27% to 60% of students were unable to participate in online classes due to a variety of

factors, including a lack of devices, shared devices and also the inability to purchase data packs.

7. ***Requires a lot of self discipline:*** Online learning does not have any guidelines that need to be followed. Therefore, a learner has a lot of freedom to do whatever they want without worrying about the lectures.

8. ***Poor student teacher relation:*** In the old studying method, there is a face to face interaction with teacher and students. But due to the pandemic, there is a lack of good teacher student relations. Especially in primary schools, students do not interact properly with their teachers, and also in higher education almost 5 semesters in online education; students have not any emotional or functional attachment with their teachers. Thus it also affects their mental ability. Without interaction with teachers, students have not concentrated properly on their subjects, because some subjects need face to face interaction.

9. ***Lack of motivation among students:*** Due to online learning, many students may not attend their class or lectures properly because of some technical and economical issues. Attending online classes regularly totally depends on students' willingness. If they drop\bunk their class, the teacher has no power to control them. Students are not motivated enough to attend class or pay attention to class.

10. ***Healthy learning environment:*** In 2020, most students were not able to attend online classes, because they did not have a healthy environment for learning. For instance, in 2017-19, 25% of Indians were living in single room houses. In that case, how can a student learn if two or four adults occupy a single room? Many students have two or three siblings and their parents have not afforded different devices to each child. In rural and even urban areas, most lower middle class or poor students had no accessibility to a healthy environment.

11. ***Digital deviations:*** According to National Sample Survey (NSS) reports, 6% of rural people and 17% of urban people have no internet access. During the online education system, many students are barren for better education. Many students drop out of their class due to no technical devices. Around 90% of Indian populations have no access to laptop or WI-FI connections. Pandemic creates a digital deviation that increases education inequality.
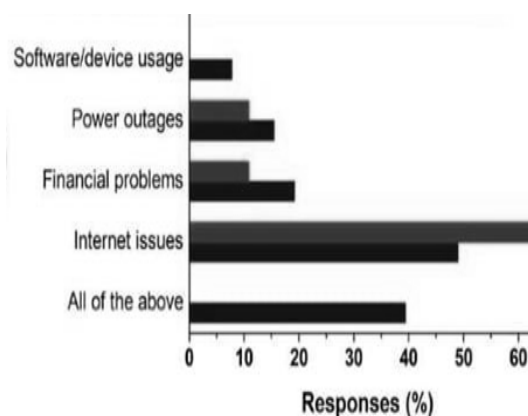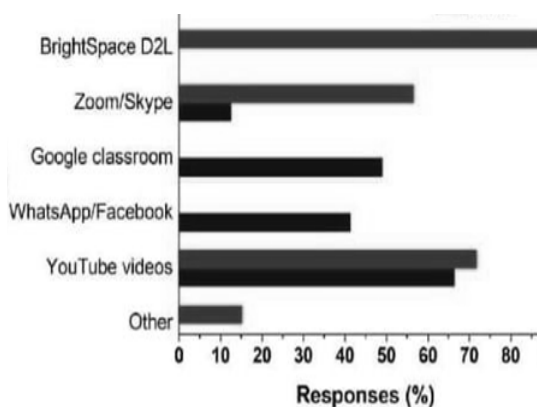
The given bar graph depicts information about the proportion of various problems which students faced in every educational institution. The internet issue remained highest during this period. Another one is the percentage of different kinds of digital applications, which are used for the online learning process. It shows that YouTube videos are used more by students as compared to other applications like zoom/Skype, Google and whatsapp.

Conclusion

As we enter the COVID-19 recovery phase, it will be critical to reflect on the role of the educational system- and particularly vocational education-in fostering resilient societies. The global health crisis and the lockdown that followed have brought to the fore professions that have often been taken for granted, renewing our awareness of their value to society. This has helped restore a sense of esteem for those workers who have worked relentlessly during this time to keep the economy afloat. Our capacity to react effectively and efficiently in the future will hinge on governments' foresight, readiness and preparedness. Through their role in developing the competencies and skills needed for tomorrow's society, education systems need to be at the heart of this planning. This includes rethinking how the economy should evolve to guard against adversity, and defining the skills, education and training required to support it. Where COVID-19 impacts positively on the education system, changing the education style and also enhancing the digital education system, there also affects negatively as many students have to drop their study and also have faced some technical and financial issues. So, the government and people have to collectively tackle with this problem.

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CHALLENGES FACED DURING SHIFTING TO DIGITAL LEARNING DURING PANDEMIC

*Ms. Manisha Mahajan**

Abstract

In today's world, access to technology and the internet is an urgent requirement. The sooner it is introduced at the school level, the better it is. This means that the digital capabilities and the required infrastructure must reach out to the remotest and poorest communities to facilitate the students to continue the education during such emergencies as the pandemic. The online teaching-learning during Covid-19 enhanced the gap between rich-poor and urban-rural students. The disruption resulted in an alarming regression in children's foundational skills-reading, writing and doing simple mathematics. The teachers also, used to the blackboard, chalk, books and classroom teaching were new to the digital mode of teaching. Many found it difficult to undertake new teaching ways. Reportedly, many were thrown out of their jobs. There is a need to deploy public funds to fix the internal gap and ensure that all students are able to learn digitally, if required to do so, irrespective of their economic status. The state government and the private organizations should come up with ideas to address the issue of digital education. The pandemic and the problems it created in the field of education also give a chance to apply correctives. Failure to do so will imprint the academic future of an entire generation.

Keywords: *Technology, Pandemic, Challenges*

Learning and virtual classrooms in the modern era has changed the scenario of education not only in urban areas but also in rural areas. The learning outcomes in the blended system has raised the overall quality of teaching- learning because of additional ICT facilities, flexibilities to learners and value addition of virtual classrooms. Unfortunately a major part of rural India is still struggling for ICT facilities and virtual classes which have become mandatory in COVID-19 crisis. Widespread poverty, digital divide, limited opportunity and low teacher attendance rates in school are the basic constraints for e- learning and virtual class in pre and post- COVID-19 period in rural India.

Virtual classrooms have the power to transform the face-to-face learning of rural education. These virtual classrooms make the dream of a perfect world in which each child has access to a good education become true in future. Teachers need to put efforts towards this endeavor of continuous learning and support the governments to ensure the vital elements for development and advancement, which are not merely clothing, food and shelter but computer, smartphone and Internet connectivity too.

In many parts of India under rural sittings , it is common for schools to be understrength. Virtual classrooms conducted on various known digital platforms like Zoom, Google meet, Microsoft Team etc. can help students to take virtual sessions from home. In such cases, a teacher can club multiple

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classes; students have access to recorded lectures; artificial intelligence helps observations, real-time analysis and assists teachers in focusing on remedial and student engagement. These advanced facilities enhance the productivity of educators and help solve the problem of too few teachers.

The quality of education depends on the availability of infrastructure in the system. During the pandemic, a new system of education requiring internet connectivity but internet connectivity to be unreliable as well as expensive for the rural area students to gain access to internet facilities. Also children with a poor background have access to desktops or laptops, allowing them to take part in online courses. So, this kind of technology is not available to a number of students in the whole country. It is essential in the future, there is proper planning for any such kind of emergency.

Digital divide is the gulf between those who have ready access to computers and the Internet, and those who do not. It is a phrase that refers to the gap between demographics and regions that have access to modern information and communications technology. Various factors such as low literacy rate and low income levels, certain geographical restrictions, due to lack of motivation to use technology, due to lack of physical access to technology, and digital illiteracy that are hindrance in the path of digital divide.

India falls short of more than one million primary teachers to cope with the mission; 'education for all' and 'RTE 2009'. In rural areas the physical infrastructure is considerably less developed or undeveloped than that in urban regions and the geographical barriers in rural areas are hard to overcome. ICT technologies like online learning or virtual classrooms can help to bridge the distances that separates students and teachers especially during COVOD-19 pandemic.

When a student's school adopts virtual classroom technology, the child need not miss any classes just because s/he lives far away from school and can quickly login into every class on mobile phone, desktop or laptop from his or her home getting direct access to interactive learning.

The digital divide denies half of the world's citizens access to digital education, work and participation in modern life. Without Internet access, people in often vulnerable situations are suffering throughout pandemic- driven school and work closures. Stable internet access also provides up to date information regarding the COVID-19 pandemic. This includes crucial information such as regional infection rates, locations of testing centers and hospital or urgent care hours.

In India, the digital divide is widely prevalent and has further deepened because of conditions caused by the COVID-19 pandemic. Considering 66% of the population lives in rural areas, there is a sizable percentage of the country's people living in regions where Internet access is minimal.

Marginalized and vulnerable communities, especially those living in poverty, could benefit the most from the connectivity and opportunities digital technology provides. By closing the gap in digital access between rural and urban communities in India, the nation will be able to develop and progress more efficiently as a whole.

This digital divide between rural and urban regions exacerbates many other social divides present in Indian society. In fact, India's digital divide contributes to social Gender inequality. For example, 36% of Indian males have mobile Internet access compared to only 16% of females. This inequality of digital access across gender creates greater dependence on men for women who often rely financially on their spouses in the Indian family dynamic. These women would, therefore, not be able to afford a device on their own.in addition, as the male head of the family is often the only member to possess a digital device; women rely on their spouses to have Internet connectivity. This limits what and for how long they may use these devices.

E-education or online learning, an emerging practice includes various processes and assimilates government responsibilities at different levels and ventures of public and rural sectors. These kinds of facilitation of different areas of rural India could be extremely helpful to establish good education in developing countries like Indian and other neighboring nations, having inadequate resources and shortage of finance.

Excitingly, the learning outcomes in the blended system have raised overall quality of instruction because of additional flexibilities and value addition of virtual classrooms. Teacher educators in virtual classrooms have a number of varied tools at their disposal that are not available in a traditional set up. These tools help the educators to use various types of e-contents catering to multiple intelligences of students in rural India.

Online learning is education that takes place over the Internet and some electronic gadgets.it is often referred to as 'e-learning or virtual learning' which is just one type of distance learning.

In addition to helping reach multiple intelligences in rural areas, virtual classrooms capture relevant data and trends. Virtual platforms equipped with artificial intelligence which can analyze such data allow educators to gain deep actionable insights and research. The instant analysis generated by virtual classrooms helps identify areas wherein a child is struggling to begin their new course of study and where s/he needs remedial class. This added assistance to teachers help in staying focused and remain effective during online teaching-learning.

While students in rural areas stand to benefit from learning in virtual classrooms, talented educators have much to gain from such classes as well. There are thousands of talented educators who are unable to tap their potential because they live in rural areas. Such high-intelligence individuals may have a wealth of knowledge to share with the world. Yet, the geographical divide makes it hard for them to teach students in other parts of the country or world. Hence the abundance of talent in the rural regions cannot only learn but can also teach others.

The pandemic affected the learning process of students, creating a digital divide and confronting planners with the need to ensure quality and access. We should understand that reliance on e-learning methods cannot be a substitute for the interactions in a classroom. In fact, both must go together to enrich the learning process for the students. Students and teachers were forced to relearn new ways of accessing, transmitting knowledge and interacting in cyberspace. The adoption and integration of ICTs is of utmost importance to access knowledge and keep up with modern developments. The adoption and integration of ICTs into the teaching and learning environment offers more opportunities for teachers and students to work better in a globalized digital age. During the time of sheer uncertainty and constant fear amid the pandemic, technology has been a source of hope and lifeline in many ways, considering the education sector, ed- technology made it possible to mitigate the extreme damage that could have been done to the sector and involved stakeholders. Educational communities have been using various platforms like Microsoft Team, Zoom, Google Classrooms, and many more to continue the process of learning for students among pandemics. This can help in believing more in the potential of ICT tools to reshape the education sector for the better. Nation's future depends on the nation's educators to use hands-on and minds-on activities to utilize the maximum potential of technology to reach every learner.

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COVID-19 AND ITS IMPACT ON EDUCATION, MENTAL HEALTH AND SOCIAL LIFE OF STUDENTS – A SURVEY

Dr. Manu Chadha* & Dr. Ramandeep Kaur Sidhu**

Abstract

The outbreak of Covid-19 has upended the lives of all parts of the society. One of the most immediate changes introduced was the closure of educational institutions to slow the transmission of the virus. In order to prevent further interruption of studies, new teaching methods for the online delivery of education were introduced. However, these measures can have long-term consequences on the lives of students. Therefore, there is a strong need to record and study the effects of the changes being made. In this study, our aim is to analyze the impact of the COVID-19 pandemic on the education, health, social life of the students, and demonstrate results about its subsequent effect on their daily routine amid travel restrictions.Majority of respondents reported that they did not utilize their time during the period of lockdown.Changes in daily routine including lack of outdoor activity, disturbed sleeping patterns and social distancing have affected the mental well-being of the students.

Keywords: *Covid 19, Education, Mental Health, Social Life.*

Prior to March 2020, Educational institutions (schools, colleges, and universities) in India were based only on traditional methods of learning, that is, they follow the normal set up of face-to-face lectures in a classroom. The sudden outbreak of a deadly disease called Covid-19 caused by a CoronaVirus (SARS-CoV-2), which shook the whole globe. So, a complete lockdown was imposed in India within the last week of March 2020. Consequently, around 3.5 million learners stopped attending schools/colleges/universities physically and all the educational activities halted in India. This situation challenged the education system across the world and forced educators to shift to an online mode of teaching overnight. Many academic institutions that were earlier not in favor of doing away with their traditional pedagogical approach had now opted to shift entirely to online teaching–learning.

Chaturvedi, Vishwakarma and Singh (2021); Hoofman and Secord (2021) in their research examined the student's engagement on social media platforms among different age categories. Sifat, Ruponthy, Shuvo, Chowdhury and Suha (2022) depicts that COVID-19 affected life and psychological state. Country has been operating under a resource crisis, and this crisis has incurred and is bringing about a governance priority dilemma. Shukla, Pandey, Singh, Riddleston, Hutchinson, Kumari and Lau (2021) recapitulated that COVID-19 has had an enormous impact on mental health services and caused disruption to care and treatment. Suárez, Eduardo Navarro-Jiménez, Manuel Jimenez, Alberto Ormeño-Holgado, Marina Begoña Martinez-Gonzalez, Juan Camilo Benitez-

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Agudelo, Palencia, Cárdenas and Tornero (2021) concluded that whosoever tested positive for COVID-19 needed to cope with fear, anxiety and uncertainty about their condition, also as physical discomfort and separation from loved ones. COVID-19 patients round the world need mental health support now and in the future, as do their families.

Emergence of the Problem

Globally, the psychological state is being challenged like never before by COVID-19. Whilst there are many uncertainties about how the pandemic will progress, what's clear is that the impact on the mental health and psychosocial well-being of those most affected will be significant. This is often a pivotal moment in the history of mental health. How the planet tackles these challenges now will determine the well-being of a generation and impact the drive to successful recovery and building back societies stronger for the longer term.

The world was not set up to respond to the growing mental health crisis before COVID-19, and it's not now. Before the COVID-19 outbreak, global statistics on mental health conditions were already bleak.

Closure of day care centers and schools, combined with restrictions on movement are limiting chances for youngsters to interact and access learning opportunities all of which are taking a toll on their mental health. A study among Italian and Spanish parents showed that 85.7% of them perceived changes in their children's emotional state and behavior during confinement at home. Children were struggling to concentrate (76.6%), were irritable (39%), restless (38.8%, nervous (38%) and experiencing feelings of loneliness (31.1%). Stress and social isolation are likely to affect brain, health and development, with young children in danger of developing lifelong challenges by periods of prolonged exposure to toxic stress and by deprivation in nutrition, stimulation and health care which may affect brain, health and development.

Children are spending longer with families during lockdown and when there is already abuse in the family - or risk of it - this is even more likely to occur. Parents and carers have to make sure their children feel loved and secure. There should be discussion around COVID-19 in an honest and age-appropriate way, whilst staying socially well connected with family and friends.

Across societies, even for those indirectly impacted by COVID-19, the consequences of social isolation and economic fallout are being felt widely. These are risk factors not just for the short term, but also longer-term psychological state problems.

Therefore conducting a survey on Impact of Covid 19 on Education and psychological state of students is not only imperative but also a dire need.

Operational Definition of Variables

- **Covid-19- Corona virus disease (COVID-19)** is a communicable disease caused by the SARS-CoV-2 virus.
- **Mental Health**- psychological state includes our emotional, psychological, and social well-being. It affects how we expect, feel and act. It also helps determine how we handle stress, relate to others and make choices.
- **Education**- The action or process of educating or of being educated, stage of such a process, the knowledge and development resulting from the process of being educated. The field of study that deals mainly with methods of teaching and learning in schools.

- **Social life** –A person's social life consists of the varied bonds they form with others, like family, friends, members of their community, and strangers. It is often measured by the duration and quality of the social interactions they have on a regular basis, both face to face and online.

Study design

- A web-based survey was conducted on 150 students from Ludhiana city. The web survey questionnaire contained four subgroups:
- Participants were asked to explain their general demographics, like age. Information about the daily online learning routine following the transition from offline learning in educational institutions in India: average time spent for online study (hours) /day; medium for online study; average time spent for self-study (hours)/day.
- Assessment of the experience of online learning to gauge the levels of satisfaction among students.
- Assessment of health to the change in lifestyle: average time spent on sleep (hours)/day; change in weight; average time spent on fitness (hours)/day; the number of meals/days; medium of stress busters during the pandemic, social cohesion with relations , etc.
- The aim of this survey study is to research the impact of the COVID-19 pandemic on the education, health, and lifestyle of scholars from different age-groups.

Highlights

- The potential consequences of the COVID-19 pandemic on the life of students is investigated.

Table 1- Demographic data for online survey (Sample 150)

Age Groups	No. of Students	% Analysis
7-12	34	22.6%
13-18	76	49.3%
19-24	42	28%

- Students of different age groups and time spent on daily life activities, online classes, self-study, fitness, sleep, mindful activities, social media are analyzed.

Table 2- Students of different age groups and time spent

Daily life activities	7-12 (Age in Years)	13-18 (Age in Years)	19-24 (Age in Years)
Online classes	3.5 hours/day	3.7 hours/day	4.2 hours/day
Self-study	2.4 hours/day	3.5 hours/day	3.9 hours/day
Fitness	0.7 hours/day	1.7 hours/day	1.4 hours/day
Sleep	9-10 hours/day	8-9 hours/day	6-7 hours/day
Medium for Online study	Smartphones	Smartphones/ Tablets	Laptops/ Desktops

- Assessment of the experience of online learning to evaluate the levels of satisfaction among students.

Table 3- Assessment of the experience of online learning

Assessment of experience	7-12 (Age in Years)	13-18 (Age in Years)	19-24 (Age in Years)
Satisfied	32.35 %	26.19 %	27.63 %
Not Satisfied	52.94 %	59.52 %	61.84 %
Undecided	14.70 %	14.28 %	10.52 %

- Assessment of health due to the change in lifestyle: average time spent on sleep (hours)/ day; change in weight; average time spent on fitness (hours)/day; the number of meals/ days; also, we considered further questions about the medium of stress busters during the pandemic, cohesion with family members, etc.

Assessment of health experience		7-12 (Age in Years)	13-18 (Age in Years)	19-24 (Age in Years)
Change in Weight	Increase in weight	23.52 %	52.38 %	31.57 %
	Decrease in weight	11.76 %	19.04 %	42.10 %
	No change	64.70 %	28.57 %	26.31 %
Fitness	in hours /day	1 hours	2.5	2.5 hours
Meals	Healthy Diet	17.64 %	23.80 %	68.42 %
	Unhealthy Diet	82.35 %	76.19 %	31.57 %
Medium of Stress busters	Exercise /Indoor Games	67.64 %	23.80 %	21.05 %
	TV	23.52 %	45.23 %	26.31 %
	Social Media	08.82 %	30.95 %	52.63 %
Social connectedness with family	Yes	94.11 %	90.47 %	88.15 %
	No	05.82 %	09.52 %	11.84%
Optimal utilization of time during Lockdown.	Yes	47.05 %	45.23 %	31.57 %
	No	52.95 %	54.77 %	68.43 %

This study suggests that public authorities should take all the required measures to enhance the learning experience by mitigating the negative impacts caused due to the COVID-19 outbreak. A wide gap is seen in the policies framed by the government and the actual implementation.

The findings indicate that the time spent by students on online classes didn't comply with the guidelines issued by the Ministry of Human Resources Development (MHRD). Limited class interaction and inefficient time tables significantly affected the satisfaction levels among students. The peer-to-peer impact within the school environment motivates individuals to work hard and learn social skills, which cannot be possible in an online setting. Moreover, the most important challenge for online learning is the requirement of efficient digital infrastructure and digital skills for both students and teachers.

Further, this study analyzes the impact of various factors to measure stress levels among students. Alarmingly, over 45% of respondents reported that they did not utilize their time during the period of lockdown. Furthermore, sleeping habits, daily fitness routines and social interaction significantly affected their health conditions. The Govt. agencies-imposed measures such as social distancing and restrictions on travel but they did not take into account the health implications. Although these measures are necessary to manage safe conditions, there's no strategy to safeguard the

psychological impact due to the Covid-19 pandemic. Our research also explores the various coping mechanisms used by students. Moreover, we analyzed various digital social media tools employed by students as a self-management strategy for mental health. Our statistical analysis addresses key concerns associated with online education and health due to the Covid-19 pandemic. A mental disease, like depression or anorexia can affect weight and overall function.

Opinions and recommendations:

The concerned authorities should still invest in online education to enhance learning experience. They ought to carefully analyze the issues experienced during sudden transition to online learning and prepare for any future situations. Proper training of educators for the digital skills and improved student-teacher interaction must be conducted. For disadvantaged students, availability of digital infrastructure with proper internet availability and access to gadgets must be ensured to avoid any disruption to their study.

Due to the situation in Covid-19, many students are likely to suffer from stress, anxiety, and depression, so it's necessary to provide emotional support to students. Moreover, guidelines should be created to anticipate the requirements of the vulnerable student population. Improved healthcare management would make sure the delivery of mental health support.

Conclusion

In this study, our findings indicated that the Covid-19 outbreak has made a big impact on the mental health, education and daily routine of scholars. The Covid-19 related interruptions highlight key challenges and supply an opportunity to further evaluate alternative measures in the education sector. Moreover, changes in daily routine including lack of outside activity, disturbed sleeping patterns and social distancing have affected the mental well-being of the scholars The new policies and guidelines during this direction would help mitigate some of the negative effects and prepare educators and students for the future health crisis.

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BLENDED MODE OF EDUCATION AND ITS RELEVANCE IN TEACHING LEARNING ENVIRONMENT

Mr. Mohd Mushtaq* & Dr. Banwaree Lal Meena**

Abstract

Around the world where the emergence of information and communication technologies is increasing day by day. Various technologies were implemented in the field of education for effectiveness and successful education in our country. This study examined a number of outcomes, consequences, and potential future pathways for blended learning in teaching learning environments at all levels. In this study blended mode of education and its relevance in teaching learning environment. The objective of the study is to explore the features of blended learning, key benefits of blended learning, role of teachers and students in blended learning environments, infrastructure required for blended learning in teaching learning environments. Results of the study reveals that blended learning is a mixed method of learning where students learn through face-to-face learning with online instruments in teaching learning environments. This type of learning is more effective, interesting and motivated for the students as well as teachers. The implementation of blended learning requires better infrastructure, good trained teachers, experts, and a better system of technology for the effective and interesting teaching learning process. Results of the study found that face to face teaching learning process with the use of online instruments such as projectors, smartboard, laptop, desktop, and some software application increase the learners and teacher capabilities, interest, motivation, learning potential, problem solving skills, creativity, cognitive power and practice of the learners in teaching learning process.

Keywords: *Blended Learning, Teaching Learning, Teachers, and Students, Online Learning.*

Background of the Study

Technology plays an important role in the teaching-learning process. At present time the emergence of technology is very beneficial in the teaching- learning process. Educational technology is made up of two words: education and technology. Education is the process of acquiring and imparting knowledge, skill and attitudes. Technology refers to the strategies as well as technical devices. Technology is the techniques of science and methods of acquiring new knowledge related to technology and other fields such as, arts, science and specifically professional courses. The National Council for Educational Research and Training defined that educational technology as the means for development, application and evaluation. The first thing is strategies/techniques, second is system and the third one is aids to improve overall teaching- learning process. The International Commission on the Development of Education states that educational technology is the cognitive

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and operational power that arranges, re-arrange and systematises the application in a scientific way for the institution apparatus and materials to enhance teaching learning process. In educational technology there are so many methods and techniques of learning such as, online learning, web-based learning, virtual classroom learning, flipped learning, ICT based constructivist learning, cooperative learning, online collaborative learning, project-based learning and one of them is blended learning.

Blended Learning

Blended learning is the combination of traditional classroom and online learning where students are physically present. Blended mode of education is a very effective method in the teaching learning process where students and teachers learn together with a lot of instruments such as projector, smartboard, laptop, desktop, mobile phone, tablets etc. Blended learning environment gives a great opportunity to the student in the teaching learning process to enhance their capability, potential, interest, aptitude and teaching learning strategies. Some definitions of blended learning are as under;

- Blended learning defines a method of learning where students learn via electronic and online and virtual media as well as formal face to face teaching learning in the classroom.
- Definition of Blended Learning: Blended learning is a style of learning that integrates formal face-to-face and online learning involvements. In an ideal world, each (both online and offline) will counterpart the other by using its actual strength.
- Blended learning is not simply online and offline mixed types of learning, nevertheless it denotes a well-planned integration and meaningful activities in both the online as well as offline teaching learning process. The blended methods of teaching consider many factors, those are mostly concentrating on learning progress and the individuals centred teaching learning environment.
- Blended learning is a plan or strategies for concentrating on improving the student's achievement, potentials, capability and interest in teaching learning environment and optimising the learning objectives by spreading personal learning technology and right time and place.
- Blended style of teaching combines the advantages of the electronic online learning method and traditional method is supposed to be more effective and interesting than face-to-face teaching or alone online teaching. Some studies related to the blended learning environment are as under;

Vallee, Blacher, Cariou and Sorbets (2022) compared blended learning to traditional learning among medical students. In this study the researcher found that blended learning is affected as compared to traditional learning. In a systematic and meta-analytic study the researcher selected a total of 9943 students belonging to the medical background. Systematic and meta-analysis review formed the basis of the study. In this study the researcher further found that out of 56 studies 3 studies supported offline education, 7 studies digital support, 34 studies online support 8 studied computer assisted, 5 studies virtual blended learning supports. The researcher analysed a pool of studies and found that blended learning is more effective as compared to traditional learning. Dziuban, Graham, Moskal, Norberg, and Sicilia (2018) explored the many outcomes, implications and possibilities of future conditions for blended learning in education at the level but specifically at higher education level. In this study the researcher used CART methods for data analysis by using SPSS. The author

studied that blended learning is combined with access, success, and students' awareness of their learning environment. Results of the study reveals that blended learning headed modern innovative technologies and its developments. it will be intimately specific to modern evidence and communication technology that are similar to some features of human thought and processes .

Anthony, Kamaludin and Romli (2022) found that innovative learning techniques and rapid modification in teaching learning process and further found through systematic review how the blended learning implemented and adopted and what is the requirement for the blended learning classroom according to the researcher a systematic analysis of the reviews and meta-analysis of 94 studies that is from 2004 to 2020 and found that the factors influencing on students, teachers and administrators for adopting blended learning environment at higher education level. For the adaptation of blended learning, infrastructure is more important, and the cooperation of the school management committee or higher authority is also required. Result of the study reveals that learners, teachers and administrators' role is very essential for the implementation of a blended learning environment at higher education level.

Bouilheres, Le, McDonald, Nkhoma and Jandug-Montera (2020) explored the assistance of blended learning among students learning involvements in Australian university that is in Ho Chi Minh city Vietnam. A quantitative study was conducted based on an online survey that was used to collect the data from 66 students. In this study the researcher found that the learning contents and learning activities in teaching learning process via learning management system. Education through blended learning is very effective in the promotion of interactions between students, teachers, peer groups and course materials etc. In this study the researcher analysed four dimensions of the scale such as, online learning experience, self-confidence, flexibility in teaching learning process and engagement of the students. Results of the study revealed that there is a significant difference between all the dimensions.

Features of Blended Learning Environment

- Blended mode of education improves students' involvement during the teaching learning process.
- Increasing the teacher and students' relationship.
- Blended learning gives a great opportunity for making students self-responsible for their study.
- Time management and freedom for the student.
- Blended learning enhances the student achievement, interest, potential and whole performance for learning.
- These methods of learning increase the institutional norms and standards.
- Blended style of teaching learning is more flexible and effective in teaching a learning environment.
- Blended mode of teaching is a continuous and on-going process and gives better chances for practical learning.

The benefits of blended learning comprise improved learning skills, better access to information and knowledge, enhanced fulfilment, satisfaction and learning results, and give opportunities for both to learn with others and to teach with others.

Key benefits of blended learning in present time

- Blended learning provides a better chance for collaboration learning.
- Enhanced flexibility, students can learn any time anywhere without the time constraint and location.
- Outside the classroom instruction in online mode of education is available for students and students can access their materials in the form of online platforms at home also.
- Improve the learning capacity among students and provide a great opportunity for the interaction of students and teachers independently.
- Main purpose of blended learning is to increase learning in the specialised subject as well as other types of learning activities, curricular and co-curricular also and help them to attain a more and more effective level of teaching and learning.
- To improve digital learning skills among the individuals for making lifelong learners.
- Blended learning courses help the learners to master in skill for using a variety of knowledge in technology.
- Blended styles of teaching and learning offer resources which are reliable, authentic and reproducible.

Role of Teachers in BL Environment

Blended learning plays an important role in teacher knowledge and the teacher role moves from teacher to mentor and coach. This change or modification means not only the teacher plays a passive role or least active role in the teaching-learning process. Rather than the opposing blended learning, the teacher plays an effective role with even more knowledgeable inspiration and effort that can affect the students' learning. Face to face or traditional classroom instruction has largely been teacher oriented, top-down approach and totally teacher centric methods but in blended mode of education give opportunity to students for improving their skills, knowledge and creativity. For the teacher and students, a blended learning approach is bottom-up, student driven and personalised. Blended learning provides a balance between offline learning and online instructions which provide the interaction between teacher and students, techniques-based learning, practical learning, motivation, encouragement, sympathy and guidance for improving the teaching learning process.

Role of students in a blended learning environment

- Blended learning style increases the learner's interest, when we combine the technology with face-to-face teaching learning process at all the levels of teaching, Blended learning will increase the interest, motivation, excitement and learning capacity among students during the teaching learning process.
- Keep students focused for a long time: when students are connected with a lot of accessible resources in technology during the teaching learning process the interest of the students are increasing day by day and enhance the focus of teaching for achieving their goals.
- Blended mode of education gives a great chance to access the open educational resource to the students that can be used any time, any place and free of cost. This technique of teaching and collaboration with the resources retains students attentive for a long period of time, this method also helps in developing learning skills over the studies and exploration.
- Give students freedom; in the online teaching learning process blended learning gives

freedom to the students for learning and acquiring knowledge autonomously in this sense the ability of the learner will be developed, interest and motivational power will be enhanced.

- self-advocacy; in self-advocacy students will be responsible for their achievements, and perusing the individuals' achievements which helps to improve the student's learning ability. Students will grow independently to achieve their goal.
- Blended learning enables students to diagnose, assess and evaluate, blended learning makes students analyse their work, reviewing, judgement and for feedback on their own behalf.
- Blended mode of education gives flexibility to the students for using the internet and websites regarding their learning. If students are not able to access the internet resource, then teachers will be given assistance for improving the speed of learning and give more advanced resources if essential during the teaching learning process.

Infrastructure requires for blended learning environment

- User Computing Devices personal devices such as Mobile Phone, Desktop, Computer, Laptop, tablets etc. are required in a blended learning environment.
- Institution device, lab device, Desktop, computer room etc.
- Audio visual devices, projector, smart board, conference, voice recorder etc. are necessary for the support of a blended learning environment.
- Different types of tablets and graphic boards are required in blended classrooms.
- Tab based remote learning is required for supporting blended learning processes.
- Satellite based TV channel for mass learning in blended methods of teaching.
- Network required for the support of technology such as router, link load balance and fire wall for the creation of a blended learning environment.
- Wireless controller for the control of institution access points.
- Campus core switch, IP CCTV and storage for improving the standard of education during blended learning classroom.

Conclusion

This study examines the blended mode of education and its relevance in the teaching learning process. A blended mode of education enhances the teaching learning process as well as the potential, capability, aptitudes and skill of teaching learning. At present time blended mode of education plays an important role in teaching learning process with the emergence of technology. Blended learning methods increase the learner's interest, because it combines the online education and traditional mode of education. It will increase the interest, motivation, excitement and learning capacity among students during the teaching learning process. For the implementation of blended learning, more and more infrastructure for effective teaching learning. If the proper infrastructure would be available and trained teachers in information technology then the educational standard will be high. Some supported studies are Anthony, Kamaluddin, Romali (2022); Dziuban, Graham, Moskal, Norberg and Sicili (2018); Vallee, Blacher, Cariou, Sorbets (2022); Bouilheres, Le, McDonald (2020) found that blended learning is more effective as compared to the traditional method i.e. face to face method of teaching- learning process. Further found that when we have the best resources or facilities for the implementation of a blended learning environment, the teaching process will be

accomplished and reached at a higher standard and students will gain more and more knowledge. Education through blended learning is very effective and successful such through the interactions between students and teachers, peer groups and course materials etc. Finding of the study showed that face-to-face teaching with the usage of technology such as projectors, smartboards, laptops, desktop computers, and some software applications makes learning convenient and enhances learner and teacher capabilities, interest, motivation, and learning potential as well as problem-solving abilities, creativity, and cognitive ability.

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A BETTER EDIFICATION FOR ALL :
DURING AND AFTER THE COVID-19 PANDEMIC

Dr. Nandini N.*

Abstract

Covid-19 affected several businesses throughout the world, with education becoming one of the primary objectives. The virus affected everyone, including students, faculty, and administration, from elementary schools to universities and colleges. Fortunately, the education world's progress during the upheavals was astonishing. Schools implemented many alternatives very immediately after institutes worldwide were compelled to close tonight to avoid the virus from spreading. The Covid-19 Pandemic has forced all countries throughout the world to develop distant learning and teaching methods. This cautious optimism has been shared by educational institutions. The popularity of college and secondary school commencement exercises represents the academic world's liberation from the pandemic's limitations. After being thrown into virtual education more than Fifteen months ago, professionals at all degrees have recognised a paradigm change in learning that will not be reversed if normality returns in earnest. This chapter discusses the influence of the pandemic on the education sector, health, and the role of teachers both before and after the outbreak. This cautious optimism has been shared by educational institutions. The popularity of college and secondary school commencement exercises represents the academic world's liberation from the pandemic's limitations. After being thrown into virtual education more than Fifteen months ago, professionals at all degrees have recognised a paradigm change in learning that will not be reversed if normality returns in earnest. This chapter discusses the influence of the pandemic on the education sector, health, and the role of teachers both before and after the outbreak.

Keywords: *Pre and post pandemic era, technology, teacher, student, education sector, blended learning.*

Introduction

Pandemic Covid-19 has an impact on the global school system. COVID 19 is an infectious disease caused by a newly discovered virus, "Novel Corona Virus" (Dhawan, 2020). This influenza has now become a worldwide phenomenon for three key reasons: widespread contamination, an elevated fatality rate, and a significant delay in vaccine development. To prevent the transmission of the corona virus, schools, colleges, and institutions have been shuttered. School closure causes problems for kids, teachers, and parents. As a result, remote learning is a viable option for sustaining the educational system. All this has led the government to implement mammoth measures (Chaturvedi, 2020). Great attempts are being made to maintain social and physical distance by persuading the population to stay at home. These efforts are largely aimed at breaking the infection cycle and reducing the strain on the civic-health machine. While the medical facilities were blamed for everything,

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the reforms that have been implemented are tremendous. During closings, educational institutions develop curricula and teach-learning practises for post-coronavirus situations. Coronavirus has had an influence on developing countries' face-to-face education systems. As a result, developing countries should improve their broadcast, online, and virtual classroom infrastructures. When schools reopen, educational institutions devise ways to recoup lost learning and re-enroll pupils.

Impact of Pandemic on Education Sector

The COVID-19 outbreak has caused significant changes in the way education is delivered throughout the world, affecting about 250 million students in over nations. The shutdown of schools, colleges, and other educational establishments have harmed more than 90% of the world's student population. This has resulted in significant changes in many aspects of our life. The requirement to follow Covid regulations has disrupted traditional teaching procedures. This epidemic is also a chance to remind everyone of the qualities that kids require in this volatile environment, such as making decisions, innovative problem solving, and, perhaps most importantly, adaptability. Resilience must be integrated into our educational institutions to guarantee that those skills continue a priority for all pupils.

The teaching profession in this country is evolving with an additional afford to assist students in overcoming these difficulties and guiding them to focus on their schoolwork. As stressful as the circumstance is for the learners, managing the timetable while communicating with colleagues is equally difficult. The virtual teaching situation has also assisted colleagues in working more efficiently. The student community is also deeply affected. They have had to let go of their campus life, stay indoors, and attend online classes (Chaturvedi, Rizvi and Pasipanodya, 2019; Govindarajan and Srivastava, 2020). Coronavirus is spreading exponentially and many countries are locked in their education system, and enforcing their people strict quarantine to control the spread of this highly contagious disease. The government's focus on fulfilling equipment, organizing medical institutions, and laboratory centres, identification of the virus, training health workers, and creating awareness for their people (Haleem, Javaid and Vaishya, 2020). Because education has been a cornerstone of development in every country, it is key to the growth and expansion of all countries. The education system has been affected by several challenges ranging from changes in the education curriculum to closing down the education system due to widespread pandemic diseases (Owusu-Fordjour, Koomson and Hanson, 2015). The COVID 19 epidemic forced both instructors and students to accept technology not by choice, but as a necessary prerequisite for the school system's proper operation. Many challenges arose as a result of the adoption, including an inadequate knowledge about use of innovation by students and faculty, difficulty in locating and selecting an appropriate platform that allows class shipment, the cost of the licence, and problems related towards the infrastructure inaccessibility of the Internet throughout remote areas.

Furthermore, the material distribution and test format required major revision. The unpredictability of events created a quandary for educational institutions and legislators about the test format. At the school level, the need methodology was used. Some primary pupils were advanced immediately to the next class; for some higher semester classes, an online test was held, as were offline examinations for those who took the board (senior secondary) exams. Because direct promotion might have an impact on a student's career and placement, universities and professional schools have mostly embraced an online assessment style. In higher education, it appears that teaching pedagogies will embrace the integrated teaching and learning process method for greater efficacy.

Impact of Pandemic on Health

The closure of schools and higher education negatively affect the mental and physical health of children, students, parents, and teachers in the world, especially in developing countries (UNESCO, 2020b). However, during failing schools, both male and female pupils in most rural regions may be required to work full-time in cattle rearing and farming. Girl students with low households and rural locations are more likely to experience sexual abuse, forced labour, and early marriage. The infected cases' rapid increase has created a sense of anxiety and uncertainty about what will happen (Tiruneh, 2020). The lockdown due to coronavirus many people are feeling stress, fear, and anxiety, such as a fright of dying, a fear of their relatives dying (Sahu, 2020). This stress may have an impact on students' mental and physical health.The pandemic may have a serious influence on the careers or may have prevented graduate of this years' higher education undergraduate students (Niranjan, 2020). All students may not have good interaction with online learning applications and platforms (Haleem, Javaid and Vaishya, 2020), because some of the students are active and some may take a longer time to familiarize themselves with the system.

Role of technology in education during pandemic

Despite the coronavirus crisis, the education industry has survived, and technology has played a significant part in providing online programmes for students to fulfil the needs of the hour. The pandemic of the Coronavirus has changed the globe in every aspect, including commerce, travel, trade, and hospitality. Education, like other industries, has been harmed by the virus's spread. Schools, universities, and other learning institutions have been compelled to close due to the threats of the deadly virus spreading. However, when there are constraints on physical access and social distancing cautions, students do not have to detach themselves from the learning process. India alone has approximately 37 million students' school and college, and the impact is significant.

The fact that we have the technical developments required to offer education to the most remote areas is working quite well for us, "in the present scenario. This is an excellent opportunity for higher education institutions to undertake online projects that will not only benefit students in the short term but will also benefit the entire institution in the long term. In some ways, the epidemic has ushered in a new era in which colleges must make their courses available online to students.

Higher education is evolving from a predominantly physical medium with a well online learning alternative, indicating a transition. This period in educational history represents the start of the process of digital transformation of classes and learning environments.

Education in post pandemic period

For a variety of reasons, the COVID-19 outbreak has the capacity to be a once-in-a-generation chance for serious change. First, the epidemic was global, affecting almost all schools. As such, it gives a chance for educators and students to collaborate to reimagine the education we truly require, rather than the rigid and out-of-date paradigm to which we are inclined to adhere. Second, educators all across the world proved that they could alter the world collectively. Because of the epidemic, schools were forced to close, forcing instructors, students, and adults to learn in a variety of settings. Governments, education systems, and schools offered remote learning and teaching without much preparation, planning, and in some cases, digital experience (Kamanetz 2020; Sun, Tang and Zuo, 2020). Third, while campuses were shuttered, most traditional school regulations and assessments

were likewise abolished or only partially applied. Traditional accountability exams, as well as several other high-stakes testing, were cancelled. Academia was given the freedom to quickly adjust to changing conditions. Without any preparation, training, or planning, instructional service providers have suddenly gone digital. However, during the previous 20-22 months, all stakeholders have learned or established a mind-set regarding the future path of schooling. The combination of IT, internet, cloud, AI, and data science in education will be expedited, and hybrid education will eventually become a basic component of future education.

Following the crisis, countries must also find funding to amaze their learning institutions for the future. This includes not just creating and integrating distance-learning possibilities, but then also ensuring that schools have enough hygienic facilities and that basic cleanliness is taught. Teachers must be trained in new approaches, and students who depend on their school in the past for one meal each day must not go famished during a crisis.

To do all of this, we must quickly assist governments in low-income nations in protecting their education budgets from any belt-tightening caused by the pandemic's economic impact. The great bulk of education financing comes from domestic sources, although overseas assistance may help protect and grow current resources. This will enable governments to begin changing learning before their countries' economies recover.

New role of teacher in pre-pandemic era

Educational leaders are a foundation for every student, and they aim to continue to inspire and educate both young and old alike. The worldwide epidemic has impacted almost every aspect of our life. COVID-19 is putting our patience to the test by slowing down and remaining still. Globally, 1.5 billion pupils (more than 87% of all students) had their schools shuttered. Most school districts learned that becoming virtual was not easy. The debut of remote learning was incorrect and hasty due to a lack of sufficient teacher training, accessible resources, and planning time. Add to this the reality that teachers and teacher officials are grappling with their own concerns and fears for their own lives as the virus spreads, and that there is a worldwide push to reopen schools.

Most instructors and learners are unfamiliar with the digital platform. There was no retraining initiative to equip instructors with digital abilities prior to or shortly following the accelerated national shutdown. As a result, instructors who have parallel talents in face-to-face classrooms are sadly hamstrung in this continuous digitalization. They are currently striving to grasp new technological pedagogies in terms of teaching online classes. They are devoted to acquiring the required digital expertise in virtual classes. However, many professors are 'digital immigrants,' feeling strange in the digital ecology of online classrooms, which has prompted increased worries about online education. Online education has a variety of issues, and those issues vary throughout India's many geographical regions. Nonetheless, state governments take many measures to remove these hurdles in order to provide adequate e-education to children from the impoverished and marginalised parts of society.

However, the revisited debate on online versus facial landmark classes has revealed some inherent limitations of online teaching, such as issues regarding classroom designs, students' digital restraint, wanting to learn involvement in the online course, teacher-taught friendships, online assessment, students' non-cognitive development, and so on. Many issues have arisen in the minds of teachers, ranging from how to begin online lessons to how to use available e-resources to establishing a conducive learning environment. The purpose of this essay is to answer all of these

questions and understand how to make education instruction valuable in the midst of a pandemic, despite a variety of problems and issues.

Teaching is the act of imparting information and training resources to students in a face-to-face traditional classroom. It is a wonderful profession in which instructors are major role players in planning and orienting programmes for learners' all-inclusive growth. Educators have long strived to fulfil their responsibilities as teachers in the face of a variety of setbacks.

In this home-based learning environment, online programmes are on the increase. It is an activity that aims to join online classroom time. Throughout the online course, educators use the internet and numerous apps to teach digital skills. However, several of them would be struggling with teaching challenges, and only a few are considering online teaching. In this instance, a teacher may consider two options: recording video-lectures and posting e-content in the form of PPTs, word or pdf files, and so on. Depending on the nature and goal of the instructional designs, the video lectures may be delivered through video-enabled multiple communication streaming. There are several online platforms where instructors may take online classes, such as Microsoft Teams, Skype, Google Classroom, and Zoom, among others. Furthermore, teachers can utilize other social applications such as Telegram and WhatsApp to exchange e-content with their pupils. However, due to the 'digital divide,' for instructors working in rural schools in economically disadvantaged areas, the usage of WhatsApp and mobile phones may be proved as efficient tools to communicate learning materials and other study-links with their pupils.

New role of teacher in post pandemic era

The coronavirus epidemic has severely disrupted schooling. Almost every component of learning is being evaluated as a result of the move from classrooms towards display panels. Instructional format, attendance, evaluation, the use of technology, and human contact are all being re-imagined, with the chance that some of these changes will stay. The protracted suspension of colleges and universities has also revealed certain underlying weaknesses in the education system and as multiple stakeholders work to solve difficulties and fill gaps, education, as we know, will alter forever. Blended learning will become the norm, as envisioned in our NEP 2020.

We've been warned of how unexpected life is even in the last year, thanks to the epidemic. We must plan and be ready to deal with this uncertain circumstance. That is why instructors and educators have implemented approaches such as differentiated instruction to ensure that learning never comes to a halt. The education sector has suffered the most as a result of the Covid-19 epidemic, as not only pupils but also instructors have suffered greatly. The trauma and long-term impacts of COVID on schools cannot be understated. Teachers must rediscover how to engage students in classroom learning for the first time after a long time, and students must relearn the standards of social and intellectual progress after a lengthy period of absence from both. The epidemic has shown us that traditional classroom instruction with human touch is still the best style of learning. However, technology is a tremendous facilitator and so plays an important part in the educational system. With the majority of higher education institutions experimenting with digital learning and professors learning to adapt to technology, teacher education will need to be updated to include technical aspects of technologies in education. Along with modernised pedagogy, improvement in technology will be a key component of future teacher training programs.

India has long talked about digital education, but it has kept a prospect rather than a real one for

more than a decade. Blended learning mixes offline and online education to allow students to connect with teachers, study materials, and other students via real classrooms and online platforms. Mixed education makes learning easier and more successful, which is why, in the lengthy period, what we call "digital learning" has become a new standard following the Covid-19 outbreak. Despite being the worst hit by Covid-19, the academic industry made a huge rebound with stronger methods. Following the epidemic, the new educational environment emphasizes flexibility, teamwork, communication, and mental wellness. However, there are a few exceptions, such as digital connectivity and technical training.

Conclusion

As nations rebuild and redefine oneself in light to COVID-19, an opportunity to expedite thinking on how to effectively promote great education for all exists. In the next months and years, coalitions of evidence-to-policy organisations, implementation partners, academics, donors, and policymakers should build on their experiences of evidence-to-policy organisations, implementation partners, academics, donors, and policymakers should build on their achievements in the next months and years to establish education-for-all plans. Many public universities throughout the nation are now rebuilding in full, in part, or in a hybrid manner, leaving millions of youngsters with fundamentally altered educational experiences. Crisis, as history has shown, reshapes society. While it is unclear how COVID-19 will disrupt our society, the global pandemic is driving and hastening innovation and progress, particularly in the digital domain. As COVID-19 cases increase and decline in the coming months, the instability is projected to continue, with schools closed and reopening as required to balance educational demands with the health of kids, staff, and families. Although not everyone believes that online education can replace conventional learning, a hybrid approach may gain acceptance in the future. The blended learning model challenges the established educational paradigm. As we negotiate the post-COVID 19 landscape, other challenges emerge. The transition era will require a hybrid of digital and physical ways of teaching and learning. The phygital, or integrated pedagogical mechanism, will be the way of the future. It's something that educational institutions must embrace since it provides for more flexible education - learning in the new world we are going to.

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TEACHING DURING COVID-19 PANDEMIC: THE SHIFT TO DIGITAL LEARNING

Dr. Naresh Kumar*

Abstract

The impact of the COVID-19 pandemic has been seen in all sectors around the globe. The education sector in India and around the world has hit hard. COVID-19 lockdown has created a very bad effect on students, schools, colleges, and other institutions. All educational activities were stopped in India. The COVID-19 outbreak has taught us that change is inevitable. It has acted as a catalyst for educational institutions to develop and transition to platforms with previously unused technologies. The education sector has fought to survive the crises with a different approach and by digitalizing challenges to remove the threat of a pandemic. To mitigate the ill effects of the pandemic, many schools and universities have embraced the digital e-learning platforms with a very short notice and very limited prior experience both on part of the students and teachers. The paper highlights the process of teaching and learning during COVID-19 pandemic that accelerated the process of digital learning.

Keywords: *COVID-19 Pandemic, Lockdown, Teaching-Learning, Digital Learning*

Introduction

The Covid-19 pandemic terribly disrupted the education sector and more than 120 million students were affected worldwide. In India, more than 32 million students are affected by various COVID-19 restrictions and national blockades. UNESCO reports that about 14 million primary and 13 million junior high school students are affected, these are the two most affected levels in India. After observing the situation of the Corona Virus pandemic, WHO recommended maintaining social distancing as the first step for prevention. So each country has started containment actions to separate those infected. The educational sector, which includes schools, colleges, and universities, has been closed and classes, examinations, and internships including entrance tests have been postponed indefinitely. So the detention destroyed each student's timetable. The lockdown has compelled many educational institutions to choose the online mode to carry on the teaching-learning process. Initially, the educators and the students were quite confused and didn't understand how to cope with the situation of this sudden crisis that compelled the closure of the educational activities. But later on, all realized that the lockdown has taught so many lessons to manage the emergence of such pandemics.

Thus, COVID-19 created many challenges and opportunities for the educational institutes to strengthen their infrastructure. The lockdown has given a glimmer of hope for teachers and students to continue their educational activities online. The teachers assigned the work to the students through the Internet and delivered the video lectures using different applications such as Zoom, Google

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Meet, Facebook, YouTube, Skype, etc. There are groups of mentors, teachers, students, and parents on whatsApp for effective communication through which they stay in touch to share their difficulties through this medium. In India, there are so many students having low socio-economic status and these students do not have access to broadband. They cannot use computer-based learning arrangements and suffered a lot during the lockdown. Students also face the problem of the connection of live video meetings due to the low bandwidth of the internet, especially in rural areas. Many educational institutions in India did not have the digital facilities to cope with the sudden changes from traditional education set up to the online education system. But slowly all educational institutions started to use technology and enhanced digital learning so that the study of students may not suffer.

Indian Government's Initiatives for Digital Learning

To prevent the spread of the COVID-19 pandemic, the Indian Government has taken several containment measures. The coalition Government on March 16, 2020, announced the closure of all educational institutions nationwide. The Central Board of Secondary Education (CBSE) has postponed all middle and high school exams from March 18, 2020, across India. CBSE has issued revised guidelines for testing centres to maintain a distance of at least one meter between students taking the test and a class of not more than twenty-four students. If the test centre's rooms are small, students should be allocated to different rooms accordingly. The Union Civil Service Commission (UPSC) has postponed the interview for the 2019 Civil Service Examination. Similarly, most other state Governments and School Boards have postponed exams due to the COVID-19 outbreak. The Government of India observed the nationwide Janta Curfew on March 22, 2020, and implemented a lockdown from March 25, 2020, in different phases and educational institutions remained closed till the further notification.

As a result, the Indian government's digital vision emerges as an essential tool in dealing with the current crisis caused by COVID-19. It is a fact that technology-based education is more transparent in every way. Faced with the challenge of closing these colleges and schools, the Indian Government, as well as State Governments and Private Institutions have taken appropriate initiatives. The Ministry of Education has made several arrangements including online portals and educational channels through Direct to Home TV, and radio for students to continue learning. During the lockdown, students use popular social media tools like WhatsApp, Zoom, Google Meets, Telegram, YouTube live, Facebook live, Google Classrooms etc. for online teaching and learning systems. The digital initiatives of Govt. of India for secondary and higher education during COVID-19 are listed below:

Initiatives for School Education

● **E-Pathshala:** NCERT has created an e-Learning software for students in grades 1 to 12 that is available in different languages such as Hindi, Urdu, and English. The app contains books, videos, audio, and other contents intended towards students, educators, and parents. NCERT has uploaded 1886 audios, 2000 videos, 696 e-Books, and 504 Flip Books for classes 1 to 12 in several languages to this web platform. Apps for mobile devices are also available.

● **Shiksha Vani:** Central Board of Secondary Education (CBSE) introduced a new podcast app called 'Shiksha Vani.' The app provides eight types of tab for various categories of audience viz. Principals, Teachers, Centre Superintendent and Invigilators, CNS and Examiners, Regional Officers, Parents and Students as well as Public.

● **Diksha:** This portal contains curriculum-aligned e-Learning content for students, teachers, and parents, such as video lessons, worksheets, textbooks, and assessments. The content was generated by more than 250 instructors who teach in multiple languages under the supervision of the country's national boards of education (CBSE) and the National Council of Educational Research and Training (NCERT). Offline use is possible with the app. It offers over 80,000 e-Books in several languages created by CBSE and NCERT for classes 1 to 12. QR codes on textbooks can also be used to view the contents. The app is available on both the Apple App Store and the Google Play Store.

● **National Repository of Open Educational Resources (NROER):** It's a website that offers a variety of resources in different languages for students and teachers, including books, interactive modules, and videos, as well as a variety of STEM-related activities. For grades 1-12, contents are mapped to the curriculum, and the teachers' materials are aligned. It has a total of 14527 files in various languages, including 401 collections, 2779 papers, 1345 interactive, 1664 audios, 2586 photos, and 6153 videos.

● **MANODARPAN:** The Ministry of Education launched the Manodarpan programme on July 21, 2020, with an aim to provide psycho- social support and counselling to students for their mental health and well- being.

● **Digitally Accessible Information System (DAISY):** It's a format for digital audio books, magazines, and electronic text. DAISY is a comprehensive audio substitute for print content that is created exclusively for people with "print difficulties" such as blindness, impaired vision, and dyslexia. The DAISY format, which is based on the MP3 and XML formats, contains sophisticated features in addition to those of a typical audiobook. Users can search, bookmark, navigate line by line with precision, and adjust the speech pace without distortion.

● **SWAYAM PRABHA TV Channel:** The SWAYAM PRABHA is a group of 34 DTH channels that are telecasting high-quality educational programmes on 24X7 basis using the GSAT-15 satellite. Every day, there will be new content for at least 4 hours which will be repeated 5 more times in a day, allowing the students to choose the time of their convenience. The channels are telecast from BISAG, Gandhinagar. The contents are provided by NPTEL, IITs, UGC, CEC, IGNOU. The INFLIBNET Centre maintains the web portal of Swayam Prabha TV channel.

● **Samagra Shiksha**: With effect from 2019, the Government of India launched Samagra Shiksha-an Integrated Scheme for School Education as an overarching programme for the school education sector spanning pre-school to class XII, with the goal of ensuring inclusive and equitable quality education at all levels of school education throughout the country, including rural areas.

● **PRAGYATA:** The PRAGYATA guidelines on Digital Education were released by the Ministry of Education with the goal of improving online education while also ensuring the safety and academic wellbeing of students. On July 14, 2020, Union Education Minister Ramesh Pokhriyal 'Nishank' issued an eight-step roadmap to online education, titled Plan- Review- Arrange- Guide-Yak (talk)- Assign- Track- Appreciate (PRAGYATA).

● **DTH Channel for Differently-abled:** For the differently-abled specially hearing impaired students, one DTH channel is available with sign languages. Study material has been developed in the Digitally Accessible Information System (DAISY), for hearing and visually impaired.

● **Radio Broadcasting:** The emphasis of the radio programmes is on activity-based learning. 289 community radio stations have been used to broadcast material for National Institute of Open

Learning - NIOS (Grades 9 to 12). For pupils (Grades 1-5) who live in rural areas, this kind of instruction is especially beneficial.

● **E-textbooks:** E-textbooks can be accessed through the e-Pathshala web portal and mobile app (Android, and Windows). Students, instructors, and parents can all access it. There are 3,500 pieces of NCERT audio and videos that are also available in English, Sanskrit, Urdu, and Hindi languages.

Initiatives for Higher Education in Online Education

● **SWAYAM PRABHA:** It provides curriculum-based course contents at postgraduate and under-graduate level covering diverse disciplines like social sciences, science, humanities, commerce, performing arts, engineering, technology, law, medicine, agriculture, etc.

● **E-PG Pathshala:** The E-PG Pathshala is a study centre for postgraduate students. These students can use this platform to access e-books, online courses, and study resources. The value of this platform is that the students can use these resources without the use of the internet (Offline).

● **SWAYAM:** It is a platform that facilitates hosting of all the courses, taught in classrooms from Class-IX to Post-Graduation to be accessed by anyone, anywhere at any time. All the courses are interactive, prepared by the best teachers in the country and are available, free of cost to any learner.

● **MOODLE:** It is a learning platform designed to provide online learning to educators, administrators and learners with a single platform with robust, secure and integrated system to create personalized learning environments.

● **NPTEL:** Its history can be traced back to 2003 with the initiation of the National Programme on Technology Enhanced Learning (NPTEL) by the IITs and IISc. It focused on courses particular in the field as Engineering, Science, and humanities stream, the horizon was broadened to all disciplines in the higher education sector in 2009 with the launch of the National Mission of Education through ICT (NME-ICT).

● **IITBX:** It is implemented as the basic version of the blended learning MOOC with the help of edX organization. In this system prime universities from India are offering MOOC courses to Indian local college learners.

● **Udemy:** It is another popular online learning platform. Nearly 40 million students are mastering new skills from expert instructors teaching over 130,000 online courses in topics from programming and data science to leadership and team building.

● **Skillshare:** Skillshare is one of the most popular online learning platforms. It has a massive collection of over 20,000 classes. Skillshare believes in a project-based approach to learning that allows students to expand creativity and apply new skills in life. All courses consist of video presentation and a class project.

● **National Digital Library:** This is a digital repository that was established to collect and index a large amount of academic content from various national and international digital libraries throughout the world. It provides interface support for students at all academic levels, including researchers and life-long learners across all fields, in a variety of leading languages.

COVID-19 Pandemic and Digital Learning

Despite the fact that the outbreak of COVID-19 has had numerous detrimental effects on education, Indian educational institutions have acknowledged the challenges and did their utmost to

give students smooth support services during the pandemic. The Indian education system now has the possibility to evolve from a traditional system into a modern one. The following are some of the positive effects that enhanced the digital learning in India:

●   **Use of Learning Management Systems (LMS):** A Learning Management System is a software application or web-based technology used to plan, implement and assess a specific learning process e.g. MOODLE, Google Classroom, Schoology, Edmodo LMS, Black Board Canvas by Infrastructure, Learn Dash etc. Tese learning management system is used for e-Learning practices and it consists of two components as a server that performs the base functionality and a user interface that is operated by instructors, students and administrators. It is widely developed and implemented by various school/colleges and universities to strengthen the teaching-learning process during COVID-19 lockdown.

●   **Blended Learning:** The use of digital technology to deliver education has accelerated during COVID-19. Higher education institutions have switched to blended learning methods. They urged all faculty and students to learn more about the new technology. New methods of delivering and assessing learning have created enormous opportunities for fundamental changes in curriculum design and pedagogy. It also allows large groups of students to participate at the same time.

●   **Development of E-Contents:** During the lockdown, every school, college, university and institution developed e-contents (audio, video, pdf, ppt etc.) for the better teaching-learning process.

●   **Use of Soft Copy of Learning Material:** Because students were unable to acquire hard copies of study materials during a lockdown, the majority of pupils relied on soft copies for reference.

●   **Improvement in Learning Material:** During the lockdown period, all the schools, colleges, and universities improved the quality of the study material for an effective teaching-learning process, so that the students may not suffer.

●   **Enhanced Use of Digital Literacy**: People were compelled to learn and use digital technology as a result of the epidemic, resulting in an increase in digital literacy.

●   **Utilization of Innovative Methods of Education:** Approaches like integrated learning and experiential learning, with greater implementation of technology empowered the education in schools/college and universities during this lockdown.

●   **Promotion of Collaborative Work:** During COVID-19, the teaching community to a large extent has been very insulated in a country like India. There was a new opportunity where collaborative teaching and learning had taken place in new forms and were monetized.

●   **Rise in Online Meetings**- The epidemic has resulted in a significant increase in the use of teleconferencing, virtual meetings, webinars, and e-conferencing.

●   **Maximum Use of Electronic Media:** Learning materials were easily shared among students, and related questions were answered via e-mail, SMS, phone calls, and various social media platforms such as WhatsApp or Facebook.

●   **Maximum Use of Mobile Educational Apps:** The intention to utilize educational applications during the COVID-19 Pandemic was significantly predicted by three factors: academic support, convenience, and social influence.

●   **Demand Raised for Open and Distance Learning (ODL):** During the epidemic, most students chose ODL mode because it supports self-learning and allows them to learn from a

variety of resources while also tailoring their learning to their specific requirements.

● **Global Interaction**: Educators and students were able to interact with people from all around the world. Learners suited to a global environment.

● **Better Time Management**: During pandemics, students in online education were better equipped to manage their time.

Conclusion

COVID-19 has had a significant impact on India's education industry. Although it has generated numerous obstacles that also resulted in numerous opportunities. The Government of India and several educational stakeholders worked hard and implemented various digital technologies to make the teaching-learning process accessible to every nook and corner of the country. Our country strived towards skilled India and Atam Nirbhar Bharat. No doubt, there were lots of negative impacts of Covid-19 on the education system but the Indian Government strived hard to promote digital education. The Indian policies included various individuals from diverse backgrounds including remote regions, marginalized, and minority groups for effective delivery of education. Online education benefitted the students a lot during the COVID-19 lockdown. This initiative has made students not just gain bookish information but also gain practical and technical knowledge. So, we can conclude that teaching-learning during the COVID-19 Pandemic is an excellent shift toward digital learning/ education.

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IMPACT OF COVID-19 ON EDUCATION IN INDIA

Dr. Neetu Ohri*

Abstract

The outbreak of COVID-19 has compounded the plight of learners in countries affected and or emerging from conflict and disaster. The Global Campaign for Education (GCE) acknowledges the public health decision to close schools. It is believed that contingency plans should be in place to ensure the right to education even in times of crisis. Though the outbreak of COVID-19 has created many negative impacts on education, educational institutions of India have accepted the challenges and trying their best to provide seamless support services to the students during the pandemic. Post COVID-19, the Indian education system got the opportunity for transformation from the traditional system to a new era of technology. Across the globe, Indian traditional knowledge is well known for its scientific innovations, values and benefits to develop sustainable technologies and medicines and this knowledge systems in different fields should be integrated with a present-day mainstream higher education system. While many lack the required digital skills to implement online education, technology remains a therapy to bridge the educational gaps that often emanates from unscheduled closure of schools during pandemics. The present article tried to highlights the positive and negative impacts of pandemic on education.

Keywords: Covid 19, Education system, Positive impact, Mitigation, Technological therapy

Education has been hit hard since the outbreak of COVID-19 in late December 2019. It has wreaked havoc across the world. Students from schools, colleges and universities have been deeply impacted by this crona wave. According to a UNESCO report , more than 800 million learners from all over the world have been affected, one out of five learners cannot attend school in regular mode, one out of four cannot attend higher education classes through regular mode, and nearly 102 countries have ordered worldwide school closures.

Globally, over 200,000 cases of the coronavirus have been reported in more than 160 countries, and more than 8,000 deaths and left several States dealing with severe outbreaks. The COVID-19 pandemic has adversely impacted the progress of the educational sector. Some governments are making efforts to increase the education budget to improve the situation. So this is a major issue that requires urgent attention and collective efforts by all Governments sectors, stakeholders as well as communities.

An everyday number of children do not go to school due to these emergencies in the present situation and this current crisis. The epidemic of COVID-19 has heightened the dilemma of learners in countries affected and emerging from conflict and adversity. While GCE recognizes the public health decision to close schools, contingency plans should be in place to ensure the right to education

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even in times of crisis. All learners need proper access to the right to education. As we know that education is an essential right for children, young and adults in these kinds of emergencies and must be a priority from the very beginning of any and all emergency responses.

Positive Influence of COVID-19 on Education

● **Adoption of Blended Learning:** COVID-19 has created a path toward adoption of digital technologies to deliver education. Educational institutions moved towards a blended mode of learning. It motivated all the teachers and students to become more techno-savvy. These new ways of delivery and assessments of learning opened massive prospects for a main transformation in the field of curriculum development and pedagogy aspects. It also gives major access to large pools of learners at a time.

● **Rise in use of Learning Management Systems:** Educational institutions provide the opportunity to use learning management systems. It is in great demand during the pandemic period. It opened a great opportunity for the companies that have been developing and strengthening learning management systems for use in educational institutions.

● **Provide support services to the students**: Though the outbreak of COVID-19 has created many negative impacts on education, educational institutions in India have accepted the challenges and tried their best to provide support services to the students. The Indian education system got an opportunity to transform this traditional system to a new learning system.

● **Enhance the use of soft copy of learning material:** In lockdown situations, students are not able to collect the hard copies of study materials and hence most of the students used soft copies materials for reference. This practice reduces the use of paper which is environmentally friendly.

● **Improvement in collaborative work:** COVID era provides a new opportunity where collaborative teaching and learning can take on new forms.

● **Increase in online meetings-** The pandemic situation has created a huge rise in teleconferencing, virtual meetings, webinars and e-conferencing opportunities to keep in touch with scholars, administrators, thinkers, educationists.

● **Digital Literacy is Enhanced**: The pandemic situation induced people to learn and use digital technology and resulted in increasing the digital literacy. It has improved the use of electronic media for sharing information: Learning materials are shared among the students easily and the related queries are resolved through e-mail, SMS, phone calls and using different social media like WhatsApp or Facebook.

● **World-wide access to educators and students:** Educators and learners are getting opportunities to interact with peers from all over the world. Learners adapted to an international community through these platforms.

● **Efficient and Better time management by students**: During pandemics students are able to manage their time more efficiently in online education.

● **Opportunities for Open and Distance Learning:** During the pandemic situation most of the students try to opt open and distance learning mode as it motivates self-learning that provides opportunities to learn from diverse resources and customized learning as per their required needs.

Negative influence of COVID-19 on education

Education sector has suffered due to this COVID-19. It has created many negative influences

on education are as:

● **Educational activities suspended:** Classes have been suspended and exams at different levels postponed. The annual examinations and entrance tests have already been postponed. Admission process got delayed from the normal schedule. Due to lockdown, students suffered nearly three months of the full academic year of 2020-21 that is going to further deteriorate the situation of continuity in education and as students would face more difficult situations in schooling again after a huge gap of lockdown.

● **Unemployment rate increased:** Most of the recruitments and placements got postponed due to COVID-19 in India. Placements of students may also be suffered with delays of companies on board of students. Unemployment rate in India is expected to increase due to this pandemic. Due to the current situation in India, there is no recruitment in Govt. sector also no fresh graduates of their job offers from private sectors. When unemployment increases then the education gradually decreases, as people struggle for food that is more important than education.

● **Unprepared teachers/students for online education:** All teachers and students are not ready for this sudden change from face to face learning to online learning. Most of the teachers are just familiar with lectures on video platforms such as Zoom, Google meet etc. which is not considered as real online learning without any dedicated online learning platform.

● **Global employment opportunities are reduced:** A number of persons lose their current jobs from other countries due to COVID 19 and the pass out students may not get their job outside India in that time due to restrictions caused by COVID-19 worldwide. Many Indians might have returned back to their home after losing their jobs in other countries. So, the fresh students who are likely to enter the job market may face difficulty in getting suitable employment in any place all over the world. Campus interviews are not scheduled due to COVID 19 . Number of students who have already got jobs through campus interviews later may not be able to join their jobs due to this lockdown situation. Recent graduates in India are also facing fears for withdrawal of job offers from corporate sectors because of movement restriction in the current pandemic situation.

● **Responsibility of parents to educate their wards:** Educated parents are able to guide their children but many parents may not have the adequate level of education that is required to teach children in the house. This increased the responsibilities of parents in this situation.

● **Loss of nutrition due to school closure**: Mid-day meal is a school meal programme of the Government of India which is designed to provide better nutritional food to school-age children nationwide. The daily nutrition of students as the mid-day meal schemes have temporarily been shut due to closure of schools. Various studies have pointed out that mid-day meals are also an important contributing factor for increased enrolment in the school.

● **Limited access to the digital world:** As students have limited or no internet access and some students may not be able to afford computers, laptops or supporting mobile phones in their homes due to some constraints. Online teaching-learning may create a digital divide among students. The online teaching-learning method during pandemic COVID-19 increased the gap between rich/ poor persons and urban/rural areas. The lockdown has most affected the poor students in India as most of them are unable to explore online learning according to various reports.

● **Decline in demand of global education:** The pandemic has significantly disrupted the higher education sector. A large number of Indian students who are enrolled in many Universities abroad, especially in worst affected countries are now leaving those countries and if the situation

persists, in the long run, there is a significant decline in the demand for international higher education.

- **Delayed payment of fees:** During this lockdown most of the parents will be facing the unemployment situation so they may not be able to pay the fee for that particular time period which may affect the private institutes.

Suggestions for coping up with future situation

- India should develop creative approaches to ensure that all children must have sustainable access to learning. The Indian policies must include various individuals from diverse backgrounds including remote regions, marginalized and minority groups for effective delivery.
- Immediate measures are required to lessen the effects of the pandemic on job offers, internship programs, and research projects.
- Many online learning platforms offer multiple programmes on the same subjects with different levels of certifications, methodology and assessment parameters. So, the quality of programmes may differ across different online learning platforms. Therefore, establishment of quality assurance mechanisms and quality benchmark for online learning programmes must be developed and offered by Higher Education Institutions (HEIs) in India keeping in view of rapid growth of the online learning platforms.
- Across the globe, Indian traditional knowledge is well known for its scientific innovations, values and benefits to develop sustainable technologies and medicines and this knowledge systems in different fields should be integrated with a present-day mainstream higher education system.
- Govt and educational institutes should plan to continue the educational activities maintaining social distancing. 30-40% students and teachers may attend schools/colleges in two shifts per day to carry on educational activities by obeying guidelines for COVID-19.
- At current times, access to technology and the internet is an urgent requirement. So, the digital capabilities and the required infrastructure must reach to the remotest and poorest communities to facilitate the students to continue their education during the pandemics. There is a need to deploy public funds to fix the internet gap and ensure that students continue to learn digitally. The state governments/private organisations should come up with ideas to address this issue of digital education.
- Some significant concerns associated with online learning techniques such as availability and proper access to digital devices with proper internet connectivity, safe learning spaces, creating number of capabilities for teachers, families and students to operate digital devices, and number of engaging lesson plans for disabled students and other marginalized groups should be addressed by Govt. of india as well as the stakeholders.

Conclusion

COVID-19 has impacted immensely on the education sector of India. Various bodies of education have created the possibility of open and distance learning by adopting different digital technologies for online learning to cope up with the present crisis of this pandemic. India is not properly equipped with all resources to make education accessible to all corners of the nation via digital platforms. But the government of India is trying to come up with a solution to resolve this problem. Digital technology

should be given priority to create an advantageous position for millions of young students in India. It is the need of the hour for the educational institutions to strengthen their knowledge in this new cotext. Information Technology infrastructure to be ready for facing COVID-19 like situations in india. There is an urgent need to take efforts on maximum utilization of online platforms so that students not only complete their academic degree but also to get ready for the future digital oriented environment. The new concept of "work from home" has greater relevance in such a pandemic situation to reduce the spread of COVID-19 in worldwide. India should develop creative techniques to ensure that all children must have access to learning during pandemic situations. The Indian policies must include various individuals from diverse backgrounds which include remote regions, marginalized and minority groups for effective delivery of content to students. Technology is an essential tool to offer educational, psychological, spiritual, and medical advice or support to parents, educators and students during and after pandemics. The problem of the digital divide was also a big issue particularly for learners in rural areas. This is because students and teachers in rural areas often lack the needed facilities and expertise to implement remote teaching and learning. Digital skills to implement online education, technology remains a therapy to bridge the educational gaps that often emanates from unscheduled closure of schools during pandemics. The unprecedented school closures for Coronavirus remains a lesson and a warning to the entire educational world particularly those who are yet to embrace or adopt emerging learning technologies that support online or remote education.

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INNOVATIVE ONLINE ASSESSMENT TECHNIQUES

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Abstract

Assessment is the process of gathering information on what students know based on their educational experiences. Traditional examples include papers, projects, reflective journals, group work, quizzes, and much more. Online learning has broadened the possibilities of assessment even further because it gives us a wide variety of tools that we can use to help students interact with material in new and exciting ways. Some of the strategies for thinking more creatively about assessments are Online quizzes, Essay questions, Drag-and-drop activities, Online interviews, Dialogue simulations, Online polls, Game-type activities, Peer evaluation and review, Forum posts etc.

Keywords*: Online, Assessment, Techniques*

Introduction

Assessment tools for assessing and evaluating students learning and that can provide different options to assess students beyond the traditional examination system. Assessment tools can be helpful to support active learning, facilitate team-building activities, and foster peer-to-peer learning in schools. They also provide various alternative assessment methods and can be used to check assessment of student learning in real time. Traditional examples of assessment tools include papers work, projects work, reflective journals, group work, quizzes, and many more. Online learning has broadened the possibilities of assessment even further because it gives us a wide variety of tools that we can use to help students interact with material in new and exciting ways. Following are the strategies for thinking more creatively about assessment aspects.

● **Capitalize on digital resources-** Students in online courses will be sitting in front of one of the most powerful tools for knowledge collection and creation for example computers, laptops as well as smartphones. We need to design assessment tools that are used in the digital environment as well as try to meet your learning objectives. For example, ask students to find, evaluate, and synthesize information from Web-based resources to answer questions or solve problems or use multimedia tools (e.g., video, podcasts, digital storytelling, concept mapping tools) to present concern work.

● **Aim for authenticity-** Many online students ask the question, "How will this material help me in the workplace? Authentic assessments are a way to answer that question. To design authentic assessments, you need to think about what professionals in your field do regularly and then ask yourself as a professional how students can take the knowledge and skills from your course and apply them to those tasks to assess yourself. Could they design different kinds of databases for real or fictional clients? Create interpretive labels for an art exhibit? Write a grant proposal for the

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same? Compose a letter to a policy maker in that context? Also consider whether you could provide students with authentic feedback from a nonacademic audience for assessment. For example, you could have students present their work publicly or to a panel of expert reviewers through a live synchronous session for assessment.

● **Use students' environments and experiences for assessment-** One of the chief benefits of online courses is the opportunity to bring together all the students from diverse backgrounds so they can learn from one another on the same platform. Depending on the teaching situation, teachers have students from very different parts of their own country or from other countries. So needs to think about how you might design assessments that capitalize on their diverse environments and experiences to enrich their own and one another's learning.

● **Integrated collaboration-** In online courses, it's important to build a sense of community and connection with learners. One way to do it is with the help of assigning group tasks and projects. These kinds of well-designed group projects help students to connect one another, learn course content more deeply through open discussion and debate and also build important skills for working in teams. Group projects have their own complexity, however, so be sure to structure them in proper and specific roles for group members to prepare group discussion or having students evaluate one another's performance that can help to ensure that everyone contributes fairly in the process. There are several approaches through online for evaluating students:

● Online quizzes
● Essay questions
● Drag-and-drop activities
● Online interviews
● Dialogue simulations
● Online polls
● Game-type activities
● Peer evaluation and review
● Forum posts

The best method to use will vary, based on the learning needs and objectives. For example, an online quiz will be appropriate if your goal is to measure knowledge gains quickly. But if you want to test your students' interviewing skills, you're better off using a dialogue simulation.

1.   **Online Quizzes-** Quizzes are a traditional assessment tool. In addition, paired with technology, they are an excellent way to engage student learning. These Quizzes can take a different number of forms, such as multiple-choice, fill-in-the-blanks etc.. Main benefit of quizzes is that they are very short and easy to assess by teachers. Another benefit is that question order and options can be randomized, so each student's quiz is unique in a way. Online quizzes are ideal for measuring learning outcomes across a wide audience. Since each student takes the same test, it's very easy to compare and contrast results across different classes, schools, or communities all over the world. A non-graded online quiz can be also very beneficial given prior to the start of a lesson to gain a baseline measurement of a student's previous knowledge. It can also embed a knowledge check test into a module to reinforce concepts taught in the lesson, or make a final graded test at the end of the course to evaluate students' overall performance.

2.   **Open-Ended or Essay Questions-** Open-ended or essay-type questions are one of the most popular qualitative assessment methods in learning context. These kinds of questions prompt

learners to explore their thoughts, feelings, and opinions during testing their overall comprehension of a topic in the class. This type of question is helpful to encourage critical thinking and is best suitable for evaluating higher-order learning and Essay type questions require a longer time for students to think, organize, and compose their answers in elaborated way.

3.   **Drag and Drop Activities-** This type of assessment shows a learner's ability to link information and apply that knowledge to solve a practical problem. This can be incorporated with the help of both images and text in a drag and drop activity, giving it a real-world feel for students that is both challenging and engaging for students. It's essential to use this type of assessment when learners want to be able to apply knowledge in a real-life situation.

4.   **Online Interviews-** Online interviews can incorporate a video conference within online teaching to give learning a more personal touch. During brief online interviews, students can demonstrate their skills with proficiency in language, music and other courses for example, where mastery of specific skills is an important requirement for these interviews. It may be beneficial to conduct group interviews for team project reports. These online Interviews can also include a mentoring component enabling students to get immediate feedback from instructors and help these students to feel more responsible about their studies.

5.   **Dialogue Simulations-** A dialogue simulation is a way to train learners for real-life conversations with customers, colleagues, and others persons. Creating a conversation activity based on a situation that a student may face on the job, let them know what to expect and provide a safe place to practice their reactions and responses.

6.   **Online Polls-** Polls allow the individuals to capture feedback directly from their audience about their learning experience. These online polls can be used to measure anything from learning satisfaction of a student making a particular choice during a lesson. Online surveys are highly helpful to engaging learners because they allow the individuals to share their opinions, make themselves heard, and are quick to complete in time. Teachers can use poll questions when they want to quickly grab and focus your learners' attention on something important or break the ice during an online group interview session of the students. For the latter, it can be easily simply carried out as a mood survey.

7.   **Game Type Activities-** Game type activities turn a series of test questions related to leaning into a game. For example, a certain game might ask learners to answer a certain number of questions within a fixed period of time and award points based on the number of correct answers secured by the participants. Game-based assessments are considered as fun and not as tests so these are generally considered a good indicator of true skills and knowledge a well as shown to enhance learning by promoting the development of non-cognitive skills like discipline, risk-taking, collaboration, and problem solving.

8.   **Forum Posts-** A forum post is an online discussion board organized around a topic for discussion. Asking questions from students to contribute to a forum post is an excellent way to gauge their understanding, create their interest, and support their learning in a positive manner. In this activity, students are given a critical thinking question based upon the curriculum or on a lesson or a reading, and asked them to reflect on this. Their answers are posted to a forum and their peers are given the chance to respond in that forum. Using this method individuals need to interact, communicate, and collaborate as part of the learning process through checking their comprehension of the topic.

Conclusion

Online learning harnesses the power of technology to help students interact with course material in new and creative ways. When designing assessments, you can incorporate audio, video, social media, collaborative wikis, creative research techniques, and more to help students build valuable skills they can use in the workplace and beyond. In addition, you can take advantage of convenient and far-reaching tools of communication to help students connect with one another and even their own communities. Assessment no longer needs to be dry exams that students dread; rather, it can be an opportunity for exciting, focused forays into real-life teamwork, problem solving, and knowledge building. Some of the strategies for thinking more creatively about assessments are Online quizzes, Essay questions, Drag-and-drop activities, Online interviews, Dialogue simulations, Online polls, Game-type activities, Peer evaluation and review, Forum posts etc.

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DIGITALISATION OF INDIAN EDUCATION SECTOR

Dr. Paramjeet Kaur*

Abstract

Coronavirus Pandemic (COVID 19) has affected all the spheres of human life globally. It brought downfall in businesses (from small to large, manufacturing to service, travel tourism to hospitality), professions, organisations, and largely impacted the higher education sector. The most crucial outcome of the pandemic was the emergence of mandatory online education in the entire nation. The paper describes some of the trends noticed in the digital education in post pandemic education scenario such as gamification in learning, cloud computing, blended learning, innovations in assessment tools and e-learning platforms. It also puts some light on the future changes that are expected to be a part of this sector.

Keywords: *Pandemic, Digital, Education, Trends, Impact.*

Introduction

The Coronavirus Pandemic (COVID 19) put forth unique challenges not just in Wuhan, but every country worldwide. The world had not seen such a lock down since the 1918 influenza epidemic. More than 12 million people lost their lives to that pandemic in India. Since December 2019, COVID has affected all the spheres of human life globally. It brought downfall in businesses (from small to large, manufacturing to service, travel tourism to hospitality), professions, organisations, and largely impacted the higher education sector (Rashid and Yadav, 2020). Human beings were affected both economically and psychologically due to uncertainty associated. Governments tried hard to cope up with the situation but were more or less unsuccessful. Even the countries with the best medical facilities were helpless in front of the epidemic. Social impact of the virus especially on the poor and homeless can't be ignored. Every single person (child, old, differently-abled) irrespective of age, social status and physical ability was affected. .

Of course, there is a huge shift in our lifestyles after the pandemic. Spending time with family, relishing homemade food, surviving without any get together, watching movies at home, reading books and incorporating internet in daily routine were some of the positive Covid-19 lockdown impacts forced on every human being. Since the lockdown, more and more people are depending on the internet. By default due to the internet, Information Technology was embedded in our lifestyles as online services are utilized in almost all spheres like, work from home, buying groceries, schooling and education, banking etc.

This pandemic also came with a silver lining. The earth was smiling. There was a massive reduction in the magnitude of pollution. There was fresh air, rivers had become clean and people were spending more time with their loved ones. Young people, especially single children, realised the

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importance of family and relationships. The most crucial product of the pandemic was the emergence of mandatory online education in the entire nation. According to UNESCO (press release on March 24, 2020), the pandemic has interrupted the education of nearly 1.4 billion students, which forced colleges and universities to move their courses online (Nworie, 2021). Many academic institutions who were reluctant to change their traditional ways of teaching were left with no other option except to shift to digitalisation (Dhawan, 2020).

Review of Literature

Rashid and Yadav (2020) discussed the impact of pandemic and advent of e-learning tools and platforms. They suggested the need for virtual education to be made a necessary component for higher educational institutes. They also put thrust on effective planning of post pandemic education and research.

Dhawan (2020) heighted the importance of online teaching and learning and presented the SWOC analysis of e-learning modes during pandemic posed by COVID-19. The study also described the growth of EdTech start-ups during the epidemic and offered suggestions for academic institutions regarding how to deal with challenges of online teaching learning.

Jena (2020) emphasised on the theme how online education was beneficial during the times of pandemic/crises and described various tools and techniques which could help in continuity of learning along with special government programmes.

Malhotra and Bhatia (2021) adopted a single cycle action approach to capture voices of prospective teacher educators from central university. Authors found that these educators consider online education as a panacea for future learning, but there exists the need to increase awareness towards cyberbullying, upscale digital infrastructure, evolve distinct pedagogy, responsible use of technology, and remain value driven.

The present study tries to discuss the trends recently emerged in the education sector and future changes that are expected to be a part of this sector.

Trends in the Digitalised Education Sector

There was a time when online education was considered as a supplement to mainstream offline education. Indian students came across an altogether different way of learning during the pandemic, which was forced on them at that time, but later became a routine part of their lives. Use of online educational tools, open educational resources, and digitalised assessment tools have witnessed a rising shift since 2020. Even the universities are revising their curriculum and making online content mandatory for students. According to a research conducted by KPMG (with insights from Google search), it was found that the Indian online education sector has flourished a lot during and after the pandemic and has emerged as a nearly $2 billion industry in 2021 (Jain, 2020).

	2016	2021
Paid user base	1.6 million	9.6 million

The report further described that the paid users have increased nearly six fold, which was an eye opening trend, never thought of in the pre-pandemic years. Even the students studying in villages also have an opportunity to use the internet and smartphones for online education.

Here are some of the trends noticed in the digitalised education these days:

● **Convenient Learning:** The meaning and way of learning got transformed. Even surviving in the offline mode today, still learners feel it is convenient to have online education modules, joining virtual lectures, posing questions in chat, appearing in the online assessment etc.

● **Gamification in Learning:** Modern life is becoming complex day by day and with the help of games techniques even the complicated lectures can be delivered in an interesting way. The learners are given strategy based games, where the sense of making decisions, designing strategy, performing cost benefit analysis, instant solutions etc are developed. Gamification has made the learning chain interesting, effective, interactive and convenient. The mind of learners can be well tapped for long which was a challenge in the offline mode of learning.

● **Cloud Computing:** Cloud computing technology provides an opportunity for online learning to save a huge amount of data on a single platform and access it anytime anywhere.

● **Blended Learning:** Another major trend observed these days is the blended learning. Online courses with offline touchpoints are becoming widely acceptable. Even many of the well-established universities are designing their curriculum so as to enable learning in blended mode. The courses meant for instructors and teachers are also being designed in the same form. The demand for blended learning has increased around 30% in the e-learning market, as it offers unique benefits of own time learning, flexibility and self-paced learning.

● **Collaborative Learning:** A new idea of collaborative learning has emerged, where students from remote and far off places can have collaboration and experiential learning. Learners learn from their peers, get their doubts cleared from co-learners, discuss various ideas amongst themselves and get connected with different groups.

● **E–learning Platforms:** The widespread use of digital education has given knowledge about myriad government led e-learning platforms, which were already available, but were hardly accessed by Indian students. The Modi government has introduced many public programmes under the banner 'digital India and skill India' to further promote e-learning. The platforms like SWAYAM (Study-Webs of Active-Learning for Young Aspiring Minds), e-Pathshala, Swayam Prabha, MOOC etc. offer the learners material to be specialised in specific skills.

● **Innovative Assessment:** In the digitalised education era, the learners have innovative assessment tools to evaluate the capabilities of their students. Various software such as Quizzes, Mentimeter, Google Quiz Forms, Online classroom assignments etc. have offered the opportunities to both learners and learning provides to assess and evaluate on desired criteria.

Road Ahead for Digitalised Education

Digital Education has a long way to go in the Indian education system. It is expected to have the following attributes:

● Learners will prefer to have choice based digital learning, instead of having a forced curriculum.

● Customised and personalised learning will be the buzzwords in the future education system.

● Courses which would offer a clear roadmap from theoretical foundation to practical expertise would be given priority by learners.

● Introduction of innovative digitised tools are expected to pose challenges in front of learning providers.

● Future learners are expected to be smarter and more tech-savvy than their trainers.

COVID 19 has affected almost every aspect of our lives. The way we used to live, spend, think, or make relations is going to change tremendously. Life has taken a new definition for all sections of society, be it children, youngsters, middle aged and old people, no one has remained unaffected. The education sector has transformed, new trends have been noticed in the delivery and grasping of content.

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AN EMPIRICAL RESEARCH STUDY ON POST COVID TEACHING APPROACHES AND METHODOLOGIES

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Abstract

The COVID-19 situation has driven the students and faculty into a new rosary of distance learning through virtual classrooms. The learning methodologies may help to improve hybrid and online teaching methods during the post COVID-19 era. This is the empirical study of 20 Senior Secondary teachers of Ambala. The objective of this paper is to highlight the different reliable interactive modalities used for the progress in Educational trends. This paper focuses upon initiating a meaningful dialogue between faculties, who are engaged in efforts to cope and adapt to the pandemic situation and may try to prove useful in re-envisioning and re-designing the future curriculum. This may facilitate future discussions on creating best practices or guidelines for asynchronous/synchronous virtual classrooms in the post pandemic. It also draws attention towards the fact that Blended Learning will dramatically increase in education settings. Existing and Potential Online Program Management Partnerships will be rethought and attendance, participation, engagement and poll features through Learning Management Systems will allow integrated and regular learning activities with assessments and outcomes. The revised concepts according to the syllabus will enable the Individualized Education Plan (IEP) suitable for CWSN. The students will be able to interact with faculty through the virtual classroom and a number of communication modalities (i.e. visually through computer camera and filters, non-visually but actively through text and chat, and non-visually but more passively through raising their hand and polls). Activities such as student presentations, group demonstrations or interactive discussions are often foundational activities in the offline classes but transitioning to the new normal in higher education trends in the hybrid model will improve the learning behaviors and etiquettes.

Keywords- Empirical study, Blended learning, LMS, IEP for CWSN

Introduction

The reality of the new normal, disrupted by COVID effects, has involved a radical transformation of education and training, and one of the sectors undergoing dramatic digital transformation is global higher education (Dwivedi, Hughes, Coombs, Constantiou, Duan and Edwards, 2020). The higher education system was able to provide quality education in a scenario of digital transformation, technological innovation and accelerated change in the educational framework. The emergence of disruptive innovation in the time of risk and uncertainty provided a time of opportunities, bringing talent and innovation to the education system. This educational system involved innovation in teaching methods such as the development of new learning materials, mechanisms, spaces and the

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transformation in the role of students to use educational knowledge. Successful educational innovation and transformation should be based on sustainability, scope, and scale (Carolan, Davies, Crookes, McGhee and Rox-Burgh, 2020). The successful transformation of higher education from old learning systems should foster a culture of participation, engage participants, and promote evidence-based decision making and transparent assessment of learning outcomes.

Review

The pandemic forced a period of global experimentation with remote teaching (Govindarajan and Srivastava, 2020). This technological transformation of education involves profound changes in teaching methodologies, essential competencies, and assessment methods, as most HEIs recognize (Jensen, 2019). The significant implications of transition for the entire learning process, modifying methods for assessing learning outcomes requires reconsideration of the skills and competencies required of students in the new setting (Jensen, 2019). Higher education has become increasingly competitive with the addition of distance and open education models (Cunha, Chuchu and Maziriri, 2020).

Empirical Study

In the empirical study conducted by the authors it is observed that the technologies used to support teaching during the Post Covid period were the higher Education web portals, instant messaging tools (WhatsApp, Telegram), video-conferencing tools (Zoom, Skype, Google meet), educational apps (Google Classroom) combined with email and telephone conversations to maintain individual contact with students. Other technologies like Cisco WebEx, Microsoft Teams were also useful. This empirical study aims to explore the experience of Post Covid teaching methodologies by teachers of Senior Secondary schools of Ambala with respect to access to resources, barriers to effective studying, anxiety, healthcare and quality of life.

Methodology

A google form survey of 20 Senior Secondary teachers of Ambala was done. The google responses were written, compared and analyzed using the comparative analysis along with the graphic analysis. The responses were then analyzed to draw relevant conclusions.

Findings and Result

E-Learning methodologies have helped the learners to bring a change in their personality. Maximum teachers have felt that demonstration has been the most effective teaching approach in the post Covid Era. 85% of teachers find that Blended Learning has emerged as the most effective teaching methodology of the post Covid time. 37% of problem solving can take place with Blended Learning and the desired level of motivation and ability is 92.6%.

Pedagogical Trends

Students complained of long screen time, overlapping lectures, lack of self-learning time, connectivity/bandwidth issues, Covid positive cases in the family, chaos in the home atmosphere etc. Educators have tried their best to adopt a flexible way of using recorded video, live sessions, or a quiz to overcome online delivery. The twenty-first century and its skills have led to new approaches in teaching learning methods. Hase and Kenyon (2020) propagated the word **Heutagogy** (self-

determined learning) with a notion of making capable learners who can learn on their own.

The emergency response from educational institutions during the post Covid Era to shift teaching and assessments online is known as Emergency Remote Education (ERE) (Shin and Hickey, 2020). ERE can involve adapting content which would have traditionally been taught face-to-face as blended learning or as fully distanced learning (Shin and Hickey, 2020).

Blended Learning

Blended learning involves online delivery of content along with the hybrid model which is a combination of online content delivery with face to face sessions (Meydanlioglu and Arikan, 2014). Each session and learning activity delivers synchronously online, and asynchronously online giving students the freedom to decide how to participate (Beatty 2019). During exams revision sessions, practice multiple choice questions were provided and students used distinguished software to submit their answers.

Thematic Analysis of Blended Learning

The main themes include Pre-exam support and preparation, Concerns about online exam duration, Student discomfort being seen on camera and home working environment. Quality online learning programs are high-input operations that require time to develop and significant investments to run. Digital tools are complements not substitutes, for the intimacy and immediacy of face-to-face learning.

Post Covid Learning Management Systems

A study on the trend of LMS platforms was conducted by Setiawan and Munzil in 2021 after the Covid-19 pandemic. The study entitled Trend of learning management system (LMS) platforms for science education after Covid-19 pandemic collected data through research article publications related to the type of LMS platform in the last ten year period from teachers of junior high school science teachers in various regions in Indonesia, with bachelor's degrees and master's degrees and also different teaching experiences. The result on the higher education data shows that after the Covid-19 pandemic, the Google Classroom type was superior to the other types. It is due to the practical, speed, and satisfaction of using both platforms.

IE FOR CWSN

- **Assessing accommodations-** The situation of each CWSN was assessed by educators, parents and other students to discuss adjustments needed for remote learning. Some changes such as audio or other formats in instruction, as well as pictures, flexible scheduling and deadlines, and assistive technology were used. (Designing for Accessibility with Perceivable, Operable, Understandable and Robust (POUR)
- **Modifying curricula and instructions-** Learning in Inclusive settings included mainstream and classroom-based environments.. The Curricula was modified with different activities adjusted. The home task could be simplified, allowing students to dictate rather than type, and audio materials can be provided for reading assignments.
- **Utilizing universal design for learning (UDL)-** UDL aims to help teachers reach a wide variety of students, focusing on how students learn and demonstrate knowledge.
- **Implementing various project-based learning-** various studies show that students with

learning disabilities learn more by using these research projects and analysis to complete a project. Project-based learning is also helpful to improve self-esteem and promotes positive engagement among students. They need to design more projects and introduce new assignments through online mode and make sure that everyone understands how to complete these projects.

● **Ensuring individualized education programme (IEP)-** IEP ensures that educators, students, parents and families work together to decide on the effectiveness of inclusive learning and individualized training for every child .

● **Supporting teachers-** In a phase of transition, evidence-based resources to deliver lessons in inclusive settings for CWSN.

Conclusion

We are all involved in a digital world and after some online experiences, a paradigm shift has occurred in higher education. Online teaching has gained relevance and ensured its continuance even after the Covid-19 pandemic. Our empirical study reveals the use of a plethora of technological tools and platforms to support online learning in the form of web-based learning platforms, video-conferencing tools, Massive Open Online Courses (MOOCs), streaming conferences, instant messaging tools, and educational apps to support new methodologies to enable learning outcomes. The new methods were more enjoyable, less time-consuming and avoided repetition of existing knowledge. It encouraged the learner to unlearn and relearn developing new experiences by practicing the existing knowledge.

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CHALLENGES AND OPPORTUNITIES IN ONLINE EDUCATION: A STAKEHOLDER'S POINT OF VIEW

Dr. Pargat Singh Garcha*

Abstract

COVID-19 pandemic has made drastic changes in our life.The whole world suddenly came to a halt. We have some unforgettable memories related to it. Our education system has also been affected from this pandemic a lot.After the initial problems and fears, the academic institutes were forced to move online to ensure continuity in academic activities. Some new innovations are tried, new learning occurred and some of them become an integral part of our education system.This new media holds out the possibility of on-demand access to the content at any given time or on any digital platform but this turns challenging for both administration and the students. Digital media today is the blend between the classical and conventional way of learning like books and notebooks and digital software like eBooks and pdfs. Online education in India has some challenges and opportunities. in this paper we will try to discuss these from a stakeholder's point of view.

Keywords: *Online education, COVID Pandemic, Challenges and opportunities*

Covid-19 Pandemic made an impact on every walk of life. The whole world suddenly came to a halt. The lockdown was announced by governments across the world. People were bound to stay at their homes. According to the UN 1.2billion learners or 68% of the total students enrolled have been affected by academicclosures (The United Nations, 2020).The government of India announced complete lockdown on 24 March 2020. We know that this month is month of board examinations followed by admissions and everything was halted. Educational institutes were physically closed for a longer duration but during this hard time we have also learnt few good lessons, we have explored the unexplored. After the initial shock and hitch, the academic institutes were forced to move online to ensure continuity in academic activities. Covid-19 Pandemichas replaced chalkboards to smartboards with the use of technology in the field of education.

We all have witnessed major changes in the field of education in last two years. Covid-19 pandemic has given us some unforgettable memories. It has affected every phase of our life viz economic, social, political etc. Our education system has also been affected from this pandemic a lot.As we progressed to the pandemic period, new ways of teaching & learning came to our notice. Some of them were in use some parts of the world in one or another way but they have taken a different shape during this pandemic. They were in the reach of masses. There were enough learning situations for all the stakeholders of education. A major contribution of the pandemic was changing the attitude of people from negative to positive towards the use of technology in the field of education,

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otherwiseIt might be a daunting task for any organisation. As all were forced to use it initial stage of COVID pandemic and with the passage of time and more and more use, they were able to recognise the positive points of ICT tools in the field of education. Teachers and students tried their hands on technology tools like Active presenter, Camtasia, VSDC, Open shot video editor, Presentation tube, Screen recorder, AZ–screen recorder, X-Recorder, Screencast-o-Matic, Screencastify for preparation of video content. They tried to used animation tools like Powtoon, Raw Shorts, Plotagon, Prezi, Animaker to make their video more interesting. They have taken online classes by using Google Meet, Cisco Webex, Zoom, Big Blue Button-Module etc. Some of the organisation and individual hosted content on learning management systems like zillearn, wikieducator, mookit, canvas and moodle for better organisation of teaching learning and assessment. So, all above key terms and many more ICT tools were become a part and parcel of every educational institution. Online course on international platforms, interactions with national and international speakers, organisation of many faculty development programs were conducted. All these tasks were not possible during the normal scenario. The government of India might have taken more than 5-10 years and expenditure of crores of rupees for training on all these ICT tools which covid19 has done within one year with nominal. All these are positive points of COVID-19 pandemic. This capacity enhancement and attitudinal change was much required in Indian education system from school to universities to reach near the objectives set by NEP 2020. Our New Education Policy (NEP 2020) is already in its implementation stage.New Education Policy proposes the revision and revamping of all aspects of the education structure, curriculum, pedagogy and including its regulation and governance. The Word 'technology' is coming again and again in many chapters/parts of NEP 2020, which clearly shows the role of ICT to transform Indian Education System. As, NEP-2020, from a birds-eye view, looks promising. It talks about focus on discovery, preparation, abstract thinking and multidisciplinary learning and that with technology redefining probably everything around us, the concept of education must also be revamped to meet the needs of the learners today. If the government is able to implement most of the recommendations, the future will belong to India. Online Education is going to make a big contribution in achieving 50% Gross Enrolment Ratio in higher education by 2035 and bring variety in educational courses across all the levels of education in India. Our government is supporting online education in India because of its potential to improve education quality and reach through the Digital India initiative.Nearly 2000 online courses are offered through Swayam and approximately 150 million students across the globe are enrolled in different courses.

All these are looking promising aspect of use of hardware and software technologies intensively in the teaching learning process but we can't ignore the other side of the story. We need to assess the difficulties and hardships of a large part of population in India, who are still missing the basic necessities. Online education is a distance dream for them under the present scenario. As per the report of World Economic Forum, only 15 percent of the households have access to the Internet, and mobile broadband remains accessible to very few i.e. only 5.5 subscriptions for every 100 people. Are we moving towards digital divide among our population, 'have' and 'have not' classes? we need to think about it. Our Indian educations aims at harmonious development of the child and man and the over dosage of ICT enabled courses and teaching learning practices will not be able to achieve this aim. Over using of smart devices has long lasting effects on mental and physical health of teachers and students. Privacy issues in Indian society can't be ignored in the online teaching learning practices. Distraction of adolescents or adults is another issue while using technology enabled

environment. A large part of our population likes to use their mother tongue as medium of instructions up to the higher education level but lack of available resources will really hamper their achievement in comparison to others. India is a diverse country having different geographical diversities and it would not be possible to provide same quality of online education to the students sitting in a metro city and a student in remote areas where basic infrastructure is missing till now. We have witnessed that during the Covid-19 pandemic, a family with a single mobile at home was facing difficulties to cater the needs of two or more school going children. They were not able to attend zoom classes, complete their assigned work on time. These scenarios are raising many questions on equal opportunities to access quality content of online education to all the students. The value system, ethics which are integral part of Indian education system, which are really missing in most of the online activities of teaching and learning through ICT dependent environments. Social interactions are disappearing with the passage of time as we are promoting mobiles in the hands of each student. Incorporating online education in the general education system isn't an easy task, with the new set of rules comes many challenges. Practical learning is another challenge in online classes. All these are just a sample of the challenges all the stakeholders are facing now a days and we have to find an appropriate way to tackle these problems.

Conclusion

It would be a big claim that online teaching learning is the new way in years to comebut it seems to be happening in India. The best wayis to use it judiciously as and where required, use it as complement to routine classroom teaching not as replacement to the classroom teaching but we need to admit that wave is so fast, it would be a daunting task to stop it. The online education market in India is poised to grow by $2.28 bn during 2022-2026 progressing at a CAGR of 19.50% during the forecast period. A lot or research is taking place and many more studies need to be conducted to understand the pros and cons of online education especially after the covid pandemic. In this open market of education in the world, many institutions and faculty of these institutions might be finding very difficult to remain relevant in next one decade. Its really challenging task ahead to match the pace with world class institutions at national and international level who are going to set up educational institution in different part of India. Let's see what is in the lap of future for all of us and generations to come.

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PSYCHOLOGICAL AND SOCIAL-EMOTIONAL IMPACT OF COVID-19 ON EDUCATIONAL COMMUNITY

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Abstract

The Covid-19 pandemic led to a prolonged exposure to stress. Therefore, researchers showed an increased interest in measuring social and community uneasiness to psychologically support the population. This increased attention might help in managing the current situation and other epidemics and pandemics. The security measures adopted in managing the pandemic had different consequences on individuals, according to the social role invested. Some segments of the population are more exposed to the risk of anxious, depressive, and post-traumatic symptoms because they are more sensitive to stress. The following article has two focuses of interest: (1) the evaluation of the psychological and social effects of the pandemic on the population, mostly children, college students, and health professionals. (2) the identification of new perspectives of intervention based on digital devices and in line with the social security measures and mental health promotion.

Keywords: *Psychological impact, Socio-Economic Consequences, Stigmatization*

The COVID-19 pandemic has caused unexpected and philosophical changes around the world. This is the worst shock to education systems in decades, with the longest school closures combined with a looming recession. It sets back progress made on global development goals, particularly those focused on education. The economic crises within countries and globally likely leads to fiscal austerity, increases in poverty, and less resources available for investments in public services from domestic expenditure and development aid. All of this leads to a crisis in human development that continues long after disease transmission has ended. Coronavirus disease (COVID-19) pandemic has unfolded a tsunami of challenges for humankind over the past months. Although this has generated a global collaboration to control the pandemic situation and altered every individual by influencing family subtleties. Many families are experiencing a continuing, persistent sense of loss like loss of social networks, jobs, financial security, and threatened loss of loved ones due to pandemic situations. This has influenced the quality of relationships among parents, children, and siblings as well as society. It poses a significant risk for the adjustment of more than 37 crore children from the age from 0 years to 14 years in India, given their dependence on positive family processes for a host of developmental outcomes.

The COVID-19 pandemic crisis has affected societies and economies around the whole world and will permanently reshape our world. While the consequence from the crisis is both strengthening acquainted risks and creating new aspects, change at this scale also creates new openings for

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handling universal experiments, and ways to build a strong base in a better way. According to UNESCO (2020), there are many harmful effects of school closures for coronavirus are as follows:

1. **Interrupted learning**: School provides essential learning to the students and when schools are closed due to pandemic, students are deprived to avail opportunities for their growth and development.

2. **Unhealthy Nutrition:** Many individuals believe in free or discounted meals provided at schools for food and healthy nutrition. This is compromised by the students because of school closures for coronavirus.

3. **Unequal Access to digital learning portals:** There is lack of access to technology or good internet connectivity for continued learning during school closures.

4. **Increased pressure on schools**: Localized school closures place burdens on schools as parents tend to redirect their children to open schools.

5. **Social Segregation:** Considering the fact that educational institutions are centres for social activity and human interactions but due to school closures, students can be deprived from social communications and socializations that are essential to learning, development and creativity.

Post Covid-19 Impact on Lifestyle

For a post-Covid lifestyle, we must be adjustable enough to strike a balance between optimism and pessimism. Everyone thinks that it takes a long time to return to normal life, but there is a catch here. Life is relational to the time, there wasn't and there will never be such a return where the life you lived in the past will return. Our lifestyle defines our definition of life and circumstances define our lifestyle. Social distractions from the pandemic situation and changes in gender norms that define our new 'normal' have generated heightened levels of psychological distress, impacting the quality of relationships among parents and children. The pandemic conveyed a complex range of challenges which had mental health consequences for everyone, including children and adolescents. Grief, fear, hesitation, social isolation, increased screen time, and parental exhaustion have negatively affected the mental health of children. In this pandemic time, friendships and family support are strong stabilizing forces for children, but the COVID-19 pandemic has also disrupted them.

The mental health of millions of children worldwide has been affected, with at least one in seven forced to remain at home under nationwide public health orders or recommendations during the pandemic. In March 2020, schools across India were shut down to curb the transmission of COVID-19. Children have been at home for longer periods of time due to pandemics than ever before in recent memory. Closing of schools, lack of extra-curricular and outdoor activities, changed eating and sleeping habits, lack of peer-time have fostered boredom, sorrow, annoyance, and diverse neuro-psychiatric symptoms. Although home should be the safest place for a child but sexual, psychological, and physical abuse has shown a significant rise during this period.

This has spread-out an incomparable global mental health problem and it presents a unique encounter to psychological resilience across the world. This may soon lead to an outbreak of a 'second pandemic' of mental health crises all over the world. Children of single parents, including medical professionals taking care of COVID-19 patients, are likely to suffer from adjustment difficulties if their parents get quarantined. In addition, transient or prolonged parent-child separation may lead to significant psychosocial impact.

It is very difficult for parents to calm their children's anxieties levels because of the uncertainty and stress in their own lives in this situation. The occupational or emotional challenges faced by the parents is interfering with their usual ability to address their children's needs and worries. These are a number of questions that arise in the mind of the parents like When will the school reopen for students? When can they go out and play with their playmates? When can they visit their favourite places without any fear? children are also worrying about it.

It is not common for children to experience negative emotions like fear, disappointment, sadness, anxiety, anger etc. But it is the sustained, obstructive, and pervasive nature of the COVID-19 pandemic that has impaired the situation. Increased screen time, strained family relations or deskbound lifestyle at home pose additional challenges. Moderate symptoms of anxiety, such as difficulty in sleeping or concentrating, have become common. But children are very resilient, and most of them manage to cope with parents and peers' support in this situation.

So, some children are at more risk of developing severe reactions which including anxiety, depression, and suicidal tendencies. Any pre-existing mental health problem, past traumatic experiences, family instability, or losing a loved one can make children highly vulnerable to developing severe mental health conditions in this way.

The pandemic is affecting diverse groups in specific ways

- **Women:** Studies showed that many women suffering from anxiety and depression during this pandemic this may be due to facing the problems of brunt of increased household responsibilities and domestic violence during this lockdown.
- **Children:** It was found that more than 50 percent of children had experienced anxiety during the lockdown. Reports showed that they may be experiencing fears about the virus, over access to online classes, and stress and irritability from being unable to go out from home. Many students have faced violence in their homes from family members or have been victims of cyberbullying while using the internet.
- **Young people:** Youth aged from 18-32 years felt lonely during the lockdown and suffer their mental health had been 'strongly impacted' by this pandemic. This pandemic affects the students by the closing of educational institutions, and the postponement of exams.
- **Migrant workers and daily wage labourers:** Migrant workers, also lost their livelihood and made desperate attempts to return to their rural homes. Daily wage laborers have also been heavily affected due to this situation.
- **Doctors and frontline workers:** Doctors also experiencing depression and anxiety due to the pandemic. Frontline workers are burdened by over-work, and anxious about contracting the virus due to this situation.
- **People with pre-existing mental health conditions:** People with pre-existing mental health conditions are also worried about this situation. Problems may also have worsened for the individuals because of the disturbance of mental health services and the difficulty of travel from one place to other, which led to people reducing doses of prescribed medication level.
- **People with substance use disorders:** In this pandemic situation, the sudden closure of all liquor shops in the country and the cutting off drug supplies has resulted in withdrawal symptoms in many people who are using these substance, for example seizures. Many alcohol 'addicts' distressed by their craving may also be consumed poisonous substances such as hand sanitizers

as substitutes leads to died, or died by suicide.

Impact on Children and Teens

Children, away from their school, friends, and colleagues due to lockdown staying at home can have many questions about the outbreak and they look toward their parents or caregivers to get the answer about their questions. Children can experience anxiety, distress, social isolation, and a negative environment that can have harmful effects on their mental health. Some common effects of this situation in children's behavior can be:

- Unnecessary crying and irritating behavior
- Increased unhappiness, sadness, or worry
- Difficulties with meditation and thoughtfulness
- Changes or avoiding the activities that they enjoyed in the past
- Unpredicted headaches and pain throughout their bodies
- Changes in their eating habits

To help offset negative behaviors, requires parents to remain calm, deal with the situation wisely, and answer all the child's questions to the best of their abilities. Parents can spare some quality time to talk to their children about the situation and share some positive facts, figures, and information. Parents can help to assure them that they are safe at home and encourage them to engage in some healthy activities at home that include indoor sports and some physical and mental exercises. Parents can also prepare schedules that can help their children to keep up with their studies as well as fun related activities. Parents should try to show less stress or anxiety at their home so that children perceive less stress and feel positive energy from their parents. The positive involvement of parents in healthy activities with their children at home can help to reduce stress and anxiety levels among students and bring relief to the overall situation in the home environment.

Impact on Elders and People with Disabilities

Elderly people are more affected by the COVID 19 outbreak by clinical and social reasons such as having a weaker immune system or some other underlying health issues and moreover they have distanced themselves from their families and friends due to their busy schedules. People aged 60 or above are more likely to get this virus and can develop a serious and life threatening condition even if they are in good health conditions.

Physical distancing due to the COVID 19 outbreak can have drastic negative effects on the mental health of the elderly and disabled individuals. Physical isolation at home among family members can put the elderly and disabled person at serious mental health risk. It causes anxiety, distress, and induces a traumatic situation for them. Elderly people depend on young ones for their daily needs, and self isolation can critically damage a family system. The elderly and disabled people living in nursing homes face extreme mental health issues. However, something as simple as a phone call during the pandemic outbreak helps to console elderly people. COVID 19 also results in increased stress, anxiety, and depression among elderly people already dealing with mental health issues.

Family members may witness any of the following changes to the behavior of older relatives.

- Frustrating and yelling behavior
- Change in their sleeping and eating habits
- Emotional outbreaks

The World Health Organization suggests that family members should regularly check on older people living within their homes and at nursing facilities. Younger family members should take some time to talk to older members of the family and become involved in some of their daily routines if possible.

Impact on Health Workers

Doctors, nurses, and paramedics working as a front line force to fight the COVID 19 outbreak may be more susceptible to developing mental health symptoms. Fear of a disease, long working hours in workplace, unavailability of protective gear and supplies for pandemic situation, patient load in the hospitals, non availability of effective COVID 19 medication, death of their colleagues after exposure to COVID 19, social distancing and isolation from their family and friends due to this situation, and the situation of their patients may take a negative effects on mental health of health workers. The working efficiency of health professionals may decrease gradually due to the pandemic. Health workers should take short breaks between their working hours for workplaces and deal with the situation calmly and patiently and set in a relaxed manner for a short interval of time.

Stigmatization

Generally, people recently released from quarantine experience stigmatization and develop a mix of emotions. Everyone feels differently and has a different welcome by society when they come out of quarantine. People who recently recovered need to follow social distance from their family members, friends, and dear ones to ensure their family's safety because of the unprecedented virus in nature. Different age groups respond to this social behavior differently, which have both short and long term effects.

Health workers that are trying to save lives and protect society may also experience social distancing, lots of changes in the behavior of family members towards them, and stigmatization for being suspected of carrying COVID 19 pandemic. Previously infected individuals and health professionals may develop sadness and frustration because their friends or loved ones may have unfounded fears of contracting the disease from contact with them.

Suggestions

However, the current situation requires a clear understanding of the effects of the recent outbreak on the mental health of people of different age groups in the society to prevent and avoid the COVID 19 pandemic. There are some suggestion that needs to follows:

- **Primary prevention-** Try to reduce symptoms related to stress by providing specific online psychological counseling based on the target population as students, medical staff, parents, and teachers.
- **Secondary prevention***:* Try to overcoming the limitations of the human interaction based on digital devices:
  1. Developing new environment for inter and intra social communication and new tools for psychological treatment, reproducing the multisensory experience during the face-to-face interaction like Virtual Reality, holograms.
  2. Training the next generation regarding psychotherapists in managing online devices and their adaptation to develop personal skills.

- Studying human interaction mediated by modern technologies and the role of empathy, associating neuroscience, sociology, and psychology.
- Parents are facing daily challenges with the realities of COVID 19 like social distancing and self-quarantine. For parents, the best way to help their children is to firstly take care of them.
- Self-care during these days is not considered as selfish because it enables the caregivers for their children as a stable, calm, and soothing parent. This way, parents will also be able to understand their children and help them accordingly to feel reassured, relaxed, and focused.
- It is important to be calm and proactive in your talks with children to check to see how they are doing. Their emotions will change regularly, and parents need to show them that they are okay.
- Whether at school or at home, caretakers can engage children in creative activities like playing and drawing that will help them to express and communicate any negative feelings. They may be experiencing a safe and supportive environment at school or at home. This helps children to find positive ways to express difficult feelings such as anger, fear, or sadness in a positive manner.
- As children often take their emotional cues from the key adults in their lives that include their parents and teachers, it is important that adults manage their own emotions in a well mannered way and remain calm and try to listen to children's concerns, speak kindly with their children, and assure them.
- Mental health problems can disrupt children's functioning at home, school and in the community. Parents and teachers should be fully equipped to detect the problem and deal with early signs of mental health problems among children as early as possible as they are the first to notice changes in a child's emotions or behavior.
- Children and adolescents should also be encouraged to talk about their feelings with their elders and try to reach out to a trusted friend or family member. Early intervention can prevent long term mental health consequences from this pandemic.
- In these challenging times, try to create an environment of positivity at home as well as school so that children feel happy and relaxed in these places.

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IMPACT OF COVID-19 ON INDIAN EDUCATION SYSTEM

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Abstract

The World Health Organisation (WHO) declared the corona virus disease 2019 (emerged from Wuhan, China), a pandemic when it expanded globally. State governments across the country began shutting down schools and colleges temporarily as a measure to control the spread of this novel coronavirus. It has affected all the aspects of human life across the world including the educational system of each country. It has enforced the world wide lock down creating a very bad effect on the students' life. There is an impact on the continuity of learning for more than 285 million young learners in India. This is a crucial time for the education sector—board examinations, school/college admissions, entrance tests of various universities and competitive examinations, among others, are all held during this period. This paper highlights some measures taken by the Govt. of India to provide seamless education in the country. Both the positive and negative impacts of COVID- 19 on education have been discussed and some fruitful suggestions are also pointed to carry out educational activities during the pandemic situation.

Keywords: Covid-19, Pandemic, Favourable and unfavourable Impacts

Introduction

Covid-19 affected badly the whole system of school/college and university education i.e. teaching-learning, examination, admissions, entrance tests, competitive exams etc. Not only it has affected the education system but also the whole socio- economic system of the globe. Due to the advancement of science and technology, the world has been shrieking and we all are interconnected to each other. The COVID-19 pandemic is not confined to the national borders. It has affected many people in concern with nationality, level of education, income or gender. This has many true consequences, which have hit the most susceptible hardest. This crisis has exposed the many inequities in our education systems from access to the broadband and computers that are needed for online education and the supportive environments needed to focus on learning, up to the misalignment between resources and needs. Education is no exception. Students from privileged backgrounds, supported by their parents, are eager to learn and find alternative learning opportunities. These disadvantaged backgrounds often remained shut out when their schools shut down in every sphere. The lockdowns due to COVID-19 have interrupted traditional schooling with a nationwide school closures system.

The educational community has made the possible efforts to maintain learning continuity during this period. The teachers and the students had to adapt to new pedagogical concepts and modes of delivery of teaching, for which they may not have been trained. In particular, learners in the most marginalized groups, who don't have access to digital learning resources or lack the engagement to

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learn on their own, are at risk of falling behind.

The COVID-19 pandemic had a severe influence on higher education as universities closed their premises and all the countries shut down their borders in response to lockdown measures in india. Although higher education institutions were very quick to replace face-to-face lectures with online learning. These closures affected students' learning and examinations as well as mostly the safety and legal status of international students in their host country at that time. The main crisis raises about the value offered by a university education which includes networking and social opportunities as well as educational content in these universities. A number of steps can be taken to manage the risks and trade-offs , including physical distancing measures, establishing hygiene protocols, revising personnel and attendance policies in this context and investing in staff training on online on appropriate measures to cope with the virus.

Preventive measures by Government of India on education during COVID-19

During the pandemic COVID-19, the government of India has taken a number of preventive measures. The government declared a countrywide lockdown of all educational institutions on 16 March 2020 due to the pandemic situation. The Central Board of Secondary Education postponed all examinations of secondary and higher secondary schools on March 18, 2020 throughout India. CBSE released preventive guidelines for examination centres to conduct examinations by maintaining a distance of at least one meter between the students taking the examination with a class not more than 24 students in one group.

The Union Public Service Commission (UPSC) postponed the interview for the Civil Services Examination 2019. The state governments and other educational boards postponed examinations due to the outbreak of COVID-19. Government of India observed one day nationwide Janta-curfew on March 22 and implemented lockdown from March 25, 2020 onwards in different phases. Lockdown period is being extended from time to time adopting different strategies to fight with the pandemic but educational institutions remain closed continuously. Almost all state government ministries are making efforts to ensure that the academic activities of schools and colleges do not hamper during the lockdown period. The lockdown has accelerated adoption of digital technology and the government found online learning as the best solution during this pandemic Covid-19 situation.

So, the digital India vision of the government is emerging as an important tool for solving the present crisis of Covid-19 pandemic. It is a view that technology-based education is more transparent with all aspects. The Ministry of Human Resource Development has also made several arrangements such as online portals and educational channels through Direct to Home TV, Radios for students to continue their learning. During this lockdown, students are using some social media tools like Whatsapp, Zoom, Google meet, Telegram, Youtube live, Facebook live etc. for online teaching learning systems. The ICT initiative of MHRD is a unique platform which combines all digital resources for online education. Following are the digital initiatives of MHRD during COVID-19

1.   **Diksha portal:** It includes e-Learning content for students, teachers and parents aligned to the curriculum, including video lessons, worksheets, textbooks and assessments. The app is available to use offline. It has more than 80,000 e-Books for classes 1 to 12 created by CBSE, NCERT in multiple languages.

2.   **e- Pathshala:** It is an e-Learning app by NCERT for classes 1 to 12 and houses books, videos, audio, etc. aiming at students, educators and parents in multiple languages including Hindi,

Urdu, and English. In this web portal 1886 audios, 2000 videos, 696 e-Books and 504 Flip Books for classes 1 to 12 are deployed in different languages.

3.   NROER: National Repository of Open Educational Resources (NROER) portal provides a host of resources for students and teachers in multiple languages including books, interactive modules and videos including a host of STEM-based games. Content is mapped to the curriculum for classes 1-12, including aligned resources for teachers in different languages.

4.   Swayam: It is the national online education platform hosting 1900 courses covering both school (classes 9 to 12) and higher education (undergraduate, post graduate programs) in all subjects including engineering, humanities and social sciences, law and management courses. The unique feature is that it is integrated with conventional education. Website: https://swayam.gov.in/

5.   Swayam Prabha: It has 32 DTH TV channels transmitting educational contents and are available for watching the whole country using Free Dish Set Top Box with Antenna. The channels cover both school education) and higher education (undergraduate, postgraduate, engineering Out-of-school children, vocational courses and teacher training) in arts, science, commerce, performing arts, social sciences and humanities subjects, engineering, technology, law, medicine, agriculture. Website: https://swayamprabha.gov.in/

6.   e-PG Pathshala: It is for postgraduate students who can access this platform for e-books, online courses and study materials during this lockdown period. The students can access these facilities without having the internet for the whole day. Website: https://epgp.inflibnet.ac.in/

Favourable impact of COVID-19 on education

Over the past few years, e-learning has suffered from an uptick due to ubiquitous internet connectivity all over India, special in rural areas. During COVID-19 crisis e-learning has become the need of the hour to sustain teaching-learning in school and colleges. There is time to learn new strategies/methods to teach the students which were not compulsory before this crisis. It is a new opportunity for teachers, learners as well as for the parents. e-learning removes geographical barriers and ensures equitable access to education to all spheres of peoples. In fact, e-learning has become a viable solution at the moment to fill the void created due to the absence of classroom learning. As we know online education cannot replace classroom education due to the face to face interactions. It can be considered as an effective supplement to the brick-and-mortar model of education. This will encourage the discouraged way of learning. So this e-learning platform has proved a boon for urban areas. New technologies like Artificial Intelligence, Machine Learning and Virtual Reality among others can be instrumental in bridging the crucial gaps between traditional as well as online learning. The ongoing crisis has given an opportunity to rethink the deep-rooted classroom mode of education in a new way and understand the significance of online learning in the present condition. It has been a great motivator as it has enabled various stakeholders to collaborate and assess the gaps and various shortcomings in the conventional model of teaching. The COVID-19 pandemic may be just the turning point for reform of the Indian education system.

Unfavourable impact of COVID-19 on education

There are various areas of potential risks for global education all over the world. Here are some negative impacts of Covid-19 on education:

1.   No cross-border movement of students: Universities in many countries like New

Zealand, Australia, UK and Canada are highly dependent on the movement of students moving from China and India. Many parents will not send their children abroad for higher education due to high risk from the pandemic.

    2.   Learning without planning: The sudden shift to online learning without any planning especially in countries like India where the backbone for online learning was not ready to work at the base level and the curriculum was not designed for that context. This online platform has created the risk of most of the students becoming passive learners due to this pandemic and they seem to be losing interest due to low levels of attention span in their studies.

    3.   No preparation for online education: Online learning is a special kind of methodology. All teachers are not familiar with this kind of online education or all of them were not ready for this sudden transition from face to face learning to online learning. Therefore most of the teachers are just familiar with conducting lectures on video platforms such as Zoom that is not real online learning because of this kind of teaching in the absence of a dedicated online platform specifically designed for the purpose.

    4.   Major risk in student recruitment: Universities and colleges worldwide are facing a major risk in the area of student recruitment and retention. The risk of losing students is very high that they will need to rethink their admission practices, admission criteria and the overall recruitment process again which will include new methods of outreach and application process itself.

    5.   No proper examination: The ways by which exams are conducted like open book exam, descriptive tests from home are neither relevant nor appropriate as per the requirement of the purpose of the exams. It is not easy to evaluate the performance of the students.

Suggestions

There are several actions and requirements that should be reviewed and put in place to prevent the introduction and spread of COVID-19 in schools and into the community and to ensure the safety of children and school staff while at school. Special provisions should be considered for early childhood development, higher learning institutions, residential schools or specialized institutions.

- There should be developed creative strategies ensuring that all children must have sustainable access to learning during pandemic COVID-19.
- Establishment of quality assurance mechanisms and quality benchmarks for online learning programmes must be developed and offered by Higher Education Institutions (HEIs) in India keeping in view of rapid growth of the online learning platforms.
- Across the globe, Indian traditional knowledge is well known for its scientific innovations, values and benefits to develop sustainable technologies and medicines and this knowledge systems in different fields should be integrated with a present-day mainstream higher education system.
- Govt and educational institutes should plan to continue the educational activities maintaining social distancing. 30-40% students and teachers may attend schools/colleges in two shifts per day to carry on educational activities by obeying guidelines for COVID-19.
- There is a need to organize public funds to fix the internet gap in various sectors of education and ensure that students continue to learn digitally. The state governments/ private organisations should come up with ideas to address this issue of digital education.
- The need for safe spaces for learning, creating more capabilities for teachers, motivating

families and students to operate and navigate digital devices, and engaging lesson plans for disabled students in a more motivating way and other marginalized groups should be addressed by Govt.

Conclusion

COVID-19 has impacted immensely on the education sector of India. The education system has explored the possibility of open and distance learning by adopting different digital technologies to cope up with the present crisis of COVID-19 pandemic situation. There is an urgent need to take more and more efforts on maximum utilisation of online platforms for learning so that students complete their degree in this academic year as well as to get ready for the future digital oriented environment. The concept of work from home has greater importance in such a pandemic situation to reduce spread of COVID-19 in various areas. In this way India should develop a creative environment to ensure that all children must have sustainable access to learning during and post pandemic COVID-19.

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IMPACT OF COVID-19 ON EDUCATION SYSTEM

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Abstract

The outbreak of COVID in late December 2019, had wreaked havoc across the world and like any critical sector, education had been hit hard. The COVID pandemic in late December 2019 caused devastation around the world and education, like any other essential industry, was heavily damaged. Students, schools, colleges, and universities have all suffered significantly. The COVID-19 pandemic has crossed national boundaries. It had afflicted people of all nationalities, levels of education, income, and gender. However, the same cannot be said for its repercussions, which have disproportionately impacted the most vulnerable. Education was no different. Students from privileged circumstances who were encouraged by their parents and hungry to learn were able to make their way beyond closed school doors to alternative learning possibilities. Those from poor backgrounds were frequently shut out when their schools closed. This crisis had highlighted several shortcomings and injustices in the system. Schools were shut down during the lockdown time as a result of the pandemic and students and teachers switched to online teaching and learning. Around 250 million pupils in India were impacted by the shutdown of schools at the start of the lockdown brought on by COVID-19. The pandemic presented both public and private schools with a number of difficulties, including an increase in dropouts, learning losses, and the digital divide. The pandemic also raised concerns about the systems' readiness, notably teachers', to deal with such a crisis and sustainability of private schools. However, COVID-19 also acted as a catalyst for digital adoption in school education. With schools reopening in many areas, it was critical that a thoughtful strategy be implemented to ease return of children's to school after more than 15 months of home-based learning. This shift must take into account the previous year's learning losses as well as take a forward-thinking strategy to construct a resilient system that can survive any future shocks. This paper highlight the impact of COVID-19 on the education system and also discusses the pedagogy for continuing education online and also talked about the Challenges and opportunities in Teaching and Learning

Keywords- *Online teaching, Challenges and opportunities in Teaching and Learning*

Introduction

The global outbreak of the COVID-19 pandemic had affected nearly all countries and territories. The pandemic was initially discovered in Wuhan, China, in December 2019. Countries all throughout the world warned the public to be cautious. Washing hands, using face masks, physical distance, avoiding mass gatherings and assemblies have been among the public care tactics. Lockdown and stay-at-home techniques had been implemented as the necessary measure to flatten the curve and control disease spread. Bhutan was the first to announce the closure of schools and institutions as well as a reduction in business hours in the second week of March 2020. Indian announce the

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nationwide lockdown in March 2020. In the interim, the movement was permitted, offices reopened, and schools and colleges reopened for selected levels and continued with online classes for others. Numerous colleges, universities, and schools had stopped offering in-person instruction. Innovative and new instructional and assessment approaches must be used immediately. It was the chance to introduce digital learning as a result of the COVID 19 pandemic. The information gap, the unfavourable environment for learning at home, equity, and academic excellence in higher education are just a few of the deficiencies that research had highlighted. Other deficiencies include the weak infrastructure for online teaching, the limited exposure of teachers to online teaching and the lack of online teaching experience. This article assesses the COVID-19 pandemic's influence on the teaching and learning processes across the world. The challenges and opportunities of online and continuing education during the COVID-19 pandemic is summarized and a way forward is suggested.

Pedagogy for Continuing Education through Online

Schools, training centres and higher education institutions had been forced to close in the majority of countries as a result of lockdown and social isolation measures brought on by the COVID-19 pandemic. The way educators deliver high-quality instruction—through a variety of online platforms has undergone a paradigm shift. Despite the difficulties faced by both teachers and students, online learning, distant learning, and continuing education had emerged as a cure-all for this unprecedented worldwide pandemic. Both learners and teachers may experience a completely different learning environment when switching from traditional face-to-face learning to online learning yet they are forced to adjust because there are few or no other options. E-learning tools have played a crucial role during this pandemic helping schools and universities facilitate student learning during the closure of universities and schools.

The education system and the educators had adopted "Education in Emergency" through various online platforms and were forced to adopt a system for which they were not prepared. Staff and student preparation must be assessed during the transition to the new changes and supported appropriately.

While students who had a growth mentality readily adapted to a new learning environment, students who had a fixed mindset found it challenging to adapt and modify. For online learning, there was no single pedagogy that worked for everyone. There were numerous topics with various requirements. Different ways of online learning are necessary for different disciplines and age groups. Online education also gave students who were physically limited more opportunity to engage in learning in a virtual setting with little physical activity required. The ideal methods for homeschooling children online had not yet been determined. The use of appropriate and pertinent pedagogy for online education may depend on the knowledge and experience both instructors and students have with information and communications technology (ICT). Unified communication and collaboration tools like Microsoft Teams, Google Classroom, Canvas, and Blackboard are a few of the online platforms currently in use. These tools let teachers design training courses and programmes for skill development. They offer features like office chat, video meetings and file storage to make classes structured and simple to work in.

They typically enable the exchange of a wide range of content, including Word, PDF, Excel files, audio, and videos. Using quizzes and the evaluation of submitted tasks using a rubric, also enable the tracking of student learning and assessment. The flipped classroom was a straightforward

method for distributing learning materials before a class, such as articles, pre-recorded films, and YouTube links. The following step in the online classroom process is to use the interaction with peers and professors to further understanding. The development of abilities like problem-solving, critical thinking, and self-directed learning could be encouraged very effectively in this way. The adoption of configurable cloud-based learning management systems like Elias, Moodle, Big BlueButton, and Skype as well as video conferencing tools like Google Hangouts Meet, Zoom, Slack, Cisco, and WebEx is growing.

Challenges in Teaching and Learning

There are so many platforms and online learning resources available, that both educators and students frequently run into problems when using or referring to these resources. The following is a summary of some of the issues that numerous researchers have noticed and raised: Accessibility, affordability, flexibility, learning methodology, lifelong learning, and educational policy are all generally acknowledged as issues with e-learning. Access to digital gadgets and a stable Internet connection are major problems in many nations. While economically disadvantaged children in many developing nations are unable to buy online learning gadgets, the risk of increasing screen time for the learner exists with online education. It is now crucial for students to participate in offline activities and self-directed learning.

Another issue is a lack of parental supervision, especially for younger students because both parents are employed. There are practical concerns with regard to physical workstations supportive of various learning styles. In contrast to pupils who are weak learners, the vulnerable group of students is relatively unaffected by their learning since they require little monitoring and direction. Some academically gifted students from underprivileged backgrounds are unable to access or finance online education.

Due to the decreased contact hours for students and the lack of instructor advice when encountering learning/understanding challenges, the level of academic performance of the students is expected to decline for the classes held for both the year-end examination and the internal assessment. Online tests are used to evaluate students, and this involves a lot of trial and error, uncertainty and confusion among teachers, students, and parents. The method used to administer online exams differs depending on the comfort, knowledge and compatibility of the instructors and students. Due to the high student population, appropriate procedures to check for plagiarism have not yet been implemented in many schools and institutions.

A levels were canceled for the entire cohort in the UK due to the lockdown of schools and institutions in addition to internal assessments and exams for important public certifications like the General Certificate of Secondary Education (GCSE). The length of the lockdown determines if the exam assessment is postponed or canceled on its whole. Due to the COVID-19 pandemic and nationwide lockdown, numerous state-level board exams, recruitment exams, university-level exams, and entrance exams were postponed throughout India. There have also been a number of admission exams postponed or rescheduled, including BITSAT 2020, NATA 2020, CLAT 2020, MAT 2020, and ATMA 2020.

The ongoing situation has had a significant impact on the educational system in schools, colleges, and institutions all around the nation. Additionally, it's likely that the pauses will help certain students' careers. For instance, it has been determined that all Norwegian 10th graders would receive a high

school diploma. According to a French study, the 1968 student riots' abandonment of France's customary examination procedures had favourable long-term effects for the cohort it touched on the labour market. Beyond being enjoyable for the kids, school time helps them develop their social skills and awareness. When pupils are not in school, there are negative effects on their social, psychological, and economic well-being. As a result of taking a lot of these lessons online and spending more time on virtual platforms, youngsters are now more susceptible to online exploitation. Children are now spending more free time consuming potentially harmful and violent stuff online, which increases their chance of being bullied online. More families are relying on technology and digital solutions to keep kids interested in learning, entertained, and connected to the outside world as a result of school closures and rigorous containment measures, but not all kids have the knowledge, skills, or resources to stay safe online.

The bulk of students taking online courses in India come from remote regions where the parents are generally uneducated farmers. Students help parents with farm work, agriculture, caring for cattle, and other home duties. Some students even asked for the exam to be moved from the morning to the afternoon since they had to work in the fields in the morning. Some students mentioned that they had to visit hospitals and care for their sick parents, grandparents, or other family members. By the time they return home in the evening, it is challenging for them to stay up for the lessons. Lower-grade parents believe it would be preferable to let their kids repeat the course the following academic year.

In addition to having poor Internet connectivity, the majority of pupils do not have access to smartphones or televisions at home. Due to the closing of businesses and offices, a large population has no or little income. Continuous access to the Internet is an expensive business for the farming community, and the data package (costs) are considerable in comparison to the average revenue received. Most people recommend taking face-to-face classes online through video, however, some students, particularly those from economically poor backgrounds, have complained that doing so uses up more data. The teachers are struggling with who to listen to and what resources to use. Others believe prerecorded videos could help; however, this would restrict interactions. It was difficult to design a proper system to fit the learning needs and convenience of all students.

Opportunities for Teaching and Learning

The COVID-19 pandemic has provided a number of chances for the unprepared and the distant goals of establishing an e-learning system, despite the huge problems that have been faced by educators, schools, institutes, and the government about online education from many angles. More so than ever before, it has built a solid bond between educators and parents. Parents must assist their children in intellectual and financial learning while homeschooling. During this continuing disaster, children with disabilities require additional and particular support.

For the first time ever, continuing education is being done through the use of online platforms like Google Classroom, Zoom, virtual learning environments, social media, and numerous group forums like Telegram, Messenger. Even after face-to-face instruction resumes, this can be investigated further, and these platforms can offer the students more resources and coaching. Teachers must come up with innovative ideas to help get around the drawbacks of online learning. Locally, teachers are actively working together to enhance online teaching techniques. As instructors, parents, and children share similar experiences, there are unmatched chances for collaboration, innovative

solutions, and a readiness to learn from others and explore new methods. Many educational institutions provide their resources and answers without charge to assist and support teaching and learning in a more interactive and engaging environment. Online learning has provided the opportunity to teach and learn in innovative ways unlike the teaching and learning experiences in the normal classroom setting.

Conclusion

The impact of the COVID-19 pandemic on teaching and learning around the world has led to the conclusion that, despite the numerous studies that have been conducted, more research into appropriate pedagogy and platforms for different class levels of higher secondary, middle, and primary education is still needed. Because data packages are expensive compared to people's income in many developing nations and the internet capacity is relatively low with fewer connection points, it is insufficiently accessible and affordable. To change this, policy-level intervention is necessary. The use of good pedagogy for online teaching and learning needs more study and investigation. The COVID-19 pandemic has shown us that teachers and students/learners need to be trained on how to use a variety of online educational resources. Teachers and students should be encouraged to continue using such online tools to improve teaching and learning after the COVID-19 pandemic when regular classes begin.

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COVID-19 IMPACT ON KARNATAKA TOURISM

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Abstract

The COVID-19 pandemic has accessible unparalleled challenges for the tourism sector across the world. In the COVID-19 repercussion, health and safety of people is of major aspects for the Government. The tourism industry anticipated to resume operations over the coming months, it is necessary to follow certain protocols in place that can ensure hygiene and safety for all tourism stakeholders. As the tourism sector recovers, reconstruction trust and inspiring confidence will be key to ensure a successful restoration. The Department of Tourism, Government of Karnataka has drafted comprehensive protocols for hygiene and safety and to ensure attentiveness for the risks posed by COVID-19. The protocol delves into every aspect of hygiene and safety of a tourist's journey and also the safety and hygiene protocols which needs to be implemented by the tourism industry before reopening for business. In addition to creating a safe environment for tourists, the protocols also endeavour in preventing new cases, mitigating impacts, and make traceability easier if the future situation warrants so.

Keywords- *Covid-19, Karnataka Tourism, Guidelines of Tourism*

Introduction

As the world is facing an unprecedented global health emergency with the COVID-19 pandemic, the tourism sector is among the most affected sectors. Thus, it has become important for the Government to consider the health and safety of tourists. The government is taking necessary measures to ensure utmost safety and control the spread of coronavirus. The Department of Tourism, Karnataka has drafted a comprehensive guide with safety protocols that need to be implemented to ensure safe travel. These measures will create a safe environment for tourists to travel across the state. Additionally, with the execution of these protocols, the government is aiming towards the prevention of new cases and reducing the mass impact of the pandemic. The state is ready to rebuild trust and inspire confidence in the tourists to revive the tourism industry amidst the unrivaled global health and economic pandemic. With districts opening up, it is the duty of both the government and the citizens to take appropriate measures to prevent the pandemic

Guidelines for Tourists

- Clean your hands often
- Cover your mouth and nose while coughing/sneezing with a tissue/ handkerchief/flexed elbow and dispose of used tissues properly
- Limit social gatherings and time spent in crowded places

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● Clean and disinfect frequently touched objects and surfaces

Impact on Karnataka Tourism

The COVID-19 pandemic has presented unprecedented challenges for the tourism sector across the world. The current trend is any indication, frustration over being locked in for nearly two years and the impact of the devastating second wave of COVID-19 has led to a tourism boom in Karnataka. Starting this weekend, and well into the next, the Dasara holiday season has brought good tidings to stakeholders in the sector.

Jungle Lodges and Resorts (JLR), for example, is witnessing record occupancy rates, better than what was seen in the past 40 years. Senior officials said that since they reopened in July, the average occupancy has more than doubled from 20% to 50%. "During the weekends, we are almost full, so much so that it is almost impossible to get a room," an official said.

So what is fuelling this? "Safe destinations are in demand, especially ecotourism, and we have good destinations. September is a lean month, but we still had over 50% occupancy. In November, we expect this to go up further to 65% or 70%. Some properties are individually seeing 80% occupancy. And the peak season is December," said the official, pointing out that the demand was here to stay.

This is the common trend in government-owned properties, said Sindhu B. Rupesh, director of the Tourism Department. "Dasara is a simple affair this year. But the Karnataka State Tourism Development Corporation and JLR properties are booked. The demand is not just in Mysuru, but in other districts too. They are all generally full and people are really travelling," she said.

M. Ravi, founder member of Karnataka Tourism Society, said that with COVID-19 cases having come down considerably, people who were staying indoors have started venturing out. "They are clubbing their holiday with Dasara. While some are travelling to experience the festival, most are actually going out to other destinations. Homestays, guesthouses, resorts — they are all going full for the next weekend. This is a very good sign for the industry," he said.

Apart from the usual popular destinations such as Mysuru, Kodagu, and Chikkamagaluru, he said Gokarna, Dandeli, Karwar, Murdeshwar, and the coastal belt of Mangaluru and Udupi had also improved a lot. But not many people are venturing outside the state yet, especially to Kerala, he added.

However, he said that though taxis and other tourist vehicles were doing well, tourist buses were still suffering as no one wanted to go in a group yet. "Once corporate companies open again, this might change as they have group outings," he said.

The impact of the second wave of COVID 19 pandemic is continuing to make its presence felt on the tourism sector in some prime destinations as they continue to be under restrictions.

On August 30, Karnataka government withdrew weekend curfew in Belagavi, Bidar, Vijayapura, Kalaburagi, Mysuru and Chamarajanagara districts, but decided to continue with restrictions in Dakshina Kannada, Kodagu, Udupi and Hassan districts.

The tourism sector is questioning the move, asking why crowd control is being exercised specifically in some districts and not in others.

M. Ravi, joint secretary of Karnataka Tourism Society, offered an example. "On August 31, a group of 36 flew from Hyderabad in Telangana to Kannur airport in Kerala. They wanted to go to Kodagu. A bus picked them up, but it was stopped at the border checkpost and they were told they

can't enter Karnataka. All 36 had negative RT-PCR reports. They were allowed to resume their journey after an hour."

The first impact of such restrictions is on tourism, he added. Though Mysuru is no longer on the list, prolonged restrictions impacted the tourism business, he said. "People from Bengaluru and other cities had to pass through Mysuru, and many usually stopped over. Even that was not happening. Now Nandi Hills is also closed due to the landslide. The Tourism Minister is changed constantly, which is also a destabilizing factor," Mr. Ravi said.

B.R. Nagendra Prasad, President, Kodagu District Hotels, Resorts and Restaurants' Association, said theirs has become a 'neglected industry'.

"Even Kodagu politicians don't care. We protested asking for weekend curfew to be lifted, but to no avail. Tourists are heading to other destinations. They just want to travel, not necessarily to a particular place. So, many are heading to Chikkamagaluru instead of Kodagu. The economy is also down. From auto drivers to petty shops to hotels, there is no business," he said. The industry got some respite for a week-and-a-half when the blooming of Neelakurinji flowers in Kodagu district attracted visitors, he said, but added, "This did not benefit local lodges and hotels. Only high-end hotels benefitted as they have formulated schemes to attract people, such as perks of membership and free one-night stay. Many smaller hotels have not even opened, because it costs less to remain closed."

Tourism was one of the hardest-hit sectors in Karnataka last year, suffering estimated losses of Rs 5,000 crore every month during the pandemic-induced lockdown starting March 2020. The state government has mentioned this in its economic survey for 2020-21. "Industry stakeholders have estimated nearly Rs 5,000 crore of potential loss per month during the lockdown period due to the impact of Covid-19," it states. The disruption put at least 1 lakh jobs at risk, but tourist activities are now picking up, the government has noted.

As the government focused on battling Covid-19, initiatives to develop the tourism sector slowed down drastically last year. Only 154 out of 1,609 projects proposed for the fiscal were completed till December 2020. A tourism investment summit was suggested before the pandemic, but the plans remain on hold.

Recounting the efforts to ease the economic pain, the government said that Karnataka was the first state to prepare a Covid-19 exit strategy for the sector, helping it navigate evolving challenges. Tourism minister C P Yogeeshwar said that the industry was still reeling under losses, but things were slowly moving towards normalcy. "In another two to three months, the sector will bounce back," he added.

The performance of staterun Jungle Lodges and Resorts has raised hopes of a revival in the sector. According to government officials, once the Unlock phase kicked in, it started receiving large bookings. Last month, the booking level was at 85-90 percent. The Covid-19 pandemic has snatched away the livelihoods of 90% of those employed in the tourism sector, Karnataka Tourism minister CT Ravi said on Thursday Speaking on the occasion of having completed one year in office, Ravi estimated that 28-30 lakh people had lost jobs over the last five months. These include tourist operators, taxi drivers, hotels, tourist guides, those owning petty shops among others "These are temporary job losses. Once the industry recovers, they will be able to secure their jobs back," he assured.

However, the rate of revival in the tourism sector was slow, he observed. "While Jungle Lodges

have seen some improvement, KSTDC and private hotels have seen only 10 percent improvement in their revenues. There are still not many tourists as people are living in fear of the pandemic. We hope that the situation will improve in the coming months, " he said, adding that the estimated loss to Jungle Lodges was at Rs 1.5 crore to Rs 2 crore, while that of KSTDC was Rs 3 crore. He pointed out that the tourism sector mainly depended on private players, while the government's share of revenue in the sector was but a small percentage.

Further, the state government is in the process of developing a new Tourism Policy, with an ambition of increasing the number of tourists in the state by four times in the coming years. The draft of the new policy will be tabled in the next Assembly session for approval, the minister said. At least three lakh people, who directly and indirectly depend on the tourism sector for their livelihood, could lose their jobs due to the impact of the Covid-19 pandemic. The situation is so bad that the State Government is now stressing on survival of the sector rather than thinking about its revival, Tourism Minister C T Ravi told The New Indian Express. Experts and stakeholders too feel that it may take at least six months, or even more, to get back to normal.

CM B S Yediyurappa held a review meeting with the Tourism Department officials where he was told that the sector has faced losses of Rs 15,000 crore in the last three months and about three lakh people are in fear of losing jobs. The Karnataka State Tourism Development Corporation and the state-run Jungle Lodges and Resorts have suffered Rs 14 crore and Rs 15 crore losses, respectively in the last three months.

According to department officials, the sector contributed 15 per cent to the state's GDP in the 2019-20 fiscal. Minister Ravi told TNIE that there are at least 35 lakh people directly and indirectly employed in the tourism sector including in hotels, transport and other ventures. "With no business, employers are forced to lay off their staff," Ravi said. The government is now looking at how these businesses can survive for longer.

"Even if we offer large discounts on bookings for hotels or entry fee at tourist places to attract visitors, revival will not happen immediately. People do not want to step out and traveling will be their last priority. It could be months before normalcy returns. Until then, we need to look at the survival of businesses. We have to start somewhere. To begin with, we are telling people to visit local tourist spots. We cannot expect international or out-of-state tourists for now," he said. Tourism hubs like Mysuru, Hampi, Karwar, and Chikkamagaluru which usually see hordes of visitors in the summer months, have seen none in the last three months. Since last week, when the government relaxed lockdown norms and allowed tourist spots to reopen, very few tourists have visited these places. Ashok S J, former secretary of the Karnataka State Guides' Association, said there are only 800 licensed tourist guides across the state. "They depend on tourists for their earnings and since there are no visitors, they do not have any work. We have conveyed this to the authorities concerned, but nothing happened. Unlike farming and other sectors, tourism has been ignored," he added. Former Tourism Minister Priyank Kharge said the number of people who may lose their jobs is much more than what the government is estimating.

Conclusion

"It's a chain reaction. The government is stressing on local tourism, but who wants to see tourist spots which are in places where they reside? It is the time for the government to instill confidence among tourists for which they need to stress on measures taken and ensure that all

standing operating procedures are followed. They should come up with packages to take tourists to different places outside their place of residence by providing safety measures. The government should strategize", he suggested.

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FUTURE SCOPE OF ONLINE EDUCATION IN INDIA : IMPACT AND INTERFACE CHALLENGES

*Ms. Prativa Tiwari**

Abstract

Indian education system has been introduced to multifarious changes since its inception. Recently, the worst situations arising out of the lock downs and closures in the wake of COVID - 19 crisis have shown that the online system of education is the only option left to rely upon. Further, the New Education Policy 2020 too introduced changes in the entire education scenario with impetus on focussing online education. In fact, the critical times of the pandemic has made us to learn lessons and has enabled us to reorient our mental set to use technology which is playing crucial role in keeping the campus of life moving by bridging the gap of physical distance between the teacher and the taught through e-learning, M-learning, technological support and virtual reality. Efforts have also been laid to remove the barriers that hinder the speedy growth of this digitized design of online teaching and learning process. Many futuristic Educationists are of the view that this new phase of teaching and learning will definitely be highly flexible, interactive and individualized. The present paper makes a positive attempt to explore this new transformation in education and assume its future - perspective in the backdrop of the current Indian situation in incorporating online education.

Keywords: *COVID - 19 crisis, online education, New Education Policy 2020, E-learning, M-learning, technological support*

Introduction

The recent outbreak of COVID - 19 crisis witnessed several lock downs and closures in order to control the same. But these situations had far reaching consequences on the educational process not only in India but the whole world. In fact, as per the UNESCO report 1.37 billion students in all the countries have been affected by the closure of the educational bodies. The teaching faculty no longer conducted the traditional classroom teaching rather found online education and e-learning as the best alternative to rely upon. Technology transformed to have a delivery role through e-learning and multimedia learning with the use of internet and mobile devices in order to deliver knowledge and instruction efficiently. Technologies for dealing with the students in remote areas are being popularized for higher education during the pandemic phase. Virtual platforms like Zoom, Skype Google classroom, Google meet, Webex etc., were the orders of the day to communicate with the students for almost two years. Meanwhile, the initiation and recommendations of New Education Policy 2020 has emphasized digital education and made it a reality to be incorporated at all levels of education. With the outset of digitized education content access has become easy because learning

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materials have been condensed into software forms like e-books, pdfs, etc. and thus metamorphosed into tech- enabled learning. This online mode happens to be the major delivery method combining a large number of non-traditional instruction techniques, tools as well as approaches to design, develop, manage and evaluate the learning process. Basically, it is fairly based on the needs of the students, technological feasibility, professional preferences, web resourced learning, blended learning, virtual learning and mobile learning are its main supporters.

Online learning and its advantageous dimensions:

E-learning gives students a chance to study anytime at any place, perfectly accommodating their needs. Besides addressing a number of students at the same time it has an additional benefit for learners to enjoy a self-paced training schedule. They can study as per their required time. Even the full - time employees or individuals who simply don't have time to attend physical classes are no longer left behind. Learning in their spare time in the evening or on the weekends is now possible through this digital mode. Here both the teacher and the teacher are at ease to fix suitable time to start the teaching learning process. All time availability and access to various technologies in the form of audio lectures, videos, texts, feedback tools etc., for all those students who are from remote areas to collaborate and interact in this environment. Educational institutes are preferably following online classes via video conferencing, discussion boards and carrying out projects, assignments and evaluation digitally. Blended learning is another unique trend in educational technology which will systematically integrate face to face teaching with online learning by means of which the learning experience may be imparted to students of different locations at different times.

Inherent limitations and challenges

Nevertheless, the online or e-learning system claims to have myriad of advantages which is difficult to count in the sense that it is cost effective and facilitates the learners to enable learning even being confined to their comfort zone. But, at the same time, it suffers from several limitations too which can't be overlooked taking into account the complexities prevailing in the Indian scenario. Before the digital education command the educational set up we have to go a long way to get its right place in the mainstream of life. Truly speaking, in online education there is loss of human touch and psychological impact which is essential to carry on the teaching learning process. The physical eye to eye contact and gestures make us understand the problem arising during the course of the ongoing communication. There is non compatibility between the psychology of the child. Further, the time bound interaction with the student in the online class leads to frustration when the points are still not clear to the students. Also, India is a land of diversity where a large chunk of population belongs to the remote and backward areas for whom non access to various digital accessories is quite common. They cannot afford to maintain such digital tools as compared to urban students. Lack of internet connectivity, power supply, non-reachability of study materials to such students add another hurdle. Also, due to the lack of proper knowledge of operating the internet on the part of both students and teachers is problematic in the teaching learning process.

Misuse of technological devices by students creates several moral issues. Apart from these, some gender related aspects cause hindrance in its free implementation. As regards the management role of technology, it has to be disseminated through various prototypes of the Institution in order to get maximum benefits out of it. Its wide adaptability by students and teachers is also a basic necessity

to create a techno-friendly environment. This is all possible only through the integrated efforts of administrative leaders in academic educational and technological fields. To get this collaborative coordination and support is not so handy as it seems to be. Technology also has a number of challenges in its delivery role. Creating high - quality digitized learning content must be contextually used. It should be 'byte sized' if we want to make learning interesting, motivational and engaging. Today's cutting edge technology requires significant investments and budget bound institutions cannot afford such expenses so easily. Educational institutions must invest money and time to have positive results. Besides this in the delivery mode of technology training is must for all the teachers as majority of them are not digital natives. They lack technical knowledge. Many teachers and administrators still resist adopting new technology. Online teacher education platforms should be supported by rich digital materials and resources. Curriculum and Pedagogy need to be updated and should become models of successful online pedagogies that could be taken into future teachers' practices. It is important to build an enabling institutional environment for sustainable national online teacher education. We need to develop evidence based policies supported by guidelines for its implementation. To provide a professional reference base for online teacher education, a framework of competencies for conducting online teaching and other standards should be developed. Still more, the testing and authentication of the online educational content and materials is required essentially prior to the present research circulation of the same among the beneficiaries. The creation, dissemination and evaluation mode of the content or study course should be duly validated by agencies and stakeholders concerned. The different initiatives recommended by NEP 2020 like pilot studies for digital education, user friendly interface through e- learning platforms like DIKSHA, creating digital infrastructure, training to teachers in order that they are skilled in managing online platforms, creating virtual labs, availability of courses in different languages, online assessments and examination, digital repository, standards for online learning, etc. have been mentioned. Slowly and steadily digitalisation is spreading and reaching out to the people belonging to rural and backward areas.

Conclusion

Truly, the Corona crisis has made us alert in respect of how to focus on developing a purposeful and well defined online course which accounts positively for the need and interest of the learners. Of course, this is pertinent and is possible only through the judicious use of technology which addresses and serves as a viable alternative to the conventional education system. There is no doubt that the whole shift will take time to understand and accept this outcome teaching whole heartedly because the culturally induced face to face teaching and learning is still heavy in the mindset of the people. Incorporating online education in the light of the new education policy 2020 seems difficult due to the myriad of problems associated with it. Online learning involves a lot of time and cost. 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 fit every level. So an effective and efficient educational system needs to be developed to impart education via online mode. Steps must be taken to reduce the digital divide. 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. Also, teachers should enrich their lectures with video chats, virtual meetings, and so on to get immediate feedback and maintain a personal connection with the

students. It is worth appreciating that this pandemic should be treated as blessings in disguise to make online education an integral part of the future education process. The reshaping of education through various life skills are important to incorporate. In the face of the challenges mentioned above, online education is going to be a part of every person's life for which we have to review, reinvent and reshape our thought and understanding to reorient the educational process accordingly and need to be prepared for the changes ahead.

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COVID-19 AND EDUCATION:
RECENT TRENDS IN TEACHING AND LEARNING

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Abstract

Education is the main root for the development of any nation. If we want to improve the society, human behaviour, spiritual and material equilibrium and all that things by which we can get well developed nation, education is one such way or tool to proceed these all things in a right way or in a right direction .But due to the unexpected spreading of Covid-19 pandemic, Education suffers a lot. It affects the education system from it's base to higher level. Teachers, students, parents, educational institutions, learning styles, teaching ways, examination system all suffer a lot. Covid-19 bring a lot of new challenges in front of our Indian Education System such as in the government primary schools as we know have lack of facilities such as teacher student ratio, infrastructure facilities, ICT (Information and Communication Technology) facilities, quality of teacher, interest of teachers ,enrolment ratio, quality of mid day meal etc. Along with this due to pandemic ICT based teaching and learning became one such way to deliver content but that was not as easy as it sounds. Parents' financial condition along with inability of ICT based tools creates a challenge in front of our Education System. Students' with limited theoretical knowledge but no critical thinking in senior secondary schools was also a big issue. In Higher institutions such as in Ph.D. research scholars suffer a lot in collecting data for their research work. In the same way Recruitment of teachers in govt., private, semi govt. all face many problems. New Education Policy brings a new change in our education system by introducing ICT based teaching–learning environment, skilled teachers, proper division of education stages, etc.

Keywords: *Covid-19, ICT, Online examination, challenges, new trends in education etc.*

Introduction

The covid-19 pandemic has broken up life in every corner of the globe, creating an exigency that is unprecedented in its scale and scope. This pandemic has brought about massive disruptive changes and is a threat across multiple sectors that are essential to children's optimal development. The corona virus has stormed into our lives, altered our realities, and forced us to change for the better. Be it fashion, sports, hospitality, or banking, there is no area where the corona virus has not played its hard. The biggest and most important impact has been on our younger generation, the future of tomorrow. Importance of Inclusion of technology in the education sector has been felt by maximum individuals during this pandemic.

Kindergarten Children during Covid-19

Children just entering kindergarten, the decision to commit to distance learning was a far

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tougher and challenging Task. Wrangling 2½ to 5 yrs old children in front of a computer screen for several hours was not an easy task. It requires constant supervision, technical assistance and cajoling ,an impossibility for many working parents, particularly essential workers and those juggling multiple children. Many Kindergarten parents who decided to keep their children in preschool felt it was a safe and familiar option that allowed the in-person interaction that small children crave. Affluent parents may have also opted to send children to private schools, which often have the larger campuses and smaller class sizes that male in-person instruction. Low–income families may have opted out of schooling entirely during the strike of the pandemic.

One key strategy may be giving teachers the leeway to tailor the pace of the curriculum to fit the needs of the children instead of sticking to the usual benchmark. Differential instruction, adjusted to children's needs, is the most difficult. It requires a great deal of training and support. In the upcoming years' new students will need time to learn how to present themselves in person school. Teachers will have to expressly teach how to do in a integrated learning environment.

Impact of Covid-9 pandemic on the development of Young Children:

- **COVID-19 has put young children's development and future at risk**: More than 42 million children in the East Asia and Pacific region were at a risk of not reaching their development potential before covid-19.
- **The pandemic has disrupted essential health and nutrition services for young children:** Between 2,500 and 13,000 children younger than 5 years could die in countries in East Asia and the Pacific per month.
- Countries in South–East Asia reported more than 50 per cent of health services disrupted.
- More than 22 million children in East Asia and the Pacific were undernourished before COVID-19. This situation was more pronounced for poorer households after the onset of the pandemic.
- More than 50 million children across the region who normally rely on meals in preschool or kindergarten for a reliable source of daily nutrition were missing out on the school feeding.
- **The pandemic has suspended children's access to early learning:** More than six in ten young children (64 per cent) in the region were not attending any form of early children programming before Covid-19.At the height of the pandemic, at least 7 million children across the region were not able to continue their pre-primary education. Maximum countries in the region provided alternative means for pre-primary education after the closures began. The most vulnerable children have been the least likely to access remote pre-primary alternatives. Teachers in kindergarten and child care centres are equally affected by the pandemic.

UNICEF country office take action to secure the good health of young children:

- In the health sector, UNICEF country officers implemented targeted interventions to ensure the health and well-being of young children and their caregivers in light of the pandemic-related interruptions in health services.
- In nutrition, UNICEF country offices supported interventions that work towards ensuring adequate nutrition for young children to ensure optimal child development and health.
- UNICEF's programming helped to nurture household and enabling environments for young children through support to families and caregivers. UNICEF provided training and guidance on responsive caregiving and awareness: raising on the importance of positive social interactions

to stimulate connections in young children's brains. These programmes also included attention to caregivers' mental health and stress management.

- In support of education and learning outcomes, UNICEF country offices implemented initiatives for positive early learning in the home environment through early stimulation and social games. UNICEF also worked to ensure the continuity of centre-and school-based services wherever possible.

Indian government E-learning initiatives in response to Covid-19 in higher education system:

The Indian government always gives preference to the use of ICT as a means of mass learning and distance education. The Computer Literacy and Social on Schools project was launched in 1984 by the Indian government to make computer literacy a compulsory subject for class 11th and 12th. In the seventh five-year plan 2598 schools had started computer literacy and in the eight five-year plan, 2371 schools adopted it in its curriculum.

Due to drastic change in the education system due to the uncertain spread of COVID-19 all over the world. Governments of different countries adopted technology for appropriate running of their education system. The Indian government also feels the importance of technology for their upcoming youths. So keeping in consideration the government makes ICT based teaching–learning important and try to provide guidelines, sufficient and required materials to all the schools from pre primary to university level. Various types of ICT tools were used during COVID-19 for education purposes such as DIKSHA (Digital Infrastructure for Knowledge Sharing), Google Meet, PM eVidya etc.

Further E-learning initiatives that were employed during this COVID-19 era were Swayam Prabha TV Channels, for open schools and pre-service education, On Air, For the differently-abled, E-textbooks, and National Repository of Open Educational Resources (NROER).

- **Swayam Prabha TV channels:** MHRD devoted thirty-two channels to broadcast high-quality educational programs. Separate channels are provided for both school education and higher education. The initiative is still undergoing development and upgradation in the content & topics are expected to be organized in a sequence for further access by an individual as per their need at any time, anywhere.

- **For open schools and pre-service education :** Approximately ninety-two (92) course contents relating to the National Institute of Open Schooling from class 9th to 12th were uploaded on the SWAYAM portal. Anyone can access these contents as per their need.

- **On air :** Radio broadcasting focused on learning-based activities were being used for children in remote areas. 289 community radio stations were also employed to broadcast NIOS for grade 9th to 12th students. Shiksha Vani Podcast with 430 audio contents governed by Central Board for Secondary Education (CBSE) was being used to deliver all the subjects of class 1th to 12[t] .

- **For the Special children**: DTH channel is dedicated specifically to hearing and visual impaired students. It stands for Direct to home .Study materials are in sign language, developed in Digitally Accessible Information System (DAISY) for visually and hearing-impaired students; the contents are also free of cost and available on YouTube and NIOS website.

- **National Repository of open educational resources (NROER):** NROER has approximately 18,000 pieces of e-content of The National Council of Educational Research and Training (NCERT) and other collaborative partners. The materials available are related to several

school subjects.

● **Technical & Vocational Education and Training during COVID-19:** According to a global survey of more than 1,350 providers of Technical Vocational Educational Training (TVET), many countries and training providers were insufficiently prepared to respond to the constraints that resulted from the crisis, A lot of them rapidly shifted to distance learning. Disruptions in training are reported by a majority of survey in work based learning due to enterprise closures. Cancellation of assessment and certification exams is also a factor in it. Education and training at different skill levels related to a wide range of employment options are provided by TVET, such as for plumbers, electricians, sales workers, accountants, programmers and bank clerks. The practical and hand based learning of the training programmes has created several challenges.

At the beginning of the pandemic, some countries and training providers had sufficient equipment, connectivity, remote learning software and platforms, and pedagogical resources. In addition, most of the students and instructors initially had the absence of digital skills to be able to adapt and use their TVET services. The shift to remote teaching has been a process of learning by doing. Examples with focal points in the report showed the development of flexible learning and assessment options, ranging from high to low or no technical solution. These include the use of offline platforms, including national television channels, to spread and enhance practical knowledge in several countries such as the Democratic Republic of the Congo, Madagascar, India and Pakistan, and the increment of self-paced learning support and skills assessment virtually. In many countries, students create videos and photos of practical assignments carried out at home and upload them to a virtual platform. Partnerships between public and private sectors have also emerged, including the provision of digital equipment to teachers and disadvantaged learners. Some countries have also adopted new policy measures to ensure that TVET systems are better prepared for the future.

Online examination system during COVID-19:

Demand for online examinations has increased in the last two years because of the ongoing COVID pandemic. This method of examination highly conveys global education especially in India. It has become a trend in India. Pen and paper examinations or traditional methods are substituted by online mode of examination. Which include conduction of examination by using the internet that facilitates the smooth conduct of examination without face to face conduct between the examinee and examiner. Almost every university, institutes, colleges, schools and coaching centers are adopting this technique. With the advancement of technology & COVID-19 Pandemic many Higher educational Institutions and other institutes also adopt online examination systems to conduct examinations. Online exams can improve the efficiency and capability of exam organizers and facilitate candidates to participate in the exam flexibly. Government is also making a lot of efforts through implementing its various educational policies for spreading ICT based literacy across India. These policies are also aiding the Indian online educational market to gain new heights and progress in the field of Indian education systems. At the same time permitting the record of the examinee's response instantaneously.

There are several benefits of an online examination and are as shown below:
● It improves the efficiency of the examination system.
● Easily adopted
● Automatically grading of e-marks and assessment

- Scoring in short time
- Environment friendly
- Reduces students travelling time
- Multiple sets of questions can be made at a time
- Easier, time saving and comfortable

Demerits of online examination system are:

- Adopting new technology is a challenging task
- Requires internet availability
- Requires proper electricity and power supply
- Requires technical knowledge
- Decreases cognitive ability of the examinee
- Copy Paste of content from internet

Contractualisation in the education sector:

'Guest' faculty itself captures the incredibly unstable and fragile nature of their job have had a very difficult experience, even before the pandemic began. Even if a qualified or overqualified teacher does manage to find a job despite corruption, lack of transparent processes of hiring and the network of caste and class, linked and connections. Several challenges teacher faces for their job give below are some examples related to this: In Karnataka contractualisation in the education sector before and during the pandemic has worsened things. A study of July 2020 has showed that over 40-45 thousand teachers (only in the private sector) lost their jobs in Karnataka. Considering the second wave, and if one were to take into consideration public schools and higher educational institutions, this number would surely have risen. Approximately 268 teachers have lost their lives in Covid-19 since March 2020. The community of guest faculty in the state has suffered from several issues such as lack of job security, under-payment, and delay in salaries etc. The second wave and the unmanaged lockdowns have only compounded their problems, becoming the straw that inevitably breaks the camel's back.

Recent Trends in our Education System:

Personalized learning, ICT based learning, Professional and skill development of teachers, formative assessment, digital ethics and privacy, Self development programmes, Shifting to online examination with requirement, Artificial intelligence learning, Innovative teaching methods and social media in learning.

Gamification- The adoption of gamification is most popular in the k-12 education sector because kids are quickly engaged in gaming videos or getting higher scores in a game. Science, technology, engineering and mathematics (STEM) based programs are the new Ed-Tech improvement over the STEM programs. This new trend of EdTech applies meaningful Science, Technology, Engineering, Art and math content to solve real based problems and creative design.

Conclusion

Our education system suffers a lot due to the pandemic as we know. Lack of infrastructure, teacher student ratio, ICT based tools, skilled teachers etc. were some challenges we had to meet with. But we can't neglect its few better things which open a new and creative way in our education.

Before covid we all were not as much familiar with online based teaching and learning, use of ICT, access and sharing of online contents due to the old education system and our mind set. But due to covid we have changed our thinking styles, our way of life & education system. Everything in now a days is totally computer based and become easier for us to access but there are a lot of challenges which are present today onwards and these should be improved by government policies and its implementations. Private and government sectors both should take proper initiatives regarding the present or any upcoming pandemic. Covid-19 is a big lesson for us by which we have knowledge about different kinds of challenges and difficulties. So, there are requirements for many kinds of changes and implementations in Indian education systems. We have to study on it and work on it.

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ICT ENABLED ASSESSMENT TECHNIQUES FOR KINDERGARTENERS (3 TO 6 YEARS) DURING POST COVID ERA

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Abstract

During COVID- 19 pandemic, teaching- learning of preschoolers was impacted the most. The children of this age-group tend to learn the most from their environment through their experience. The pandemic made the little ones sit at their homes glued to the screen which not only hampered their socio- emotional growth but also impacted their learning. It became difficult for the teachers to connect with their children through online mode. Assessment of this age- group also came as a big challenge as for this age- group authentic assessment must also be engaging and motivate the kids to learn the most. This article talks about some of the interesting online assessment techniques that can be taken up during post COVID times both in classes and at homes to make learning fun.

Keywords - ICT, Assessment Techniques, Kindergarteners, Post Covid Era

Introduction

Learning is always an interactive process especially with toddlers, that is, children within the age group of 3 to 6 years. They learn the best by engaging themselves in a peer group or with a facilitator. COVID has brought a major shift in their lives as they started learning through gadgets. This shift has both benefits and challenges. As now in the post COVID era, children have got so much exposure to gadgets that it is the time for all the educators, school leaders and teachers to innovate and utilize the technological bent of mind of our young learners. In classrooms, the use of ICT has increased as the teachers are also more resourceful. They are using their skill set, which they have learnt during the pandemic, more effectively.

Purpose of assessment

Educational assessment is a systematic process of analyzing the knowledge and skills of the learners. Our National Education Policy 2020 also talks about assessment that is experiential and builds upon competency of learners. Online assessment is one of the challenging areas. It consists of using information and communication technology tools such as laptops, computers, mobile phones, tablets and I- pads in conducting effective assessments. Integrating ICT-enabled assessment techniques is the need of the hour so as to tap the maximum benefits from the resources which kids already have.

In a classroom, assessment has some or the other purpose given below-

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- **Assessment of learning-** It is an attempt to find out what the children have learnt by the end of the lesson or term. It helps the teacher in finding out whether the objectives were met completely or not.
- **Assessment for learning-** It helps the teacher to understand the knowledge and skills set which the children already have and devise ways on building the future concepts upon their previous knowledge.
- **Assessment as learning-** The children learn a lot more during assessment tasks. The higher order thinking skills such as reasoning, problem solving and critical thinking are developed while the children are engaged in any assessment activity.

ICT enabled assessment techniques for kindergarteners

Let us talk about some of the most interesting ICT enabled assessment techniques for our young learners.

- **Weave stories with Story Weaver-** Story Weaver is a browser based site through which children can construct their own stories. Teachers can choose any picture story on the basis of a child's age, grade or level of understanding. That particular story can be used to assess a child's learning in various domains such as language (listening, speaking, reading and writing), cognitive (sequencing, analytical thinking, reasoning and problem solving, art and aesthetics (sing as song or enact, use actions, gestures and expressions) and psychomotor domain.
- **Create videos using Flipgrid-**Many children hesitate to speak, enact or sing in front of the audience or even for the camera. To resolve this problem, we have both web- based as well as Android or iOS versions. Through this application, teachers can assign some tasks for which videos can be created. For this purpose, various filters, images and backgrounds can be used, if the child is uncomfortable in facing the camera.\
- **Have fun with augmented reality through AR Loopa-** AR Loopa is a mobile based application through which 3 D images can be scanned and brought into your living room. There is a huge gallery of resources available. Children can choose their favorite animal, plant, planet, vehicle and many more things. Then, with the help of the parent they can rotate their camera and see it alive and moving in their room through their mobiles. Children can talk about innumerable items, create videos and share it with their teacher and peers.
- **Worksheets come alive through liveworksheets.com-**The time has gone when children used to solve worksheets using pen and paper. Now, we have a new, interesting and innovative way to make filling worksheets fun. Teachers can create their own worksheets or use any from a plethora of samples. She can, then, share it with their parents. Children can fill in the correct blank, match the following, colour the correct option and many other interesting and exciting sheets. Also, the results can be seen immediately and the teacher receives them through mail. So, it saves both time and energy for the teacher as well.

Conclusion

The post COVID era marks the era of digitization and skill based learning. All our teachers, educators, school administrators and principals must gear up to provide children with the best of the

knowledge and skills available to them. The ICT enabled assessment techniques are not only economical in terms of saving time, energy and resources (such as paper), but also provides them with instant feedback which can be saved in the cloud for a longer period of time. These techniques also help children in using their time judiciously while using mobile phones. So, instead of getting them engaged in just youtube videos and games, we can include such activities both as home and school assignments as it helps break monotony too.

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POST COVID EDUCATION SCENARIO IN INDIA

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Abstract

Covid 19 pandemic has changed the lives of many people. Many emotional, social and health problems were faced by them. Main effect was on education. There was a wide gap between students and teachers due to lack of communication. Educationists thought to cover this gap through technology. Technology came as a boon to teachers and students. It brought with it many benefits and challenges for teachers as well as students which are discussed in the paper below.

Keywords- *Online Platform, Challenges*

Introduction

Due to Covid-19 lives of many people have changed. It has affected all the domains of life whether it is social, political, economic or education. Education is worst affected at this time. According to the OECD report of OECD, the COVID-19 pandemic has disrupted education in over 150 countries and affected 1.6 billion students which ultimately led to closure of many educational institutions.

Many educationalists, scholars and personnel thought about this serious situation and type of mode of education as an emergency response that can reach remote areas. Many universities, boards prepared themselves for the use of technology which will be a solution for covering the gap in education and to enable effective online learning. In this way, many schools, higher institutions, welcomed and became interested in how to best deliver course content online, engage learners and conduct assessments.

Online education helped to direct, design and deliver the learning content, and to facilitate two-way communication between students and faculty. It contains many facilities for teachers and students to communicate online and share course content side by side. Some of the online platforms available are Microsoft Teams, Google meet, Edmodo and Moodle as learning management systems along with their applications for video conferencing. Mostly used were video conferencing solutions including Zoom, Skype for business, WebEx and Adobe connect etc.

Benefits of using Online Platform

- **Readily available online distance learning platforms**. Online platforms provide texts, videos related to curriculum courses in digital format. These also provide facilities for practice exercises. Teachers can select the topics according to the level of students.

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- **Availability at remote areas:** Teachers can teach their students sitting at remote areas using various platforms at the time of the corona crisis, be they public or private.
- **Cover number of students at a time.** . Some companies have made online platforms in such a manner that it can cover vast numbers of students at a time.
- **Collaborate with other countries to mutualise existing online educational resources.** It has been viewed that different countries and regions have their own curriculum. They tend to teach similar subjects and could consider translating and using foreign digital resources aligned with their curriculum.
- **Using all electronic means**. During the pandemic, some older electronic means such as TV has also helped in providing lessons to students through Doordarshan programs, which is more appropriate for very young students or in some contexts where infrastructure lags behind.
- **Facilitate teachers with digital learning opportunities**. Many seminars and hands-on experience were provided to train teachers for using learning management systems online.
- **Time flexibility:** Learning for students and attending classes become comfortable due to time flexibility. Students can watch and listen to the lessons online again and again according to their ease.
- **Student centered:** Digital learning becomes easy for students as they can access online material at any time. Online education turns education to be student-centered, where students take part in the learning process, and teachers work as supervisors and guides for students.

Challenges

Teaching and learning online is not as easy as thought to be. Many different types of hurdles and challenges are there that the teachers as well as students have to face which are discussed as follows

- **Maintaining the balance between online and offline activities**. Taking into consideration the health of students, balance between online and offline activities have to be maintained.
- **Students' Emotional Health**. Pandemic has brought many effects on the health of people. Students were mostly emotionally affected. So taking this into consideration, technological solutions need to find a way to provide connection, interaction, and support whilst learning is happening, particularly in a time of uncertainty.
- **Non availability of technological devices**. Some families could not afford laptops, Desktops or smartphones. So in that case also a big problem is to reach those students. Schools, government, and some non government organizations must look for the solution to reach those students by providing them access to online education.
- **Managing connectivity**: Sometimes all students get connected at the same time may be a problem in some places, and managing all the devices should also be monitored to provide good access to all.

Studies Supporting Online Learning

Mukhtar, Javed, Arooj and Sethi (2020) conducted the Qualitative study from March to April 2020 on Advantages, Limitations and Recommendations for online learning during COVID-19 pandemic era by exploring the perception of 12 teachers and 12 students from University College of

Medicine and University College of Dentistry, Lahore. Results of the study showed advantages of using online learning as it involves remote learning, comfort, accessibility, while the limitations involved inefficiency and difficulty in maintaining academic integrity. Jeffcoat and Golek (2004); Gratton-Lavoie and Stanley (2009); De-La, Keane and Irvin (2010) has indicated that Online learning has been considered a useful tool for learning, cost-effectiveness, flexibility, and the possibility of providing world-class education). Li and Lalani (2020) in their study   indicated that COVID-19 had brought change to the status of learning in the 21st century.

Almahasees, Mohsen and Omar (2021) conducted a study after 4 months of online education on Faculty and Students' Perceptions of Online Learning During COVID-19.data was collected from 50 faculty members and another 280 students of Jordon selected randomly by distributing two online surveys. The results of the study revealed that the common online platforms in Jordan were Zoom, Microsoft Teams offering online interactive classes, and WhatsApp in communication with students outside the class. Moreover, both faculty and students agreed that online education is useful for all during the current pandemic. It involves self learning, low costs, convenience and flexibility but at the same time, its efficacy is less effective than face-to-face learning and teaching. It was also observed that it was less beneficial for deaf and hard of hearing students; there is lack of interaction and motivation, technical and Internet issues, data privacy, and security.

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IMPACT OF COVID-19 ON SCHOOL EDUCATION IN INDIA

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Abstract

COVID-19 has createdchaos across the world and like all thesectors; education has been hit very hard. Many changes came to our world and It took some time for everyone to adopt the new normal.Universities, Colleges, Schools and all other institutions providing education have been impacted. According to the United Nations Educational, Scientific and Cultural Organisation (UNESCO), over 800 million learners from around the world have been affected, 1 in 5 learners cannot attend school. COVID-19 had adverse effect on Education especially on Teachers, Parents and Students. In present paper investigator tried to write all the challenges which the stakeholders including policy planners, Governments, Teachers, parents and Studentsfaced during and after pandemic. Some suggestions/precautions are also discussed at the end to be taken in school campus.

Keywords- *Covid-19, Education, Higher Authorities*

Global Education

Lockdown and maintaining social distance have led to closures of schools, training institutions and higher education facilities in most countries. Education systems and educators have been forced to adopt "Emergency Education", transitioning from traditional face-to-face learning pedagogies to online education or remote virtual platforms, in spite of the challenges posed to both educators and the learners. Challenges characteristic in unexpected, oversensitive rather than expected and deliberate e-learning responses to a global pandemic include convenience, affordability, suppleness, life-long learning, and educational policy.

Teaching and Learning

Move from "normal" face-to-face teaching and learning to, online platforms was unprecedented, the effects and impacts of this forced shift were under-estimated, occurred without sufficient planning or preparation, and tested individuals and institutions to new limits.

In the beginning, almost all governments have decided to close the schools to reduce the spread of corona virus. Later, these were opened for a few classes, which increased the number of infection rates and then closed again.

Even when schools are closed, students were attending their classes through various education initiatives like online classrooms and on platforms like Zoom, Google Meet, WebEx, Microsoft Teams and various other Learning Management System platforms. Though it was good happening on the other side, there were lots of students who didn't own the resources to attend the online classes.

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Most of the students were struggling to obtain the gadgets like internet, mobile phones etc. required for online classes.

There were students in India who came to school just because they can get food. The great mid-day meal scheme has helped many children who couldn't bring their food from the home to get their nutrition; many students were suffering from not having enough food for their survival. Delay or cancellation of exams, which leads to confusion for many students and there is no room for curriculum.There is a lot of chance that the education of female children and transgender children will affect, as their parents may see, the financial and opportunity costs of doing so. This has not only affected the students but also the institutions and schools, resulting in close-down the same. Both positive and negative matters happened.

Higher Authorities

University Grants Commission has allowed Higher Education Institutions with SOPs but still many induction Programmes and refresher courses are going online. It may be due to availability of Experts in online mode only or it is less economical.

Ensure adequate ventilation and increase total airflow supply to occupied spaces, if possible. Clean, natural ventilation (i.e., opening windows) should be used inside buildings where possible, without re-circulating the air. If heating, ventilation and air conditioning systems are used they should be regularly inspected, maintained and cleaned. Rigorous standards for installation, maintenance and filtration are essential to make sure they are effective and safe. Consider running the systems at maximum outside airflow for two hours before and after times when the building is occupied, according to the manufacturer's recommendations

Teachers

Teachers which were expert in Blackboard, books, and classroom teaching really new to this online teaching, but they are adopting new methods. But on the negative side, many teachers are looking for an alternative job to support their families.

Grappling with new technologies is another new difficult task because all the platforms like Zoom, Google meet, Microsoft Teams, WebEx requires competencies of Security feature.

Teachers at B.Ed. level were not taught for Long time sittingin-front of computer/ mobile screens and interacting with sounds and images of students only.

Teachers standing before a class and speaking before a hundred gaping eyes, and a hundred more eager ears ensure the adrenalin rush and performance anxiety. The challenge of stage, the fright of being on a platform and delivering knowledge, but not knowledge alone, prepares the mold of a teacher.

Blended Mode of Teaching is difficult in actual practice for a teacher because at the same time much is expected from higher authorities. Now a day's teacher is considered to be robot with increased responsibility rather than a teacher.

Now a days teacher is in Confusion with task that he/she requires double efforts to teach offline as well as online and upload it on LMS, YouTube etc. for future references.

Sitting more and more time online has bad effect on the physical health of teachers and Students as well.

Students

Most of the students feel it is easy to learn and give exam online. Universities till now giving

opportunities that students could give exam online/ submit assignments online and students feel it easy.

Sitting at home with comfortable environment and learning online is considered to be easy and Comfortable. Moreover, students get more marks while attempting paper online.

Task of Regular Sitting on computer screen is difficult for all such students who are not physically fit. Students are actually learning anything or not is major task.

The changes in methods of learning has advised us to move to methods that have never been taken up before, it is giving us a chance to change and experience exposure.

During the initial period, the institutions were confused because they had no idea how to proceed but gradually , they developed the digital infrastructure and the study pattern started to settle.

During the pandemic the situation most of the students preferred was open and distance learning mode as it encourages self-learning and providing opportunities to learn from diverse resources and customized learning as per their needs.

Most of the recruitment got hampered because of the pandemic. Placements for students were also affected.

Many pass out students lost important job opportunities and many students and job workers had to return home from overseas because of the pandemic therefore disrupting their work

Parents

Low income group of parents were mentally disturbed because they have to make available their wards online. Providing smart phones is again difficult task. Families who could not afford smart-phones, Wi-Fi, computers or laptops were at immediate disadvantage. The parents, many of whom lacked the skills of becoming a home-teacher now had to take up the job suddenly. Internet connectivity issues, limited data, lack of resources are the three main challenges to online learning for school children.

It's much difficult to make parents available 8:00 am to 2:00 pm to attend online classes with the wards, as mothers have lots of responsibilities the houses and Male members are on their duty. It's also difficult for such parents where family members are working.

Pupils

Children under the age of 18 years represent about 8.5% of reported cases, with relatively few deaths compared to other age groups and usually mild disease. However, cases of critical illness have been reported. As with adults, pre-existing medical conditions have been suggested as a risk factor for severe disease and intensive care admission in children.

Whether a child should go to school depends on their health condition, the current transmission of COVID-19 within their community, and the protective measures the school and community has in place to reduce the risk of COVID-19 transmission. While current evidence suggests that the risk of severe disease for children is lower overall than for adults, special precautions can be taken to minimize the risk of infection among children, and the benefits of returning to school should also be considered.

The following should be monitored after reopening the schools:

- Effectiveness of symptoms-reporting, monitoring, rapid testing and tracing of suspected cases
- The effects of policies and measures on educational objectives and learning outcomes
- The effects of policies and measures on health and well-being of children, siblings,

staff, parents and other family members
- The trend in school dropouts after lifting the restrictions
- The number of cases in children and staff in the school, and frequency of school-based outbreaks in the local administrative area and the country.
- Assessment of impact of remote teaching on learning outcomes.
- Based on what is learned from this monitoring, further modifications should be made to continue to provide children and staff with the safest environment possible.
- In countries or areas where there is intense community transmission of COVID-19 and in settings where physical distancing cannot be achieved, the following criteria for use of masks in schools are recommended:
- Children aged 5 years and under should not be required to wear masks.
- For children between six and 11 years of age, a risk-based approach should be applied to the decision to use a mask, considering:
- Intensity of transmission in the area where the child is and evidence on the risk of infection and transmission in this age group.
- Beliefs, customs and behaviors.
- The child's capacity to comply with the correct use of masks and availability of adult supervision.
- Potential impact of mask wearing on learning and development.
- Additional considerations such as sport activities or for children with disabilities or underlying diseases.
- Children and adolescents 12 years or older should follow the national mask guidelines for adults.
- Teacher and support staff may be required to wear masks when they cannot guarantee at least a 1-metre distance from others or there is widespread transmission in the area.

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DIGITAL DIVIDE: IS ONLINE EDUCATION A BOON OR BANE?

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Abstract

Digital divide focuses on access to various aspects of information and communication technology (ICT) including physical access, motivation, skills, and actual usage of digital technologies. This divide is wider in developing countries. The role of technology and importance of access to high-speed broadband has become a necessity during the COVID-19 pandemic. High-speed Internet is a tool. People depend upon the daily business of their life and interact with each other, the economy, and government. In India, the benefits of IT are beginning to be seen and the impact of these benefits are creating great change. It is also true that the use of digital technologies in the world has not only improved people's day–to–day life but it has also divided the world into information rich and information poor, i.e. the information haves and have–nots. The unequal access to information and communication technologies has led to a massive divide digitally. Although India has been one of the emerging superpowers in Information Technology, the benefits have been surprisingly slow, particularly in rural and remote areas. Besides socio–economic factors, geographic, educational and attitudinal factors have been some of the challenges for the government when introducing IT–oriented programs

Keywords: Information technology, Digital divide

Technology has transformed human life from traditionalism to modernism. The development of the world is directly related to the change of technology. The beginning of the day or the end of the day, the one thing we all have in common in our lives is technology..Our seniors can tell us stories of difficulties they face in their daily activities. On the other hand, we can tell stories of convenience in our daily lives.

Technology has become an integral part of our lives today, opening a big window to all. However, while technology offers many benefits, it also brings problems. in terms of education, including the digital divide. Impact on students and schools. With the advent of the Internet and information technology, students can now study, work, research, collaborate and develop knowledge independently to a large extent.

The digital divide is when all people don't have equal access to technology to experience learning, the wealthy have access to it, but people from middle- and low-income backgrounds don't. This technology includes I hardware, such as mobile devices, televisions, and personal computers, as well as Internet connections, such as access to data and Wi-Fi.

In the digital age, educators must change what they ask of their students from "send to me" to "share with me," demonstrating in the first place inequalities in access to technology devices and resources. Every student is entitled to adequate educational resources as outlined in the Right to

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Education and Support Services in the Fundamental Rights of the Constitution of India to enhance their academic performance. The current pandemic has not only affected the world economy, but also political structures and governments. While some countries face stagnant growth and serious health security concerns, nearly all countries face challenges in their education systems. India is one of those countries that has closed educational institutions, including schools, due to the spread of Covid-19. While various stakeholders are increasingly concerned about the immediate, short- and long-term impact of prolonged educational lockdowns on students and parents, and society as a whole, these educational institutions have yet to determine how they will reopen.

Central and state programmes aimed at achieving universal education and primarily related to the country's economy, health and food security have historically been structurally imbalanced in terms of class, caste, language, region, development (urban and rural) and gender divides.

Entering educational institutions, diseases are most likely to spread due to mass gatherings in classrooms. Covid-19 has severely impacted school education; it has limited traditional classroom-based teaching and learning in schools, forcing these institutions to turn to remote or digital learning platforms for teaching and student assessment. However, even these virtual digital learning platforms have many structural and institutional problems. While MHRD's schooling and literacy sector has increased its spending on education, its spending on digital India e-learning should also increase and provide this tax-free.

The Department of Statistics report on key indicators of household and social consumption in education in India (2017-18) report attests to disproportionate internet access across states. According to the Internet and Mobile Association of India report, across the country, fewer women (33%) have access to the Internet than men (67%), with a wider gap in rural areas compared to urban areas (28-72 age) region (38-62).

Entering the current situation also exposes the pervasive language divide in India, with vernacular secondary schools catering mainly (albeit with exceptions) to the poor, while English secondary schools cater to the rest of society Here 2 is yet another aspect of the digital divide: the poorest students have no access to smartphones, when they do have poor internet connections, and content is often not available in local languages. This causes discrimination in access to education. The report shows that mobile phones are the most popular online medium in both urban and rural areas. However, both teachers and students lack digital infrastructure, and there are gaps in internet connectivity and device access; while all students may have it, recently, the education sector has felt the inability of half of the 1.5 billion students affected by the COVID-19 pandemic to Use a computer and the Internet. This is despite the need for distance learning globally to adhere to social distancing protocols.

As of September 2021, some 117 million students are still out of school due to the enforced lockdown, according to UNESCO. The effects of the digital divide continue to be felt globally, as 1.3 billion school-age children worldwide do not have the internet at home to access learning resources. In developing countries, there is a considerable disparity in access to information and communications technology (ICT) between the rich (privileged) and the poor (vulnerable).

Here, social structures are based on complex socioeconomic levels and geographic distributions in which "the majority of the population lacks access to basic competencies such as health care and education" Thus Make access to ICT a lower priority. So when students are suddenly forced to study at home, the disparity affects the poor more. If we are to take into account common gender-

based disparities such as the additional burden of cooking, cleaning, and household care that women carry, this situation leaves female students underrepresented among the poor.

Teaching and learning activities had to move online when the pandemic forced the closure of schools and colleges. While technology ensures that learning is not completely suspended, the digital divide continues to make remote learning an "operational night."

The Boon

There may still be some ambiguity about the importance of physical and social experience between online and offline education. Virtual/distance learning certainly helps bridge the inequality gap that exists in terms of denial of education due to an individual or child's geographic, physical or economic factors. It brought the classroom home and expanded the reach of education like never before.

It also changes the way parents and students think about education and helps them recognize the need for educational continuity.

Online learning creates programs that help develop other soft skills for further career opportunities and more. It also proves that distance learning is comparable in quality and content, and can be a major source of education in the future. It creates learning opportunities not only for learners, but also for professionals.

The beauty of the internet is that today people can teach anyone anywhere. It facilitates education, bringing learning home when people cannot leave their home.

Online education does not limit students to one syllabus/board or course. It provides space for exploring and learning beyond the syllabus. Students have unlimited access to new skills, languages and subjects from global experts. They have the opportunity to discover and experience niche topics that many cannot afford or imagine.

Online education also allows people of different age groups (young or adults) to learn at their own pace, without restrictions or impact on their other duties. For the past two years, teachers have tried to make the most of the situation by exploring new teaching and assessment methods

Other Benefits of Online Education:

- **Flexible system:** Students now have the flexibility to study at home or anywhere in the world. One can study indoors or out in a room or while traveling by subway. It also saves time, effort or money traveling to a specific destination to acquire knowledge.
- **No language impediments:** Given that online education is accessible in most vernacular languages, there is no language barrier. Students do not necessarily have to learn a specific language or follow a specific text. Online, they are able to read linguistic texts or watch videos related to them in any language they prefer, providing them with multiple intelligences-based methods for better understanding. In these days of sudden curfews and prolonged lockdowns, information technology has become a kind of superpower. We are disconnected from life but connected online. However, without a little learning, teaching, or difficulty, there is no gospel.
- **World Adventures online replaces face-to-face learning and work as well**- Going digital is a double-edged sword, using the internet for entertainment is common, but online courses can be a big challenge. Teachers may not be proficient in creating digital content and communicating it effectively online. They suddenly expect an upgrade, and students adapt, which may be a little unfair.

- **Body language and eye contact**- Body language and eye contact are important tips for teachers and can be hard to spot in an online classroom. The teachers didn't understand either. Some of the questions teachers have been wondering are- how many students in a class are paying attention? How many people actually understand what is being taught?
- These issues arise even in traditional classrooms, but are more difficult to address in online classrooms. Parents of younger children generally agree that preschool and kindergarten children do not benefit from virtual learning because they perceive them to have smaller attention spans and are easily distracted. College students also seem to value the physical learning experience in the virtual learning classroom far more than the online learning experience. Many agree that phone calls can be distracting. On top of that, science and technology courses often include hands-on lab sessions, dissertations

In the end, education is not just about understanding the subject, but also about developing students' social skills and sportsmanship, which is built into offline education. Relying solely on online education can inhibit a child's overall growth, which can affect their future professional and personal lives.

Is online learning really beneficial?

Our answer is positive. It bridges existing gaps, expands learning, and is available when the world needs it most. However, it is important to note that physical isolation can affect the mental health of a student because it reduces real-world experience. However, as a country, it may be helpful to adopt and retain another way of learning. However, it may never replace the in-person educational experience, but it certainly supports it. The future is changing rapidly and we need to always ensure accessibility, continuity and certainty in education digital divide,

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E-LEARNING IN INDIA:
A RAY OF HOPE DURING COVID-19 PANDEMIC

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Abstract

COVID-19 pandemic is the most destructive crisis worldwide. All sectors of the world are adversely affected with this ongoing pandemic. It is the foremost challenge for the education sector on how to face this situation. All the educational institutions are closed due to nationwide lockdown in India during the outbreak of COVID-19 pandemic. Physical classes replace online classes. It is the innovative outcome of Digital India Mission. E-Learning became the new normal for getting education during COVID-19 pandemic. The Government of India takes major initiatives towards transformation in the Indian education system so that every student gets quality education. E-Learning is one of the protected ways to impart education for acquiring new innovative skills among students. Its utility is not only limited to academic areas but also in the field of extra-curricular activities for students such as they participate in various online poster making, online slogan writing, online debate, online poetry recitation, online quiz competitions etc. Now the youth of India have learnt almost all the e-learning skills that will help them in the coming career. The current scenario of e-learning makes the bright future of online education and brings so many revolutions in the field of digital learning.

Keywords: Digital India, E-Learning, Innovative, ICT tools, Technology.

Introduction

COVID-19 pandemic disrupts the precious human life worldwide. India has been hit hard by COVID-19 pandemic. E-Learning seems to have become a secure mode to spread educational knowledge among students during nationwide lockdown in India. Online learning helps to control the spread of this infectious disease to some extent by maintaining social distancing. Study from home is the revolutionary outcome of Digital India Mission. Moving towards digital learning with the use of innovative ICT tools has now become the new normal for all educational institutions. Students also participate in various online competitions such as online poster making, online slogan writing, online quiz, online debate, online poetry recitation etc. It helps the students for their holistic development and for a better future career. E-Learning is the essential need of the hour during the ongoing COVID-19 pandemic.

Objectives of the Study

1. To identify the status of e-learning during COVID-19 pandemic.
2. To study the impact of COVID-19 pandemic on the Indian education sector.
3. To know the need of e-learning education tools for revival of the Indian education sector.

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4. To evaluate the various government schemes to promote e-learning in India during COVID-19 pandemic.

5. To aware the society about the use of ICT tools in the field of education during the ongoing COVID-19 pandemic.

Research Methodology

The research study is based on secondary data obtained from magazines, thesis, reports, newspapers, books and the like.

Lockdown Phases in India

The lockdown phases in India during COVID-19 pandemic are as follows:

Table 1: Lockdown Phases in India

Nationwide Lockdown in India		
Phases	**Time Period**	**Number of Days**
Phase 1	25 March 2020 – 14 April 2020	21 days
Phase 2	15 April 2020 – 3 May 2020	19 days
Phase 3	4 May 2020 – 17 May 2020	14 days
Phase 4	18 May 2020 – 31 May 2020	14 days

The table 1 represents that nationwide lockdown in India is from phase 1 to phase 4 due to the outbreak of COVID-19 pandemic which is not good for each sector of India. So the education sector adopts so many e-learning methods to continue the study of students during COVID-19 pandemic induced lockdown.

E-Learning Resources to Get Education during Covid-19 Pandemic

E-Learning resources play an important role during lockdown in India. This pandemic has led to spread greater awareness about the e-learning tools among students. The revolutionary e-learning sources to get education are as follows:

- **SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds):** SWAYAM is a programme initiated by Ministry of Education that offers courses from class 9th to PG with rich e-learning contents and designed to achieve the three main cardinal principles of Education Policy: access, equity and quality. The numbers of enrollments in different courses of SWAYAM are increased in the COVID-19 pandemic.

- **DIKSHA (Digital Infrastructure for Knowledge Sharing):** DIKSHA is a national platform developed for school education launched on 5th September 2017, an innovative initiative of National Council for Educational Research and Training (NCERT), under the aegis of the Ministry of Education, Government of India. DIKSHA can be easily accessed by teachers and learners across the country. Currently it supports 36 Indian languages. Amidst the disruption of offline classes due to COVID-19 pandemic, DIKSHA makes it possible for all states and UTs to enable learning at home through innovative state programs.

- **SWAYAM PRABHA:** The SWAYAM PRABHA is a group of 34 DTH channels devoted to telecasting of high-quality educational programmes on 24×7 basis using the GSAT-15 satellite. It has every day new content for at least (4) hours which would be repeated 5 more times in a day that allows the students to choose the time of their convenience. The channels are uplinked from BISAG, Gandhinagar. The contents are provided by NPTEL, IITs, CEC, UGC and IGNOU etc. The INFLIBNET Centre maintains the web portal.

Table 2: DTH Channels: Higher & School Education

S. No.	Channel Number & Name
	DTH Channels: Higher Education
1.	**Channel 01:** VAGEESH: Humanities - 1, Language and Literature
2.	**Channel 02:** SANSKRITI: Humanities - 2, History, Culture & Philosophy
3.	**Channel 03:** PRABODH: Social Science - 1, Social & Behavioral Sciences
4.	**Channel 04:** SAARASWAT: Social Science - 2, Education, Psychology, Home Science and related subjects
5.	**Channel 05:** PRABANDHAN: Social Science - 3, Management, Library Science, Information Science and related subjects
6.	**Channel 06:** VIDHIK: Social Science - 4, Law, Legal Studies, Human Rights and related subjects
7.	**Channel 07:** KAUTILYA: Economics, Commerce and Finance
8.	**Channel 08:** ARYABHATT: Physical sciences, Mathematics, Physics, Chemistry and related subjects
9.	**Channel 09:** SPANDAN: Life Sciences, Botany, Zoology, Bio-Science and related subjects
10.	**Channel 10:** DAKSH: Applied Sciences, Allied Physical and Chemical sciences and related subjects
11.	**Channel 11:** Mechanical Engineering & related branches
12.	**Channel 12:** Civil Engineering & related branches
13.	**Channel 13:** Computer / IT & related branches
14.	**Channel 14:** Electrical, Electronics and Communication & related branches
15.	**Channel 15:** Engineering Sciences & related subjects
16.	**Channel 16:** Humanities, Management and other branches
17.	**Channel 17:** Social Sciences and Humanities
18.	**Channel 18:** Basic and Applied Sciences
19.	**Channel 19:** Professional and Vocational Education
20.	**Channel 20:** State Open Universities and Teacher Education
21.	**Channel 21:** Vyas
22.	**Channel 22:** IIT PAL
	DTH CHANNELS: SCHOOL EDUCATION
23.	**Channel 23:** Class - 1 PMeVIDYA
24.	**Channel 24:** Class - 2 PMeVIDYA
25.	**Channel 25:** Class - 3 PMeVIDYA
26.	**Channel 26:** Class - 4 PMeVIDYA
27.	**Channel 27:** Class - 5 PMeVIDYA
28.	**Channel 28:** Class - 6 PMeVIDYA
29.	**Channel 29:** Class - 7 PMeVIDYA
30.	**Channel 30:** Class - 8 PMeVIDYA
31.	**Channel 31:** Class - 9 PMeVIDYA
32.	**Channel 32:** Class - 10 PMeVIDYA
33.	**Channel 33:** Class - 11 PMeVIDYA
34.	**Channel 34:** Class - 12 PMeVIDYA

Source: https://www.swayamprabha.gov.in/index.php/higheredu
                https://www.swayamprabha.gov.in/index.php/schooledu

Table 2 represents that various higher and school education channels are available for students that help them to pursue their studies during COVID-19 pandemic. It provides quality educational curriculum-based course contents covering diverse disciplines such as arts, science, commerce, social sciences, humanities, engineering, agriculture etc. to all students, teachers and citizens across the country.

- **NATIONAL DIGITAL LIBRARY OF INDIA:** National Digital Library of India is a virtual repository that offers learning content for users from Primary to Post Graduate Levels across all disciplines. Contents are available in multiple formats i.e. audio, video, report, book, thesis etc.
- **E-PATHSHALA:** E-Pathshala offers e-textbooks and supplementary books of NCERT for all subjects for classes I to XII. The contents are available in English, Hindi and Urdu languages. It also offers educational e-Resources like audios, videos, interactive images, maps, question banks etc.

E-Learning Initiatives Undertaken by the States/Uts

Learning is a lifelong key to unlock the doors of success, especially for career-oriented and professional individuals. E-Learning is the solution to continue the study during COVID-19 pandemic. The relevant initiatives are taken by the State as well as UT governments are as follows:

Table 3: E-Learning initiatives undertaken by the STATEs/UTs

S. No.	Name of State/UT	Initiatives
1.	**Andaman & Nicobar Islands**	Broadcast through Doordarshan, Tele-Classes on Local Cable TV Network, Audio Classes, Repository of Digital Content, Initiative through Google Platform etc.
2.	**Andhra Pradesh**	Vidya Varadhi T.V. Lessons, NISHTHA online courses, Bridge course material, Online learning through WhatsApp groups, Zoom class for students for better understanding of critical topics, Conduct of language festivals through virtual mode, Ek Bharat Shresth Bharat online quiz etc.
3.	**Arunachal Pradesh**	Radio School, Classes via Doordarshan - Arun Prabha Channel, Live classes through EDUSAT, E-Studio, Local content in Vernacular etc.
4.	**Assam**	DIKSHA, Television programmes, Radio programmes, Training on Virtual/Online mode, VidyaDaan Programme etc.
5.	**Bihar**	Web-based learning, Mera Doordarshan Mera Vidyalaya, Digital Education Portal, Vidyavahini App, Unnayan App: Mera Mobile Mera Vidyalaya, Bihar Career Portal and App, Mobile Learning Centre, Provide Mobile phones to School Students to continue online studies etc.
6.	**Chandigarh**	Online celebration of Reading Day & Reading Week from 19th to 26th June 2020, Online Talent Hunt, Online Maths and Science Club Activities conducted under Rashtriya Avishkar Abhiyan (RAA) during 2020-21, Online Language Festival, Digital Initiatives under Inclusive education: Virtual Therapy camps for CWSN, Environment Building Programmes (Online Quiz and poster making competitions) for inclusion of Children with Special Needs etc.
7.	**Chhattisgarh**	Padhai Tuhar Dwar (PTD), EDUSAT Network, Post Graduate Certificate course on Reflective Teaching with ICT (8 Credit Modular Course), Houshle Ki Dagar, E-Gupshup, SAMPARK-BAITHAK for COVID-RESPONSE, Hybrid Hamara Gaon-Tablet Program etc.

8.	**Dadra and Nagar Haveli & Daman and Diu**	Action taken for Teaching and Learning: For students with Digital Devices (Smartphone, Radio, TV, PC/Laptop, Community PC/Laptop), development of E-Gyan Mitra Mobile application for class 1st to 12th for English, Hindi, Gujarati and Marathi Medium, TV Channels (Vande Gujarat) and Maharashtra (DD Shyadari) Learning Channels and NCERT Channels etc.
9.	**Delhi**	The online lecture series "Learning Never Stops" is going on, Webinars on educational issues are organized etc.
10.	**Goa**	TV Lessons-Educational E-Content, DIKSHA-Digital Learning Platform, Online Capacity Building Programme, STEP app Program etc.
11.	**Gujarat**	'Study from home' initiative by Samagra Shiksha, Home learning initiative on DD Girnar, Distribution of the digital content through different platforms, Virtual classes with the students through Microsoft teams, Gujarat Virtual Shala Programme for secondary and elementary grades, Career counselling through live sessions and encouraging access to Gujarat Career Guidance Portal, YouTube channel created by the Vocational trainers, Focus on learning continuity of students with no access to digital platforms, Online Self-Defence training, etc.
12.	**Haryana**	TV learning through EDUSAT, Ghar Se Padhao Campaign via WhatsApp and SMS, Community engagement through SHIKSHA MITRA campaign, eContent Creation and teacher training through DIKSHA-Haryana etc.
13.	**Himachal Pradesh**	Content Creation and Assessment through Har Ghar Pathshala, HIM Shiksha programme was also started through JIO TV on 28th October 2020, Three channels were allocated for Elementary, Higher and Vocational classes etc.
14.	**Jammu and Kashmir**	The Jammu and Kashmir Knowledge Network (JKKN), DIKSHA outreach Programme etc.
15.	**Jharkhand**	Learning Continuation through collaborative efforts of JEPC, JCERT and CSO network, DigiSATH Initiative, DIKSHA App, Television: Doordarshan, Saturday Quizzes, Psycho-social support aspects in COVID response etc.
16.	**Karnataka**	Makkala Vani/YouTube channel,Samveda – Classes on Doordarshan Chandana Channel, DIKSHA etc.
17.	**Kerala**	'First Bell' – Digital Classes, 'White Board' – for the Differently-abled, 'Thenkoodu' – Mobile App. for the Differently-abled, 'Mazhavilppoovu' – Digital Classes in Tribal Dialects, DIKSHA, 'Digifit' - Digital Teacher Empowerment Programme, Sasthrapatham, 'Rasakkoottu' – Radio programme etc.
18.	**Ladakh**	Tablet Distribution, ICT/Smart classrooms for HS/HSS, Telecast of TV Lectures on DD Kashir, Audio Lectures on All India Radio Leh/Kargil, DSEL Online Education Apps, Online Teacher Training etc.
19.	**Lakshadweep**	Lakshadweep Radio Pathshala programme aired through All India Radio Kavaratti from 10:30 to 12 noon from classes 10th, 11th and 12th two subjects per day etc.
20.	**Madhya Pradesh**	WhatsApp based DigiLEP program, TV classes for Gr 6-12, Radio School for Grades 1-8, WhatsApp based Assessments, Digital orientation and support for Parents and Teachers, Online activities for CWSN, Online Parent-Teacher Meetings etc.
21.	**Maharashtra**	Missed Call Do Kahaani Suno & Goshticha Shaniwar, Education through JIO TV and JIO Saavn, Google classroom training, Broadcasting "Dnyanganga" programme on Doordarshan, Broadcasting of programme 'A Special English Hour' on Doordarshan, Virtual PD: Online Shikshak Vyavasayik Vikas Manch, SWADHYAY (Student WhatsApp based Digital Home Assessment Yojna) etc.

22.	**Manipur**	JIO TV Channel, Radio Class, Lairik App/Lairik website, YouTube Channel (@Department of Education Schools Manipur), Facebook (@Department of Education Schools Manipur) etc.
23.	**Meghalaya**	E-Learning Portal, DIKSHA Meghalaya etc.
24.	**Mizoram**	Educational lessons through TV channels, Educational YouTube Channel, Online Classes for B.Ed.(Special Education), Online Classes at DIETs, NISHTHA on DIKSHA, Online School Health and Wellness Programme, YouTube Channel of School Leadership Academy Mizoram in regional language, Digital library etc.
25.	**Nagaland**	Tele/Radio Online Education, Efficient Utilization of Social Media, Online Evaluation Portal, Continuous Learning & Online School Monitoring, Teachers' Online Transfer Portal, Using DIKSHA for Online Education through 'Coherent Access' etc.
26.	**Odisha**	Distribution Textbooks at Doorstep, Distribution of LEP Books, Odisha Shiksha Sanjog (Learning Through WhatsApp), Radio Pathshala, Shiksha Darpan (Telecast of video lessons on T.V.), Digital Knowledge Sharing (DIKSHA), E-class through Microsoft Teams/Zoom/Google Meet Platforms, E-Vidyalaya App etc.
27.	**Puducherry**	Community Radio, DTH TV Channel, Virtual Control Room and telecasting classes through local TV channel, Online Textbooks, Digital Repository, YouTube etc.
28.	**Punjab**	YouTube Channel (named "Edusat Punjab"), Ghar bethe Sikhiya program, Radio Programs, Virtual classes, Punjab Educare App, Online learning through Khan Academy, Capacity program on DIKSHA, Teacher orientation program Punjab-DIKSHA, Smart classroom and ICT Labs etc.
29.	**Rajasthan**	Aao Ghar Mein Seekhein, e-Kaksha etc.
30.	**Sikkim**	Sikkim Edutech App etc.
31.	**Tamil Nadu**	Video Lessons through Hi-Tech Lab, Video lessons through Kalvi TV, Video Bridge Courses, Video Work Books, Audio Lessons for class 10 and 12 in All India Radio etc.
32.	**Telangana**	Energised Textbooks – DIKSHA TELANGANA, Live Phone-In Programme, Tic Tac Learn Videos, At-Home Learning Solutions WhatsApp Chat Bot, Video Lessons on Yoga, Online Seminars/Exhibitions/Competitions etc.
33.	**Tripura**	Telecast of e-classes (Live & Recorded) through various local cable TV Channels and Uploaded Classroom videos in departmental YouTube Channel 'Tripura Shiksha Bandhu'(Class I to XII) with privately managed web portals, Educational TV channel: Vande Tripura etc.
34.	**Uttar Pradesh**	e-Pathshala 1.0, e-Pathshala 2.0 etc.
35.	**Uttarakhand**	Use of DIKSHA, Exam revision videos, PM e-Vidya, YouTube channel, Gyan Deep: Relay of Lectures through Doordarshan, Use of Virtual Classes etc.
36.	**West Bengal**	E-learning materials on Banglar Shiksha Portal, Banglar Shiksha Online Classroom, Audio-visual learning Video, Learning/doubt clearing through Tele mode ("Banglar Shiksha Durabhashe") etc.

Source: India Report Digital Education (2021).

The table 3 shows that every Indian State/UT takes major steps to continue the students' study during COVID-19 pandemic. It is possible only due to the Digital India Mission. Digital technology helps to conduct online classes via many innovative apps such as Zoom, Google Meet, Webex Meet etc.

E-Learning Benefits during Covid-19 Pandemic
- E-Learning resources provide a safer alternative to offline classes that helps the students to protect himself/herself from unnecessary outbreak of the coronavirus.
- E-Learning enables students to learn from anywhere and at any time.
- E-Learning consists of numerous tools such as videos, e-books, PDFs, podcasts etc. that helps the teachers to deliver the efficient lectures during the ongoing pandemic.
- Online lectures can be recorded and shared for future reference that allows the students to access the learning material at any suitable time.
- E-Learning teaches lots of online communication skills and how to use it for online classes that are not known by all of us previously.

E-Learning Challenges Faced During Covid-19 Pandemic
- The foremost challenge of e-learning is internet connectivity. Lack of consistent internet connection speed disturbs the students as well as teachers to the continuity of online class.
- Various electronic devices such as mobile phones, computers, laptops etc. are required for online learning. Poor parents can't afford such devices for their children due to budget constraints. Only well-to-do parents can afford the massive expenses of e-learning devices.
- Online learning is the biggest challenge towards performing experiment work because the physical appearance of students is necessary.
- Online learning is adversely affecting the physical and mental health of the students.
- Lack of proper communication facilities in remote and rural areas is the biggest hurdle in the online learning of the students.

Conclusion

E-Learning is the ray of hope and prime path to ensure that learning never stops. Online learning is the pertinent medium for students and professionals to acquire new innovative skills. The new norm in the education sector is the increased use of online learning tools. E-Learning provides a highly effective learning environment for the students. The advantages of adopting e-learning skills today will have a very optimistic impact to uplift the future of the coming generation.

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DIGITAL PLATFORMS: A SHIFT TO DIGITAL LEARNING

Dr. Rashmi Singh*

Abstract

Education is the continuous reconstruction of experience. Hence education is a continuous process. The recent corona pandemic has thrown the education system into a state of turmoil and the countries into a lockdown state. To maintain a flow of services in all sectors, especially the education sector, digitalization has become a boon. Digitalization of the education system has made a way to carry out teaching-learning activities. As education is the best means for sustainable development of all the resources, it acts as a panacea for all the hurdles in the state of lockdown. Digital platforms have presented themselves in a way that digital teachers can teach their students in an almost similar manner as in traditional mode. There are learning management systems, commonly known as LMS, such as MOODLE, Google Classroom, etc. that can serve the very purpose of teaching-learning. The present paper deals with the issues and challenges and potentialities of digital platforms in education.

Keywords: pandemic, digitalization, learning management system, digital teachers, sustainable development.

Introduction

When COVID-19 has hit the world suddenly, the first and foremost motive is to save humanity from its ill effect, the first action that would be suggested by health officials is, complete lockdown. At once, everything is shut down, be it offices, malls, shopping complexes, restaurants, and eventually educational institutions because of its highly contagious nature. For continuing the educational services in this situation, digitalization of education is the only means left. Hence digital platforms serve as the model for providing education in virtual mode. We can thank this pandemic due to which each sector of education be it primary, secondary, or higher has adopted the inclusion of digital elements in teaching-learning. If there is no pandemic wave we can take at least 10-20 more years to move upward in the adoption of the virtual world in teaching-learning. As educators when we practically use digital tools we found various potentialities and challenges in their usage. Nowadays we have moved forward and bid adieu to the age-old chalk and talk method of classroom teaching. Digitalization of education has shaken the entire educational system so that learners are now met with myriad learning opportunities at any time, any place, and anywhere. So for a better understanding of the after-effects of digitalization in education, one must be aware of popular digital platforms in education.

Digital Platforms

Digital education platforms are a set of tools and technologies that together enable pupils to

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learn online in a virtual classroom. A digital learning platform can be a learning management system (LMS) or a learning content management system (LCMS). It can also be a virtual classroom tool or a virtual learning environment (VLE).

- **Learning Management System (LMS):** An LMS is an online integrated software used for creating, delivering, tracking, and reporting educational courses and outcomes. We can understand it in this way too, an LMS can serve all modalities of teaching-learning, such as taking attendance, providing notes, taking a class as well as assessing in online mode too. There are various popular LMS but mainly Google Classroom and MOODLE are the most popular ones.
  - o **Google Classroom:** Google Classroom has evolved recently into a very popular learning management system. It is very easy to use, any student can join the google classroom with only the class code provided and having an email id. The teacher can take attendance here, providing assignments, and also assessing the student on one to one basis. It has also facilitated the evaluation of students by using rubrics.
  - o **MOODLE:** Modular Object-Oriented Dynamic Learning Environment. Moodle LMS is an open-source secure, feature-rich software platform that runs on any computer server and all common devices to create a web-based online learning space containing "courses" full of resources and activities. It is such LMS, which has regularly updated its features, such as including improvements to the user interface, admin experience, user-requested features, any necessary security patches, and more.
- **Learning Content Management System (LCMS):** A Learning Content Management System (LCMS) is a platform that integrates authoring, delivery, publishing, and analysis of content in a multi-user environment. There is a major difference between LMS and LCMS, LMS is designed to measure and report course completions. It does not take into account the needs of content authors or the struggles organizations face daily in producing, maintaining, and optimizing content. An LCMS goes beyond the capabilities of an LMS. It allows content to be managed, updated, and deployed on a granular level, allowing organizations to easily re-package and reuse content and media to serve the right audience, in the right format at the right time.
- **Virtual Learning Environment:** In traditional mode, there is a classroom environment, which is the actual learning environment and depends upon the classroom dynamics. When we use the digital platform, there is also a learning environment in the virtual world, which we can term as a virtual learning environment. A virtual learning environment refers to a system that offers educators digital-based solutions aimed at creating interactive, active learning environments. It encapsulates all the online environments that act as supplements to the course. In VLE, it is possible that we can diversify and break down the long reading content into bite-sized modules, a strategy called micro-learning. This is in sync with the theme of linear programmed instruction, i.e., small content has to be learned at a time so that minimum learning can occur. If we use augmented reality in education then we can also provide a personal touch in the virtual learning environment, a component that is severely missing here. There are in-numerous benefits of using VLE in our teaching-learning strategy.

Benefits of Digital Learning

The benefits of digital learning are purely magical, we could not even think of the positive outcomes of inclusion of digital learning in the educational scenario. Such as:

- **Easy access to information:** Gone are the days when teachers and libraries were the only information-providing bodies. In the digital world, students have easy access to information. Mobile sets with internet facilities have actually revolutionized the information world. Any information can be sought by anyone in a fraction of seconds now.
- **Up-to-date content:** Each one of us is aware of the fact that books cannot be revised so quickly. It is a time taking process, hence the traditional mode of teaching-learning has devoid of up-to-date content but digital content is disseminated as soon as it is created in no time. It is resulting in getting really up-to-date content.
- **Advanced reporting:** In the physical mode of assessing students, there is some limitation to assessing each and every aspect of them by a single teacher or group of teachers. But in a learning management system, one can report each and every single activity of one's students very accurately. From how much time they have devoted to the LMS to how many files they have downloaded, everything can be found out and reported by the teachers without any extra effort and time.
- **Multimedia learning:** In traditional teaching, teachers can not include various modalities of learning and hence are devoid of multimedia learning as well. But digital platforms have provided the inclusion of and benefit of multimedia learning as well. Here text, charts, graphs, animations, music, PPTs, etc. that can make any topic lively, interesting, and motivating to students.
- **New communication channels:** Digitalization of education has provided many new communication channels in the educational sector, one cannot even think of earlier.
- **24*7 access to learning resources:** As learning turned into mobile learning and eventually ubiquitous learning, students have now 24*7 access to learning resources, i.e., digital platforms have followed 3 As, anytime, anywhere, and anyone.
- **Self-directed study:** Digital learning has actually made learning in conformity with individual differences. It has provided personalized experiences to teaching-learning. Tailor-made courses are available in accordance with the needs and aspirations of the students. Online platforms, courses, and mode has made actually learning self-directed, i.e., governed by the self-pace of the students only.
- **Social media as learning platforms:** Social media has evolved into a very powerful means of communication. Any post can be viral within the seconds, such is the power of social media platforms like Facebook, WhatsApp, Twitter, etc. In this digital era, social media platforms can also act as learning platforms as synchronous as well as asynchronous modes of communication.
- **Collaborative environment:** In virtual mode also learning management system can provide a collaborative environment for teachers as well as students. As collaboration is the key for learning, discussion forums can provide a good means of discussion as well as dissemination of information and eventually collaboration as well.
- **Industry ready students:** There is a mismatch between demand and supply if we follow the only traditional mode of teaching because this is the 21st century, students must be skilled in the latest technology. If we use digital platforms, students must be aware of and skilled in 21st-century skills. The result is students are industry-ready, as soon as they enter into the workforce, they become absorbed by the system and this can check the problem of unemployment.

Issues in the adoption of Digitalization in Education

The above discussion seems that there is all good in the digitalization of education and it is as smooth as it has been written here but this is not so. To include the input of digital elements in the educational field is a very challenging task. Obstacles vary from psychological to economic as well as geographical realms. Let us have a look:

- **Economic reasons:** India has resources but its huge population makes its resources insufficient to it. Hence it seems that India has not had sufficient resources to move forward in technological advancement. Adoption of digitalization demands huge input in terms of infrastructure as well as in terms of investment. The government has done many initiatives in this direction to make India digitally equipped but still, a lot has to be done in this direction so that its benefit can be reached up to the grassroots level. In this pandemic situation, each level of the education system has adopted digital platforms but still, a very little percentage of students have benefited because of economic reasons. Generally, students don't have mobile handsets with internet facilities, the basic requirement is to be digital.

- **Psychological reasons:** The reason is not economic only, there is the problem of mindset too. There are people who still do not agree to move towards digitalization, they found the traditional mode better than the new one hence they do not adopt it and also propagate its shortcomings to others.

- **Geographical setup:** India is a nation of unity in diversity. There are geographical regions that have very poor internet connections. A small file cannot be downloaded properly there. Hence in such conditions, one cannot be benefitted from the functionalities of learning management systems and such.

- **Administrative role:** It must be the decision of the administration level that institutions must go for digitalization. As many benefits are for the institutional level in which higher-order authorities are involved, each and every decision cannot be taken at an individual level.

- **Gender norms:** There is gender disparity in our country, there are efforts for gender equality and demand for social justice but still it is a far cry. Hence in sync with this many traditional dogmatic families still found it's bad and unethical for the female gender to use mobile phones and use the internet. So gender norms are also playing a big obstacle and challenge to bridge the digital gender divide.

Probable Solutions

There is a solution for every problem and it is no different. We can overcome these challenges by tact and tactics and proper planning and by utilizing government initiatives. These can be:

- **Training programs:** There should be the provision of the training program for teachers on a priority basis because students are digital natives and generally better equipped with digital skills. And if they are not then trained teachers can train them.

- **Awareness programs:** First of all it is necessary to be aware of the benefits of digitalization of education to be in the cutthroat competition of the global world.

- **Government initiatives:** The government has invested money in making India into digital India through many initiatives and programs under the umbrella term NMEICT (National Mission on Education under Information and Communication Technology). GOI has launched a national MOOC provider platform under the abbreviation of SWAYAM (Study

Webs of Active and Young Aspiring Minds). Hence teachers must use these platforms to be digitally skilled and motivate their students too to utilize these initiatives.

● **Must for professional development:** Teachers of higher education must go for continuous professional development programs to be updated in their required field. In addition to this post COVID era also cannot and must not rely on traditional mode only. Hence teachers must be involved in using digital platforms so that students must get acquainted with their magical benefits.

Role of NEP (National Education Policy) 2020 in the Inclusion of Digitalization of Education

The NEP 2020 has a special focus on online education. Universities and institutions like NITs and IGNOU will be conducting pilot research studies for maximizing the benefits of digital learning in India. This policy has also emphasized on inclusion of artificial intelligence (AI) in education and the up-gradation of digital education by concepts like, virtual and augmented reality, the internet of things (IoT), and the like. NEP 2020 has envisioned the future of the Indian education system, especially the higher education sector is digitally skilled so that our institutions can be turned out into the world's topmost institutions.

Conclusion

We can conclude the above discussion in this way. Digitalization of education has come forward as a solution to mankind in the lockdown period as a boon to remain connected with our students and colleagues as well. Adoption of digitalization is not as easy for our country because of many challenges as we have already discussed. But in spite of this, we have adopted it in a respectful manner and come to know about its benefits for all its stakeholders. My argument here is that even when this pandemic is over and we go back to our offline classes, we must not be left with the digital platforms as well as our learning management systems. We must use it in the blended or hybrid way in a combination whichever is suited for the needs of its stakeholders.

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STUDENT'S PERCEPTION AND PREFERENCE FOR ONLINE EDUCATION DURING PANDEMIC

Ms. Sandeep Kaur Boski* & Mr. Raj Kumar**

Abstract

Education is everything as it helps us to become ideal human beings so that we shape a better society to live in and by knowing and respecting rights, laws and regulations. In context to the above topic the online education is to be concerned. The education being delivered and administered using the internet. It was difficult to imagine high quality instruction delivered online, but today in the computer age, it has become a reality. It is a broader term. If we stress on the concept of online education we stress about online education during the Corona period. Educational institutes across the world were closed due to COVID-19 pandemic affecting the academic calendars. Education during time was a major challenge for all the students in terms of receiving the input and giving output in education field. Education during COVID- 19 made the students highly independent and instilled a sense of confidence among the students. If we consider their mentality then they were free from high burdensome homework, punishments and studied with great enjoyment at home. Students highly preferred online education in a positive way. If we analyse the above topic deeply then it comes to light that education is a base of life and everybody has the right to get it for the growth of life, as our life is a challenging asset and we have to adapt and adjust in it.

Keywords: *Online Education, Perception, Preferences*

"Education is not the learning of facts but the training of mind to think."

— Albert Einstein

Education is everything as it helps us to become ideal human beings so that we shape a better society to live in and by knowing and respecting rights, laws and regulations. Generally we come across three types of education- formal, informal and non-formal education and all the above types have their respective relevance and significance. Education reduces the challenges of life. It paved that way for the career world of the modern century. The more knowledge we gain the more opportunities will open up to allow individuals to achieve better possibilities in career and progress.

In context to the above topic the online education is to be concerned. The education being delivered and administered using the internet. It was difficult to imagine high quality instruction delivered online, but today in the computer age, it has become a reality. It is a broader term. Traditional education is on the opposite side. Online education is also known as web qualitative learning and. Online education has become very famous in academics as well as for other training. Learners can indulge in an online course from home, work, the library or anywhere they can search the internet.

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If we stress on the concept of online education we stress about online education during the Corona period. Educational institutes across the world were closed due to COVID-19 pandemic affecting the academic calendars. With COVID-19, a drastic Coronavirus disease spread across the globe and all the educational institutions have come to a static still because they had to save the students from dreadful disease. During the start of Feb 2020, schools in China and few others affected were closed due to COVID-19. Almost all countries had announced the closing of all educational institutions from March, school and universities closed due to COVID-19 which has left one in 5-students out of school. By the end of April 2020, 186 countries were closed. To break the chain of transmission, only lockdown and school distancing were the only ways and slowly spread of COVID-19 by breaking chain of transmission and for an indefinite time all the educational institutions were closed. During this period online education grew its wings. Students were experimenting with ways to complete their syllabus to be in line with the academic calendar. This was an inconvenience for students and they also have discovered new examples of educational innovations using internet technology. The dark cloud has a silver lining on the dark cloud. Considering the sluggish phase of reforms in educational institutions. Covid-19 has been a trigger for all institutions to continue innovative approaches in a very short notice. Here it is to be noted that learning quality depends on degree of digital knowledge and skills. This online learning environment changes from old classroom structure when it comes to learner's encouragement, satisfaction and interaction.

Students were using Microsoft terms, Zoom or other platforms during this COVID period. The community of inquiry (COI) framework offers a convenient baseline for intervening in online teaching and learning. (Garrison, 1997)

In India, academic institutions have also made a change to the online teaching environment soon after Government decision to do nationwide lockdown for 21days from 25th March 2020 which was later increase for more days. The major concern is about the quality of learning which is closely related with how well the subject matter is designed and executed.

There is also a need to look at how this content is related to the online environment and also to understand and address the difficulties faced by students. The change to online mode has been abrupt one due to a lockdown imposed to manage COVID-19 and academic institutes did not have time to frame and adopt course content for online mode. In this context, experience of students and learning can be incorporated to make online learning very easy, and productive, even after lockdown is revoked. Life after COVID-19 will not be like before and online learning has to stay with offline classes. It was uncertain about length of pandemic and chances of reinfections, and the social distancing become normal.

Warner, Christie and Choy (1998) proposed the concept of readiness for online learning in the Australian vocational education and training sector. They described readiness for online learning mainly in terms of three aspects:-

1. The preference of students for the way of delivery opposed to face to face classroom instruction.
2. Student's confidence in the utilisation of electronic communication for learning which includes competence and trust in the use of internet and computer based communication.
3. Capability to engage in autonomous teaching.

McVay (2000, 2001) developed a 13-item instrument which measured students behaviour and attitude as predictors. India is the second largest country in the world and there was a great shift towards online teaching through the Indian Govt. Digital initiatives. An online self respect survey (n=1318) was conducted to assess students' perception of online learning in this changed situation in comparison with traditional classroom learning. The study analysed independent variables on student's percent towards online learning viz. gender, nature of settlement, economic background, primary electronic device, technology receptiveness, age and educational institution with each of these variables forming respective research hypotheses - results revealed several facts of student's perceptions. Receptiveness towards online learning was significantly higher for students from urban areas. Possible reasons for the results are discussed, hold-ups to students' motivation with digital education are identified and findings are contextualised in a broader way. Detailed surveys of students' perceptions about online learning have been in India, the second most populous country in the world. Among a few studies concluded that the students who embraced online learning felt positive about learning. The medical students also show motivation, interest and contact time between student and facilitator influenced receptiveness. A review on SWOC of online education in India did not show any new parameter on student's perception about online learning.

Student's perception and preferences regarding online education vary with the passage of time, area wise, school wise, family background, financial status, values taken from family etc. in the beginning of online education the sincere students took it as a boon for them. They thanked God for getting some education through this online mode. They preferred to get all the essential knowledge whatever they were getting. Even their parents were also supporting them. Few students percept that something is better than nothing. It was a drastic time from all angles. Education during that time was a major challenge for all the students in terms of receiving the input and giving output in education field. Education during COVID- 19 made the students highly independent and instilled a sense of confidence among the students. If we consider their mentality then they were free from high burdensome homework, punishments and studied with great enjoyment at home. Students highly preferred online education in a positive way. They took it as a way of life because the time of online education was maximum. Students preferred to attain their degrees with this online education. Syllabus completion was totally done by the mentors, even practical work was also done through an online mode. Many research findings indicated significant differences between the fear of academic failure and online and home environment among male and female students. Many of them have started diverting themselves to various innovative activities and taking courses that are happy for them to learn new technical skills by using emotional intelligence and distance from burden and negative thoughts. Students were trying to cope with negative effects rising from current pandemic situations. We know some poor students did not afford to get this education and also there was a range problem in some of the areas some northeast students took it as a fun to get educations through online mode this sudden change from traditional to online education has created many pros and cons for learning from home not only the education but extra curricular activities are being carried by online mode. More to that, a lot of students' time was saved as online classes were possible from anywhere as there was no area boundedness. The online teaching was recorded and saved for future references and the students preferred it because they had easy access to study

material in the time they required and students also used options to display PDF pictures, activities, 3-D structure, case studies, theories etc. In this way, their learning increased. Students' perception was that they could spend much time with their parents and their bonding was strongest as well as students called their cousins and brothers. Students perceive that their online learning has a wide range of options and can be personalized. Students prefer it more due to less cost factor. The school consolidated all the expenses of good transportation, books, school dress etc. Students were having the benefit that they could easily have access to the recording of the previous class.

Some students less preferred it because they got sick from screen time viewing. Case studies show that some students cannot adjust to the computer screen for such long hours of online classes and many eye related problems were raised.

If we analyse the above topic then it comes to light that education is a base of life and everybody has the right to get it for the growth of life, as our life is a challenging asset and we have to adapt and adjust in it. Students' preferences and perceptions vary from different aspects. What during COVID-19 the giant like time when we were not sure even to breathe the next moment. This boon contributed a lot to our students. It was not possible to give offline education but to some extent this online education was far better than all. The main objective was to get some knowledge, so this objective was accomplished with the online education irrespective of all problems and issues. The challenges of corona time were balanced to some extent. As it may be, the continuity of education remains and students got good marks in passed classes. Maximum students positively comment on such types of education. It is fact that nothing is perfect so students preference and perceptions were fully solid and constructive. It was a balanced method of study during the blastic period. An important view that "Perhaps it is our imperfections that make us so perfect for another."

It is well said that the reasonable man adapts himself to the world the unreasonable one persists in trying to adapt the world to himself. So, in the nutshell the adaptation to such a time of online education enhanced the overall program progress, and protections of all the aspects of one's personality. Whichever students preferred it helped them in one way or the other. So it is important that instead of worrying about what you cannot control, shift your energy to what you can create. Be mindful.

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DIGITAL DIVIDE ONLINE EDUCATION : CAUSES AND MEASURES

Ms. Sandeepa Kaur Bhatiani*

Abstract

After the Pandemic, the role of technology has become very important. Where technology has opened new avenues in the education sector, the\y have come in the way of obstacles like the digital divide. Therefore, this entire chapter focuses on the digital divide and online education. Digital divide is a very big obstacle in the way of good online education. So, in this chapter an attempt has been made to find out the cause of the digital divide and find a way out how it can be reduced. Digital divide is a big challenge, but there is a solution to it. The digital divide happens due to many reasons. Low income, lack of knowledge of information technology, lack of access to internet facilities are the main reasons. To this end, the chapter has articulated the issue of digital divide, its causes and solutions to the problem.

Keywords: *Pandemic, Digital divide, low income, Information communication technology, online education.*

Introduction

As the term indicates, the digital divide is a gap between those people who have knowledge of technology and those who do not have access to technology. Before understanding this divide, it must be understood who can connect with whom and how. If we take an example from a child who has a laptop mobile and a high-speed network, and on the other hand those children who have a joint laptop mobile, we will call this the digital divide. This divide is increasing after Covid 19. As teachers are using new technologies, this divide is increasing. That is why a lot of students are not able to do their homework because they do not have high speed internet and network facilities. Most of these students belong to low-income family groups or are first generation learners. Digitalisation and the internet are very good means of communication. That's why both of them play very important roles in the digital divide.

Concept of Digital Divide

When we talk about digital divide, first of all we need to understand what it means. The digital divide is a combination of two words. Digital is a common word which is being heard a lot after the pandemic. Digital word means electronic technology, through which we can work on computers. Data can be stored and transmitted only with digital technology.

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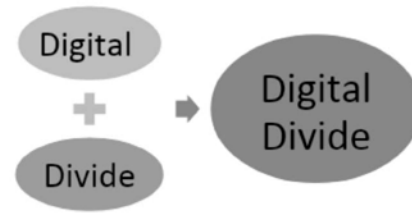
Divide means to separate the two parts or gap between two parts or groups. So, the digital divide defines the gap between the two groups. The gap that is being talked about here is the Technology gap. When there is a gap in two groups related to using or accessing technology or knowledge related to technology, it is called digital divide.

Online Education

Online education has become common word after pandemic for all. Because it is such a flexible platform that everyone can use it according to their own needs. Online education is such education which is given through the use of the internet. Before the pandemic, it could not have been thought that good education could be given in online education. But in this digital age it becomes reality after a pandemic. Due to this reason, online education, online teaching and learning have become broader terms. According to an ASER report (2021) only one third of Indian school children were pursuing online education during the pandemic, and almost 32% were doing online classes. While just 11% of all students enrolled in both private and government schools attended online classes, another 21% were watching videos or recorded lectures. If only government schools were considered where 81% were using online classes all over the country. So, this report finds the difference in household availability of mobile devices among students studying in government schools is only 56.2% as compared to households where children are studying in private institutes to 74.2%.

Types of Digital divide in India

There are many types of digital divide that affect the access of information communication technology in India. Following are the some types of digital divide in India.
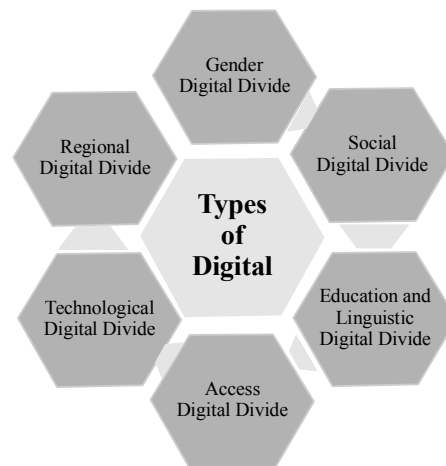
- **Gender Digital Divide:** Internet user gap between gender or males and females is called gender digital divide gap. This type of digital divide is very common in India specially. Mobile connectivity by the internet is spreading fast after the pandemic, but it is not spreading uniformly. There is still a gap between men and women. Mobile phones and internet facilities are used more by men than by women. Compared to women, 90% of men own a mobile phone. Despite owning mobile phones, women do not have access to the internet.

- **Social Digital Divide:** There are a lot of social networking sites and apps available these days. Therefore, social media platforms such as Facebook, Twitter, and Instagram are very popular. Several groups have been formed on these social media platforms, based on similar interests. It has become easier for people to follow and like such groups due to internet connectivity. Those without internet access cannot join or participate in these groups. A social digital divide occurs as a result of this.

- **Education and Linguistic Digital Divide:** In the year 2021, the average literacy rate of India was 77.70%, according to data from the National Statistical Office (NSO). As of 2021, male literacy has reached 84.70% and female literacy has reached 70.30%. So, there is still a gap between male literacy rate and female literacy rate. However, most of the content on the internet is in English. This explains why people who study English are capable of using the Internet effectively. That is why it is called the Educational and Linguistic Digital Divide.

- **Access Digital Divide:** A lack of telecommunications facilities is India's biggest obstacle. There are many people in India who cannot afford Internet access because they are so expensive. It is especially difficult to afford internet services in rural areas. There are a lot of network issues in rural areas. So, people can't access technology.

- **Technological Digital Divide:** Technological digital divides refer to differences in the use of modern technology, inability of ICT, Lack of knowledge of work on computers and any disability to use computers, between two groups.

- **Regional Digital Divide:** In India, there is a huge gap in access to technology in urban and rural areas. Due to the lack of high-speed internet access and other resources in rural areas, the percentage of internet users is low. There is therefore a gap in internet usage between rural and urban populations. It is referred to as the regional digital divide.

Causes of Digital Divide

After Pandemic Digital Divide has a lot of effects. The digital divide happens due to many reasons. So, followings are some major causes of digital divide.

- The main cause of digital divide is income level of the peoples of a nation. Because only the income level shows how much people can afford or spend money on internet facilities. In India, the income level of the people of rural areas is low, so they are not able to afford internet facilities.

- The biggest reason for the digital divide in India is the lack of infrastructure. When we talk about schools, if the infrastructure is good, then students can learn and train about new technologies.

- Weak access of ICT is another one of the major causes of digital divide. Because in rural areas people are not able to access internet.

- Another major cause of digital divide is expensive technology. Because in India, most of

the people in rural areas come in low-income group, so they are not able to afford the expansive technology. Moreover, if they take the cost of expansive technology into consideration, they cannot afford to spend on it.

● Lack of development of digital content is also major cause of digital divide. Because, As Hindi is our official language, more rural students are of Hindi medium. For this reason, most of the e-content is developed in English. Hindi medium students do not understand this content.

So, these are some major causes of digital divide. For this it is very important to pay attention to these causes.

Measures to restrict Digital Divide or Ways to reduce Digital Divide:

Digital divide is a big challenge, but there is a solution to it. Followings are some measures by which we can restrict the impact of digital divide:

● Cost effective access to ICT. This is very important measure by which we can restrict digital divide by some extent.
● Give the internet services to the user according to their needs, so that they can easily afford these services.
● Some government programmes related to digital literacy training should be organised so that students' knowledge about the latest technologies can be enhanced.
● Good technical support should be given to students.
● Free Wi-Fi facilities should be given in rural areas so that rural students can easily access the internet facilities.
● Extending the role of community and panchayat in rural areas so that students can use internet facilities easily.
● Continuous Inservice training should be organised for rural areas teacher so that they can be competent in using latest technologies in teaching learning.
● Motivate NGO's and private sectors so that they will invest in rural areas in providing best quality internet services.
● Motivates the experts to develop the e-content in Hindi also. So that Hindi medium students can easily access and download this type of e-content.

Conclusion

In conclusion, I it can be said that it is very important to finds the way to reduce the digital divide. Because, lack of telecommunication facilities means lack of opportunities for fortune. Those who cannot access the new technology cannot take advantage of it. If we have to do social economic development of the country, we have to reach the access of the Internet from house to house.

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NEW INNOVATIONS IN EDUCATION :
CREATIVE PEDAGOGY FOR TEACHING AND LEARNING

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Abstract

Education in current modern age requires an innovative model of teaching and learning. Faculties of education nowadays are in the process of introducing innovative teaching methods, hoping to improve the quality of education. Both scholars and educators recognise the value of the learning environment, particularly the creative learning environment, in fostering students' creativity. This paper proposes a series of tasks and idea generation opportunities to be implemented by teachers in improving classroom creativity. By fostering students' learning goal orientation, network links, and information sharing, the creation of a creative learning environment has a major positive impact on student creativity. Therefore, it is a necessity for each teacher to know how to increase students' creativity in order to have sufficient and brilliant ideas for solving problems in innovative ways. For enhancing creativity among students each teacher must have an understanding of the concept of creativity; social, physical and psychological factors required to release the innovative ideas. Creativity is influenced by strategies implemented by teachers in their classrooms to make their teaching more innovative. This paper discusses conceptual framework of creative pedagogy and suggest various measures to create learning spaces by using various technological tools to enhance students' creativity.

Keywords: Creativity, Creative pedagogy, Positive classroom cultures, innovative learning spaces, Technological tools.

Introduction

Education in modern age requires an innovative model of teaching and learning. It means there is need to emphasize optimal development of individual potentialities, innovative thinking and creativity. Promotion of creativity is demand of present education system. It is essential for educators to support students in developing innovative learning strategies. They can also educate the learners who have higher order thinking skills and can ensure the conceptual knowledge building of the numerous concepts in school. It is for this reason, among others, that the idea of creative learning has been highlighted as the best method for shaping learners in the 21st century, and the pedagogical models of the creative learning environment provide strong support for this ideology. Sternberg and Lubart (1999) defined creativity as one's ability to produce novel work that is both unusual and original. Wallas (1926) considered four stages of creative and problem solving behaviour as: Preparation; Incubation; Illumination and Verification.

In recent years, creativity has become a topic of utmost importance in the field of teaching

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(Plucker, Beghetto, and Dow, 2004) and need of nurturing creativity among students has intensified. Teachers must foster students' creativity because it is essential to success in the rapidly changing global economy if they are to prepare students for job and life in the twenty-first century. The role of supportive learning environment in nurturing creativity is well recognized by scholars (Williams, 2002). The importance of creativity in education is well acknowledged and widely accepted (Amabile, 1996a; Sternberg, 1999; Cropley, 2003; Sawyer, 2011). Creativity is associated with emotional, cognitive and social domains, having professional advantage (Sternberg & Lubart, 1996; Sternberg, 2006) in life. It is crucial to use technology in the classroom today to maintain children' creativity and encourage it to flow. Memory-based instruction has contributed to the decline in students' desire to produce something unique and original. By implementing innovative teaching strategies, educators can reverse this trend and revive creativity in the classroom.

Framework of Creative Pedagogy

A framework of creativity is based on the assumptions that creativity can be nurtured though three interrelated elements of teaching learning process i.e., Creative teaching, Teaching for creativity and Creative learning (Lin, 2009). Watkins & Mortimore (1999) considered creative learning as a salient feature in creative pedagogy. Also suggested that neglect in components of creativity such as Autonomy and other characteristics could create hindrance in fostering students' creativity. Framework of creative pedagogy focuses on components of creativity and their implications for fostering creativity. Lucas, (2001) suggested that teachers can encourage students' creativity by teaching creatively through their skills, enthusiasm and imagination. Developing problem solving ability and appreciating students in learning contexts are essential elements of teaching creatively. It's crucial to understand how people's experiences with a task today could influence their creativity toward that work in the future. However, individual differences may be able to diminish the impact of situational factors on experience, quality and creativity.

Supportive environment for enhancing creativity is developed through Pedagogical principles of teaching creativity (Fryer, 1996). These principles of fostering creativity describe effective teaching strategies to create a supportive environment that prioritise students' autonomy (Cremin, Burnard, and Craft 2006). These researchers maintained that creativity can be foster by incorporating three principles; involving standing back, by profiling learner agency, and by creating time and space in teaching learning process. These help to encourage the student's questioning and their active learning engagement by own decision making and the responsibility for learning. Scheffer et al. (2017) compiled a comprehensive list of approaches to cultivate creativity; the suggestions include working in team, taking risks, report writing, meditation, time for self, sporting a pocket book, trashing paintings if needed, disregarding norms, and collaborating.

Watkins & Mortimore (1999) suggested four phases of pedagogical practices, including:
— Focus on different types of teachers
— focus on the context of teaching
— focus on teaching and learner
— an integrated model of pedagogy

Watkins & Mortimore described the relationship between the teacher, learning environment, and the concept of learning.

Woodman, Sawyer and Griffin (1993) expounded a similar theoretical concept of creativity by

extending their model including both External influences and intra-organizational influences. In this model of creativity two type types of work environment inputs were emphasized as:

- Group characteristics – diversity of group, task assignment, roles, group structure and problem solving approaches used in group
- Organizational characteristics – organizational climate, technology use, incentives and reinforcement, interpersonal relationships, team culture

Model offers holistic approach of fostering creativity among students. Karnes et al. (1961) explained that creativity among students can be encouraged through flexible educational services and enrichment programs. Davis & Rimm, 1985; Karnes et al., 1961; Subotnik (1988) emphasized the role of Individual assignments based methods, problem solving and problem finding approaches to stimulate creativity. Davis & Rimm, (1985) expounded a four-step model of creativity development and suggests attributes to become a creative person as follow:

- — Increase creative consciousness (readiness to think in creative manner)
- — Understanding the conceptual framework of creativity
- — Individual and standardized techniques of creative thinking
- — Self-actualization (i.e., attaining one's potential).

Sternberg and Lubart (1991) suggested that there are two types of motivation significant to creativity: intrinsic motivation and extrinsic motivation to outshine. Basically, creative people are intrinsically motivated to accomplish a task. Whereas, extrinsic motivation of grading system in schools is major block in path to creativity among students. Sali and Akyol (2015) reported the most significant block in cultivating creativity in the primary school level was lack of professional training to teachers in cultivating creativity. Niu and Steinberg (2003) found no space of imagination and invention in education system rather focuses on quantitative standards.

Croply (1997) listed nine principles for teachers to foster students' creativity in the classroom as follows:

1. Independence: Students should be encouraged to learn independently
2. Integration: Teaching in cooperative and integrative style
3. Motivation: Motivating students to gain fact based knowledge to develop divergent thinking
4. Judgement: Not judging students until they have clearly formulated ideas and worked out completely
5. Flexibility: Giving opportunity to students for expressing their ideas in flexible manner
6. Evaluation: Students must be encouraged for self-evaluation
7. Questions: Students should be encouraged to ask questions and must be responded seriously by teachers
8. Opportunities: Offering diverse experiences under many different situations
9. Adjustment: Helping students to learn new ways to handle and cope up with difficult situations

Strategies to Create Innovative Learning Spaces

Innovative learning spaces can be created by providing flexible and supportive environment for building team culture, independent thinking, group discussions, collaboration and should be supportive to one-to-one learning. Csikszentmihalyi (2003), suggested that the best workspaces for creativity and flow are those that strike a balance between environmental demands and users' capacities to

operate on their environment. Student achievement and the physical environment according to research on student academic performance and building quality, physical environment quality has a big impact on students' ability to learn. The facility where students spend a significant amount of their learning time does in fact affect how effectively they learn, according to substantial data (Earthman, 2004).

Use of Technological Tools to Enhance Student Creativity

Blogs for Creative Expression

Blogs are a great manner for the development of innovative and creative expression in students. It provides platform to students to share, post and comment upon each other's creative writings. They can write freely on topics of their own choice and expression of ideas without having any fear about grading or assessment. Teachers can encourage students to prepare and manage a common magnificence weblog, in an effort to act as a common source of expression for the all students of the class by making learning a joyful experience. Edu Blogs, Blogger, Word Press are some of the free blogging platforms for students and teachers.

Brainstorming Tools

In today's teaching practices Brainstorming on subjects that are to be delivered to students has now turn out to be a remarkable collaborative way, which inspires the students to think out of the box and creatively. By making use of technology for Brainstorming teachers can make their teaching more easy and participative activity. These tools give opportunity to interconnect the thoughts in creative manner and boost the creativity of students. Teachers can illustrate a concept by using various mind maps and visual graphing tools.

Audio-Video Tools

Teachers and students can create videos and tutorials of subject matters by using a variety of audio video tools available free online.

Students have the chance to make their own videos and share them with the class, which can be a wonderful way for them to practise their creativity. Audio tools are also equally important as students can use them to make quick amendable audio clips and can share with someone else or post on class blog or school website. Jing, Cam studio, Screener are examples of video making tools for teachers and students. Other audio recording tools; Audio Pal, Vocaro can be used easily in the classrooms by teachers and students.

Games

By games collaboration and creativity can be enhanced effectively in a very simple manner. Educational games keep students interested in their studies, pique their imagination and interactive thinking, and shape their thinking toward creativity. Nowadays, games are a required component of education. Free online educational games include Capital Penguin, Grammar Gorillas, FunBrain.com, and more.

I Annotate

With the aid of a pen, highlighter, and even images, students use I Annotate to take digital notes. This enables students to effectively apply the close reading strategy in the digital environment and showcase their inventiveness in the note-taking process. Teachers can use this as a fantastic grading tool.

Positive Classroom Cultures

Positive class room cultures that create genuine interest in gaining knowledge result in more possibilities for students to undoubtedly connect with content material, their peer group and teachers.

1. Mindset: A teacher can change the mindset and mood of students by innovative pedagogy. The teacher can change the attitude of students towards learning by making teaching learning process interesting. If educators are passionate about their subject matter, students will definitely tend to follow. Educators must have commitment for the students and the subjects they are teaching. However, a teacher's mindset regarding how to organize, design and deliver content is critical to the innovative pedagogy. Teachers must be trained for fostering creativity in their classrooms. Rather than content delivery only teachers must act as guides to develop problem solving ability, idea generation in students and make the classroom more innovative.

2. Self-Reflection: Self-reflection is the method of self-analysis for teachers to see how well their teaching strategies were in terms of content delivery and concept building of students. Self-reflection provides an opportunity for teachers to critically examine the success and failures of their teaching mechanism in the classroom. By this evaluation teachers can adapt their teaching methodologies accordingly. This acknowledgement help teachers to improve teaching learning process.

3. Open-Ended Questions: Teachers can ask Open-ended questions to encourage students participation. This gives a good opportunity for students to share their ideas, exciting conversations, promote team culture and leadership skills. When educators ask open-ended questions, students can give unique answers and points of view. This practice helps to bring out hidden potential of students.

4. Creating Flexible Learning Environment: In the challenging profession of teaching, teachers must have an understanding of using their classroom for creating flexible learning environment. For example, teachers must know that furniture setting is one of the important variable in creating physical environment for learning assisting in collaboration and interaction with other students. Crowded classrooms with cluttered and loud spaces create uneasiness for students to move around, lead to communication gap and break concentration when students need to focus.

5. A Flipped Classroom Model: Teachers can use a flipped classroom model to reverse the traditional order of classroom teaching. In this model, students before coming to the class view lecture materials, read books, or do research as their assignment in advance. In class room situation various activities i.e., peer discussions, collaborative learning, individual learning, brain storming as well as cooperative learning. Researches has shown that flipped classroom learning practice has improved students grades, achievement and attitude towards learning.

6. Create A Place for Personality Development of All Learners: Teachers can offer option to students for working in group or alone. Both the ways are crucial to meet the needs and demands of all learners. Therefore, when a classroom only focuses on group work emphasizes whole group discussions and working together gives chance to extroverts to grow and gain energy. Whereas, when a project focuses solely on individual research, Introverts can get chances to blossom.

Teachers who provide the activities to engage, inspire and sustains the love for learning of their students are more likely to enjoy the teaching learning process and find positive results.

Incorporation and integration of music, art and culture. It is recognised all over the world that society is enriched by culture based creativity. A recent report of European commission considered creativity as central force to shape our culture. Therefore, incorporation of music, art and culture in schools provide opportunity of cultural integration.

7. Use of Problem-Finding Method: Teachers can help students to look at the world by finding gaps through problem-finding method. Problem-finding is a sort of problem discovery. Teachers can use problem-finding method as part of a more significant teaching process as a whole which can include both problem-finding and problem-shaping together. Problem-finding develops an intellectual and imaginative understanding to solve various problems. Teachers by using this strategy, can provide opportunities for students to think out of box, ask analytical questions and apply these innovative ways to solve problems.

8. Conferring Autonomy to the Students: Giving autonomy to students develop a sense of responsibility towards their own education. This in turns result in a feeling of desire to succeed. When teacher give freedom for task accomplishment, students get motivated to do their best and make use of their full potential. A sense of determination and focus among students is crucial to bring out their hidden talent.

All the above strategies are ways to create innovation and inspire creativity in the students. Teachers can implement various new strategies to know how things go on in their classroom while revising, learning and concept building repeatedly with students.

Conclusion

A conceptual framework of creative pedagogy within educational context highlight the significant role of teacher in creating supportive learning spaces conducive to creative learning. Teachers with their innovative pedagogical approaches and using technological tools in their classroom are able to enhance creative abilities of their students than the teachers who follow merely traditional instructional approaches. There is dire need of innovations in schools today, and it can begin with teachers. Thus, nurturing creativity through creative pedagogical practices is a way to provide supportive environment for developing creative qualities, satisfy the need of self-actualization as well as contribute in their future success.

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EXPLORING CONCEPT MAPS IN ONLINE EDUCATION :
A CONCISE AND EFFECTIVE TOOL TO LEARN CHEMISTRY

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Abstract

Chemistry has always been a difficult subject to learn and teach. A Concept map simplifies the topic and makes the subject matter easy to understand. This is well defined, established technique which every chemistry teacher uses in one way or the other, knowingly or unknowingly while teaching in classroom. COVID-19 pandemic restricted our classroom teaching to new ways of online and flipped classroom education. This has made difficult not only for the teachers but also for the students to adopt and adapt with the new technologically advanced ways of teaching-learning. Understanding chemistry in online classroom and teaching the subject without chalk-duster enforced teachers and students to incorporate old proven techniques and tools in online teaching-learning which aids in making the subject simple and lucid. One such method is use of concept maps or mind maps in teaching online, a tough subject like chemistry.

***Keywords**- Concept Map, online Education, Chemistry*

Introduction

Chemistry is taught to science students at undergraduate, graduate and postgraduate levels. It includes major subjects of organic, inorganic and physical chemistry with allied sciences of analytical, pharmaceutical, petrochemical, food, cosmetic and environmental chemistry as well. It covers array of industrial areas from small chemical factory to multinational pharmaceutical company including oil and gas refineries, food and cosmetic production units, plastics and what not. Students of Science go through competitive entrance examinations along with regular semester evaluations where chemistry remains part of curriculum. It is also a part and parcel of industrial formulations. Concept understanding, memorizing reaction mechanism, remembering and retrieving knowledge become important for learners of chemistry.

Teacher plays a key role in making a child understand concepts of chemistry at primary, secondary and even at ternary levels. Teacher uses different techniques such as teaching through charts, providing mechanisms in tabular forms, writing jingles for difficult topics. Students still forget the topics and concepts easily as chemistry is too vast to keep every bit of information in brain-box of our body.

Concept mapping is a way of representing concepts in map form. Map of world, map of India or map of any country gives us most of the information of globe and any specific country in single page concisely. Concept maps were developed and designed in similar fashion to keep the concepts in summarized form so as regain any small intricacies at the time when needed. These are not just

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concepts to draw on the page of paper but to visualize the blueprint of concepts in mind to simply call it mind maps.

Expert teachers and students can only plan a good concept map which includes each important key word to remember the concept easily. Teacher uses his knowledge and conceptual framework to draw a compiled picture of concepts.

Concept maps are used by chemistry teachers for a long to teach reactions in organic chemistry and to make the student remember the complete periodic table in inorganic chemistry. Even the concepts of physical chemistry such as solid-state, and chemical kinetics can be understood with the help of concept maps. Polymeric chemistry can be tabulated in the form of a concept map to remember the types and examples of each polymer. One such example is shown in figure 1. suggesting the importance of concept maps in explaining chemistry concepts briefly in a meaningful manner.
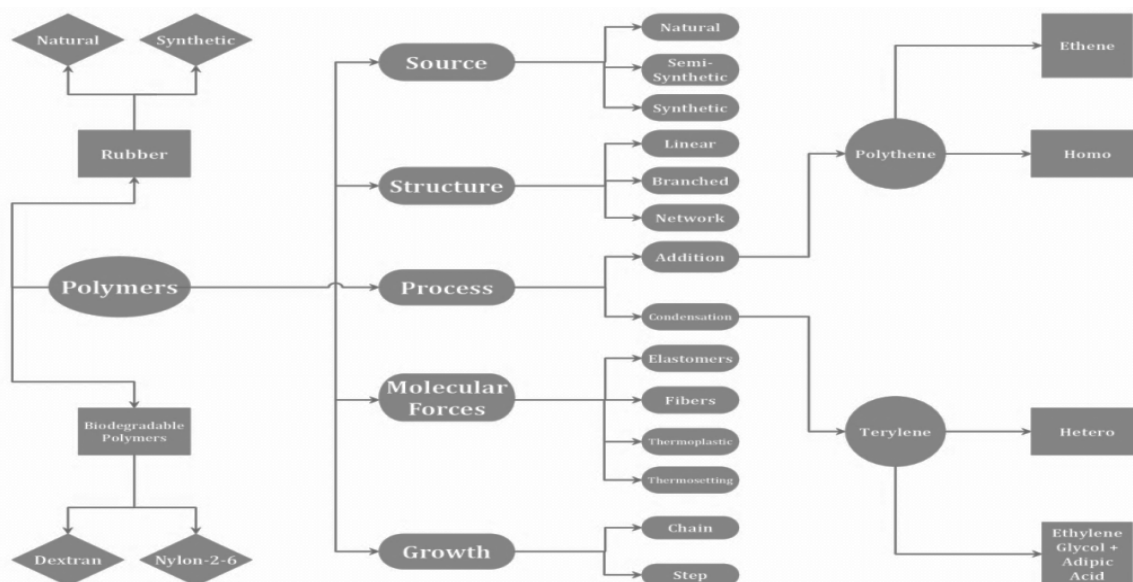
Figure 1. Sample of concept map explaining polymers in chemistry.

Recently, COVID –19 pandemic has taught many lessons to educationists. The brick-and-mortar model was shifted to an online mode of education. A teacher transfers knowledge to students sitting at their home through online platforms like ZOOM, MS-Teams, Google Meet etc. using mobiles, laptops and tablets. Many teachers used the same chalk-duster method keeping the camera on, and many used writing pads to deliver the concepts.

The shift from visual to virtual classroom was transformation in the overall system of education binding educationalists to unlearn old methods adapting to the modern methods of teaching with the aid of technology. Google classrooms, MOOCS, e-content development to teach and learn from remote locations become important both for teachers and learners.

The transition phase was not an easy task to break the age-old system and suddenly adapt to a new one. Teachers found it difficult to deliver the concepts to students sitting in comfort zones at their own places on mobile screens or laptop screens. Students out of boredom kept their mobiles aside without asking for further explanation to the teacher even if concept is not understood. One

way teaching, lack of teacher-student interaction and the pressure of pandemic was making it more difficult for educational institutions to run the system smoothly.

Teaching chemistry online was stressful for teachers. Chemical reactions cannot be taught without chalk-board. Derivations, numericals in physical chemistry was much difficult part to deliver online. The long theoretical concepts of inorganic chemistry is not an exception and techniques in analytical chemistry were burdensome to teach. Teachers of chemistry tried varied ways to satisfy students. After much trial and error, they were still finding lacunas in actual classroom teaching and virtual teaching of concepts of chemistry.

Concept maps proved a boon to such teachers who wanted their students to understand concepts easily without losing interest in the subject. Many teachers of chemistry tried this already accepted method of concept mapping to add spice to enhance worthy online teaching and to avoid feeling of give up at the shifted mode of virtual classroom.

Online teaching in chemistry can be made sufficiently interactive and enjoyable. The satisfaction level of using concept maps in online teaching with respect to teacher and students needs to be assessed. Standard concept maps in chemistry are to be designed by experts for the acceptance of a larger communities *at par*. Common framework of concept maps in teaching chemistry through online mode will open novel authentic ways in teaching-learning.

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CHANGING TEACHING-LEARNING SCENARIO AFTER COVID-19 IN INDIA

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Abstract

Education is a field that requires changes day by day because the needs of society & nation change over time. We can also observe that there is an abrupt change in our education whether it comes to school education or higher education. Due to COVID-19, there is a change in the teaching-learning process. With nearly 1.6 billion students affected due to the COVID-19 pandemic, more than about 200 countries. Over 94% of students around the world have been affected by COVID-19. The COVID-19 pandemic has caused the greatest disruption of educational systems in recorded human history. Conventional teaching processes have been seriously disrupted by social exclusion and restrictive movement laws. Many students are unable to handle the stress and abrupt transformations that occur in higher education, which leads to their dropping out. Dropouts from private schools increase and enrollment in government schools increases when it is compared with previous data. This paper focuses on the availability of infrastructures in rural areas & according to this situation awareness among the teachers that how to use innovative teaching strategies like different platforms for the teaching-learning process for example: google classroom, google meet, zoom, Webex meet, Microsoft team, etc. As a result of this, the educational sector has been adversely affected by the situation, all face-to-face instruction has been discontinued in educational institutions, which has resulted in complete reliance on online learning and the adoption of methods tailored exclusively for distance education, not only school education but higher education also affected by this situation. Everything about our lives has changed significantly.

Keywords: Teaching-learning process, ICT, COVID-19, availability, awareness, challenges

Introduction

The basic building blocks for a promising future are laid by education. School education provides a platform for learners to identify their interests and passions. Education gives a meaningful shape to the students, provides the right direction, develops interest & hobbies, helps in future creation, and helps in keeping touch with innovative & technological inventions. So, in this context changes occur day by day because of the needs of learners, society, & nation. But everyone can't adapt to the abrupt changes in anything for example, in their house, interest, in their life, etc. It takes time to adopt new changes in anything; this is a natural process & a human tendency. In a sense, schooling at school lays the groundwork for learners to design their career paths and divisions on the ladder to a prosperous future. At the school stage, basic education usually starts. The child gains understanding and verbal skills at this level. Students have a fantastic opportunity to learn about literary works,

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math, scientific knowledge, political history, history, and a variety of other crucial subject areas through their schooling. Education also has a significant impact on how inquisitive young children 's thoughts develop. But when it comes to COVID time in 2020, the whole educational process shifts from face-to-face to online. This is one of the abrupt changes in the education system. With nearly 1.6 billion students affected due to the COVID-19 pandemic, more than about 200 countries. Over 94% of students around the world have been affected by COVID-19.

In most regions, the COVID-19 pandemic has forced the closure of educational institutions including colleges and universities. This makes an abrupt change in the teaching-learning process. There are several challenges faced by teachers, learners, schools, institutions, & universities. Education shifts from conventional to technology-based learning. The teacher delivers quality education with the help of various online platforms. Both learners and teachers may experience a completely different learning environment when switching from conventional face-to-face learning mode to online learning, but they are forced to adjust because there are few or no other options. Through a variety of online platforms, the educational system and the instructors introduced "Education in Emergency," forcing them to adopt a system for which they are not prepared. The use of online tools depends on the institute's effectiveness, performance, and teachers' skills. Teachers' skills play a very important role in managing online resources, how to use them effectively, and managing classrooms in virtual mode. The entire educational system has switched to digital learning, distance learning, e-learning, or adjustable learning as a result of the COVID-19 lockdown situation (Tanveer, Bhaumik, Hassan and Haq, 2020).

Availability of infrastructure in rural areas

Due to inadequate digital infrastructure support, children in rural India were unable to cope with the normal due to the disruption of education brought on by Covid-19. India's rural areas are better off economically and socially thanks to education. In India's 26 surveyed rural districts, only 16 percent of Class 1 students can read the text at the required level, and nearly 40 percent cannot even identify letters, according to the Annual State of Education Report (ASER) 2019. An increased emphasis on improving the rural education system is necessary to realize the vision of a skilled India. Due to inadequate digital infrastructure support, pupils in rural India were unable to deal with the normal due to the interruption of education brought on by COVID-19. A comprehensive approach must be offered to guarantee high-quality education at the primary level. Every village faces particular difficulties. Governments and enterprises must collaborate closely with local populations to change systems and behaviors in a way that has a lasting impact.

Two-thirds of Indian rural children said they received no educational materials or tasks during the pandemic time, according to the Annual State Education Report survey. Rural children struggled greatly because there is a clear divide between the urban and rural educational systems. They are prevented from receiving the education they want due to a lack of resources, an insufficient number of schools and facilities, financial constraints, and low digital literacy. A two-wheeler manufacturer's social arm, Srinivasan Services Trust, is dedicated to eradicating disparities in rural education in India by assisting in the improvement of school infrastructure, mobilizing qualified teachers, and providing career counseling. A change in mindset can be facilitated by improved learning infrastructure, which will inspire students to show interest in their studies.

Awareness of ICT- enabled infrastructure for pedagogic use

The COVID-19 pandemic has created a number of chances for the unprepared and unreachable plans of incorporating an e-learning system, despite the overwhelming difficulties that have been faced by teachers, schools, institutes, and the government pertaining to online education from various perspectives. Because of online education, has forged a solid bond between educators, learners' & parents. After COVID-19, the teachers use technology-based teaching. In this type of teaching a teacher uses google meet, google classroom, zoom meeting, Webex, Microsoft team & social media like WhatsApp, telegram, messenger, & WeChat tried for the first time to continue the education in schools, & in universities. But everyone cannot accept the immediate change so,technology-based teaching was not as appropriate as planned for education. Technology-based teaching requires appropriate training to get better results. And in the COVID-19 pandemic, due to lack of training, they face many challenges like teachers who don't know how to use these apps for taking online classes, same issue with students, & students who don't have smartphones, living in that type of area where there is no connectivity (like people living in rural areas).

As 2 years were crossed in this situation after this most of the teachers are having awareness of how they can use technology in their teaching-learning process in a better way, how they can assess students using online innovative techniques, and how they can give assignments to the students easily. In simple words, we can say that today's teachers are enabled to use ICT as pedagogy. Various programs are running to fulfill this purpose because it saves human resources, but one of the big disadvantages is that the bond between teachers and students breaks somewhere which doesn't create a healthy environment in the classroom. The establishment of a bond between teachers & students is important & this happens from face-to-face mode only. It is proven that when students learn on their own i.e., learning by doing they learn 90%. There is also a negative effect on the mental health of students like it causes fatigue, lack of communication skills, lack of confidence, lack of interaction and social isolation, experience anxiety & stress, Even the Lecturers and Instructors Experience Stress.

Challenges in the teaching-learning process after a pandemic

Numerous difficulties were brought on by the Covid-19 pandemic for the Indian educational system. But teachers face many difficulties after COVID-19 also. Government, stakeholders, & regulatory bodies take some decisions like phase-wise students enter the school, rest of the students take classes on virtual mode only (at that time they followed the *odd-even system* in the schools) following social distance norms. By doing so, a safer transformation to an offline-led educational module could be made without having to assign more teachers to more classes each day. Nowadays, teachers use a blended approach in the teaching-learning process. To make this realistic, central, state, and divisional governments could work with private non-profit players to expand the access to digital learning options for underprivileged students. Research conducted by Pablo A. Lizana et al. in 2021 & found that recent observations suggest that in settings where face-to-face mode has been reinstated, teachers exhibit high prevalences of anxiety, depression, and stress. After COVID-19, it is observed that there is a decrease in social relations, level of physical activity decreases, & domestic confinement.

Conclusion

The mental health of all individuals involved, including educators, family members, and learners,

has been impacted by remote learning. According to reports, parental involvement is essential for implementing rural learning at the elementary level. Moreover, the vast most of the reports discuss how to do so and advise including such strategies in future teacher preparation programs. In the past, educators were not exposed to many of the necessary pedagogies, and many had to overcome a challenging learning curve in order to deliver fundamental lessons. The educational disparities brought on by the digital divide. This has had a significant influence not only in middle- and low-income countries but also in many developed regions."As per Unified District Information System for Education (UDISE) data for 2018-19, the Gross Enrolment Ratio of girls decreased from 96.72 in elementary classes to 76.93 in secondary classes and 50.84 in higher secondary classes. It also pointed out that the dropout ratio of girls during 2019-20 was 15.1," the report stated. According to the Annual Status of Education Report (ASER) survey the enrolment in government schools raised from 64.3% to 65.8% between 2018-2020. According to the survey, it soared to 70.3% in 2021, representing an increase of 4.5% in public-sector school enrolment nationwide over the previous year. Although the government is tasked with several duties that compete for scarce resources, enhancing access to information and lowering its cost right now demand urgent policy attention.

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ACCREDITATION OF PUBLIC SCHOOLS IN INDIA FOLLOWING THE COVID-19 OUTBREAK: UNDERSTANDING IMPORTANT POLICY IMPERATIVES

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Abstract

Accreditation improves and sustains the quality of education for children of all backgrounds through extending educational opportunities. Accreditation methods verify whether a school ensures minimal requirements for teaching, classroom learning, school administration, and other disciplines. It holds schools and the education system responsible for delivering quality education by strengthening community credibility and responsibility. The proposed research paper explores existing knowledge of the school accreditation system, identifies knowledge gaps, reviews, analyses education policy pertaining to school accreditation and provides a critical evaluation of existing school accreditation systems. Furthermore, briefly discuss COVID-19 and its influence on accreditation, focusing on learning objectives, online learning platforms and assessment tools, instructional approach, and how all of this influence's accreditation. Additionally, the study emphasises the significance of school accreditation and provides recommendations for implementing accreditation programmes in public schools by highlighting the role of key stakeholders of the education system for transforming schooling through robust accreditation programmes.

Keywords: Accreditation, Quality Assurance, Education accountability, School Standards

Introduction

The ancient Indian education system provided information, customs, and traditions that directed and nurtured humanity (Altekar, 2009). However, with time today, the Indian education system has grown to be the one of the largest in the world, with over 1.5 million schools, 8.5 million educators, and 250 million students from various social, cultural, caste, and religious backgrounds (UNICEF 2018). Initially, India had several issues related to attendance, dropouts, and school enrolment, but in recent times, India has improved primary school attendance, expanded access to high-quality education, and decreased the proportion of out-of-school children. (UNICEF, 2018).

Academic achievement has long been an issue for educational quality in India. Only 44% of eighth-grade students can do basic mathematical operations, and 27% of students can't read (ASER, 2018). As per the 2022 National Achievement Survey conducted by NCERT, compared to the 2017 results, the national average student performance across subjects dropped by up to 47 points, and for class 3, students' average exam performance in language, mathematics, and environmental

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science drastically dropped. The results for Class 10 mathematics, physics, social science, and language tests have all fallen. This indicates that the education system is facing a serious concern regarding quality education. Along with basic numeracy and literacy, 21st-century skills need to be incorporated to make the country a mighty nation (NEP, 2020). However, the requirement for 21st-century skills and educational quality has become a global goal for providing effective education for everyone, as effective education must be provided at all stages of education, as raising standards at a certain age or stages of education will not promote achievement of educational outcomes.

National Education Policy 2020: School Accreditation

Aiming to bring standards in the education system, the National Education Policy 2020 directs states to develop State Standards of Setting Authority in order to provide good education via transparent, fair, and rigorous school assessment and benchmarks. Furthermore, via the provision of high-quality education, the strategy aspires to provide an appropriate, equal, and vibrantly aware society.

One of the fundamental functions of the central, state, and municipal governments is to offer an excellent education to their inhabitants. Despite India's entry into the globe of economic and literary progress, there is a long list of vital issues that have hampered its perfect educational system (World Bank, 2019). And a possible solution to these fallacies is school accreditation.

Accreditation will enable the monitoring and development of a transparent and accountable eco-system to guarantee excellent education to even the most distant corners of the nation. It may also be characterised as a continual progress of meeting standards, incremental improvement, and quality assurance (Proitz, Stensaker and Harvey, 2004). The accreditation process includes creating criteria, indicators for school progress, and procedures, activities, or products that a school must adhere to in order to achieve accreditation requirements (Accreditation Standards for Quality Schools, 2007). Generally, in the field of education, accreditation is the procedure through which a group or organisation assesses a school or course of study and officially declares that it has complied with, surpassed, or fulfilled established norms and criteria for educational quality. These organisations provide fundamental criteria that represent the characteristics of a good educational programme (Ibrahim, 2014).

However, accreditation and standards-setting aren't new to the education system. The University Grant Commission (UGC) established an autonomous and independent body as National Assessment and Accreditation Council (NAAC) in 1994 to improve the quality of higher education with the aim of making quality assurance an integral part of the functioning of higher education institutions (HEIs).

Given India's advanced and extensive educational system, existing system implementations raise questions about the quality of education as a whole. Thus, the policy paper outlines strategic goals for the policies to address concerns with accountability and transparency in order to bring about systemic change in the educational system. To build a strong accreditation system for educational advancements, the policy has called for the creation of an independent state-level accreditation agency.

The main goals of the accreditation process are included into its many definitions, which may be summed up as follows (refereed goals of the National Program on School Standards and Evaluation) (2015).

a)   Design sound framework, methods to implement, and evaluate a school assessment system that is technically sound and meets the needs of Schools.

b)   Establish an organisational framework and a critical mass of human resource for state-to-state adaptation and contextualization of school assessment processes.

c)   Building school and system-level capacity to institutionalise school assessment and continual school effectiveness.

d)   Analyse school evaluation reports across systemic levels to help the system respond to school-specific needs.

Need of Accreditation; Standards Setting for Public Schools

Due to accessibility issues and other necessities, millions of children today remain far from attaining their fundamental human rights. UNICEF predicted estimates for 2021, nearly 17 million children and adolescents globally are unable to achieve basic competency levels in reading and arithmetic.

According to the World Bank's 2020- fifty-five per cent of Indian school-age children cannot read and understand a basic paragraph by standard five. According to another survey report, due to poor infrastructure and accessibility 30% of girls from economically disadvantaged communities in India have never attended school. To address this global learning crisis, high-quality education requires a great degree of openness, responsibility, and internal drive.

State governments, communities, and other stakeholders must be prepared to collaborate in order to address educational challenges. Accreditation may be an action that may be utilised organically. Accreditation will help schools, states, communities, and other numerous stakeholders in the setting of minimum quality standards. Furthermore, evaluating schools against a minimum level or set of criteria may provide accountability and openness.

Using accreditation as a management tool, schools may find areas for development and raise their standards for educational excellence. Accreditation gives schools a disciplined framework for progress.

Process of School Accreditation

It is a form of voluntary quality control that engages the whole school in an ongoing process of reflection, self-evaluation, and development. This procedure involves an outside review, which offers constructive criticism on praise and adjustment suggestions in an effort to confirm and enhance educational quality, (Ulewicz, 2013). The Indian Quality Council (NABET) defines Process of accreditation; as follows, educational accreditation is a kind of quality assurance technique in which a third party assesses the operations and services of a school or programme and based on the school performance the relevant agency grants accredited status to the schools.

Also, integration of internal and external assessment occurs, notably in the context of the accreditation process for schools. Based on some existing practices in India, as well as school accreditation frameworks and the recommended procedures in each framework, the following framework draft has encouraged a self-evaluation mode for school accreditation followed by external validation procedures. Those frameworks are the Central Board of Secondary Education (2018), the National Program on School Standards and Evaluation (2015), ASIC (2018), and the Council of Internal School Committees (2020).

In accordance with National Education Policy 2020, an effective quality self-regulation or accreditation system will be instituted for all phases of the education system, including pre-school

education as private, public, and philanthropic to ensure compliance with essential quality standards, the policy states. As mentioned above, some of the public schools/states have adopted mixed methods of accreditation but there is a little variation in the accreditation processes for private and public schools. Since accreditation is a voluntary procedure, the majority of private school's act in their own self-interest (Manimala, Wasdani and Vijaygopal, 2020). Private schools, on the other hand, use the accreditation process at their convenience and adhere to the procedures specified by certifying bodies, which have incorporated internal and external evaluation criteria.

The key accreditation procedures in India are as follow:

1.   Self-interest/review: Because it is a voluntary procedure, schools usually apply via the proper channels and submit the proper documents to the appropriate agencies. Public schools choose a model as well, however, in the case of mandates, schools have to follow the state's chosen model. But, in an ideal case, school accreditation must be followed by both internal and external evaluations.

2.   Self-evaluation report or an external validation: In many cases, schools get a self-evaluation report card with highlighted areas of performance and critical areas to improve. In certain situations, schools get an external assessor to verify submitted data and issue report cards based on the evaluation. However, in the context of public schools, an external assessment may be difficult and impractical, thus states use validation methodologies with a randomly selected sample size.

3.   Report cards: Schools get report cards on performance in the different criteria of the accreditation process when the self or external assessment is completed.

4.   Accreditation: In respect to public schools, the trained staff/ assessors or quality assurance team at the department evaluates all the data points gathered throughout the process and decides on the kind of accreditation, grade or ranking should offer to the schools along with recommendations for improvement.

5.   Improvement plan: Since accreditation is a sustainable and ongoing review procedure. Schools need to work on development plans based on the identified areas of strength and potential improvements. In the context of public schools, adequate instruction is needed to enhance overall operations, systems, and governance in order to deliver high-quality education.

6.   Public disclosure: One of the goals of the accreditation process is to improve system accountability and transparency (NEP 2020), hence school accreditation report cards should be accessible to the public and it must be made available through the public domain websites of the state as proposed by National Education Policy, 2020.

State School Standards Setting (SSSA)

As National Education Policy 2020, chapter eight states that the all state education departments must conduct assessments of all state-run schools, including privately run schools, in order to ensure their adherence to the established minimum standards. Further, policy directives suggest that the State must form a state's independent and autonomous body, i.e State School Standard Authority (SSSA) for overall school quality assurance (NEP, 2020).

Furthermore, The State Council of Education Research and Training (SCERT) - a relevant state agency- shall strive to develop a School Quality Assessment and Accreditation Framework (SQAAF) with multiple stakeholder support to implement the policy effectively. The standard framework will focus on objective parameters of school performance and critical areas for improvement. All schools will be assessed on minimal professional standards, and the self-disclosure

of all essential information will be published on SSSA and Schools websites (MoE, 2020). At the end of the assessment, all schools should be provided with a report card consisting of comprehensively analysed objective data and insights (NEP, 2020). The NEP also emphasises the need for using technology in the school accreditation process, even going as far as to specify that technology will be used appropriately to guarantee efficiency and transparency in all SSSA activities. This would greatly reduce the burden of regulatory demands that schools presently bear, (NEP, 2020).

Besides this Ministry of Education, India's new education policy (2020) indicates a key role of State Standards Setting Authority (SSSA) in ensuring school quality and effectiveness as below:

a. Implement state government policies on education, regulations, and standard-setting for schools.
b. Setting minimum standards for state schools based on fundamental parameters in line with international best practices for school standards and quality assurance.
c. Basic regulatory information should be made transparently available to the public so that it may be monitored and held accountable.
d. Frequently monitor educational websites for updated public disclosure information.
e. Settle public grievances and complaints.

School Accreditation Best Practices

The Shaala Siddhi scheme was also put into place centrally to evaluate schools according to certain standards. The National Program on School Standards and Evaluation (NPSSE) was established by NUEPA in New Delhi with the goal of allowing all schools to engage in ongoing self-improvement.

Table no 1: Shala Siddhi framework (2015)

#	Key domains
1	Enabling Resources of School: Availability, Adequacy and Usability
2	Teaching-learning and Assessment
3	Learners' Progress, Attainment and Development
4	Managing Teacher Performance and Professional Development
5	School Leadership and Management
6	Inclusion, Health and Safety
7	Productive Community Participation

Source: School Standards and Evaluation Framework, Shala Sidhi (2015)

This framework focuses on a number of particular topics for overall development and school improvement. The framework takes care of the critical seven assessment domains, enabling school administrators to enhance academic standards. However, in order to direct the teaching and learning process, technology integration in schools is becoming more and more necessary as time goes on. To solve the learning obstacles, technology must be employed, and it should be given significant consideration in accrediting programmes.

School Quality Assurance and Assessment Framework (SQAAF)

The CBSE School Quality Assurance and Assessment Framework (2019) strives to deliver great education to children via standardised self-evaluation and external assessment standards in the creation, implementation, and administration of effective school systems. CBSE, like other

educational frameworks, has identified major topics for school evaluations.

Table 2: School Quality Assurance and Assessment Framework (2019), CBSE.

#	Key Domains
1	Scholastic Processes
2	Co-scholastic Processes
3	Infrastructure- Adequacy, functionality, and aesthetics
4	Human Resources
5	Management and Administration
6	Leadership
7	Beneficiary Satisfaction

Source: CBSE School Accreditation Framework (2019)

The framework assesses both student progress and the school's ability to provide an innovative, relevant, socially aware, and environmentally concerned learning environment. Thus, Quality Assessment is integral to the curriculum, serving both self and school assessment purposes. The important aspects of the framework are that it focuses on the process of schools not only on outcome. This helps schools to strengthen schools' processes to improve overall governance of the school.

State Initiatives on School Accreditations in India

Since 1994, NAAC has been certifying higher education institutions and accreditations for educational systems in India. In a similar vein, the Gujarat state government launched the GunoStav (Celebration of Education Quality) initiative in 2009 to highlight areas for development and boost the motivation of local school officials. .Furthermore, the state of Gujarat started the GunoStav school evaluation programme in 2010 and recently upgraded it in 2019 to become "GunoStav 2.0" to accredit schools. The Gujarat State Quality Assurance Council, which oversees and controls the quality of education provided in Gujarat schools, has also been established by the state.

In order to execute the National Education Policy, 2020, the Haryana Education Department has recently started state-wide accreditation programmes. It is hoped that the state will finally embrace the accrediting agenda centrally in order to ensure an increase in overall school quality and prevent it from spreading to the lower rungs of our social pyramid, (Press Trust of India, 2021). In addition to Gujarat, several Indian states have started public school certification programmes in a short period of time. These states include Delhi, Karnataka, Maharashtra, Karnataka, Odisha, Goa, and Assam. However, no conclusive evidence exists that these programmes are successful.

COVID and Accreditation

A rapid global pandemic outbreak, COVID-19, fundamentally altered how we work and see society. This epidemic affected all sectors, including education at all levels. This epidemic significantly impacted how we acted and functioned in the educational realm. The abrupt shutdown of schools and the technological move left educators and policymakers with limited time to plan for potential systemic difficulties. As a result, key stakeholders fail to develop fundamental guidelines for educational institutions' accreditation and certification processes to ensure minimum standards (OCED, 2020).

Furthermore, with the rise of online learning platforms in COVID times and teaching through

remote learning, authorities are constantly confronted with challenges in teaching, such as whether courses are engaging enough or whether teachers have the opportunity to exhibit their talents in the classroom (Mishra, Gupta, and Shree, 2020).

With the unexpected onset of a pandemic, educational authorities are confronted with several significant obligations, including adhering to government regulations, documenting the necessary paperwork for monitoring online classrooms, such as course reports, educating teachers on technological use, etc.

In providing a new experimental learning platform to support a new generation of learners, in contrast to conventional learning, On the other hand, the accreditation procedure may need to be revamped to account for the evolving transition in the education sector from traditional to online interfaces. The management of the academic accreditation procedures has altered as a result of the COVID-19 pandemic. The availability of technology tools and human resources, i.e., qualified teachers and academics inside the system may be utilised as school accessors to handle extensive accreditation procedures, are some of the remedies that are thus advocated in this new circumstance (Abdelhadi, 2020)

The role of key stakeholders in School Quality Assurance

In order to maintain respectable levels of instruction, scholarship, and infrastructure, quality assurance is the systematic assessment of educational programmes (UNESCO). Transforming education system, each stakeholders play a crucial role along with stakeholder participation in quality assurance procedures, engagement of stakeholders in educational processes, in general, is seen as critical for fostering a culture of quality improvement (Importance of engaging stakeholders in quality assurance processes: New report for policymakers, 2021). Education and Training 2020 Working Group Schools' emphasis on stakeholder involvement in quality assurance processes is essential in the education sector to foster a culture of quality improvement and technological openness. A focus on continuous improvement to promote students' learning and wellbeing may be seen in schools with a culture of quality enhancement.

Thus, each stakeholder is crucial in guaranteeing educational quality and establishing educational standards. We have summarised the role of important stakeholders in the school accreditation process given by (UNSECO, 2007), Ulewicz, 2017) and on our practical experiences.

Table 3: Role of Stakeholders in Public School Standard Setting

Stakeholders	Responsibilities
State governments-Education Department	• Provide inputs to accreditation design, training, and delivery process at state level • Define/ review guidelines and checklists to be adhered by schools • Provide financial assistance for improving schools. • Interact with students on a regular basis to hear about their experiences and what they want from schooling • Build and improve academic infrastructure • To ensure quality education, multilateral standards should be developed. • Enhance working conditions for teachers and other school personnel. • To ensure that changes in governments do not have an impact on educational policy, independent educational commissions should be established to supervise educational policies. • Assure a favourable student-to-teacher ratio. • Adhere to the execution of governmental directives and regulations.

State Council for Educational Research and Training (SCERT)	• Adhere to the execution of governmental directives and regulations. • Research should be done to make sure that the content of the framework is always getting better to meet the needs of the industry and the times. • Facilitate review workshops to suggest corrective measures to District officials • Provide information and build the capacity of schools with the necessary abilities, information, and attitude for successful implementation of the accreditation programme delivery.
District Institute of Education Training and District Education Office (DIET/DEO)	• Conduct monthly review meetings and ongoing monitoring at the block, cluster levels – with specific emphasis on accreditation activities • Define quality indicators for district and provide ongoing support to schools on improving identified areas
Head Teachers/Principals	• Receive orientation on assessments formats designed and distributed to Head Teachers for assessing on their own • Administer self-assessments in respective schools, accurately record data and submit timely reports to the DIETs and State group
Teachers	• Support the Head Teachers in carrying out self-assessments by providing accurate information, data, and evidence

Conclusion and Recommendations:

The effectiveness of the accreditation programme depends on establishing a trustworthy, equitable, and transparent accreditation mechanism. By giving a school community a defined approach for reflection, assessment, and growth to implement and assure systematic and ongoing school improvement, accreditation changes schools (Council of International Schools 2019). Thus, in order to improve the quality standards of education, stakeholders' equal engagement is important and taking accountability for the role becomes highly crucial.

We must implement a high-quality assessment system that consistently measures the quality of school performance and supports school improvements and student outcomes through frequent, rigorous school assessments if we are to realise the world-class education system that the National Education Policy, 2020 envisions. However, both internal and external evaluations of the assessment must be given equal weight. Assessment frameworks need to be thoroughly investigated and contextualised in light of national and local standards.

The accreditation procedure is being implemented in India in compliance with the NEP 2020. The establishment of SSSA organisations should assist in the preservation of minimal quality standards based on defined criteria. Furthermore, the strategy emphasises transparency and accountability by publicly making all basic regulatory information accessible.

Nonetheless, it is important for us to keep a few potential challenges in mind given the shift in time and Covid in place:

1. Resources: While accreditation will shed light on the areas where schools need support, will each state be able to provide its schools the resources (both monetary and otherwise) that they need to improve their infrastructure, curriculum, teacher quality, and teacher recruitment.

2. Accessibility: While the NEP 2020 asks for all accreditation information to be made publicly available, we need to ensure that this is done in a way that will allow community members (especially parents) to understand and engage with it.

3. Potential for uptake: Schools themselves need to be coached to understand the importance of the accreditation process, what data they need to collect and the importance of data transparency, and how they communicate their gaps to their communities.

Today, states are gearing up for the process of accreditation. And while they are faced with real concerns, the expectation is that each state will embrace the process and use it to improve the overall quality of its schools.

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IMPACT OF COVID-19 PANDEMIC ON EDUCATION SYSTEM

Ms. Tajinder Kaur* & Mr. Manpreet Singh**

Abstract

COVID- 19, the epidemic disintegrated all spheres of life and education was affected the most. Due to the lockdown all the educational institutions were shut off by the government authorities. The trouble was posed over the education for the children. Online Education were the terms which were propagated during this period. The content was delivered through multitudinous operations and softwares as Zoom, Google Class, Google Meet and so on. New methodologies of tutoring were introduced. Now, when everything regularized, education has commenced again in the physical form still, there are enormous issues and challenges which need to be bandied about similar to how the epidemic has affected the whole education system including assessment measures, tutoring ways in school and university education. The present paper addresses the colorful consequences of the COVID- 19 in the education system.

Keywords: *COVID-19, Education System, Home-based learning, Assessment Measures, Teaching Techniques*

Introduction

COVID 19 is an contagious respiratory complaint caused by a recently linked nimbus contagion called SARS- COV- 2 with a mortality rate of between 2- 3. The epidemic has disintegrated the lives of the world's population and affected all sectors of the world. In the original phase, there was no result to the complaint to anticipate counter blockade. Thus, the world blazoned Lockdown and India also blazoned Janta Curfew which included restrictions on travel and education. Massive public care strategies have included hand washing, wearing masks, physical distancing and avoiding mass gatherings and gatherings to alleviate the effect of the contagion. Lockdown and stay at home strategies were put in place as a necessary action to flatten the wind and control complaint transmission (Sintema, 2020). Seminaries and other educational institutions were poorly affected as coaching methodologies and studies were the first to be hit hard by the lockdown. On April 14, 2020, the lockdown was likewise changed to drag through the Indian authorities till May 3, 2020. The training space is likewise degraded with the lockdown being a pivotal determinant of the US profitable future. There's a deficit, including a lack of contemporary statistics, a lack of aids, a data gap, an inimical terrain for learning domestic, fair and academic excellence in advanced education rulings. This newsletter assesses the impact of the COVID- 19 epidemic on education.

Impact of COVID-19 on Education System:

To prevent the outbreak of epidemic covid- 19, the government of India had taken expensive

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type of preventative measures. The union government declared a countrywide shut-down of all educational institutions on 16 March 2020. This was also Applicable to Board of Secondary training March 18, 2020 all over India. CBSE launched revised guidelines for examination centres to conduct examinations by maintaining a distance of at least 1 cadence between the scholars taking the test with a class not having further more than 24 scholars. The union public provider figure laid over the interview for the civil immolations examination 2019 also the utmost of the state Governments and other educational boards laid over examinations due to outbreak of COVID- 19. Govt. of India has determined in the unborn civil Janta-curfew on March 22 and implements lockdown from March 25, 2020 onwards in one- of-a-kind situations. The lockdown 6.0 was declared on June 29, effective from 1st July to 31st July 2020 with some important lower restrictions in different sectors besides training. Nearly all country authorities ministries have taken measures to make sure that the educational conditioning of modalities and sodalities do no longer bog down for the duration of the lockdown length. They've advised the institutions to keep all their classes online. It has given a chance to develop new and advanced professional chops through online literacy in a more effective and productive way. Online literacy is the stylish result during this epidemic Covid- 19 situation (Jena, 2020b). So, the digital India imaginative and visionary of the government is arising as a important device for working the prevailing disaster because of covid- 19. It's a fact that technology- grounded education is more transparent with all respect. Looking at this adventure of sodalities and faculties being shut, authorities of India, in addition to state governments and particular gamers have accepted right enterprise. The Ministry of Human Resource Development (MHRD) has made several arrangements, including online doors and educational channels through Direct to Home TV, Radios for scholars to continue learning. During lockdown, scholars are using popular social media tools like WhatsApp, Zoom, Google match, Telegram, Youtube live, Facebook live etc. for an online tutoring literacy system. ICT action of MHRD is a unique platform which combines all digital resources for online education. The digital enterprise of MHRD for secondary as well as advanced education during COVID- 19 are Diksha, E-Pathshala, National Repository of Open Educational Resources (NROER), Swayam, Swayam Prabha etc. utmost of the examinations were laid over or tallied. Some universities had canceled the test or conducted online examinations. Educational institutions had to defer or cancel nearly all examinations (engineering, medical, law, husbandry etc) in the expedient of avoiding the social gathering as the contagion is spreading by skin contact. Student comforting operations were also affected. It may be that some faculties and workers may face pay cuts, lagniappes and payment increases may also be laid over. Some workers were terminated from the service. The cinch- down had caused query on the examination cycle. Universities, sodalities and seminaries face the impact in respects to reduced training and externships quality and period, and placements, as well as reduced figure collection.

Positive Impact of COVID-19 on Education

Though the outbreak of COVID- 19 has created numerous negative impacts on education. Educational institutions of India have accepted the challenges and tried their best to give flawless support services to the scholars during the epidemic. The Indian education system got the occasion for metamorphosis from the traditional system to a new period. The following points may be considered as the positive impacts.

● **Move towards Blended literacy:** COVID- 19 has accelerated relinquishment of digital

technologies to deliver education. Educational institutions moved towards an amalgamated mode of literacy. It encouraged all preceptors and scholars to come with more technology expertise. New ways of delivery and assessments of learning opened immense openings for a major metamorphosis in the area of class development and pedagogy. It also gives access to large pools of learners at a time.

- **Rise in use of Learning Management Systems**: Use of learning operating systems by educational institutions came with great demand. It opened a great opportunity for the companies that have been developing and strengthening literacy operation systems for use in educational institutions.
- **Enhancement in cooperative work:** There was a relief occasion where cooperative tutoring and literacy can attack new forms. Collaborations may be among faculty/ preceptors across the globe to benefit from one another.
- **Rise in online meetings:** The epidemic has created a large rise in teleconferencing, virtual meetings, webinars and E-conferencing openings.
- **Enhanced Digital knowledge:** The epidemic situation convinced people to find out and use digital technology and redounded in adding the digital knowledge.
- **Ameliorated the employment of electronic media:** For participating information Learning accouterments are participated among the scholars fluently and thus the affiliated queries are resolved through e-mail, SMS, phone calls and using different social media like WhatsApp or Facebook.
- **World wide exposure:** Preceptors and learners have gotten openings to interact with peers from around the world. Learners acclimated to a world community.
- **Better time management:** Scholars are suitable to manage their time more efficiently in online education during afflictions.
- **Demand for Open and Distance Learning (ODL):** During the epidemic situation utmost of the scholars preferred ODL mode because it encourages tone- learning furnishing openings to find out from different coffers and customized literacy as per their requirements.

Negative impact of COVID- 19 on education

It has created numerous negative impacts on education and a many of them are as refocused below:

- **Educational exertion hampered:** Classes are suspended and examinations at different situations laid over. Different boards have formerly laid over the periodic examinations and entrance tests. Admission process got delayed. Scholars suffered a loss of nearly 3 months of the complete time of 2020- 21 which goes to further deteriorate the true durability in education and also as scholars would face important difficulty in continuing training again after an enormous gap.
- **Impact on employment:** Most of the reclamation got laid over thanks to COVID- 19 placements for council scholars may also be affected with companies delaying the on board of scholars. The Percentage is anticipated to increase because of this epidemic. In India, there is no reclamation in Govt. sector and fresh graduates sweat out their job offers from private sectors.
- **Unprepared teachers/students for online education:** Not all teachers/students are

good at it or a minimum of not all of them were ready for this sudden transition from face to face learning to online learning. Most of the teachers are just conducting lectures on video platforms like Zoom, Google meet etc. which cannot be real online learning with non dedicated online learning platform.

- **Reduced global employment opportunities:** Some may lose their jobs from other countries and thus the pass out scholars might not get their job outside India thanks to restrictions caused by COVID- 19. Numerous Indians may need to return home after losing their jobs overseas. Hence, the fresh scholars who are likely to enter the duty request shortly may face difficulty in getting suitable employment. Numerous scholars who have formerly got jobs through interviews might not be suitable to join their jobs thanks to lockdown. The Indians who are doing their jobs abroad may lose their jobs. Recent graduates in India are also stewing for pullout of job offers from commercial sectors due to movement restriction within the current epidemic situation.
- **Increased responsibility of elders to train their wards**: Some educated parents are suitable to guide but some might not have the acceptable position of education demanded to show children within the house.
- **Loss of nutrition:** Mid day meals is a school meal programme of the govt. of India which is intended to produce better nutritional food to school-age children nationwide. The closure of schools has serious implications on the daily nutrition of scholars because the mid-day meal schemes have temporarily been shut. Various studies have known that mid-day meals also are a vital contributing factor for increased enrolment within the schools.
- **Access to digital world:** As numerous scholars have limited or no internet access and plenitude of scholars might not be ready to have a computer, laptop or supporting mobile phones in their homes, online tutoring- literacy may produce a digital peak among scholars. The lockdown has hit the poor scholars veritably hard in India as utmost of them are unfit to explore online literacy harmonious with colorful reports. Therefore the web tutoring- literacy system during epidemic COVID- 19 may enhance the gap between rich/poor and civic/pastoral.
- **Access to global education:** The epidemic has significantly disintegrated the upper education sector. A large number of Indian scholars who are enrolled in numerous Universities abroad, especially in the worst affected countries are now leaving those countries and if effects persist, within the future, there'll be a big decline within the demand for transnational education.
- **College fee got delayed**: During this lockdown, the majority of the people are facing the severance situation so that they might not be ready to pay the figure for that exact time, which can affect the private institutes.

Future Perspective on Indian Education System

Indian education system has shown the will to accept the challenge to continue education process during lockdown but still Indian education system is in the middle of metamorphosis, COVID-19 has stimulated the metamorphosis and it's just beginning, while going to borrow digital or online tutoring literacy, it must be in the mind that machine or digital bias won't understand scholars mind and emotion. The current and future education is based on technological advances and innovation

of Information Technologies and Internet. One may ask, what are three directions of computer development and three directions of communications development? Hundred years ago, most people thought they would live the same life their parents did. Today most people are not surprised by the prediction that the Information Age will probably transform their lives beyond recognition. Let's consider the trends in the development of computers and communications and, most excitingly, the area where they intersect. Three principal Directions Computer Development are:

- **Miniaturization:** Everything has come lower. ENIAC's old- fashioned radio style vacuum tubes gave way after 1947 to the lower, briskly, further dependable transistor. A transistor is a small device used as a gateway to transfer electrical signals along destined paths (circuits).
- **Speed**: Due to enormous large volume of sale and information processes the loftiest processing and communication speed is essential in all sectors.
- **Affordability:** The cost is critical to all businesses worldwide.

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UNDERSTANDING DIGITAL DIVIDE IN ONLINE EDUCATION

Ms. Tamisha* & Dr. Narendra Kumar**

Abstract

Digital divide is defined as a gap between those having access to modern technology and those who don't have excess technology, such as computers, smartphones, laptops,internet etc. There is a huge difference which affects the education of students, therefore we should be more aware of the barriers that students face in accessing technology and the internet. Pandemic has caused a lot of disruption in the society we live in. Education is one of the major areas of concern. According to the UNESCO report of 2020 more than 32 crore students in India have been affected by the pandemic due to the closing of educational institutions. Students belonging to the more unprivileged background have to face a huge loss as the educational institutions have to adopt much more Technology based teaching methods. All the classes are being mediated online the digital divide among the rich and poor is highly visible during this period.

Keywords: Digital divide, Education, Pandemic

Introduction

According to the ACT center for equity in learning, a gap between the individuals who have sufficient knowledge and technology accessible to them and those who don't have expertise or access to technology is called a digital divide. The term is mostly used in economics which refers to the economic gap that is present between rich and poor. Digitalization has become a very important means of communication and information and this has proved to be very useful during the Global pandemic covid-19 it has helped in providing administrative support as well as all the education sector has changed from being traditional to digital. In India Arogya Setu app was very useful for public health. Access to technology has come out as a very powerful tool in this global crisis, however the gap of the digital divide is also increasing at an alarming rate.

Importance of Digitalization

In today's world the internet has become a very valuable tool for information and communication. It is easy to use. The Internet has opened up the option to study from anywhere. It has helped us coming out from demographic barriers. Internet has bought a new revolution in the world. People are more aware of their rights as they are able to get information about everything. It has also helped in promoting the effort of the government to provide better education. It has helped in reducing cost as most of the things are becoming available online. It also saves time for the people who could not reach everywhere, as they are able to do it as per their convenience from their homes. Better health, employment and educational opportunities are available to us now and it has also helped the

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government in implementing the schemes successfully.

Technology and its Effect on Education

Technology has played a very important role in today's world. We cannot calculate the impact of technology as it is still changing. The education sector is changing today because of technology. It has also changed the methods of teaching and learning, we have come far away from traditional classroom teaching methods. In today's world technology has become a very important part of how the student is taught in the classroom, whether the child is at the elementary level or is getting higher education, technology is needed at all levels of education. However, it has also resulted in a big gap between the rich and poor.

Caught in the Digital Divide

In today's world technology has become a part of our lives. Knowledge, information, and highly skilled people are the most important factors when it comes to the growth in the economy but the digital divide is stopping many students from receiving better learning aids. Many people from rich backgrounds have easy access to the latest technology and can buy learning aids for their children easily and those belonging to the poor background are still getting knowledge through traditional methods. That is why many students are unable to get admission in the schools embracing ICT as they are unable to cope with the classes, they are excluded from the scene because they don't have technical skills which are highly essential in today's world.

Implications of Digital Divide

There is a large gap when it comes to education. It is a great interference to the areas which are not very well developed. The people who are living in underdeveloped areas are unable to get in touch with the new technology and promote their standard of living. The digital divide not only stops the development of these underdeveloped areas but also reduces their chance to have a better career to a great extent. As a result, there are many students today who are not able to build a better career for themselves as a child who has come from a highly privileged background can build for himself.

Defeating the Fundamental Right

The Supreme Court has warned that the digital divide caused by online classes will defeat the fundamental right of people, mainly those underprivileged children studying in conventional schools. The Supreme Court bewailed that the Right to Education now depends on who can afford the gadget and who cannot, as during the pandemic online education has increased the digital divide with major consequences.

In India, the rural and urban divide is one of the biggest factors of the digital divide.Students belonging to privileged family backgrounds are learning new concepts with the help of modern technology and various e-learning platforms while those belonging to most of the rural areas or underprivileged areas are even struggling for basic facilities such as infrastructure, proper toilet facilities, and clean drinking water and food. Gender also plays a very important role as the condition of a female is much worse than a male as many girls drop out of school when their menstruation cycle starts. Also, it is the case in some of the schools that students have to travel far distances to reach their schools.

After the pandemic many of the privileged students are able to learn through digital education due to their high-income families, they can easily afford various gadgets and availability of the internet, and also they can afford various e-learning platforms. But when it comes to underprivileged sectors it is totally opposite as in most of cases the phone is with only the earning member of the family, the students find it difficult to attend online classes and even those who have smartphones have a problem accessing the internet and networks as having recharge for internet also gets very expensive and in some cases the teachers who are only familiar with the traditional ways of classroom teaching are also having problems with digitizing the classroom and giving education online.

Part IV of the Indian Constitution, Article 45 and Article 39 (f) of Directive Principles of State Policy had a provision for state funding as well as equitable and accessible education.

The 86th Constitutional Amendment in 2002 provided the Right to Education as a fundamental right in Part-III of the Constitution. Article 21A made the Right to Education a fundamental right for children between 6-14 years.

Types of Digital Divide

There are many types of digital divide which hampers the access to education as well as communication and Technology. Some of them are:

- **Gender divide:** 90% of men are most likely to have cell phones as compared to women. Many females in India who are from underprivileged backgrounds have to leave schools as there is a lack of infrastructure and toilets in the school. In many communities boys are given more priority than girls so as the technological devices are very expensive, boys are given more advantages as compared to a girl child.
- **Social divide:** Many social media platforms like Facebook, Instagram, and Twitter help in creating online groups, it has created new social strata among those who are connected to the internet.
- **Access:** Lacking access to technology due to infrastructure, internet connections, expensive costs, ability to purchase and many more things like this creates barriers and increases the digital divide.
- **Rural-urban divide**: According to the NSO report, in cities 42% of homes have internet access whereas only 15% of homes in rural areas are connected to the internet. During the lockdown, the digital divide in India is not only seen in the sector of education but also in digital banking, e-governance, and e-commerce as all of them became accessible during the lockdown.

Effect of Pandemic on Digital Divide

Covid-19 did not create the digital divide but it brought into view all the drawbacks that we had an educational system when it came to the digitalization of education without devices and unavailability of Internet and connectivity issues, the students are facing lots of problems but if they prioritize the education and work with the community we can provide students with numerous technological solutions that can help students to succeed in their life.

Way forward

After the pandemic, we know that schools are opening and having regular days but it is essential

for us to be ready for any kind of situation. That is why we should make sure to provide appropriate Computer-Based Technology as well as facilities to the students. More priority should be given to students who are from less privileged backgrounds. Efforts must be invested to make sure that students are getting equal opportunities of good quality, as well as equitable education and adequate facilities, should be provided to all the social strata. These are the few things that government should make sure to provide to students:

Infrastructure: Atmanirbhar Abhiyan has played an important role in the development of the IT sector. Developing and adopting new technology as well as budget phones is the important part. Also, as there is huge competition and market it may also help in providing services that are less expensive.

- **Digital literacy:** National digital literacy mission focuses on digital literacy at the primary level as well as at the level of Higher Education for more content according to the need of the learner. Higher Digital literacy also provides students with more interaction with technology. It can also help students as they can learn anytime and anywhere.
- **Regional language:** Natural language processing needs to be developed in India. The government should pay more attention to providing students content in their regional language.
- **Enhancing connectivity**: All the policy recommendations which address the digital divide are much more focused on enhancing connectivity as their most important priority. Access should be given to electronic devices, high speed internet should be provided in all educational institutions as it is one of the basic necessities in today's world.
- **Flexibility in educational platforms:** Flexibility should be provided to students as to how and when they want to learn some of the online classes also provide offline content with students can learn whenever they want as there are many issues regarding connectivity and the internet as sometimes students are unable to attend the classes as they don't have appropriate network or electricity problem or any other issue, so students must be provided with content which can be reached even offline and also they should keep in mind that not all the students have access to the internet, so we should keep in mind that how we can provide them with the offline content a student is unable to attend classes due to unavailability of the internet.
- **Affordability:** The United Nations said that the government can easily bridge the digital divide by ensuring that technology is easy to use, electricity and Taxes and high-cost internet are affordable as they are the main contributors to the digital divide.
- **Enhancing digital skills:** In the 21st century many people lack basic technical skills, digital skills, and computer science is very important as those who do not have these skills are at big disadvantage students and teachers both need to be trained in how to use the technology effectively the less the students and teachers know how to use technological tools the more the digital divide will increase.

Conclusion

Divide whether it is economic or Digital is a major roadblock when it comes to prosperity. The digital divide can be lessened as we progress, however it will take some time. Government should provide funds for various projects that will help in increasing digital inclusivity. Also, the government

should work in various sectors such as lack of infrastructure, it should also ensure that digital connectivity can help students learn. During the Pandemic students from all around the world have to transition from a traditional mode of learning to the virtual mode of schooling, while it is not a big deal for those who are from a privileged background but for those who are from the unprivileged background it is a major pitfall for them as they have lack of access to technology as well as internet services. These unequal levels have given a huge rise in the digital divide among students.Both manufacturers and service providers can give a huge push to digital literacy.

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POSSIBILITIES AND CHALLENGES OF DIGITAL EDUCATION IN INDIA

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Abstract

Digital education refers to a way forward to seeking education through the means of technology and digital devices. Digital education has a lot of capabilities as digital education scenario in India is observed as gloomy. In India if we talked about the future of digital education, we discover digital education speed up in the coming years, but in present scenario digital education isn't that popular among different classes of the society in India. Digital education is already popular in urban areas but not in rural areas. Digital Education no doubt contributes and make life easier for both students as well as teachers. But still digital education has a long way to go, because there are challenges already that we need to overcome. Accessibility of internet connections in the rural areas is not yet available. Social interaction among students is missing due to online classes. Less interaction with the teachers make them passive listeners. Time management on the part of students and teachers is a matter of great concern. It is required on the student side to be disciplined, punctual and active listener. To meet various challenges it is required that government should intervene and make necessary arrangements to make digital education a success all around the country. Making digital education cost-effective should be a key motive of the Government. Government should ensure that schools and colleges are provided with proper facilities for digital classrooms. They check ground realities and must ensure aims and objectives of digital education should meet the outcomes.

Keywords - *Digital Education, Possibilities, Challenges*

Introduction

Education plays a pivotal role in overall development of an individual's life which results in immense contribution to the development of a country. Education is considered as a witness for immense changes. All this happens due to drastic internet as well as digital revolutions in the last 20-30 years all over the world. Earlier, Indian classrooms were characterized by students sitting through hour-long sessions. Teachers used to discuss things without any visual presentation. But now thanks to digital technology which makes life easier for both students as well as educators. In India, Digital Education is regarded as the future of learning and education. It is an innovative and broad technical sphere which shall help students to attain knowledge and gain information from any corner of the world.

Digital education means digital learning. It reflects that type of learning which is established by digital technology, along with this by instructional practice it helps to make effective use of digital

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technology. Digital learning covers different learning areas and spheres. Digital education gives win-win opportunities for all, at one side school, colleges and other institutions find the rapid increase in enrolments and added revenue because of digital education, and on other side students view this as a flexible option which allow them to study as per their convenient time and speed. Digital technology helps teachers and professors in preparing lesson plans. Teaching and learning includes animations and audio-visual effects which arouse curiosity among students to learn. Digital Education is an innovative technique of learning which involves technology and digital devices.

But during tough days like COVID-19 pandemic, all schools and colleges are shut down to curb the spread of coronavirus and we can't stop the learning process so we have just one option left to adopt digital technology to continue classes , and deliver good quality of education through the internet. But multiple queries arises, digital education is inclusive for all class/gender/caste of students. Digital education, is equally dispersed among all students and how we measure the same. During Covid-19 Pandemic, working in various fields continue through online mode, even education is not lagging behind, and online education is very helpful for students in present era of technology. The lockdown situation due to COVID-19 has taught us the importance of online education and we are already observing several schools and colleges conducting classes online and the students can also study at their own speed with the help of several online courses. The schools and colleges have understood that online education is the best way to deliver knowledge and educate students by keeping them safe in their homes with digital transformation.

Digital transformation to enhance student experience may include enabling students to enter through the mobile app or web application. It also provides a broad range of choices for online learning. It enables the use of technology to track the progress of students and enforce intervention protocols. It also enables online class organization faculties. For digital transformation high-speed connectivity and high-speed network is required which connect any areas of the world with innovative ideas and improve e-governance by giving digital services to the Indian citizens. It helps in increasing opportunities in the IT sector and can help small businesses which are established in rural areas. Digital transformation can improve the lifestyle of individuals and can connect people through social media anywhere and expand various communities. Digital Education in India is a way forward to various accomplishments in today's scenario:

- To meet the diversity of Indian languages, it is required to develop e-content in localized languages.
- Establishment of various skill development courses, virtual laboratories and virtual vocational training for students.
- Framing of online guidelines in context to education addressing the digital divide.
- By integrating present education scenarios and technology, it is required to develop digital classrooms for students.
- Developing framework for assessments in the present time of digital education.
- Provision of multi-mode access to education system with the help of mobile apps, web portals, television channels, radio, podcasts and many more.
- To enable the provision of access at any point of time and at any place and focus on more and more usage of mobile phones.
- Teachers will be up-skilled and up-dated with the latest technology to meet the requirements of e-learning resources.

Different channels of Government of India focused on the sources and means to provide education to students residing in different parts of the country. In digital India, it is promoted by the Indian government to use maximum things in a digital way. In addition to it, it contributes to the growth of India. The motive of digital India is to reduce the use of paperwork and connect every part of India with high-speed internet connections. During 2019-20 when the whole world was fighting against COVID-19 pandemic, Digital Education in India was the sole source of learning for the students in the country.

Possibilities of Digital Education in India

- Digital education adds not only to bookish knowledge but also enhance individual's practical and technical knowledge.
- The obstacle of time and place is overcome with the help of digitalization. Students can engage according to their own preferred time and place in online classes.
- Students can go through and understand any topic at their own pace with study material available to them.
- In digital education, both students and teachers are more engaged and interactive in learning.
- In education, digital transformation provides a genuine way of checking the success of students. Technology helps in recording the information of students' work and reflects about students' development to the parents and teachers. In addition to it, digital education helps students in knowing the results of students.
- Schools got the opportunity to improve and enhance their results with more and more innovative efforts. Capability of students to understand different concepts enhanced with the use of digital technology as more and more innovative methods will be used. Digital technology will help students in diagnosing their weaknesses easily and reliably. Required action will be taken to overcome in due course of time.
- Cooperative learning is forced by digital learning among students. It helps teachers to build and handle groups through cooperative learning platforms. Tools for interacting with students are used in organizations for student development.
- Schools used a future-focused curriculum for the teaching-learning process. For effective teaching learning innovative techniques are welcomed like automated films etc.. Appropriate and updated content is available and accessible to students for their better understanding.
- Enhanced linkage and communication between parents and teachers due to digital learning. Involvement of parents in the academic success of their children will enable better results at school. Automation provides progress reports to parents electronically.
- Digitalization is a time saver for both students as well as teachers as time is the most important element in today's world.

Thus, Digital Education is considered as a supplement element and does not completely overpower the physical education channel.

Challenges with Digital Education in India

There are various barriers in the way of digital education before it can approach mainstream teaching among all the classes of our society. Many technology-based adaptations will have to be met by the Government so as to ensure that digital education must be within reach of every student

across the nation. In India, there are various hindrance and challenges with Digital Education:

- For digitalization, it is mandatory to make internet connection available to all students, and is one of the biggest requisites for digital education. Internet connection for all will be achieved only by the Government intervention in the same.
- It is difficult to fulfill on ground realities such as providing the devices and technology to the people belonging to socio-economically weaker sections so that they are not left behind in education. Training teachers adds to another barrier in the process of digitization. Digitalization is a success only when the teachers are technically sound and can conduct the digital classes. Technology acts as a hindrance even in a teacher's life.
- Digital education is costly as compared to classroom education as internet costs and device costs add to it.
- Proper facilities for digital classes are lacking in schools and colleges to meet the needs of students.
- To use digital technology, lack of knowledge and skills on the part of students and teachers acts as a challenge in the process of digitization. Educational institutions follow new approaches and methods for upgrading students and make them familiar with digital learning.
- Major challenge is that data is smooth but sometimes it is inaccurate and unreliable, especially in the education sector.
- Lack of instructions to go through with digital transformation in educational institutions. It can be difficult to understand which path to take or how to build a solid strategy for digital transformation.
- Digital transformation in education is not in accordance with modern technologies. This incompatibility results that a current integration system must be upgraded, customized or replaced.

Thus, direct and favorable impact on the environment, results in the need for less paper and helps to minimize costs and maximize resources. India is placed to reap the advantage of digitalization of education that can change how we learn and what we learn. Digital education is the new incorporation of modern technology and digital tools to assist the progress of teaching and learning. It is called Technology Enhanced Learning or digital learning, or e-learning. Students and teachers can improve their skills in order to create an active educational process with the help of digitalization. Digital transformation in education can be applied from online learning to physical schooling, student assessments, customized learning experiences, and online examinations. But on the contrary, ground realities are totally different. Availability of internet is secondary, on primary basis availability of android phones is of utmost importance. It is required to train teachers as technology acts as a barrier in teachers' lives. Government should inspect the situation to see whether ground realities meet their objectives.

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