

# CECNews



**SPECIAL EDITION ON**  
**Online and Digital Education:**  
**National Education Policy 2020**

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शैक्षिक संचार संकाय

Consortium for Educational Communication

(इलेक्ट्रॉनिक मीडिया पर विश्वविद्यालय अनुदान आयोग का एक अंतर-विश्वविद्यालय केन्द्र)  
(An Inter-University Centre of University Grants Commission on Electronic Media)



## Chief Editor

Prof. Jagat Bhushan Nadda

Director, CEC



प्रिय पाठकों,

सी.ई.सी. ज्ञान के दूरतम साधकों तक ज्ञान का प्रसार करने के महान अनुसंधान पर है। जैसा की राष्ट्रीय शिक्षा नीति 2020 (एनईपी 2020) में संस्तुत है, हमारा मिशन दक्षता, निष्पक्षता एवं समानता के साथ उच्च गुणवत्तापूर्ण डिजिटल शैक्षिक कंटेंट प्रदान करना है। कोविड-19 महामारी ने हमारे समक्ष डिजिटल शिक्षा की आवश्यकता के साथ-साथ छात्रों के साथ ऑनलाइन जुड़ने, सहभागिता निभाने तथा सहयोग करने हेतु विभिन्न रचनात्मक विधियां दर्शायी हैं। ऑनलाइन क्लासरूम अधिक छात्र-केंद्रित दृष्टिकोण के रूप में शिक्षकों और छात्रों को समान रूप से समय और स्थान की नम्यता प्रदान करते हुए शिक्षण का एक अनिवार्य हिस्सा बन गए हैं।

आज, सी.ई.सी. एशिया के सबसे बड़े डिजिटल शैक्षिक कंटेंट भंडारों में से एक है। इसमें शैक्षिक कंटेंट/कार्यक्रमों की एक विस्तृत श्रृंखला है, जिसके निर्माण और प्रसार में तेजी से वृद्धि हुई है। इस डिजिटल शैक्षिक कंटेंट की गुणवत्ता को लगातार उन्नत करने के लिए, सी.ई.सी. अपने कार्यबल और शिक्षाविदों के लिए नियमित रूप से कार्यशालाओं, प्रशिक्षण और क्षमता-निर्माण कार्यक्रमों का आयोजन करती है ताकि उनका नवीनतम शिक्षा प्रौद्योगिकी के साथ तालमेल बना रहे।

सी.ई.सी. ने लगातार दूरस्थ शिक्षार्थियों को डिजिटल रूप से समृद्ध शैक्षिक पाठ्यक्रम प्रदान करने में एक महत्वपूर्ण भूमिका निभाई है। आज, हमारे पास जानकारी की प्रचुरता है। फिर भी अपने आप में जानकारी इतनी बिखरी हुई है कि यह सीखने की प्रक्रिया को निष्प्रभावी बना देती है। यहाँ, सी.ई.सी. विषय-विशिष्ट डिजिटल शैक्षिक सामग्री और विशेषज्ञों के व्याख्यान प्रदान करने के लिए सभी सूचनाओं का समावेश कर उन्हें डिजिटल प्रारूप में प्रस्तुत करती है। हमारा प्राथमिक ध्यान खासतौर पर उन लोगों तक उच्च शिक्षा की आसान पहुँच सुनिश्चित करने पर केंद्रित है जिनके पास इसे प्राप्त करने के संसाधनों की कमी है। सी.ई.सी. में हमने हमेशा शिक्षा की उस व्यापक शक्ति पर विश्वास रखा है जो की हर सामाजिक-आर्थिक एवं भौगोलिक बाधाओं का सामना करने में सक्षम है।

प्रकाश पर्व के इस शुभ अवसर पर, मैं सी.ई.सी. कर्मचारियों के साथ मिलकर आपको एक खुशहाल और समृद्ध दिवाली की शुभकामना देता हूँ और आशा करता हूँ कि यह त्यौहार आपके जीवन में ज्ञान और प्रबोधन का स्रोत बने!

शुभकामनाएँ...

जगत भूषण नड्डा

निर्देशक - सी.ई.सी.

Dear readers,

CEC is embarked upon the noble quest to disseminate knowledge to the farthest seekers of knowledge. As recommended in the National Education Policy 2020 (NEP 2020), our mission is to provide superior quality of digital educational content with efficiency, fair play and uniformity. The COVID-19 pandemic has shown us the necessity of digital education as well as various creative means to engage, interact, and collaborate with students online. Online classrooms have become an indispensable part of the pedagogy as a more student-centric approach providing flexibility of time and space to teachers and students alike.

Today CEC, as one of the largest Digital Education content repositories in Asia, has a wide range of educational content, the production and dissemination of which has risen exponentially. It constantly upgrades the quality of its digital educational content with the latest education technology through workshops and capacity-building programmes for its workforce and academicians.

CEC has constantly played a vital role in providing digitally enriched educational courseware to the remotest learners. Today, we have access to a plethora of information. Yet the information in itself is so scattered that it renders the learning process ineffectual. Here, CEC steps in to provide subject-specific digital educational content and experts' lectures by converging all information and offering it in digital format. It is our primary focus to ensure easy access to education especially for those who lack the resources for obtaining higher education. At CEC, we have always believed in the pervading power of education to overthrow socio-economic and geographic barriers.

On the occasion of the festival of light, I join CEC staff in wishing you a happy and prosperous Diwali and hope that it be a source of knowledge and enlightenment to your lives!

Best wishes...

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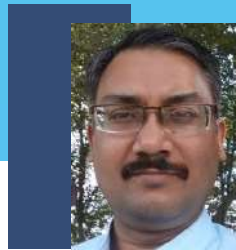


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# ONLINE AND DIGITAL EDUCATION IN THE LIGHT OF NATIONAL EDUCATION POLICY 2020



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## Introduction

The much awaited National Education Policy 2020 (NEP 2020) has been adopted on 29th July 2020 replacing the thirty four year old National Policy on Education 1986 to enhance the access, and equity and quality in primary, as well as, higher education to create holistic environment for the students by providing access to educational institution and its infrastructure. The National Education Policy 2020 recommends the extension of the Right to Education (RTE) Act from age 6-14 years to 3-18 years. There is another change in higher education where the undergraduate degree will be of either 3 or 4 year duration, with multiple exit options. The change in the education system in India was highly needed to cope up with the automation features of Industry 4.0 and the present economic condition of the country. It is really a challenge to reach the mass in a vast country like India. Major challenges of Indian education system are i) Access ii) Equity iii) Quality and iv) Infrastructure both physical & human resources. NEP 2020 addresses the challenges of education system and will also develop

the strategies for betterment of Indian education system both for primary and secondary levels including the higher education. While the RTE Act 2009 with an amendment in 2019 gives the right that every child is free to access the school and early child care, the NEP 2020 prescribes the new curriculum with new pedagogical structures for effective learning which suits the needs of the country in 21st Century. NEP 2020 also ensures the holistic and all round development of a student which would not only be value based but should also be vocationalized and employment linked.

## Opportunities

NEP 2020 recognises that technology can be an effective tool in facilitating the teaching-learning process, creating digital libraries/ repositories for ensuring greater access to education. It encourages the extensive use of technological platforms for online and digital education and training programmes.



Indian education system is one of the largest system in the world as it offers a variety of courses at different levels to millions of learners. As classroom teaching continues to be the main form of education which demands huge physical infrastructure and human resources, our country is not able to reach the desired level of Gross Enrolment Ratio (GER) in higher education as yet. NEP 2020 envisions that the GER should be 50% by 2035 which can be achieved through extensive use of information and communication technology (ICT) in the education sector. Technology has transformed almost every aspect of our lives, and now it seems that education systems around the world would be ICT integrated. The educators are tapping into the digital revolution and adopting new technologies to reach their students more effectively without the restriction of time and pace. With the use of digital platform, the delivery of educational programme has witnessed a paradigm shift from traditional teaching-learning system to technology mediated learning or digital learning.

The advent of the digital age and the emergence of digital learning offers opportunities to develop new learning experiences outside the traditional system and, as a result, the students of 21st Century find convenient methods to increase their

knowledge and skills as per their needs. Therefore, the potential students will have more flexibility and choice as to time, location, pace etc. the ICT has the potential to provide equal learning opportunities too. So the judicious use of digital tool in education can change the whole learning process. The provisions like i) Open and Distance Learning, ii) Online Education and Digital Learning and iii) Technology in education of the NEP 2020 are very relevant and important in today's context when the COVID-19 pandemic has disrupted the education sector tremendously.

The aim of making education accessible to all can only be accomplished through proper use of technology. With the help of ICT, we may cater to the needs of thousands of aspirants of higher education in the country. The internet has become a part and parcel of human life now a days. It emerges as the educational tool which provides the adequate and proper information and solution to the problems in an academic environment as well as in the social life. The rate at which the ICT is growing today is evident from the fact that it has invaded almost every part of our social life. Technological progress can be harnessed for augmenting both expansion as well as quality of education as identified by the NEP 2020.



To continue teaching-learning activities during the lockdown situation due to COVID-19, the educational institutions adopted online learning leaving behind classroom education as a quick solution. This unplanned and sudden shift, without training, sufficient internet connectivity and also lack of IT infrastructural facilities for online classes created the digital divide in the country. NEP 2020 aims to bridge the digital divide in the country and ensure a wider reach of online education. The NEP

has suggested that the Centre and the States may work together to increase the public investment in education sector to reach 6% of GDP which may help in developing the IT infrastructure and other facilities in the country.

During the COVID-19 pandemic, the educational institutions have taken lots of online initiatives to continue their teaching-learning activities and already embarked on the digital transformation process in education sector at all levels. We may highlight a few important online facilities that an educational institution may implement for online education through digital platform in the country:

- Online admissions
- Online attendance
- Online classes and sessions (synchronize and asynchronous)
- Online academic content
- Online workshops
- Webinars
- E-library
- Online journal
- Online feedback mechanism
- Online courses
- Online assessments
- Online meetings
- Online counselling



The establishment of the National Educational Technology Forum (NETF) as envisaged in the NEP shall operate as a platform for free exchange of ideas on the use of technology to enhance learning, assessment and administration for school and higher education. The thrust of technological intervention will be for the purpose of improving teaching-learning and evaluation process, enhancing access to education and streamlining educational planning and management etc. As we move forward for online learning, NEP lays a special focus to develop digital infrastructure including strengthening the existing digital educational platform like SWAYAM, SWAYAM Prabha DTH platform, DIKSHA, etc.

### Challenges

The new policy has envisaged the importance of inclusion and access, blended learning, content creation and extensive use of digital platform. The online learning providers may have robust IT infrastructure for developing and delivering the high quality educational content. In the context of online and digital education, it is important that each student, both in urban and rural areas, has access to digital device and internet connectivity.

As of today, majority of students from under-privileged groups have limited or no access to exclusive digital devices/ internet or even electricity. The success of online learning depends on the internet connectivity at the receiving end as well as the availability of digital devices like PC/ Laptop/ smart phone etc. The students' motivation and engagement is another crucial factor for digital learning environment. The students may not be familiar with the communication system in this learning environment. The subject experts, technology experts, hardware, software, satellite, internet are the key factor of the entire eco-system of the online learning environment. The Teachers also require suitable training to be effective online educators/ instructors. Proper integration of all these factors may only create an effective eco-system for online / digital learning environment. The benefits of digital education cannot be leveraged unless the digital divide is eliminated through concerted efforts, such as the Digital India campaign and the availability of affordable computing devices. It is important that the use of technology for online and digital education adequately addresses the concerns pertaining to access, equity, quality and infrastructure etc.

The policy recognises the importance of technology intervention as an integral part of next generation education system characterised by specialized and personalized learning, digital learning, blended learning, outcome-based learning, inter-disciplinary research, collaborative learning, creative thinking and the skills which are necessary for the 21st century.

### **Way Forward**

The University Grants Commission (UGC) presently, prescribes the policy guidelines to ensure quality of higher education in the country. NEP 2020 envisages that all types of institutions have the option to run ODL programme and online programmes provided they are accredited to do so. The objectives behind this are to improve access, increase GER, and provide increased opportunities for lifelong learning. The UGC is very keen to intro-

duce online education in the country which has been emphasised in the National Education Policy.

The UGC has released the new regulations for integrated open and distance learning and online programmes where in a detailed guidelines have been given to offer open and distance learning programme and online programmes. The new regulations allow the top 100 universities in the National Institutional Ranking Framework (NIRF) to offer courses both on open and distance learning (ODL) mode and online learning mode without any prior approval from UGC. HEIs having NAAC score of 3.26 on a 4-point scale or above can also offer online learning programmes without prior permission. The HEIs having NAAC score 3.01 on a 4-point scale have been allowed to offer ODL programme only. However the open universities have been allowed to offer online programmes with prior approval of UGC.

The rise in the internet use has changed the way of life in India recently. Due to COVID-19 pandemic, we have learnt many things doing online from our residences e.g. we shop online, we order food online, we make business online and also learn online etc. It has given a real boost to use the digital platform in our every day life. Since the online degrees are now approved and recognized by the UGC, with its unique features of any where any time learning, reduced travel time, personalized learning and availability of quality course content, the demand of digital and online education will definitely be overwhelming in India in near future. The successful implementation of online / digital education will have an impact in increasing the GER as well as in continuing lifelong learning for reskilling or retaining the existing workforce to remain relevant in the job market of 21st century and fulfil the objectives set forth in the NEP 2020.





## ONLINE REALMS & NEW EDUCATION POLICY: HORIZONS OF DIGITAL INNOVATIONS IN LEARNING



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Nation is witnessing debates on National Education policy 2020 (NEP 2020) and its related clauses which have called for major revamp of education system in India. NEP pitching for “5+3+3+4” pattern, doing away with MPhil course, and the vision to attempt to make India a global knowledge super-power are important aspects of the same. Further, proposal to set up National Educational Technology Forum (NETF), are important innovations being enlisted in the policy, wherein digital realms are

being worked out to build foundations of a new revolution via learning amidst the citizenry and polity. The important role of education and its role in nurturing human resources of a nation, indeed are praiseworthy in all times.

A well trained, erudite, skilled human resources of a nation contribute to nation's development and towards building the attractive power of it at the global realms in terms of what has been called as 'soft power' by Joseph Nye.

Further to add here, power has acquired many dimensions today. Education and technology are important areas both at global and domestic levels where nations across the world are attempting to usher excellence in order to factor in gains for people, society and the country. Digital endeavors in terms of connecting resources and services have provided useful outcomes. In the same vein, one must ponder that digitalization in education realms has to be chalked out in a manner to fill in loopholes of the past, garner support to enhance its reach and impact.







When the intent of any policy is good, it requires meticulous efforts to translate it towards good governance practises to benefit the people. Same can be said for one of the important input of National Education policy with respect to promotion of online and digital education. At the outset, it is essential to understand that one has to adapt with needs of changing times. We are living in a world where disruption impacts our lives, livelihood, learnings on daily basis and that technology has worked to ensure people find solutions amidst crisis. In this aspects of multidisciplinary challenges, it is equally essential that right balancing of policy framework with other sectors is needed to work out multi-pronged strategy.

Due policy coordination is needed to get industry, academia, infrastructure, teaching and students fraternity on same plank to ensure smooth application of the policy.

The idea of National Educational Technology Forum (NETF) as an autonomous body, to be set up with the task to ensure capacity building, development of digital content, amongst others. In this regard, it's essential that while exploring this innovative approach, the idea of skill development

has to be put in practice in due letter and spirit in this regard. There is a need for acquiring new skills to keep pace with new developments in industry and society. There must be broad based deliberation on propagation of digital literacy through the proposed forum with the aim to factor in tuning with latest developments in lucid way, curriculum that helps in best knowledge practices.

The merits of digital education are known to all. The success of digital education needs an infrastructure that provides pillars of equity, inclusiveness, consistency and capacity building. The idea to have virtual labs, 'Divyang' friendly education software, amongst others are good initiatives. What is essential here is that this exercise must be done to join and correlate country's past, present and future. The base of digitalization must promote attempts to focus on development of vernacular, build an architecture of own story based on grassroots campaign, correlating education processes with outcomes both in terms of employment and values.

Information is an important variable which has immense benefits for a nation. In this regard, it is important that all attempts at ushering digitalization of education, promotion of online learning, must work to blur out rural urban divide and ensure promotion of regional inputs in terms of language, development needs, with larger collaboration with the national policy agenda.

Consistent research is needed to tackle challenges arising out of rapidly growing and changing context. Digital technology can be ear marked via incubation centres, to develop academic institution and industry partnership. This shall also enable translation of roles of tutors and students alike as knowledge and job creators. Robotics, artificial intelligence, Big Data, is an important agenda for nations across the world. There is no industry that is immune from its impact. Looking at this aspects, new avenues must be worked out making due use of online education in this regard. There is also a need to work out mechanisms of data storage and cyber security, to ensure efficient digital administration of supervision.



Lastly, making fruits of decentralized technology and online education can be an apt tribute by the nation to the vision of Mahatma Gandhi ji, as stated in his valued words of Talisman: "Recall the face of the poorest and the weakest man [woman] whom you may have seen, and ask yourself, if the step you contemplate is going to be of any use to him [her]. Will he [she] gain anything by it? Will it restore him [her] to a control over his [her] own life and destiny?"

We must apply it in practice that how technology and digital education can be worked out to enhance the participation of the marginalized towards education. It is important to reflect this involvement towards a positive change by ushering in an enabling scenario where online education can help to bring in self reliance in an individual interface with society and nation.

Gandhian value of maximization of welfare and reaching towards the grassroots are a significant yardstick to keep into account while putting the idea of promotion of digital education.

A strong nation, society, citizenry shall emerge when from rural to urban, and from the strongest to the frail, shall have equal access to an important forum of education, namely digital learning. The ideas of self sufficiency, placing knowledge based on truth at centre of any task, learning endeavors connected to needs & realities of nation building have been central themes in Gandhian narrative. The need of the hour is to let this enduring legacy guide all attempts to expand the outreach of digital education in nation to work out best possible outcome.



## ADAPTIVE LEARNING IN DIGITAL EDUCATION: A PREREQUISITE FOR NATIONAL EDUCATION POLICY 2020



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**C**COVID-19 began as a public health emergency and disrupted lives in more ways than we had ever imagined. The deadly virus has not only tested human resilience, it has also been a witness to human adaptability to cope with novel conditions. It has caused economic disruptions and is redefining social relationships. It has altered the meaning of engagement with most engaging through computer-mediated screen-based engagements. The education sector has been amongst the forerunners that coped with the situation and tried its best to continue the learning process despite the uncertainty of the times.

COVID-19 showcased the necessity of being acquainted with digital education tools and the strategies to engage, interact, and brainstorm with students through online mode. Blended and Flipped classrooms became the 'new normal' for the education sector. Governments are trying to bridge the 'Digital Divide' both in terms of infrastructure and device availability. Blended classrooms were known to be a student-centric approach and gave much-needed flexibility to the students, however, the model had certain inherent limitations. MOOCs are also designed on a pattern of Blended Learning with the combination of E-Text, Videos, Quizzes,

Discussion Forums among others. However, 'Digital Natives' would be more comfortable with such courses than some of their other counterparts who procured their first device in recent times. The high attrition rates of the MOOCs have been a constant concern for the educators despite providing high-quality self-paced courses. Digital Literacy remains a crucial factor for successful learning in MOOCs.

Amidst the pandemic, the Government of India announced its much-awaited National Education Policy 2020 (NEP 2020). The Third National Education Policy provided a comprehensive framework for the development of education in India in the upcoming years. The policy was designed based on a wide consultation between academicians, experts, bureaucrats, ministers, and citizens at large. The policy took a multidisciplinary approach to education especially in the higher education scenario where the government will thrust upon converting single-stream universities and colleges to multi-disciplinary ones by 2040. The focus is to provide a holistic educational experience while providing multiple entries and exit options. The policy aims to create critical thinkers who could be problem solvers and innovators of tomorrow.



through collaboration and application of an interdisciplinary approach.

The NEP 2020 creates space for a much larger role for digital education initiatives like SWAYAM, e-Pathshala (PG) among others. It focuses on creating a two-way interface for holding online classes, virtual labs, learning games, and simulations through virtual reality, the digital repository of coursework among other provisions. Thus, creating more opportunities for democratisation of education and continue the life long learning process through online modes. These initiatives would yield results only if the students complete online courses provided by the government and use them to upgrade their knowledge base, skill sets, and reskill themselves. As mentioned, low student involvement by the end of MOOCs and other Open Education Initiatives and completion of courses remains a concern for the educators in India.

Adaptive Learning models provides a solution to these concerns. Adaptive Learning uses computer algorithms to understand the needs of the learners and their level of understanding based on their responses and engagement and then, customizes the resources and learning materials according to the needs of the particular learner. It helps to adopt the personalized approach to education rather than a 'one-size-fit-all' approach to education. As the name suggests, Adaptive Learning 'adapts' itself to the needs of the learner rather than a set sequence or pattern of the self-paced MOOCs courses that are directed to the larger student community. It uses the principles from various disciplines that include Computer Science, Psychometrics, Education among others. Algorithms provide adaptability suggestions and reori-

ent the course based on the performance, engagement, and behaviour of the learner. The performance of a learner can be judged by the regularity and the appropriateness of the tasks completed by the learner during the course. It may also include the quality of the content in the assignments submitted by the student. Whereas Behaviour would include the time taken by the learners to grasp the concepts and complete the tasks provided with it. It may provide vital insights regarding the interests of the learner in certain themes or concepts of the course. It may also showcase the strengths and weakness of the learners and the areas where he or she may require additional support.

Adaptive Learning also provides a forum and space for the learners to share their own experiences and information regarding the course. It may include the areas of the subject where the learners feel confident and the preferences of the learners to discuss a topic in a more detailed manner. Thus, Adaptive Learning helps to alter the feedback, sequence, and assessment according to the needs of the learners thereby increasing the efficiency of intended learning outcomes. It brings forth a more customised approach to learning and helps to create long-lasting meaningful engagement in the online environment of teaching-learning.

Adaptive Learning is beneficial for both the learners as well as educators. It provides technological intervention which helps educators to improvise, alter, and upgrade the style to the unique needs of the learners. Online education is based on the idea of connectivism, and Adaptive Learning would help to enhance the idea and improve the efficacy of the online learning initiatives thereby, building upon the vision of the National Education Policy, 2020 (NEP 2020).

Adaptive Learning supports the endeavors of great educators through data analysis and algorithms. It helps educators to make decisions with precision and save their valuable time. It is a tool for the new age teachers who try to match the expectations of all learners and follow the broad vision provided by the Education Policy.







## SAMR, TPACK MODEL AND NATIONAL EDUCATION POLICY 2020



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**T**he National Education Policy 2020 (NEP 2020) talks about Online and Digital Education: Ensuring Equitable Use of Technology. Let us look at what are the challenges and opportunities. Should content be digitised or the delivery, should interactivity be part of it?

SAMR is a framework for evaluating the level at which a given technology can influence teaching and learning. SAMR stands for substitution, augmentation, modification, redefinition. It was designed by Dr. Ruben Puentedura to define the level of impact that a particular technology has on a learning activity. It talks about substitute of common actions to digital mode and some improvement. This leads to enhancement of performing actions. This is followed by modification of the existing action to go digitally. Finally, some of the acts can be completely fined to make a transformation.

A simple example is writing the notes with a pen or pencil in a physical classroom, a conventional way of note taking. Now SAMR models advocates, replacement of pen with a digital substitute. Here note taking can be done on a computer/laptop. Students can add more inputs by highlighting or annotating the text (augmentation). They can share the work to the class in the form of a presentation (modification) or they can upload the presentation to the internet (redefinition). The same is pictorially represented below. We should not lose the forest for the trees. Although, physical to digital transformation is welcome, it should focus on end objectives (learning outcomes) and not mere use of tools or techniques. Unless a meaningful learning happens during the digital transformation, SAMR model may not fulfil the intended learning outcomes.



## SAMR MODEL

Enhancement		Transformation	
Substitution	Augmentation	Modification	Redefinition
<ul style="list-style-type: none"> <li>Technology acts as a direct tool substitute</li> <li>No functional change to the teaching task</li> </ul>	<ul style="list-style-type: none"> <li>Functional improvement to the teaching task</li> </ul>	<ul style="list-style-type: none"> <li>Technology allows for educational task redesign</li> <li>Results in changes to the design of the educational experience and learning outcome.</li> </ul>	<ul style="list-style-type: none"> <li>Technology allows for the creation of new tasks, previously inconceivable.</li> <li>Educational experience is transformed.</li> </ul>
<b>Writing with Pen</b> <b>Typing on computer</b> <b>Annotating/highlight</b>	<b>Conventional mode</b> <b>Substitution</b> <b>Augmentation</b>	<b>Creating presentation</b> <b>Publishing the work</b>	<b>Modification</b> <b>Redefinition</b>

One of the questions we need to answer is “Is the technology adding value to what we are doing?”. What is important to achieve is not the mere integration of digital tools in teaching learning process but identifying specific learning outcomes to give some context and rationale for any meaningful transformation in learning activities of the learners.

Next let us look at TPACK (Technological Pedagogical Content Knowledge) model [1]. This talks about the knowledge the teacher should possess to teach their students a subject, effectively using technology. TPACK model is an extension of Pedagogical Content Knowledge (PCK) framework first proposed by Lee Shulman. Teachers are already familiar with pedagogy. They also create contents. Although not all of them share their contents freely, they are accustomed to contents. The only area they are not familiar is technology. According to TPACK model, technology is crucial for bringing out transformation. Because of the myriad facets of technological tools, the teachers are often overwhelmed by the ever-expanding exponential size of available materials. They are perplexed and often intimidated by forceful adoption without ever having time to understand and assimilate the pros and cons of the tools/materials they use.

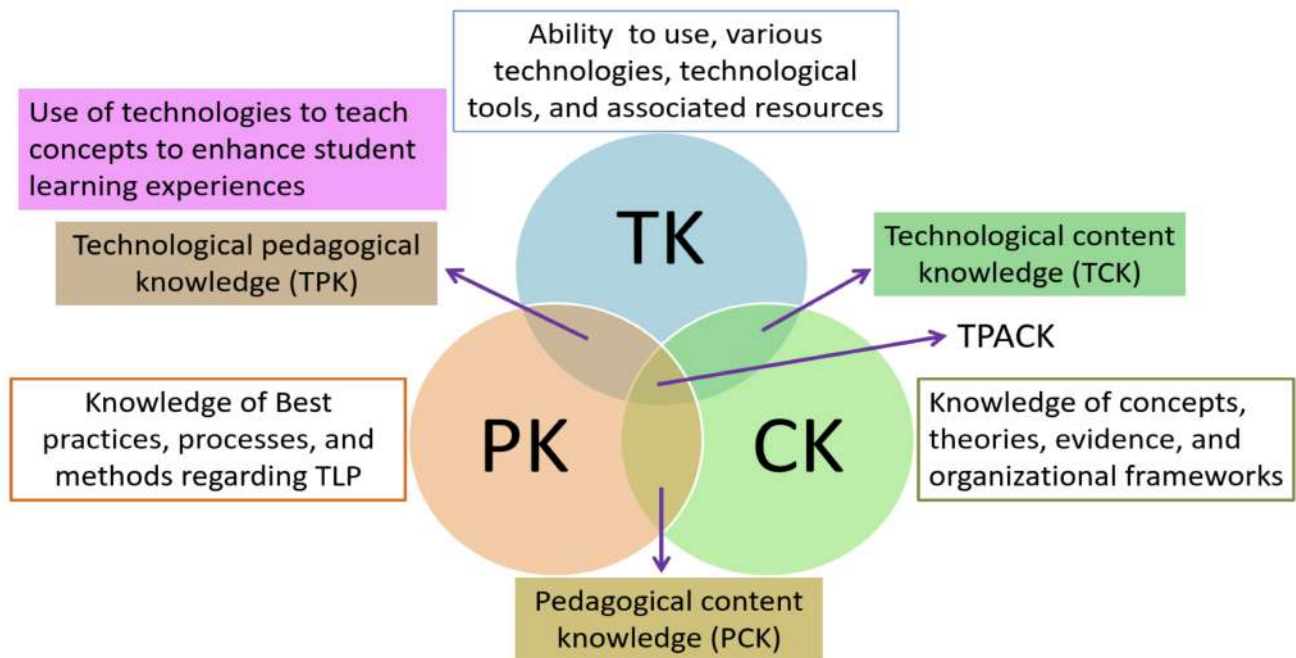
Teaching in the digital or virtual world involves all the aspects of physical classroom teaching and additionally incorporation of digital tools (infra-

structure, hardware) and techniques (software, multimedia, audio-video content). To make this transformation, the teachers themselves need to be autodidactic and make the initial step of self-transformation. Here, the trainer needs to undergo training. Identifying the right set of trainers is crucial for the success. Because we have teachers with varied set of technical, academic, cultural, social and linguistic talents. A teacher with many years of experience may be reluctant to move to digital domain, whereas a tech savvy youngster may not be pedagogically strong. The trainer needs to be tech savvy, and have knowledge about various learning theories, passionate, analytically sound, goal oriented.

It is very important to acknowledge that embracing digital technology is not an answer or solution to educational transformation. Teachers can be supported by creating awareness about the digital challenges and opportunities, providing required infrastructure facilities, giving technical support for smooth integration of digital tools for teaching learning activities, giving adequate training about various digital platforms, technologies, open access tools and their usage. Although these steps may not completely remove the digital divide, but it can help mitigate the gaps.

Teachers can contribute to e-content development for SWAYAM MOOC, SWAYAM Prabha TV channel, DIKSHA, developing virtual labs etc. It is possible to

## TPACK MODEL



reduce the digital divide through mass media, such as television, radio, and community radio which can be extensively used for telecasting and broadcasts. Being pocket/purse conscious and cautious, many of us are slow to acquire/own digital gadgets leave alone keeping pace with cutting edge technological advancements. Incentivizing the teachers through innovative ways like support to purchase digital devices, support for mobile/internet or broadband facilities, access to web resources and National Knowledge Network (NKN), subscription to journals and magazines, remote access to educational resources, providing common facilities to create open educational contents, encouraging to use OER are some of them.

Although many mega initiatives are envisioned, most of the time they fail to take off or make any meaningful impact owing to several lacunae. Some of them include inadequate pilot studies, failure to identify infrastructure deficiencies, failure to implement preliminary results of pilot studies (if any), failure to create awareness, completely ignoring the ground realities, failure to identify and address cultural and language barriers, failure

to give proper training, not adhering to industry standard protocols, cutting corners to make a profit (if outsourced), unrealistic timelines, absence of feedback mechanism, superficial audit, refusing to change policies when there is genuine concerns. The new education policy precisely focuses on these challenges and tries to address them. It is prudent to ask the following questions "should government go solo or involve private players?", "is it true that digital learning is not on par with physical learning?", "should we need to incentivize the digital transformation?" and "if so whom, how, how long?".

Although some of these questions cannot be answered or solved by the teachers at their individual capacity, a willingness to adopt and contribute to digital transformation for a better and brighter future of the country should be the prime objective. Like the Finnish education, where there is no competition between schools to excel, everyone should be empowered and supported to create a win-win situation.

[1]. Mishra, P., & Koehler, M. J. (2006). Teachers College Record, 108 (6), 1017-1054.





## UNDERSTANDING DIGITAL INITIATIVES IN NATIONAL EDUCATION POLICY 2020 FOR CREATING EQUITABLE SYSTEM



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In today's knowledge seeking environment, online and digital education have gained immense attention as they are an easily accessible medium for teaching and learning. In recent unprecedented pandemic situation, this platform has helped many teachers and students from school education to higher education as a substitute media in their respective studies. The online/digital reading material is open and can be used or reused by different learners as per their desire and learning level.

The National Education Policy 2020 (NEP 2020) envisaged the use of online/digital education as a medium of leveraging quality education for all through addressing the concerns of equity. The policy envisions continuous professional develop-

ment of teachers through online and digital education medium at all ladders. The online/digital education platform promotes active learning and urges rigorous training in learner centric pedagogy



and learning material. The policy visualizes the online/digital education as a potential to provide the scholarly material without any demographic, economic and geographic educational boundaries; and to promote lifelong learning and personalized learning of all professionals in India.

The following initiatives formulated in the NEP 2020 for unwinding the digital divide in teaching-learning at all levels from school to higher education aims to facilitates the skill development, professional upgradation and lifelong learning through providing high quality e-content for developing critical, independent and creative perspectives in learners:

- **Creation of Online/Digital Teaching Learning Platform:** The policy recommends digital platforms like SWAYAM for higher education and DIKSHA for school education wherein structured e-content material will be available for all grade learners in different languages in user-friendly and self-pacing mode of learning. These open courseware initiatives are publicly and freely available, and that is either a part of or a complete course from

an educational institution.

- **Online/Digital Education as a Platform for Lifelong Learning:** The policy envisages that online/digital education can play a pivotal role in creating a space for continuous and lifelong learning for all generations through figuring out the need of the hour. The professionals currently in the workforce have very few options for pursuing their academic interests or the required skill sets as per their jobs. The online/digital platforms can help ease and get rid of different logistic barriers, thus truly making education a lifelong learning. The initiative is really appreciable as it incredibly a value addition to their formal education system. It also promises to lower the cost and democratize access to education for all, there by bringing equity among masses.

- **Addressing the Digital Divide:** The policy tries to address the issue of digital divide for the masses who don't have access to digital content through exiting mass media, such as television, radio and community radio. The DTH initiative like SWAYAM Prabha facilitates the learning of all





grade students from school to higher education through educational programmes which will be now available 24/7 in different languages to cater the varied needs of learners. This helps the learners involved in constructing knowledge in different perspectives instead of merely absorbing the available textbook content. The electronic media integration will drastically reduce the cost of accessing the quality resources for learners who can't afford high cost quality resources or educational e-content.

- **Piloting of Online/Digital Medium:** The policy recommends different educational institutions i.e. NETF, CIET, NIOS, IGNOU, IITs, NITs, etc. to study and evaluate the pedagogical interventions through integrating education with online/digital media for facilitating the students teaching-learning. The piloting will facilitate knowing different possible approaches to create an environment which will enable the student's engagement in active learning; and to contribute in better understanding of technology enhanced and student-centred learning environments through studying the content delivery in a variety of forms.

- **Creation of Digital Repositories:** The policy anticipates creation of e-content and its free public dissemination through creation of digital repositories in respective disciplines or streams. For making the learning interactive and simulating, the policy acclaims the courseware creation through integrating learning games & simulations, augmented reality and virtual reality. Through

creating digital repositories of learning resources in electronic forms of documents on the internet, the policy sets a stepping stone for expanding the skill set and professional skill development of learners to compete in this competitive globalized world by dissemination of knowledge on the Pan India scale.

The digital initiatives taken in education policy have opened the doors for empowering individuals and society through creating a knowledge economy. The word "online" and "digital" appeared 50 and 38 times respectively in the policy document with an aim of providing a conduit to increase access to quality education. The policy anticipates designing a digital educational platform for improving the educational processes and learning outcomes. The integration of technology and education is seen as bidirectional. Technology-based education platforms, such as DIKSHA, SWAYAM and SWAYAM Prabha are designed for enriching the learning across school and higher education through facilitating user friendly quality content. For creating an equitable opportunity, all programmes/courses curricula and pedagogy across subjects aims to achieve global standards of quality through online and digital mode.

The online/digital courses provide a wider exposure and attract learners from different streams due to its ease of accessibility, flexibility and none the less affordability. It enables learning anywhere and anytime as it provides opportunities for remote and self-paced learning. It supports the students to learn at different times in different places free of cost. In higher education, it facilitates the demand driven education according to the need of the job market through accommodating multiple learning styles and flexibility in assignment designs. Therefore, it has immense potential which can be tapped both for capacity building of learners and lifelong learning as well as professional development. The NEP 2020 is a conspicuous user friendly policy which can be easily comprehended by any stakeholders and thereby must be adopted for the benefit of all learners.



Learning



## ONLINE AND DIGITAL EDUCATION: POLICY PERSPECTIVE AND WAY FORWARD



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**T**ransition from teacher-classroom based teaching to online education through digitized medium is the need of the hour. The digital promise in the National Education Policy (NEP), 2020 will supplement and re-define the Indian educational landscape. As the Indian education system walks the road of digitization, NEP, 2020 paves the road by bringing the idea of educational transformation for 21st century needs. From school education to higher education, from vocational education to technical education, digital education is indeed at the forefront of national agenda.

The Digital India campaign, a flagship programme of the Government of India with a vision to transform India into a digitally empowered society and knowledge economy is one of the rarest initiatives in the history of nationwide schema. The Digital India Programme centres on three core areas, namely, Digital Infrastructure, E-governance, and Digital Empowerment. The campaign leaves its imprints on the education scene, where technology enablement, integration and digitization is considered to be the panacea for the digital lacks that accentuates the

digital divide when compared with status in technological realm. National reports emphasize upon the capacity of India to reach the zenith in digitization by catalysing transformational change in different stages of education.

### **Fundamental recommendations for Digital Education in NEP 2020**

The core components specific to Digital Education in NEP, 2020 at different stages of education are as under:

#### **1. Establishment of National Digital Libraries:**

Establishment of National Digital Libraries gives access to multiple forms of content with a potential reach of infinite number of resources and users. It provides a framework of virtual repository of learning resources with a single-window search facility. It is a 24x7 learning resource accessible from anywhere by anyone.

**2. Augment Digital Literacy:** Enhancement of Digital Literacy amongst students will ensure that the students hone their individual ability to

discover, evaluate, and compose texts, audio, videos, applications, designs using technology. Creating digital literacy is essential to understand basics of using web browsers, search engines, emails, blogs, PowerPoint, and so on.

**3. Institute Smart Classrooms:** Establish smart classrooms i.e. technology enhanced classrooms at school level to foster opportunities for teaching and learning by integrating technology. Smart classrooms as recommended are to be initiated in a phased manner, slowly and gradually covering the whole school sphere with technology integration.

**4. Use of Digital Pedagogy by Teachers:** Digital pedagogy used by the teachers will go a long way in making children achieve learning outcomes in a fun-filled way. Digital pedagogy is not about making blind use of technology, but selecting digital tools thoughtfully using critical pedagogical perspective.

**5. Curricular integration of New Technologies:** New technologies like artificial intelligence, data coding, machine learning has the capacity to transform how our education system works. Curricular integration of new technologies exposes students to the innovative world of technologies and its assimilation in curriculum will widen the scope of skill and competency development.

**6. Strengthen Digital Infrastructure:** Foundational to technology integration is establishment of digital infrastructure. As online education is gaining popularity, for IT enabled learning in schools, robust digital infrastructure considering the future challenges and rampant digital divide.

**7. Optimization of Digital Platforms:** To enhance specific knowledge, learning, and skills of learners, the digital platform provides extension for content curation, for example, MOOCs (Massive Open Online Courses) consist of digitized learning material, an amalgam of audio-video lectures, interactive sessions, etc. Ongoing ICT-based educational initiatives must be optimized to meet the current and future challenges in providing quality education for all.

### **Bridging the Digital Divide to meet the recommendations as laid in NEP, 2020**

The core recommendations laid in NEP, 2020 suggest that there are several critical areas for technology interventions and effective strategization to mark a way forward towards catalysing transformational change in Indian education landscape. However, several recent studies have emphasized upon the gap that exists between those who have access to technology and those who do not. To fully utilize the technology as the biggest enabler in the learning space; for effective technology integration and to suitably implement the recommendations as laid in NEP, 2020, it is a thousand miles journey, which begins with each step. Right to Technology besides RTE Act is a fundamental pre-requisite to not to create exclusion and endanger social integration which may hamper the road to technological integration. Fundamentally, access to technology needs to be enabled by putting the thrust towards connectivity provision, capacity augmentation, resource mobilization, core technology creation and community participation. The gap between technology's haves and have-nots can be tackled through the government policies and PPP partnership tackling three major challenges- infrastructure, trained teachers and content choice and delivery.





## सी.ई.सी. एवं एच.पी.यू., यू.जी.सी. केंद्र ने समझौता ज्ञापन पर हस्ताक्षर किया

प्रो. जे.बी. नड्डा, निदेशक, शैक्षिक संचार संकाय (सी.ई.सी.) एवं प्रो. सिकंदर कुमार, कुलपति, हिमाचल प्रदेश विश्वविद्यालय (एच.पी.यू.), यू.जी.सी. केंद्र ने 16 अक्टूबर, 2020 को एच.पी.यू., शिमला में शिक्षा प्रौद्योगिकी के उचित उपयोग के माध्यम से उच्च शिक्षा की जरूरतों को संबोधित करने के लिए समझौता ज्ञापन (एम.ओ.यू.) पर हस्ताक्षर किए। यह एम.ओ.यू. स्नातक (यू.जी.) और स्नातकोत्तर (पी.जी.) दोनों स्तरों के छात्रों के लिए डिजिटल उच्च शिक्षा कंटेंट की अधिक से अधिक पहुंच सुनिश्चित करेगा। इसके साथ ही सी.ई.सी. उच्च शिक्षा पर स्वयं मैसिव ओपन ऑनलाइन कोर्सेज (मूक्स) और सीईसी के 11 स्वयं प्रभा डीटीएच चैनल के माध्यम से छात्रों को नवीनतम शैक्षिक तकनीकों के साथ तालमेल रखते हुए शिक्षा प्राप्त करने का मार्ग प्रशस्त करेगी।

समझौता ज्ञापन पर हस्ताक्षर करने से पहले, प्रो. नड्डा ने कोविड-19 लॉकडाउन के दौरान दुनिया भर में डिजिटल शिक्षा के उभरते महत्व, तथा पोस्ट-कोविड विश्व में ऑनलाइन शिक्षा के भविष्य की संभावनाओं के बारे में बताते हुए विशेष व्याख्यान दिया। व्याख्यान के पश्चात् छात्रों के लाभ हेतु सी.ई.सी. की बहुपक्षीय डिजिटल शैक्षिक पेशकश पर एक व्हाइटबोर्ड एनीमेशन फिल्म प्रस्तुत की गयी।

इसके अलावा, निदेशक, सी.ई.सी. ने हिमाचल प्रदेश के माननीय राज्यपाल श्री बंडारू दत्तात्रेय से भी मुलाकात की तथा राष्ट्रीय शिक्षा नीति 2020 (एन.ई.पी. 2020) की विभिन्न बारीकियों पर चर्चा की।

## CEC signs MoU with HPU, UGC Centre

Prof. J.B. Nadda, Director, Consortium for Educational Communication (CEC) signed a Memorandum of Understanding (MoU) with Prof. Sikander Kumar, Vice-Chancellor, Himachal Pradesh University (HPU), UGC Centre on 16th October, 2020 at HPU, Shimla for addressing higher education needs through appropriate use of education technology. The MoU will provide students with greater access to digital higher education content for both undergraduate (UG) and post-graduate (PG) levels. CEC would also pave the way for students to keep in tandem with latest technology enabled learning through SWAYAM Massive Open Online Courses (MOOCs) and CEC's 11 SWAYAM Prabha DTH Channels on higher education.

Prior to the signing of the MoU, Prof. Nadda delivered a special lecture delineating the ways in which importance of digital education was realized worldwide during the COVID-19 lockdown, and the future potential of online education in the post-COVID world. The lecture was followed by a whiteboard animation film about CEC and its multitudinous digital education offerings for the benefit of students.

Furthermore, Director, CEC also met with Hon'ble Governor of Himachal Pradesh, Shri. Bandaru Dattatreya to discuss various nuances of the National Education Policy 2020 (NEP 2020).



प्रो. जे.बी. नड्डा, निदेशक, सी.ई.सी. (बाएं से तीसरे) और प्रो. सिकंदर कुमार, वी.सी., एच.पी.यू. (दाएं से तीसरे) एम.ओ.यू. पर हस्ताक्षर करते हुए एवं एच.पी.यू., शिमला के अन्य संकाय सदस्य

Prof. J.B. Nadda, Director, CEC (3rd from left) and Prof. Sikander Kumar, VC, HPU (3rd from right) signing MoU, and other faculty members of HPU, Shimla



## सी.ई.सी. में "हिंदी पखवाड़ा 2020" का आयोजन

प्रत्येक वर्ष की भाँति इस वर्ष भी शैक्षिक संचार संकाय (सी.ई.सी.) के प्रांगण में निदेशक प्रो. जगत भूषण नड्डा के नेतृत्व में 30 सितम्बर, 2020 के दिन 'हिंदी पखवाड़ा' कार्यक्रम का आयोजन हुआ। इसमें मुख्यतः दो प्रतियोगिताओं का आयोजन किया गया। सर्वप्रथम थी निबंध प्रतियोगिता, जिसका शीर्षक "राष्ट्रीय शिक्षा नीति -2020 में हिन्दी की उपादेयता" रखा गया था। तत्पश्चात 30 सितम्बर, 2020 को आशु भाषण प्रतियोगिता आयोजित की गयी जिसमें दिए गए विषय "कोविड लोकडाउन - एक अभिशाप या वरदान?" पर प्रतियोगियों ने अपने विचार व्यक्त किये।

निबंध प्रतियोगिता में प्रथम स्थान सुश्री ऋचा, द्वितीय स्थान सुश्री मीना कुमारी एवं तृतीय स्थान सुश्री आशा को प्राप्त हुआ। आशु भाषण प्रतियोगिता में प्रथम स्थान पर डॉ गीतांजली सिंह, द्वितीय स्थान पर श्री सत्येन्द्र भारती एवं तृतीय स्थान पर श्री ब्रिजपाल सिंह रहे। हिंदी पखवाड़ा कार्यक्रम का यह आयोजन पूर्णतः सफल रहा।



हिंदी पखवाड़ा 2020 के अवसर पर (बाएँ से दाएँ) श्री नवीन सोई, सी.ए.ओ., सी.ई.सी., श्री के.एस.महाजन, सलाहकार ए एंड एफ, सी.ई.सी., प्रो. जे.बी. नड्डा, निदेशक, सी.ई.सी., डॉ.सुनील मेहल, संयुक्त निदेशक (एस), सी.ई.सी. और ईआर. नागेश्वर नाथ, संयुक्त निदेशक (एच), सी.ई.सी.

(Left to right) Shri. Navin Soi, CAO, CEC, Shri. K.S. Mahajan, Consultant A&F, CEC, Prof. J.B. Nadda, Director, CEC, Dr.Sunil Mehru, JD(S), CEC and Er. Nageshwar Nath, JD(H), CEC on the occasion of Hindi Pakhwada 2020



## CEC organises “Hindi Pakhwada 2020”

Like every year, this year too, the 'Hindi Pakhwada' was organized at the Consortium for Educational Communication (CEC) under the leadership of Prof. Jagat Bhushan Nadda, Director, CEC on 30th September, 2020. Mainly two competitions were organized for the event. The first was Essay Competition, titled "The Significance of Hindi in National Education Policy – 2020". Thereafter, an Extempore Competition was organized on 30th September, 2020, in which the contestants expressed their views on the topic “COVID Lockdown – A Curse or a Boon?”

The 1st prize for the Essay Writing competition was won by Ms. Richa, the 2nd prize by Ms. Meena Kumari and the 3rd prize went to Ms. Asha. Dr. Geetanjali Singh won the 1st prize in the Extempore competition, Mr. Satendra Bharti stood 2nd and the 3rd prize went to Mr. Birajpal Singh. The organisation of Hindi Pakhwada event was a complete success.



सी.ई.सी. के निदेशक, प्रो. जे.बी. नड्डा हिंदी पखवाड़ा में आशुभाषण प्रतियोगिता में प्रथम पुरस्कार जीतने के लिए डॉ. गीतांजलि सिंह, निर्माता, सी.ई.सी. को पुरस्कृत करते हुए

Prof. J.B. Nadda, Director, CEC giving award to Dr. Geetanjali Singh, Producer, CEC For winning 1st prize in the Hindi Extempore Competition in Hindi Pakhwada 2020 event



प्रो. जे.बी. नड्डा, निदेशक, सी.ई.सी., हिंदी पखवाड़ा 2020 के आयोजन में हिंदी आशुभाषण एवं निबंध लेखन प्रतियोगिता के विजेताओं को पुरस्कार प्रदान करते हुए: 1. सुश्री ऋचा 2. सुश्री मीना कुमारी 3. श्री सतेंद्र भारती 4. श्री ब्रिजपाल सिंह

Prof. J.B. Nadda, Director, CEC giving award to winners of the Hindi Extempore and Essay Writing Competition in Hindi Pakhwada 2020 event: 1. Ms. Richa 2. Ms. Meena Kumari 3. Mr. Satendra Bharti 4. Mr. Birajpal Singh



## Resource Person: Dr. Namita Rajput

### Affiliation:

Associate Professor,  
Department of commerce,  
Sri Aurobindo College,  
University of Delhi.

## BLOOM'S TAXANOMY

### About the Expert:

Dr. Namita Rajput is the Principal (OSD), Sri Aurobindo College (Evening), University of Delhi. She has over 200 publications in SCOPUS, UGC\_CARE, ABDC, etc. listed journals. She is an Internationally Certified Lead Auditor for Quality Standards (ISO 9000-2015) IRCA approved. She is certified as an Assessment Centre Analyst (HR Professional) by the Ministry of Micro, Small & Medium Enterprises (MSME), Technology Development Centre, Chennai, and Govt. of India. She has been awarded Dr S. Radha Krishnan lifetime Achievement National award 2018, Women Excellence Award in Education 2017 by YMCA, 1RSD-Outstanding Researcher Award 2017, Best Women ICONIC Award-2018' by Earth Saviours Foundation, Mahatma Gandhi Ekta Samman-2013 by IIF5, Paul Harris Fellow by Rotary International, Best Citizen of India Award-2012 by IPH, Indira Gandhi Shiromani Award 2011, Prof. M.B.Shah Memorial Research Award 2014 by ICA.

### Excerpt of the Lecture:

One of the most widely used ways of organizing levels of expertise is according to Bloom's Taxonomy of Educational Objectives. It uses a multi-tiered scale to express the level of expertise required to achieve each measurable student outcome. Organizing measurable student outcomes in this way will allow us to select appropriate classroom assessment techniques for the course. There are three taxonomies. Which of the three to use for a given measurable student outcome depends upon the original goal to which the measurable student outcome is connected. There are knowledge-based goals, skills-based goals, and affective goals (affective: values, attitudes, and interests); accordingly, there is a taxonomy for each. Within each taxonomy, levels of expertise are listed in order of increasing complexity. Measurable student outcomes that require the higher levels of expertise will require more sophisticated classroom assessment techniques. Bloom's Taxonomy is a convenient way to describe the degree to which we want our students to understand and use concepts, to demonstrate particular skills, and to have their values, attitudes, and interests affected.

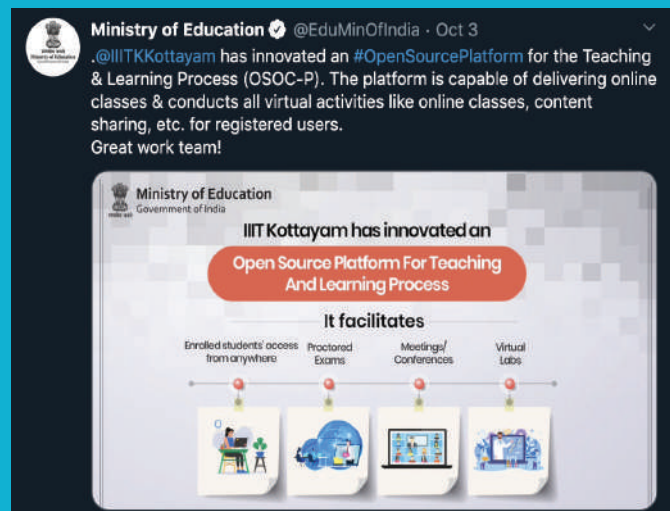
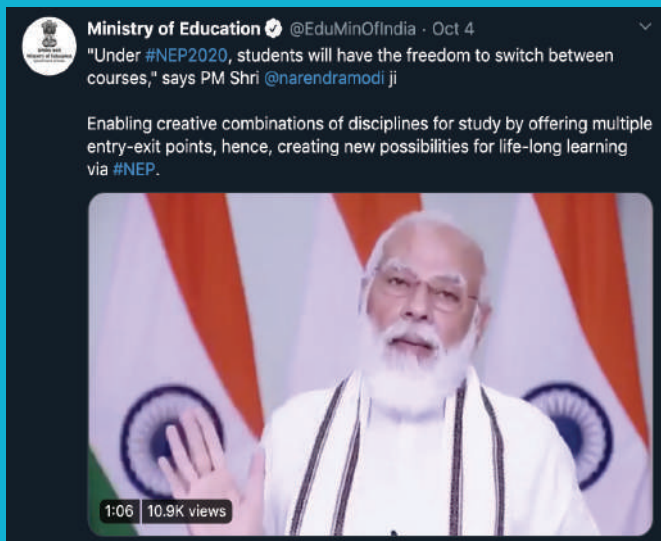
### Learning Objectives:

- To discuss the Bloom's Taxonomy as an effective tool to achieve outcome based education.
- To understand various levels of thinking from low order to high order level
- To elaborate various Domains of thinking i.e Cognitive, Affective and Psychomotor
- To explain the various levels of thinking with proper illustrations.





# TWEETS ON DIGITAL EDUCATION







## CEC's Bouquet of 11 DTH Channels on SWAYAM Prabha

CEC is the National Coordinator for Non-Technology UG and PG Programmes for 11 SWAYAM Prabha – MHRD's DTH bouquet of educational channels that telecast high quality educational programmes 24x7. Each channel has fresh educational content for 8 hours to be telecast 3 times a day. The channels are free-to-air and can be viewed on DD Free Dish and DishTV. CEC's exclusive 24x7 CEC-UGC Higher Education channel – Vyas transmission is available on CEC's website: <http://cec.nic.in> and on <http://webcast.gov.in> web portal of the Government of India.

Each programme offers a comprehensive understanding of the fundamentals of the subjects enabling the students to choose a convenient time and ensure recapitulation. Curriculum based programmes meet the needs of lifelong learners.

### Channel Name – वागीश | Vageesh

Channel Scope – Language & Literature  
Channel No. – CEC-UGC - 01

Subjects: Hindi Literature, Hindi Language, English Language, English Literature, Sanskrit, Urdu, Foreign Language Courses: German, Japanese, Chinese, Spanish, French, Russian, Linguistics

### Channel Name – संस्कृति | Sanskriti

Channel Scope – History, Culture & Philosophy  
Channel No. – CEC-UGC - 02

Subjects: History, Philosophy, Performing Arts, Rabindra Sangeet, Hindustani Classical Music, Karnataki Sangeet, Fine Arts, Manuscriptology, Painting Applied Art Sculpture, Theatre Arts, Film Studies, Painting Applied Multimedia, Vocational Studies, Buddhist Studies, Comparative Studies of Religion, Jyotish Ganit, Visual Arts, Indian Culture

### Channel Name – प्रबोध | Prabodh

Channel Scope – Social & Behavioral Sciences  
Channel No. – CEC-UGC - 03

Subjects: Sociology, Anthropology, Social Work Administration, Social Work, Political Science, Public Administration, Psychology, Population Studies, Women Studies

### Channel Name – सारस्वत | Saaraswat

Channel Scope – Education and Home Science  
Channel No. – CEC-UGC - 04

Subjects: B.A. Education, B. Ed., B. Ed. English, Special Education for Visually Impaired, Elementary Education, Environmental Science, Home Science, Adult Education, Physical Education, Sports & Health Education

### Channel Name – प्रबंधन | Prabandhan

Channel Scope – Information, Communication and Management Studies  
Channel No. – CEC-UGC - 05

Subjects: Business Management, Human Resources Management, Management & Marketing of Insurance, Marketing Management & Retail Business, Bachelor of Business Studies, Office Administration & Secretarial Practice, Tourism, Hindi Journalism, Communication & Journalism, Multimedia Communication, Vocational Studies – Mass Communication, Video Production, Advertising, Library Information Science Management

**Channel Name – विधिक | Vidhik**Channel Scope – Law and Legal Studies  
Channel No. – CEC-UGC - 06

Subjects: LLB, Criminology, Forensic Science, Human Rights &amp; Duties

**Channel Name – कौटिल्य | Kautilya**Channel Scope – Economics and Commerce  
Channel No. – CEC-UGC - 07

Subjects: Economics, Business Economics, Commerce, Financial Accounting

**Channel Name – आर्यभट्ट | Aryabhata**Channel Scope – Physical and Earth Sciences  
Channel No. – CEC-UGC - 08

Subjects: Mathematics, Statistics, Physics, Geography, Geology, Chemistry

**Channel Name – स्पंदन | Spandan**Channel Scope – Life Sciences  
Channel No. – CEC-UGC - 09

Subjects: Botany, Zoology, Life Sciences, Microbiology, Bio-Medical Sciences, Bio-Chemistry, Bio-Informatics

**Channel Name – दक्ष | Daksh**Channel Scope – Applied Sciences  
Channel No. – CEC-UGC - 10

Subjects: Applied Life Science - Sericulture, Applied Physical Sciences - Electronics, Industrial Chemistry, Computer Science, Computer and Networking, Cyber Security/Information Security, Environmental Science, Analytical Chemistry/Instrumentation, Pharmacy, Agriculture, Architecture, Biophysics, Food &amp; Nutrition, Food Technology, Polymer Science

**Channel Name - व्यास | Vyasa**  
**Channel No. - CEC-UGC - 33**• **Art/Culture/Literature/Language** Band - I

English Language, Linguistics, Hindi &amp; other Languages, English Literature, Literature of other Languages, Culture, Architecture, Plastic Arts &amp; Sculpture, Drawing &amp; Decorating Arts, Painting &amp; Fine Arts, Music, Recreational &amp; Performing Arts, Public Performance, Film Appreciation, Dance &amp; Drama, Religion, Customs, Folklore

• **Social Science** Band - II

History, Geography, Biography, Genealogy, Insignia (Awards), Archaeology, Museology, Manuscripts &amp; Rare Books, Philosophy, Psychology, Religion, Social Sciences/ Sociology, Anthropology, Political Science, Economics, Public Administration

• **Management and Other professional Courses** Band - III

Management, Marketing, Commerce, Communications, Telecommunication, Tourism, Advertising &amp; Public Relations, New Media Journalism, Publishing, Photography &amp; Photographs, Graphic Arts, Printmaking &amp; Prints, Library &amp; Information Science, Education, Sports/Physical Education, Women Education, Law, Environment Studies/Management, Home Economics &amp; Family Living

• **Natural and Applied Science** Band - IV

Forensic Science &amp; Criminology, Mathematics, Astronomy &amp; Allied Sciences, Physics, Chemistry, Earth Science, Geology, Hydrology, Meteorology, Paleontology/Fossils, Life Science, Biology/Ecology, Genetics/Biotechnology, Microbiology, Botany, Zoology, Medical Science, Health &amp; Nutrition, Diseases, Engineering, Electrical/Mechanical Engineering, Mining &amp; Related Operations, Military &amp; Nautical Engineering, Civil Engineering, Manufacturing Technology, Agriculture, Horticulture, Animal Husbandry/Veterinary Sciences, Sericulture, Aquaculture, Chemical Engineering/Biotechnology, Manufacturing for Specific Uses, Computer Sciences

# #Birthdays@November2020

## SCORPIO

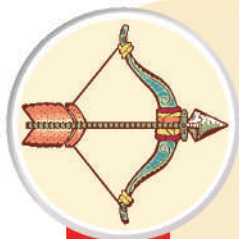


Asif Saleem  
Technician  
(Sound Recordist)

Ambitious, dominating, passionate, intuitive, creative. Scorpio usually is a good judge of character. If they don't trust you, it is usually for a good reason.



Optimistic, idealist, adventurous, philosophical. Sagittarius is interested in what is possible and what is on the horizon, rather than what has already been done.



## SAGITTARIUS



Srishti Sharma  
Content Writer



T.C. Saikia  
Engineer (Broadcast)



Surinder Gandhi  
Administrative Assistant



Mukul Rewari  
M.TS



CEC wishes you all a very  
Happy Birthday!!



# National Education Policy 2020 Highlights



Holistic multi-disciplinary education at undergraduate (UG) level in all fields of study.

National Educational Technology Forum for increased use of technology for education with equity.

Digital education to be expanded to increase the Gross Enrolment Ratio (GER) to 50%.

Universal Access to Education & curtailing “Drop-out” rates.

Scholarships and Incentives for meritorious students from socially and economically disadvantaged groups.



Flexibility of Subjects in higher education curriculum. Multiple entry/exit with appropriate certification.

Academic banks of credits to facilitate transfer of online course credits.

Multilingualism: Creating equal opportunity to access education for Anyone, Anytime and Anywhere through digital education in regional languages.



Consortium for Educational Communication, New Delhi -110 067.



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