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## **A New Paradigm Shift: Online-learning Environment Transformation in Higher Education**

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### **ABSTRACT**

This essay discusses the paradigm-shifting change in higher education's online learning environments. As a backdrop and framework for comprehending the current state of the art, particularly with regard to the application of network technologies for collaborative learning in post-secondary education, it starts by providing an outline of the history of online education. It offers a framework for comprehending this new discipline by starting with the inventions of the early pioneers as a contributing factor to the paradigmatic change. Subsequently, the paper centres on Virtual-U, an online platform specifically designed to facilitate advanced teaching methodologies. The discussion of the arrows pointing to potential future developments that these data point to closes this essay.

**Keywords:** E-Learning, Teachers and Students Perception, Paradigmatic shift, Online education, ICT in Teaching and Learning

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### **1. Introduction:**

Since ancient times, teaching and learning have evolved, moving from Gurukul to contemporary institutions and, more recently, virtual learning. Regardless of the mode of instruction and learning, a unique bond has always existed between a teacher and student. With education 4.0, however, learning has become more student-centric, requiring teachers to come up with innovative ways to impart the finest information possible to their students. The era of virtual learning necessitates some basic requirements that haven't changed since the IT revolution. Staff training, a wide range of online courses, resources, and other institutional and personal infrastructure are a few of them. For the shift from traditional to online learning to go well, some preparation is necessary. Due to the ongoing nature of the crisis, the full effects of the global pandemic on the economy, business, politics, and society cannot yet be fully realized or precisely forecast. With all of the changes taking place in the world, higher education will surely also confront new and unexpected problems. The UGC, the highest authority for higher education in India, and policymakers are the ones we are looking up to to reorganize and restructure it in ways that are unprecedented. Even though they make only 20% of the population, they will shape the whole future, thus they should receive all the attention they need. While innovative learning interventions are urgently needed, learning quality shouldn't be sacrificed in the process. The goal of e-learning should be learning itself, as well as the medium through which it is imparted. This essay aims to draw attention to the problems and difficulties in learning from the viewpoints of teachers and students, as well as offer some recommendations for improving it for the benefit of all parties involved.

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### **2. Review of Literature:**

Because the e-learning system is more flexible, self-paced, and cost-effective than the old system, it has the potential to completely change the educational landscape (Little, 2001). Some have suggested that the provision of computerized, structured, and easy writing help inside an educational system is essential to the success of e-learning (Aroyo & Dicheva, 2004). A productive, exposed, universal, connected, distributed, adaptable, practicable, social, and attainable array of information is being fostered by acts throughout the world, which demonstrate the union of e-learning and knowledge management. According to Mulwa et al. (2012), the assertion is based on a hybrid recommendation framework that is based on an education evaluation data set. This framework helps software developers and end user evaluators avoid known drawbacks, and it also increases the empirical value when future evaluation report creators report the approaches, methodologies, techniques, and results in a way that makes it easier to repeat the evaluation process. According to the study's findings, which showed that the younger group spoke more slowly than the adult group while visually outperforming the junior group, the success of utilizing smart technologies may be impacted by an individual's cognitive and emotional makeup. e-learning has long been adopted and supported by developed nations, but developing countries such as India have begun to adjust to the changes and are now reaping the benefits of e-learning (Sood & Singh, 2014). Empirical research has demonstrated that the proficient utilization of e-learning might potentially augment student engagement, motivation, and attendance. It is challenging to gauge students' motivation for online learning, though, because there is no direct communication between the teacher and the students. El-Seoud and associates (2015). To be ready for cutting edge technology in the educational environment, one must be open to change, be flexible, foster intellectual curiosity, and be a person of acceptance (Lahiri and Moseley, 2015). Nevertheless, the study's findings about Namibia indicate that there was no guiding strategy for utilizing new technology in resource-poor areas. Electronic readers are quite popular, yet there

are several implementation issues with e-learning (Shehu and Jere, 2016). Therefore, e-learning should not be viewed as a permanent substitute for the conventional learning process, but rather as an extra way to complete learning activities. As a result, e-learning has been steadily expanding within organizations, and in line with this, businesses, professional groups, and the government have been highlighting the useful and practical applications and resources for e-learning deployment. A fast-increasing internet connection may guarantee the rise of e-learning. According to Gaikwad and Randhir (2016), the expansion of e-learning may be facilitated by a robust internet network that partners both locally and internationally. The use of technology by educators has expanded from being basic to being inventive, with applications ranging from personal to professional. Teachers employ it to teach and study at different intensities and levels according to their comfort zones (Sadeck and Cronje, 2017). Due to its ability to reduce the time and stress of long, boring sessions and allow students to study at their own pace, e-learning has long been seen as a boon to education, both for teachers and students. Teachers and students agreed that combining VLE's capabilities with their own has helped them evaluate and think about their own behaviour and performance. For e-learning to be successful and efficient in terms of knowledge, performance, and learning outcomes, however, it is important to evaluate the software that will be utilized (Bhongade and Sarode, 2018). Designing a learner-centered curriculum that increases the likelihood of active learning and fosters greater student involvement and engagement is important. To ensure that the online education tool is as user-friendly as possible, though, is necessary because blended learning and online distance learning are becoming more and more common in academic settings. As a result, training academic staff members to support technology-oriented teaching and learning is also necessary. In order to provide instruction that gives students freedom and enhances learning, educational institutions are obligated to use such online tools. Students have adopted e-learning as a means of gaining academic knowledge with ease (Trakru and Jha, 2019). However, the sense of belongingness among students is hampered by online learning, so it is important to encourage collaborative activities where students work with one another to build peer relationships and foster sentiments of recognition, significance, and appreciation (Peacock et al in 2020). Making decisions on learning technologies and approaches is not well-supported by the current definition of blended learning, which is centered on the integration of in-person and online instruction. In order to maximize learning and teaching, a proper definition of blended learning should thus take context, theory, technique, and technology into account (Cronje, 2020). While conventional teaching has been the way of learning for millennia, the above talks on e-learning in the national and worldwide context, as well as the unexpected surge in the use of e-learning techniques in India, have pushed us to have a deeper understanding to check its potential.

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### **3. Research Gap:**

To the best of my knowledge, no study on e-learning has been done in India during the lock down era, despite the fact that a sizable number of studies on the subject have been carried out both domestically and internationally. This prompted us to do study on the subject in order to get deeper understanding and communicate our e-learning experiences to all relevant parties.

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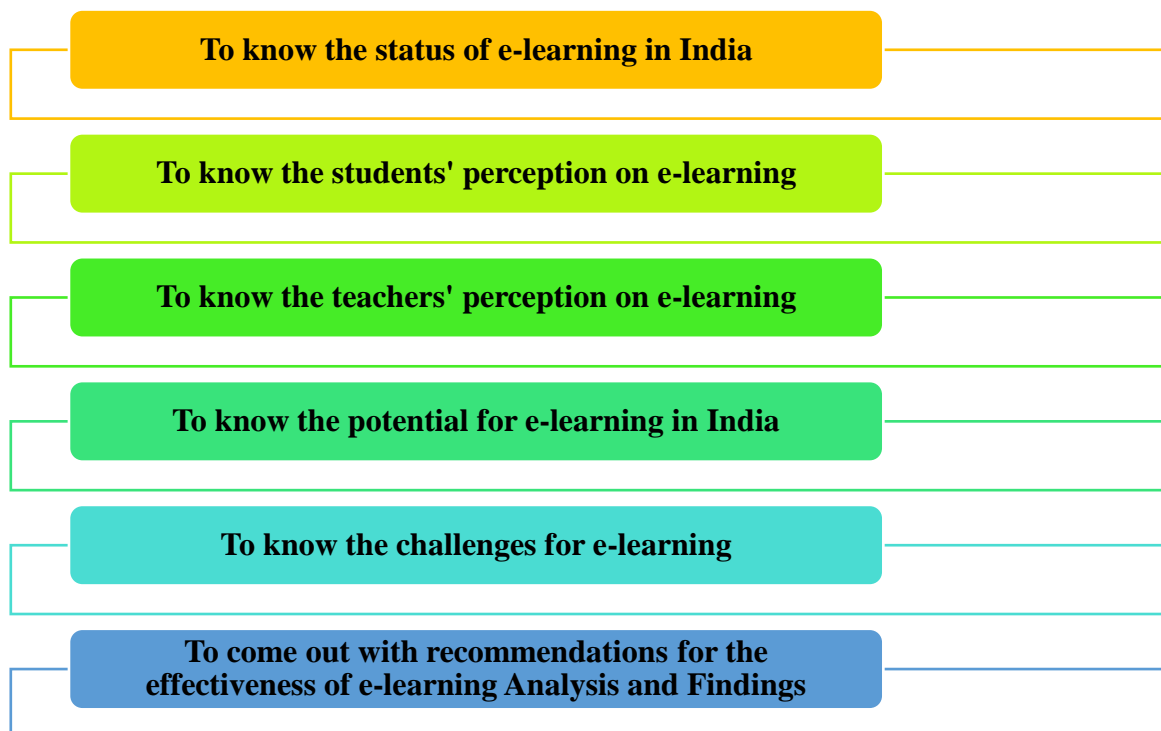
### **4. Research Methodology:**

This empirical study is based on primary data that were gathered from instructors and students using two different questionnaires. To complement the empirical study, however, secondary data from published sources such as newspapers, reports, and research papers have also been used where needed. Sampling Technique: The responses were gathered using the purposeful sampling technique. A link to a Google Form was emailed to educators and students at many northern universities and colleges in order to gather data. Sample Size: 355 pupils make up the student sample, while 100 instructors make up the teacher sample. In order to obtain a comprehensive understanding of e-learning in all subject areas, both theoretical and practical, educators and students from all streams have been requested to submit their comments. Statistical Instruments: The statistical analysis has made use of bar charts, pie diagrams, the mean, standard deviation, and the simple percentage technique. Owing to time constraints, we were only able to research the northern region, although we could have expanded to include other regions as well. The replies that the respondents provided serve as the exclusive basis for the analysis and conclusions.

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### **5. Objectives:**

There are mainly 6 objectives are given below:

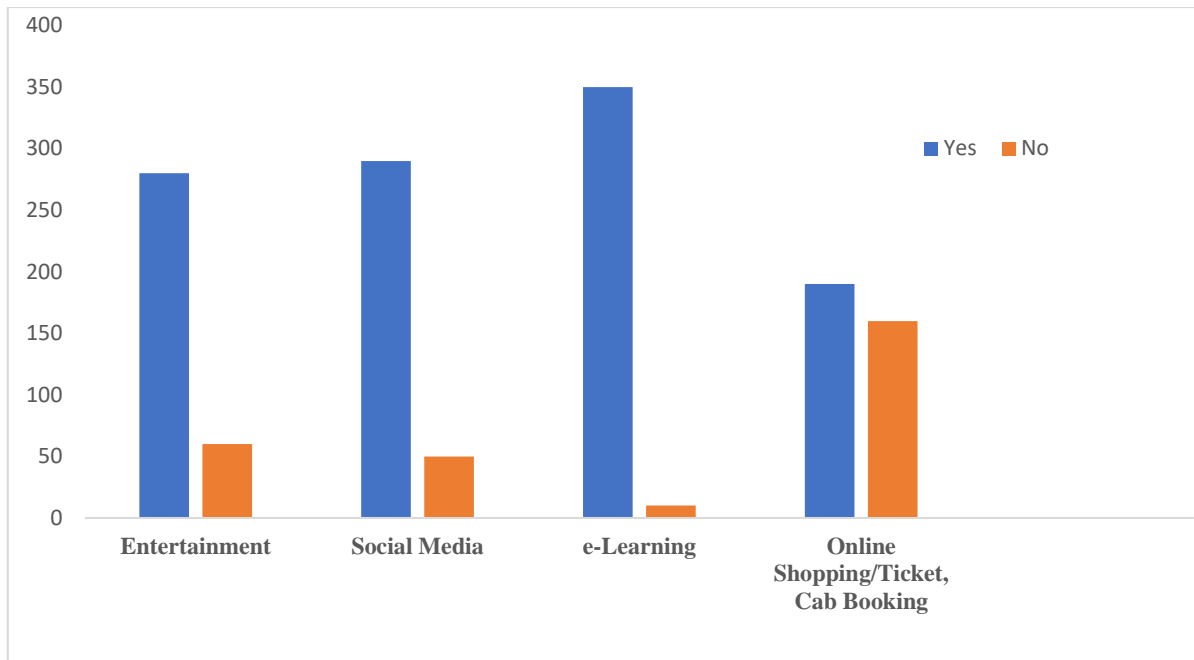


The use of ICT in education has become essential, but owing to a lack of infrastructure, no state or institution, from elementary schools to universities, has been able to implement an education system supported by technology.

**Table 1.** Frequency and % of Education, Gender and Area

Education	Frequency	%	Gender	No.	%	Area	No.	%
UG	221	60.4	Female	232	65.5	Urban	207	56.5
PG	140	39.6	Male	129	34.5	Rural	154	43.5
Total	361	100		361	100		361	100

According to Table 1, 39.6% of respondents are pursuing post-graduation studies at different colleges and universities, while 60.4% of respondents are undergrads. The fact that UG enrolment is higher and that e-learning technologies have a greater impact on them might be examined further. Female enrolment is higher than that of male enrolment. Cities have far superior infrastructure than rural locations do for e-learning, as evidenced by the 56.5% of responders who live there. The poll revealed that 96.9% of participants, regardless of gender, and living in urban or rural areas, own a smartphone, allowing them to participate in virtual learning. An internet connection was absent in just 6.7% of cases. The statistics also show that when it comes to internet connections, mobile data is thought to be more dependable, practical, and affordable. This might be problematic for e-learning because downloading large files requires a fast internet connection. Data indicates that internet usage is dependent on need. Additionally, 36.9% of people have trouble utilizing the internet, which presents another obstacle to the effective application of e-learning techniques. Figure 1 shows the reason why students use the internet. 339 students were discovered to be utilizing the internet for practically everything, from online shopping and taxi booking to amusement. Students' preferences for selecting the style of study: 51.8% of students said they preferred conventional learning, while 43.1% preferred online learning. We think they don't really know anything about mixed mode. Two questions with multiple-choice statements were created using a 5-point Likert scale to gauge the students' perceptions. The first set of claims was made by those who concurred that online learning is a useful tool for learning new skills and information. The second set of remarks addressed individuals who claimed that online learning is ineffective as a method of instruction. Students were asked about the potential for e-learning to solve problems related to cost effectiveness, quality improvement, and absenteeism in the last section of the questionnaire. They gave positive answers to all three questions; 76.3% thought that e-learning could help solve the absenteeism problem, and 73% agreed that e-learning could improve the quality of higher education because it offers a wide range of international standard level study material that students can consult and because they can watch and listen to the videos repeatedly to better understand the concepts, which may not be possible in traditional teaching methods.



**Figure 1:** Frequency of entertainment, social media, e-learning and online shopping, Ticket, Cab booking

Since students from far places don't have to pay for transportation costs, 63.1% of respondents thought it was cost-effective. Furthermore, the cost of online courses is significantly lower than that of traditional modes.

#### Students' Perception on E-learning:

- ❖ It offers a better delivery of content
- ❖ Saves commuting time and expenses
- ❖ One can take study anywhere any time
- ❖ Affordable for rural folks
- ❖ Improved performance as the material or lecture is downloaded permanently so can be listened many times to recapitulate which is required in difficult concepts of accounting and taxation.
- ❖ If a lecture is missed due to some reasons, then it can be rewinded in learning mode
- ❖ It motivates students to explore more related links
- ❖ It is an active-learning and enhances concentration
- ❖ Less chances of deviation as compared to the conventional teaching learning methods.
- ❖ Convenience, commencement dates and variety of study material are the key motivational forces to opt for e-learning

Self-paced, pocket friendly and mobility are preferred benefits Teachers' Perception on e-learning: Teachers are a significant stakeholder in the teaching-learning system, and as such, their opinions are crucial to consider. In actuality, students are not the only stakeholders in this system. Teachers may be under stress since the lockdown announcement and the epidemic have made it necessary for them to become digital savvy overnight. Though it was entirely voluntary up to the shutdown, online teaching and learning was not entirely new. However, the epidemic caught them off guard. In terms of infrastructure and training, neither the instructor nor the pupils had adequate resources. Therefore, the input from the providers acting as executioners is crucial to the development of policy. In addition, a systematic Google Forms questionnaire was created to find out how instructors felt about using e-learning as a regular teaching approach. The questionnaire included 16 statements that might be interpreted as either positive or negative, along with a few fundamental questions. A few questions from another questionnaire (Muain Jamlan, 2004) have been reworded specifically for this investigation. Likert scales with five points, strongly disagree, disagree, agree, neutral, and strongly agree have been employed.

A straightforward random selection technique was employed to gather information from one hundred instructors from different northern Indian institutions and universities. Microsoft Excel has been used to compute the mean, standard deviation, and descriptive statistics.

The table below reports the statistical results for the questionnaire's measure of teachers' attitudes about e-learning. It is clear that 53% of the instructors are between the ages of 41 and 55, indicating that the data was gathered from educators with a wealth of experience in the classroom. It has been discovered that associate and assistant professors have a connection to students and have generated proposals for development. The majority of the

questions showed a minimal standard deviation spread, further indicating that faculty members hold similar views regarding the e-learning assertions. The standard deviation is typically low when respondents provide comparable answers to the claims, as the table illustrates. It has been shown that instructors have a generally good attitude toward e-learning. Nearly all of the instructors have suggested that more FDPs on MOOCs and e-learning be held in collaboration with UGC HRDCs to give teachers practical training. In order to address issues linked to infrastructure and enhance e-learning, it is necessary to provide teachers and students with affordable internet subscriptions. Training in both delivery and reception is essential for developing pedagogy that can interest students throughout online instruction. A hybrid learning environment is most advised rather than a full transition from a traditional to a digital classroom, since there is also a need to foster a sense of adaptability among instructors and students without which all efforts may be in vain. SWOC Analysis of e-learning Strengths: With over 1,55,000 students enrolled, India has the second-highest number of course enrolments worldwide, perhaps making it the world's second-largest knowledge economy. Approximately 1.2 million students globally, with 32% originating from the United States and 15% from India. The lack of highly educated instructors in rural India might be solved by e-learning; some of the issues it can solve include live online tutoring, streaming videos, and online classrooms like Zoom and Google Meet. Dropouts from school and college can be taught. Students from Divyang can learn at home.

Because they are unable to attend schools and universities because of societal stigma or identity crises, transgender men and women can obtain the education they want. India's e-learning market is expected to reach \$1.96 billion in revenue by 2021, with an annual growth rate of 25% (Aurum equity study). Technology has completely changed how much may be learned at home with simplicity and at a lower cost. The size of the e-learning market, according to a KPMG and Google analysis, was \$247 million in 2016 and included 1.6 million users. By 2021, the industry is predicted to have grown eight times to reach \$1.96 billion, with a 44% increase in users to 9.6 million (Aurum equity poll). India is the second-largest e-learning market in the world, after the United States, whose industry is expected to increase by 15.64% and reach over \$48 billion by 2020. Thus, there may be a sizable market with nearly all of the growth-promoting factors. The government of India has initiated many projects under the banners of "Digital India" and "Skill India" in an effort to promote digital literacy, establish a knowledge-based society, and put the three tenets of the Education Policy, access, equity, and quality into practice. For improved connection and e-learning, a number of projects have been introduced, including e Basta, MOOCs, Nand Ghats, Swayam, Arpit, Swayam Prabha, India Skills Online, LMS, and the National Optical Fibre Network. Furthermore, the average yearly cost of private education for general courses up to and including post-graduation has increased exponentially. Prospects: India will surpass China to become the country with the second-highest number of internet and smartphone users behind the United States, as evidenced by the country's continued expansion in both domains. By 2020, it's anticipated to reach 730 million (Aurumequity poll). To demonstrate its mettle on the virtual battlefield, where Knowing will prevail, an even playing field has been established. The average annual cost of private education for general courses up to and including post-graduation has increased exponentially. According to a poll, parents pay Rs 3, 96,000 in private schools and Rs 36,000 (Aurumequity survey) for a six-year secondary education in government institutions. Thus, e-learning offers a financially sensible answer to this issue. By the end of the year, the government hopes to increase the gross enrolment ratio to 30%, but the current infrastructure is not set up to handle this extra capacity. Therefore, e-learning can help close the gap and accomplish goals by complementing the traditional paradigm. The worldwide shutdown has the unintended effect of allowing India to change its reputation from a sending market to a keeping market. Notwithstanding the catastrophic pandemic situation, there remains a bright spot. Today, all of the students who planned to pursue undergraduate studies abroad can be accepted into India's top universities. Students from the middle and higher middle classes have been more interested in studying abroad throughout the past ten years. By 2018, there were 7.5 lakh Indian students studying overseas for degrees, making India the second-largest sending market after China, with around 2.1 lakh students doing so in 2010. Furthermore, data indicates that 72% of Indian students studied in five of the world's most competitive countries: the USA (2,11,703 as of July 2018), Canada (1,24,000), Australia (87,115), Saudi Arabia (70,800), and the United Arab Emirates (50,000).

Indian students are encouraged to pursue UG degrees in India because of the unstable global climate and growing usage of ICT-enabled education. It will help advance the larger goal of changing India's international student market from one of sending to retaining and eventually accepting students. It is impossible to overlook India's and Bharat's digital gap. Only 3.1% of Indian homes, according to data from the 2011 census, own a computer or laptop with an internet connection; the percentage of people who use smartphones is an exception. However, not all e-learning can be accessed via cell phones; just 0.7% of rural residents fall into this category, whereas 65% of people live in villages. The days of the school system operating on a "one size fits all" basis are over. Given regional differences, others cannot be forced to adopt the Open Book Exams policy as Delhi University does. As screen usage has risen, worries have been raised about the faculty members' and students' physical and mental health. Another issue with e-learning is cyber security. It's possible for hackers to breach networks, steal data, and cause issues with internet service providers' data leaks.

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## 6. Challenges:

In addition to severely impairing the incumbent's capacity to repay the debt accrued, online degrees are frequently underestimated by prospective employers. Various perspectives exist on the effectiveness of e-learning. While some believe it to be a temporary solution, others argue that it is a desperate measure appropriate only in extreme circumstances. E-learning is not a sustainable long-term solution in India. The issue remains, though, if the politicians and officials are attempting to handle the problem in a desperate manner by waiting until now to enact a long-pending legislation that would likely encounter strong opposition from parents, educators, and children. Regulations for online courses were introduced by the UGC in July 2016, giving institutions the authority to provide MOOCs in the event that there is not enough qualified faculty to teach a course. Recently, the UGC approved online courses at 100 Indian colleges, allowing students to pursue two-degree programs simultaneously, one in traditional mode and the other online. This appears to be the right moment for the government to outsource the creation and sale of ready-made online instructional materials in order to generate revenue. Another issue with so-called digital education is that it affects students enrolled in physical education and vocational programs, where the majority of the coursework is applied with little theoretical instruction. For training and field trips, students must be present in person. The absence of

internships, which is an essential component of these courses, will affect the students. According to TOI (June 21, 2020), instruction in sports and culinary arts cannot be provided via E-Platform. In addition to the issues mentioned above, instructors and students have made certain observations that should be taken into account.

- ❖ The development of affordable, high-speed internet networks that are available to everyone is a necessary condition for the expansion of e-learning. The majority of respondents listed the internet as the main obstacle to online learning.
- ❖ Another problem is language because much of the information is only available in English and not in other regional languages. Thus, it is important to generate material in regional languages as well.
- ❖ In many rural and village parts of India, there is still a lack of internet access and poor internet capacity. The e-learning platform performs poorly in terms of instructor engagement and feedback. Students might be reluctant to ask questions at times, while teachers can occasionally be unable to answer queries.
- ❖ As a result, some techniques, such as traditional teaching methods, should be created to have a greater connection with teachers. Better for teaching theoretical topics; nevertheless, students struggle with numerical issues in accounting and finance.

Concerns over cyber security were also mentioned by a few of the respondents. It is possible to abuse personal information. In this case, instructors and students must receive the necessary training to safeguard them against online fraud. Where internet connectivity is a concern, e-learning should be made available offline through resources like podcasts and Swayam Prabha radio stations. This would allow for less online usage. Human connectedness is a crucial component of learning and experiencing while maintaining a give and take interaction between a teacher and student. UGC deputy chairperson Dr. Bhushan (The Indian Express, June 26, 2020) underlined this point. Production can be robotic, but education cannot be made mechanical. We must adopt an agile, flexible, and creative strategy if we are to succeed in this online endeavour. A mental shift is also necessary. Rabinder Nath Tagore famously said, "A candle which is not lit, cannot light others." One cannot instruct others if they are not learning themselves.

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## 7. Conclusion:

"Those who cannot learn, unlearn, and relearn will be the illiterate of the twenty-first century, not those who cannot read and write," according to Alvin Toffler. From the debate above, it is clear that policymakers need to reform and rebuild the educational system with regard to its delivery, reach, assessment, and results. The outdated rote learning system, which has widened the gap between what is learned and what should be learned, need to be abandoned. The exponential increase of knowledge should be properly directed without raising questions about how it was obtained. Future research will evaluate results rather than methods of operation. It is undeniable that a unique relationship between a teacher and student will always exist, and technology cannot take its place. Teachers and students should use e-learning as a tool to educate and learn, but they shouldn't feel forced to use it since, as Plato once said, "knowledge acquired under compulsion, obtains no hold on the mind." Together, let's reinvent the traditional, utilize the contemporary, and adjust to the new normal.

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