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EDUCATION IN POST - PANDEMIC ERA AN INTERNATIONAL OVERVIEW AND PROBLEMATIC ISSUES

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Abstract:
The presented text refers to the discussion of different models and systems of education that have taken place in the distant and recent past. It also offers an analysis of current models that have changed due to the COVID 19 pandemic. Future models of education are proposed.

Key Words: education, types, new, normal, era

Introduction:

Etymologically speaking, the term "education" traces its roots from the Latin word" "*educatio*" which signifies the meaning -"a breeding, a bringing up, or a rearing."[1]
Education is the practice of advancing learning, or the inculcation of knowledge, skills, values, beliefs, and manners. Various educational means encompass teaching, training, narration, deliberation and guided research. Education is usually taken under the guidance of educators or academicians, however learners can also educate themselves nowadays, anywhere without any limitations of territorial borders. Education can occur in formal or informal settings and any experience that has a productive effect on the way one thinks, feels, or acts may be recognized as educational. The methodology of teaching is known as pedagogy.

Formal education is commonly divided into numerous progressive phases such as preschool or kindergarten, primary school, secondary school and then college, university, or apprenticeship.
Education initiated from prehistory itself, as adults instructed the young in the knowledge and skills perceived requisite in their society. In pre-literate societies, this was accomplished through oral dissemination of knowledge and through imitation. Storytelling or narration passed knowledge, values, and skills from one generation to the next. As cultures began to expand their knowledge beyond skills that could be readily learned through imitation, formal education developed.

Beginning from the Ancient Greek civilizations, the world renowned scholar and philosopher Plato laid the foundations of "the Academy" in Athens, the first ever institution of higher learning in Europe.[2] The city of Alexandria in Egypt, instituted in 330 BCE, became the successor in education to Athens as the intellectual cradle of Ancient Greece . There, "the Great Library of Alexandria"

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[1] ERIC - EJ724880 - Educare and Educere: Is a Balance Possible in the Educational System? Educational Forum, The, 2004. (n.d.). Retrieved January 7, 2021, from https://eric.ed.gov/?id=EJ724880

[2] Lynch, John Patrick (1972). *Aristotle's School; a Study of a Greek Educational Institution*. Berkeley: University of California Press.

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was established in the 3rd century BCE. European civilizations suffered a collapse of literacy and organization following the downfall of the Roman Empire in CE 476.[3]

In Ancient China, Confucius (551–479 BCE), hailing from the state of Lu, was the country's most authoritative ancient philosopher, whose educational outlook continues to shape the societies of China and neighboring nations like Korea, Japan, and Vietnam. Confucius rallied disciples and explored in vain for a sovereign who would follow his principles of good governance, but his "Analects" were written down by his followers and have continued to influence education in East Asia into the modern era.
After the Fall of Rome, the Catholic Church became the dominant preserver and exponent of education in Western Europe.[4] The church set up cathedral schools in the Early Middle Ages as hubs of advanced education. Some of these establishments ultimately evolved into medieval universities and antecedents of many of Europe's modern universities.[5]

The medieval universities of Western Christian world were well-bridged across all of Western Europe, fostered freedom of information, and produced a diversity of exceptional scholars and natural philosophers, including Saint Thomas Aquinas of the University of Naples, Robert Grosseteste of the University of Oxford, an early proponent of a systematic methodology of scientific experimentation, and Saint Albert the Great, a pioneer of biological field research. Established in 1088, the Bologna University is recognized as the foremost, and the oldest perpetually operating university.

In other parts of the globe during the Middle Ages, Islamic Sciences and Mathematics prospered under the Islamic caliphate which was institutionalized across the entire Middle East.
The Renaissance period which marked the transition from middle ages to modernity in Europe released a new era of scientific and intellectual upliftment and admiration of ancient Greek and Roman civilizations. This age also saw the European ideas of education in philosophy, religion, arts and sciences spread out across the globe. Missionaries and scholars also brought back new ideas from other civilizations such as China and India. Then later, the Age of Enlightenment witnessed the exposure of a more secular educational experience in Europe.

In ancient India, the education system was largely influenced by the Brahmanical order of the society. The highest group of intellectuals, the Brahmins, were the priests and men of learning, the next group, of nobles and soldiers, were the Kshatriyas; thirdly, the agricultural and trading class was known as the Vaishyas and finally, the artisans and labourers were called the shudras. Such was the division of the ancient Hindu society into the four "varnas" or "classes of labor."
Religion was the mainspring of all activities in ancient India. It embraced not only prayer and worship but also philosophy, morality, law, government as well as educational ideas. The study of the Vedic literature ,the four vedas ("the Rig-veda, the Yajur- veda, the Sam-veda and the Atharva-veda"), "the Upanishads" or the conclusion of the vedas and "the dharmashastras and the sutras" or the righteousness science was indispensable to higher castes. All the stages of instruction were very well defined.

The 500 years from the 4th century CE to the close of the 8th, under the Gupta and the Harsha dynasties, is an astonishing period in Indian history. It was the age of the distinguished universities of Nalanda and Valabhi and of the rise of Indian sciences, mathematics, and astronomy. Girls were usually educated at home, and vocational training was imparted through a system of apprenticeship.

[3] Blainey, Geoffrey (2004). *A very short history of the world*. London: Allen Lane.
[4] "Science owes much to both Christianity and the Middle Ages: Soapbox Science". *blogs.nature.com*.
[5] Blainey, Geoffrey (2004). *A very short history of the world*. London: Allen Lane.

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These were the main developments in education prior to the Muslim invasions, beginning in the 10th century.
In contemporary times, a fundamental right to education has been appreciated by the majority of governments worldwide and the United Nations Organization[6]. In most countries, education is mandatory up to a certain age of a child depending upon their respective availability of resources to impart education.

I. **Traditional/ Pre-Pandemic Approach of Education**

Traditional education occurs in a well-defined or organized environment or set-up whose primary purpose is to teach students. Usually, it happens in a school or institutional environment with classrooms of multiple students learning together with a trained and certified teacher of the discipline. Most school systems are designed around a set of values or ideals that govern all educational choices in that system. Such choices comprise curriculum, organizational models, design of the physical learning spaces (e.g. classrooms), student-teacher interactions, methods of assessment, class size, educational activities, and more.

The International Standard Classification of Education (ISCED) was initiated by UNESCO as a statistical base to contrast education systems.[7] The current version ISCED, 2011 has 9 levels, created by dividing the tertiary pre-doctorate level into three levels. It also extended the lowest level (ISCED 0) to encompass a new sub-category of early childhood educational development programs, which focuses on children below the age of 3 years.[8]

Early childhood Education:
The education is modelled to buttress early development in laying down foundation for participation and integration into the school and society. The programs are designed for children below the age of 3. This is ISCED level 01. Preschools furnish education from ages approximately three to seven, depending on the country when children enter primary education. The children now willingly interact with their peers and the educator. These are also called as nursery schools and as Kindergarten. It "provides a child-centered, preschool curriculum for three- to seven-year-old children that aims at upholding a child's physical, intellectual, and moral nature with balanced emphasis on each of them." [9]This is ISCED level 02.

Primary Education:
This is ISCED level 1. Primary or elementary education is composed of the first four to seven years of formal and structured education. They are typically outlined to dispense young children with functional literacy and numeracy skills and concrete foundation for most regimes of knowledge and personal and social development to reinforce the transition to secondary school. In general, primary education consists of six to eight years of schooling starting at the age of five to seven, although this varies between countries.
Under the Education For All programs driven by UNESCO, most countries had committed to attain universal enrollment in primary education by 2015, and in many countries, it has been made compulsory. The division between primary and secondary education generally occurs at about eleven or twelve years of age. Some education systems have separate middle schools, with the

[6] Article 13.1 of the United Nations' International Covenant on Economic, Social and Cultural Rights, 1966 recognizes a universal right to education. *ICESCR*.
[7] https://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf
[8] http://www.uis.unesco.org/Education/Documents/isced-2011-en.pdf
[9] Ross, Elizabeth Dale (1976). The Kindergarten Crusade: The Establishment of Preschool in the United States. Athens: Ohio University Press. p. 1.

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transition to the final stage of secondary education taking place at around the age of fifteen. Schools that bestow primary education, are commonly referred to as primary schools or elementary schools.
In India, for example, compulsory education spans over twelve years, with eight years of elementary education, five years of primary schooling and three years of upper primary schooling. Various Indian states impart 12 years of compulsory school education based on a national curriculum framework designed by the National Council of Educational Research and Training (NCERT).

Secondary Education:
It encompasses the two ISCED levels, ISCED 2: Lower Secondary Education and ISCED 3: Upper Secondary Education.
In most contemporary educational systems of the world, secondary education comprises the formal education that occurs during adolescence or teenage. In the United States, Canada, and Australia, primary and secondary education together are sometimes referred to as K-12 education, and in New Zealand Year 1–13 is used. The objective of secondary education is to accord common knowledge, to construct for higher education, or to train directly in a vocation.
Depending on the order, schools for this period, or a part of it, maybe cited as secondary or high schools, gymnasiums, middle schools, colleges or vocational schools. The precise meaning of any of these terms differs from one system to another. The exact divide between primary and secondary education also varies from country to country but is generally around the seventh to the tenth year of schooling.

Lower Secondary Education:
Programs at ISCED level 2, lower secondary education are usually arranged around a more subject-oriented curriculum, varying from primary education. Teachers typically have pedagogical training and specialized knowledge in their specific subjects they teach. Lower secondary education aims to settle the footing for lifelong learning and human development upon introducing theoretical concepts across a broad range of subjects which can be progressed in future stages. Some education systems may propose vocational training programs during ISCED level 2 furnishing skills pertinent to employment.

Upper Secondary Education:
Programs at ISCED level 3, or upper secondary education, are commonly fashioned to complete the secondary education process. They lead to skills relevant to employment and the competency requisite to engage in tertiary courses. They afford students more varied, specialized and in-depth instruction. They are more differentiated, with a range of options and learning streams.

Tertiary or Higher Education:
Higher education, also referred to as tertiary, third stage, or postsecondary education, is the non-compulsory educational level that follows the completion of a school such as a high school or secondary school. It normally incorporates undergraduate and postgraduate education, as well as vocational training. Colleges and universities mainly impart tertiary education and are collectively known as tertiary institutions. Individuals who complete tertiary education generally receive certificates, diplomas or academic degrees.

The ISCED differentiates 4 levels of tertiary education. ISCED 6 is equivalent to a first degree, ISCED 7 denotes a masters or an advanced professional qualification and ISCED 8 is an advanced research qualification, usually concluding with the submission of a substantive dissertation of publishable quality based on original research. The category ISCED 5 is reserved for short-cycle courses of requiring degree level study.

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It involves teaching, research, developing intellectual capacities, social services activities, etc. Hence, higher education is very essential to national economies, both as a significant industry in its own right and as a source of trained and educated personnel for the rest of the economy.

Vocational Education:
Vocational Education is a class of education committed to direct and practical training for a specific trade or craft. Vocational education may come in the form of apprenticeships or internships as well as institutions teaching courses such as carpentry, agriculture, engineering, medicine, architecture and the arts.

Special Education:
In the past, the disabled or differently abled children were often not eligible for public education. Children with physical or mental disabilities were time and again denied an education in regular schools along with other children. The early physicians or special tutors like Itard, Seguin, Howe, Gallaudet set the foundation for special education today. It focuses on individualized instruction and functional skills. In its early years, special education was only provisioned to people with severe disabilities, but recently it has been opened to anyone who experiences difficulty in learning.

Indigenous Education:
It calls for the insertion of indigenous knowledge, models, methodology, and content within the formal and in-formal educational systems. Seen in a post-colonial context, the growing recognition and use of indigenous education methods can be a retaliation to the erosion and loss of indigenous knowledge and language through the process of colonialism. Furthermore, it can provision indigenous communities to "reclaim and revalue their languages and cultures, and in so doing, improve the educational success of indigenous students."[10]

II. Modern/ Post-Pandemic Approach of Education
Alternative Education:
While regarded as "alternative" today, most alternative systems have existed since ancient times. For instance, home-schooling as mentioned aforesaid. As the public school system widely advanced and flourished in the beginning of the 19th century, some parents found rationale to be discontented with the traditional system. Alternative Education emerged as a reaction to perceived limitations and failings of the traditional education system. A broad range of educational approaches have emerged and succeeded in contemporary times especially after the worldwide outbreak of the Covid-19 pandemic, comprising alternative schools, self-learning, e- learning, homeschooling, and unschooling. Examples of alternative schools include Montessori schools, Waldorf schools, Friends schools, Sand school, Summerhill schools, Walden's Path, the Peepal Grove school, the Sudbury Valley school, the Krishnamurti schools, and open classroom schools.
Informal Education:
Informal learning happens at a variety of sites, such as at home, workplace, and through daily interactions and shared relationships among members of society. For many learners, this embraces language acquisition, cultural norms, and etiquettes.

It usually involves a reference person, a peer or an expert, to orientate the learner. If learners have a personal engrossment in what they are informally being instructed, they tend to widen their existing knowledge and formulate new ideas about the topic being learned.

While informal learning often occurs outside formal educational institutions and does not abide by a specified curriculum, it can also eventuate within educational settings and even during formal

[10] May, S.; Aikman, S. (2003). "Indigenous Education: Addressing Current Issues and Developments". Comparative Education. **39** (2): 139–45.

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learning situations. Educators can organize their lessons to directly utilize their students informal learning skills within the education setting. For example, a museum is commonly perceived as an informal learning environment, as there is room for free choice, diverse and potentially non-standardized range of themes, flexible set ups, socially rich interactions, and no externally imposed assessments.

In the late 19th century, education by way of plays began to be recognized as making an essential contribution to child development. In the early 20th century, the concept was broadened to encompass young adults, but the emphasis was on physical activities. Education via recreation is the opportunity to learn in a seamless fashion through all of life's activities. The concept has been revived by the University of Western Ontario to teach Anatomy to medical students.[11]

Self-directed Education:
Self-directed learning is also known as Autodidactism. It is a form of education without the direction of masters or institutions. Generally, autodidacts are the individuals who choose the subject they want to pursue for study, their study material and the studying rhythm and time. It has become a popular means of education in contemporary times. One may become an autodidact at any point in one's life. Noteworthy autodidacts include Abraham Lincoln (U.S. president), Srinivasa Ramanujan (Indian mathematician), Micheal Faraday (English chemist and physicist), Charles Darwin (English naturalist and biologist), Thomas Edison (American inventor), George Bernard Shaw (Irish playwright and political analyst), Leonardo Da Vinci (Italian engineer, scientist and mathematician) and many others.

Evidence-based Education:
Evidence-based education is the combination of well-structured scientific studies to determine which education methods work best in interest of the students. It embodies evidence-based teaching and evidence-based learning. Evidence-based learning methods such as spaced repetition can increase the rate of learning.[12] The evidence-based education movement has its roots in the larger movement towards evidence-based practices. In these times of Covid-19 pandemic various means of evidence-based education are being tested and utilized.

Open and E-learning:
Open education has been known to be the biggest change in the way people learn since the printing press. Many large university institutions have now started to offer free or almost free full courses such as Harvard, MIT and Berkeley teaming up to constitute edX. Other universities offering open education are prestigious private universities such as Stanford, Princeton, Duke , Johns Hopkins, the University of Pennsylvania, and Caltech, as well as renowned public universities including Tsinghua, Peking, Edinburgh, the University of Michigan, , the University of Virginia, Indira Gandhi National Open University, etc.

Many open universities are working to have the ability to offer students standardized testing and traditional degrees and credentials.

The conventional merit-system degree is currently not as common in open learning as it is in campus universities, although some open universities do already offer conventional degrees such as the Open University in the UK. Presently, many of the major open education sources provide their

[11] Ullah, Sha; Bodrogi, Andrew; Cristea, Octav; Johnson, Marjorie; McAlister, Vivian C. (2012). "Learning surgically oriented anatomy in a student run extra-curricular club: An education through recreation initiative."
[12] Smolen, Paul; Zhang, Yili; Byrne, John H. (25 January 2016). "The right time to learn: mechanisms and optimization of spaced learning". Nature Reviews Neuroscience. 17 (2): 77–88.

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own form of certificate. Due to the popularity of open education, these new kinds of academic certificates are attaining more reverence and equal academic value as the traditional degrees.
A recent meta-analysis observed that online and blended educational approaches had better outcomes than methods that used solely face-to-face interactions.[13]Moreover the significance of open and online learning has considerably escalated globally in view of the present pandemic situation.
E-learning is the combined use of computer hardware, software, and educational theory and practice to facilitate learning or education. It creates, uses, and manages technological processes and educational resources to aid and enhance academic performance of students. The field has been recognized as a persisting initiative that seeks to collaborate learners, teachers, and technical means together in an effective manner.

E-learning embraces several domains including, computer-based training, online learning, and m-learning, where mobile technologies are employed.

The Association for Educational Communications and Technology (AECT) elucidated “educational technology”, which can be seen as an alternative term for e-learning as "the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources"[14]. In simple terms it may be said that it is the process of integrating technology into education in a positive fashion that promotes a more diverse learning environment and a means for students to learn how to use technology as well as their common assignments.

Various means of e-learning consist of the audio- video technology employed in classrooms such as Smart class, online or live education through computers, tablets, or mobile devices, collaborative and social learning through group webpages, blogs like ipleaders blog, wikis, and social networking sites like Twitter allow learners and educators to post thoughts, ideas, and comments on a website in an interactive learning environment, virtual classrooms via popular live education apps like Byjus’s, Vedantu, etc.
The aforesaid methods of e-learning have gained prominence and enhanced usage globally since the outbreak of the Covid-19 pandemic.

III. Emergence of New Schools/ Universities/ Institutions of Thought on Education

The institutions of education will not be the one and the same once they reopen completely after the Covid-19 lockdown. For one, student life is the antithesis of the much called social distancing, so in the post pandemic era the educational institutions like schools, colleges, etc. will have implemented measures like classes on rotation basis, enhanced online lessons, cancellation of group activities like annual functions, and daily sanitization of buildings and transport.
Until there’s either a preventive or curative remedy for the novel coronavirus infection, schools will no doubt have to practice social distancing. The whole idea of a school as brick and mortar structure has evolved. This requires extensive and exhaustive changes in procedures and protocols. There is a blend of learning from home, classroom and online. However, it has to be ensured that students at home learn in tandem with those in the classrooms.

Most educationists opine that educational activities have to be designed in a way that minimizes crowding and avoid huge gatherings like parent-teacher association meetings, assemblies, sports day and the annual functions.

[13] U.S. Department of Education, Evaluation of Evidence-Based Practices in Online Learning A Meta-Analysis and Review of Online Learning Studies, 2010.
[14] Richey, R.C. (2008). "Reflections on the 2008 AECT Definitions of the Field". TechTrends. **52** (1): 24–25.

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Alongside, however, there's concern that social distancing can have negative psychological impacts on students. This leads to increased appointment of nurses and counsellors at schools and colleges and resolve student issues such as rage, bullying, behavioral problems, alienation and irritability.

Looming over such concerns is also the imperative of completing the syllabus or curriculum and academic programs. A balance has to be sought so that the students don't feel pressured. Online learning will help in this regard and have to be continued with for a considerable length of time.

The Covid-19 pandemic has ensued in an unprecedented upheaval across all industries, with the education sector being no exception. In such difficult times, society and industries have sought to counter the disruptions caused by the pandemic, through 'great decentralization' i.e. work-from-home or actually work-from-anywhere. Similarly, online education by most of the colleges and universities has become a norm. Moreover, research indicates that online learning has been shown to enhance retention of information, and take less time, meaning the changes the coronavirus have caused might be here to stay.[15] Whether it's language apps, virtual tutoring, video conferencing tools, or online learning software, there has been a significant surge in usage since the pandemic.

While some believe that the unplanned and rapid shift to online learning – with no training, insufficient bandwidth, and little preparation – will ensue in a poor user experience that is unconducive to sustained growth, others believe that a new hybrid model of education will emerge, with consequential benefits. "We do believe that the integration of information technology in education will be further accelerated and that online education will eventually become an integral component of school education," says Wang Tao, Vice President of Tencent Cloud and Vice President of Tencent Education.[16]

There have already been successful transitions amongst many universities. For example, Zhejiang University managed to get more than 5,000 courses online in just two weeks into the transition using "DingTalk ZJU". The Imperial College London started offering a course on the science of coronavirus, which is now the most enrolled class launched in 2020 on Coursera.

Many are already touting the conveniences: Dr Amjad, a Professor at The University of Jordan who has been using Lark to teach his students says, "It has changed the way of teaching. It enables me to reach out to my students more efficiently and effectively through chat groups, video meetings, voting and also document sharing, especially during this pandemic. My students also find it is easier to communicate on Lark. I will stick to Lark even after coronavirus, I believe traditional offline learning and e-learning can go hand by hand."[17]

It is absolutely explicit that this pandemic has utterly disrupted an education system that many assert was already losing its relevance. In his book, "*21 Lessons for the 21st Century*", scholar Yuval Noah Harari outlines how schools continue to focus on traditional academic skills and rote learning, rather than on dexterity such as critical thinking and adaptability, which will be more essential for success in the future. While some worry that the hasty nature of the transition online

[15] The rise of online learning during the COVID-19 pandemic | World Economic Forum. (2020). Retrieved January 8, 2021, from https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/

[16] The rise of online learning during the COVID-19 pandemic | World Economic Forum. (2020). Retrieved January 8, 2021, from https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/

[17] Same as 16.

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may have hindered this goal, others plan to make e-learning part of their 'new normal' after experiencing the benefits first-hand.[18]

IV. UNESCO's Education Response to COVID-19:

The COVID-19 pandemic has revealed vulnerabilities, but it has also surfaced extraordinary human resourcefulness and potential. Decisions made today will have long-term consequences for the futures of education. Choices must be based on a humanistic vision of education and development, and human rights.

"COVID-19 has the potential to radically reshape our world, but we must not passively sit back and observe what plays out," said Ethiopian President H.E. Ms Sahle-Work Zewde, Chair of the International Commission on the Futures of Education. "Now is the time for public deliberation and democratic accountability. Now is the time for intelligent collective action."

Most governments around the world have temporarily closed educational institutions in an attempt to contain the spread of the Covid-19 Pandemic.

These nationwide closures are impacting hundreds of millions of students. Several other countries have implemented localized closures impacting millions of additional learners.

UNESCO estimates that about 24 million learners, from pre-primary to university level, are at risk of not returning to school in 2020 following the education disruption due to COVID -19. Almost half of them are found in South and West Asia and sub-Saharan Africa. University students are affected the most, due to the costs related to their studies. Pre-primary education is the second most affected while at primary and secondary level 10.9 million students are at risk. Socio-economic factors are behind this risk, including the need to generate income, increased household and child-caring responsibilities, early and forced marriage and/or unintended pregnancy in certain contexts, or fear of a resurgence of the virus. Those who did not have access to distance education during confinement are also at risk.[19]

"These findings emphasize the need to proactively address all the drivers of educational exclusion and to strengthen the resilience of education systems in the face of this unprecedented crisis", says Stefania Giannini, Assistant Director-General for Education at UNESCO.

Hence, UNESCO is supporting countries in their efforts to mitigate the immediate impact of school closures, particularly for more vulnerable and disadvantaged communities, and to facilitate the continuity of education for all through remote learning.

The organization also calls on Governments and other partners to increase investments and efforts to remove barriers to education and take the necessary legal and policy actions to make school environments more conducive to students' learning and well-being.

The Global Education Coalition launched by UNESCO in 2020, is a platform for collaboration and exchange to protect the right to education during this unprecedented disruption and beyond. It brings together more than 140 members from the UN family, civil society, academia, and the private sector to ensure that learning never stops.[20]

V. Case Study: New Education (example: Policy of India) 2020

This National Education Policy 2020 is the first education policy of the 21st century and aims to address the many growing developmental imperatives of our country. This Policy proposes the revision and revamping of all aspects of the education structure, including its regulation and

[18] Same as 16.
[19] Same as 16.,
[20] Same as 16.,

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governance, to create a new system that is aligned with the aspirational goals of 21st-century education, including SDG4[21], while building upon India's traditions and value systems. The National Education Policy lays particular emphasis on the development of the creative potential of each individual. It is based on the principle that education must develop not only cognitive capacities - both the 'foundational capacities' of literacy and numeracy and 'higher-order' cognitive capacities, such as critical thinking and problem-solving – but also social, ethical, and emotional capacities and dispositions. The key highlights of the policy are as follows[22]:

School Education:

- Universalization of education from preschool to secondary level with 100% Gross Enrolment Ratio (GER) in school education by 2030.
- To bring 2 crores out of school children back into the mainstream through an open schooling system.
- The current 10+2 system to be replaced by a new 5+3+3+4 curricular structure corresponding to ages 3-8, 8-11, 11-14, and 14-18 years respectively.
- It will bring the uncovered age group of 3-6 years under the school curriculum, which has been recognized globally as the crucial stage for the development of mental faculties of a child.
- It will also have 12 years of schooling with three years of Anganwadi/ pre-schooling.
- Class 10 and 12 board examinations to be made easier, to test core competencies rather than memorized facts, with all students allowed to take the exam twice.
- School governance is set to change, with a new accreditation framework and an independent authority to regulate both public and private schools.
- Emphasis on Foundational Literacy and Numeracy, no rigid separation between academic streams, extracurricular, vocational streams in schools.
- Vocational Education to start from Class 6 with Internships.
- Teaching up to at least Grade 5 to be in mother tongue/regional language. No language will be imposed on any student.
- Assessment reforms with 360-degree Holistic Progress Card, tracking Student Progress for achieving Learning Outcomes
- A new and comprehensive National Curriculum Framework for Teacher Education (NCFTE) 2021, will be formulated by the National Council for Teacher Education (NCTE) in consultation with the National Council of Educational Research and Training (NCERT).
- By 2030, the minimum degree qualification for teaching will be a 4-year integrated B.Ed. degree.

Higher Education:

- Gross Enrolment Ratio in higher education to be raised to 50% by 2035. Also, 3.5 crore seats to be added in higher education. The current Gross Enrolment Ratio (GER) in higher education is 26.3%.
- Holistic Undergraduate education with a flexible curriculum can be of 3 or 4 years with multiple exit options and appropriate certification within this period.
- M.Phil courses will be discontinued and all the courses at undergraduate, postgraduate, and Ph.D. level will now be interdisciplinary.
- Academic Bank of Credits to be established to facilitate Transfer of Credits.
- Multidisciplinary Education and Research Universities (MERUs), at par with IITs, IIMs, to be set up as models of best multidisciplinary education of global standards in the country.

[21] Goal 4 (SDG4) of the 2030 Agenda for Sustainable Development, adopted by India in 2015 - seeks to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030.

[22] National Education Policy 2020 Ministry of Human Resource Development Government of India. (2020.).

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- The National Research Foundation will be created as an apex body for fostering a strong research culture and building research capacity across higher education.
- Higher Education Commission of India (HECI) will be set up as a single umbrella body for the entire higher education, excluding medical and legal education. Public and private higher education institutions will be governed by the same set of norms for regulation, accreditation, and academic standards. Also, HECI will be having four independent verticals namely,
- National Higher Education Regulatory Council (NHERC) for regulation,
- General Education Council (GEC) for standard-setting,
- Higher Education Grants Council (HEGC) for funding,
- National Accreditation Council (NAC) for accreditation.
- Affiliation of colleges is to be phased out in 15 years and a stage-wise mechanism to be established for granting graded autonomy to colleges. Over a period of time, every college is expected to develop into either an autonomous degree-granting College or a constituent college of a university.

Other changes:

- An autonomous body, the National Educational Technology Forum (NETF), will be created to provide a platform for the free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration.
- National Assessment Centre- 'PARAKH' has been created to assess the students.
- It also paves the way for foreign universities to set up campuses in India.
- It emphasizes setting up of Gender Inclusion Fund, Special Education Zones for disadvantaged regions and groups.
- National Institute for Pali, Persian and Prakrit, Indian Institute of Translation and Interpretation to be set up.
- It also aims to increase the public investment in the Education sector to reach 6% of GDP at the earliest. Currently, India spends around 4.6 % of its total GDP on education.

New circumstances and realities require new initiatives. The recent rise in epidemics and pandemics necessitates being ready with alternative modes of quality education whenever and wherever traditional and in-person modes of education are not possible. In this regard, the National Education Policy 2020 recognizes the importance of leveraging the advantages of technology while acknowledging its potential risks and dangers. It calls for carefully designed and appropriately scaled pilot studies to determine how the benefits of online/digital education can be reaped while addressing or mitigating the downsides. In the meantime, the existing digital platforms and ongoing ICT-based educational initiatives must be optimized and expanded to meet the current and future challenges in providing quality education for all.

Given the emergence of digital technologies and the emerging importance of leveraging technology for teaching-learning at all levels from school to higher education, this Policy recommends the following key initiatives:

Pilot studies for online education:

Appropriate agencies, such as the will be identified to conduct a series of pilot studies, in parallel, to evaluate the benefits of integrating education with online education while mitigating the downsides and also to study related areas, such as, student device addiction, most preferred formats of e-content, etc. The results of these pilot studies will be publicly communicated and used for continuous improvement.

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Digital infrastructure:
There is a need to invest in creation of open, interoperable, evolvable, public digital infrastructure in the education sector that can be used by multiple platforms and point solutions, to solve India's scale, diversity, complexity and device penetration. This will ensure that the technology-based solutions do not become outdated with the rapid advances in technology.

Online teaching platform and tools:
Appropriate existing e-learning platforms such as SWAYAM, DIKSHA, will be extended to provide teachers with a structured, user-friendly, rich set of assistive tools for monitoring progress of learners. Tools, such as two-way video and two way-audio interface for holding online classes are a real necessity as the present pandemic has shown.

Content creation, digital repository, and dissemination:
A digital repository of content including creation of coursework, Learning Games & Simulations, Augmented Reality and Virtual Reality will be developed, with a clear public system for ratings by users on effectiveness and quality. For fun based learning, student-appropriate tools like apps, gamification of Indian art and culture, in multiple languages, with clear operating instructions, will also be created. A reliable backup mechanism for disseminating e-content to students will be provided.
Addressing the digital divide:
Given the fact that there still persists a substantial section of the population whose digital access is highly limited, the existing mass media, such as television, radio, and community radio will be extensively used for telecast and broadcasts. Such educational programs will be made available 24/7 in different languages to cater to the varying needs of the student population. A special focus on content in all Indian languages will be emphasized and required; digital content will need to reach the teachers and students in their medium of instruction as far as possible.

Virtual Labs:
Existing e-learning platforms such as DIKSHA, SWAYAM and SWAYAMPRABHA will also be leveraged for creating virtual labs so that all students have equal access to quality practical and hands-on experiment-based learning experiences. The possibility of providing adequate access to SEDG students and teachers through suitable digital devices, such as tablets with preloaded content, will be considered and developed.

Training and incentives for teachers:
Teachers will undergo rigorous training in learner-centric pedagogy and on how to become high-quality online content creators themselves using online teaching platforms and tools. There will be emphasis on the teacher’s role in facilitating active student engagement with the content and with each other.

Online assessment and examinations:
Appropriate bodies, such as the proposed National Assessment Centre or PARAKH, School Boards, NTA, and other identified bodies will design and implement assessment frameworks encompassing design of competencies, portfolio, rubrics, standardized assessments, and assessment analytics. Studies will be undertaken to pilot new ways of assessment using education technologies focusing on 21st century skills. (i) Blended models of learning: While promoting digital learning and education, the importance of face-to-face in-person learning is fully recognized. Accordingly, different effective models of blended learning will be identified for appropriate replication for different subjects. (j) Laying down standards: As research on online/digital education emerges, NETF and other appropriate bodies shall set up standards of content, technology, and pedagogy for

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online/digital teaching-learning. These standards will help to formulate guidelines for e-learning by States, Boards, schools and school complexes, HEIs, etc.

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The New Education Policy aims to facilitate an inclusive, participatory and holistic approach, which takes into consideration field experiences, empirical research, stakeholder feedback, as well as lessons learned from best practices. It is a progressive shift towards a more scientific approach to education. The prescribed structure will help to cater the ability of the child – stages of cognitive development as well as social and physical awareness. If implemented in its true vision, the new structure can bring India at par with the leading countries of the world.

V. Challenges of Online Education System:

Digital Divide: While e-education is a privilege for the students from an upper and middle class, it has proved to be a nuisance for students from the lower middle class and people living below the poverty line. Similar circumstances exist in the international strata, sufficiency of infrastructure and resources in developed (American and European) countries whereas lack of the same in developing and underdeveloped countries (Asian and African countries). Many poor students who don't have access to e-resources (computers, laptops, internet connectivity) are not able to attend classes from home.

For example, whilst 95% of students in Switzerland, Norway, and Austria have a computer to use for their schoolwork, only 34% in Indonesia do, according to OECD data. In the US, there is a significant gap between those from privileged and disadvantaged backgrounds: whilst virtually all 15-year-olds from a privileged background said they had a computer to work on, nearly 25% of those from disadvantaged backgrounds did not. While some schools and governments have been providing digital equipment to students in need, such as in New South Wales, Australia, many are still concerned that the pandemic will widen the digital divide.[23]

Commercialization of Education: With online education becoming a norm in the post-pandemic era, there is a significant possibility of corporate houses, technology firms and educational institutions working much more closely together. Though this may have a big positive effect on the education sector, it may further aggravate the ongoing commercialization of the education sector and exclude the self-dependent tutors.

Mental Health Issues faced by students: After weeks or months at home, students will have lost their teachers' face-to-face support. Many young people will have experienced poverty and stress. They may have seen family members become ill, or worse. They might have had little chance to play outside. Rates of domestic abuse and fights over custody arrangements have been on the rise during the COVID-19 pandemic. More than a few will exhibit the signs of post-traumatic stress. A lot of students will have spent hours looking at smartphones or playing video games, and the learning gaps will undoubtedly widen between children from poorer and better-off homes. We'll

[23] Same as 16.,

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need counsellors, mental health specialists and learning support teachers to help our weakest learners and most vulnerable children settle down and catch up.

VI. Impact on International Academic Mobility of Students

Universities and college campuses worldwide are places where students live and study in close proximity to each other. They are also buzzing cultural hubs where students are brought together from nations around the world. Recently, the foundations of this unique ecosystem have been impacted significantly by the rapid spread of the Covid-19 outbreak, creating uncertainty regarding the implications for higher education.

In many countries, the higher education landscape has changed dramatically due to the spread of the coronavirus and the containment and mitigation strategies adopted by national governments and higher education providers. Travel restrictions, social distancing measures, isolation and quarantine procedures, campus closures and border closures have radically altered the nature of academic study and academic work for students and faculty around the globe, in ways that are expected to persist for some time. The financial operating models of many providers and the financial viability of some will be severely tested by the economic repercussions of the pandemic, which may mean a substantial contraction of public and private spending on higher education in the years ahead.

Holon IQ's Global Executive Panel survey (March 2020)[24]:

The March 2020 survey includes over 700 respondents from 50 countries with a strong weighting to Europe, LATAM and North America. Across the board, organizations of all types are expecting to be worse off in the short term as a result of COVID-19. Education institutions are expecting to be the hardest hit with 91% of respondents indicating they will be moderately (61%) or substantially (30%) worse off in the short term.

On the other hand, only 50% of organizations providing technology services to education are expecting to be worse off in the short term, with one third expecting to be better off due to COVID-19, presumably expecting their tech services to be more in demand as institutions pivot to online delivery.

Educations.com Surveys (April 2020): [25]

- The dream of studying abroad is still alive and well. Only 5.4% of prospective students intend to cancel their study abroad plans in light of COVID-19.
- The database of students primarily interested in in-person study opportunities is now entertaining the idea of studying an international degree digitally. Students who told us they were primarily interested in in-person (or classroom) courses are now considering getting their degrees online in light of COVID-19. 45.2% of prospective students would now be interested in studying their program virtually as an alternative.
- Although prospective students are interested in studying their degree online, their concerns regarding the quality and recognition of a virtual degree weigh heavily on them.
- There has been little change in response from the international student community regarding their study abroad plans between March 16th and April 22nd.
- Institutions are responding quickly to the rising demands for online study options for the international student community, with 85.1% of current students surveyed saying they are now taking classes online due of COVID-19.

[24] Global Education Conditions Survey | HolonIQ. (2020). Retrieved January 8, 2021, from https://globaloutlook.holoniq.com/

[25] Please check more: https://institutions.educations.com/insights/student-survey-covid-19-and-study-abroad.

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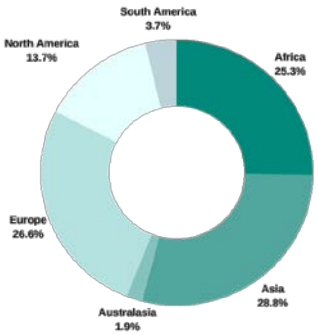
- Mental health services as a selective factor of prospective students has risen dramatically according to our April 24th deep-dive.

The geographic breakdown of surveyed students is as follows:
Boston College for International Higher Education survey (May 2020)[26]:
The first aspect of higher education impacted by COVID-19 has been internationalization, in particular student mobility. Institutions and countries that have been dependent on revenue from international students will try as soon as possible to go back into the market. The industry that has developed over the past decades—agents, pathway programs, and recruitment companies—will decline drastically and will need to adapt to new models to survive. Issues such as student safety and well-being will become more important push and pull factors in decisions of students and their parents.
Study abroad programs in which students participate for a year, a semester, or even shorter periods, may suffer even greater problems as students assess possible risks and challenges for experiences that are mandatory for their academic success. In Europe, the flagship program Erasmus+ might encounter serious cuts instead of its anticipated rise in funding. In the United States, one of the larger providers of study abroad, the Council on International Educational Exchange, has announced that it will eliminate 600 jobs.

Pearson's Global Learner survey (August 2020)[27]:
The Global Learner Survey uncovered 6 key trends, all driven by the effects of the COVID-19 pandemic:
There is no returning to a pre-COVID-19 education world. Globally, more than 3 in 4 people believe that education will fundamentally change as a result of the pandemic. Online learning will be a key part of experiences for learners of all ages, and economic uncertainty will drive more people to upskill and re-skill for job security.

Trust and confidence in education systems is on the rise nearly everywhere. In turbulent times, people look to the institutions that instill hope and opportunity. Education does just that. This year, a growing number of people say education is an important stepping stone in life, with more people than ever giving their country's education system high marks for quality.



Learners expect schools to catch up with the times on issues of equity. People are demanding equity in education. They don't believe that everyone has equal access to education, which is critical for future success. They believe that education inequality will get worse during the pandemic, and 9 in 10 learners want education systems to do more to address the problem.

If online is here to stay, learners want a better experience. Learners are practical and realize that online learning is a reality during a global pandemic. But, there are clear calls for more investment in and better use of technology for learning.

[26]Altbach, P. G., De, H., Ang, N., Stanfield, D., & Ergin, H. (n.d.). Postpandemic Outlook: Bleakest for the Poorest Singapore: An Early and Measured Response Crisis upon Crisis: COVID-19 and Student Refugees. Retrieved January 8, 2021, from www.internationalhighereducation.
[27] Global Learner Survey https://www.pearson.com/content/dam/one-dot-com/one-dot-com/global/Files/news/gls/Pearson_Global-Learners-Survey_2020_FINAL.pdf

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The pressure is on to build skills that will sustain people through the pandemic and beyond. With more than half of employed respondents in need of education because their job status has changed, there is a palpable urgency to build skills for employment. This includes a new breed of digital soft skills as well as an emphasis on English language skills.

Universities have more opportunity than ever to help drive economic recovery. Learners are clamoring for universities to provide more adult learning, shorter courses, soft skill training and more affordable options for the unemployed.

In this crucial time, institutions around the world adapted to deliver education online so that thousands of international students can still live their dream of studying abroad. Currently, from onboarding to delivering lectures, everything has been moved virtually. This is a great step considering that international education has not only been made more accessible (from the comfort and safety of home) but it also pushes the upcoming generation towards a whole new level of digital maturity.

VII. Steps Requisite to Counter Challenges:

Promotion of online education as a common good: Commitment to strengthen education as a common good is indispensable. It is a bulwark against inequalities. There's an ancient Indian sanskrit phrase "*Vasudhev Kutumbkan"* which connotes that "the world is my family." In education as in health, we are safe when everybody is safe; we flourish when everybody flourishes. The Centre and the state governments worldwide should start making access to technology universal and more feasible in the public education system.

Also, as a part of the Corporate Social Responsibility, private players can involve tech-based organizations to make e-resources accessible and available to students, especially in government and low-income private schools and educational institutions.

Expansion in the scope of the universal Right to Education: The definition of the right to education needs to expand and promote online education so that it addresses the importance of connectivity and access to knowledge and information. This calls for a global public discussion—that includes, among others, nations as well as learners of all ages on ways the right to education needs to be expanded.

Valuing of teaching profession: There has been remarkable innovation in the responses of educators to the COVID-19 crisis, with those systems most engaged with families and communities showing the most resilience. Digital innovation provides a remarkable opportunity for the democratization of education. However, there is a need to encourage conditions that give frontline educators autonomy and flexibility to act collaboratively.

Protection of the social ambience provided by education institutions: Traditional classroom organization must give way to online education. However, school or education as a social space (whereby a student not just learns the academic knowledge but many social skills also) is indispensable. The classroom system must give way to a variety of ways of 'doing school' but the school as a separate space-time of collective living, specific and different from other spaces of learning must also be preserved.

Ensuring scientific literacy within the curriculum: This is the right time for deep reflection on curriculum, particularly as the society still struggles against the denial of scientific knowledge and actively fights misinformation and misrepresentations.

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Promotion of domestic and international financing of public education: The pandemic has the power to undermine several decades of advances. National governments, international organizations, and all education and development partners must recognize the need to strengthen public health and social services but simultaneously mobilize around the protection and promotion of public education and its financing. A way forward as elucidated above, has been actively initiated by UNESCO in this direction by furnishing economic as well as ground engagement support to different countries.

Protection of physical and mental health of students: The governments globally, must strive towards addressing the physical and mental issues of students that have arisen in consequence of the pandemic by providing counselling and physical fitness sessions at every educational institutions and local healthcare centers. This will ensure a bright as well as secure futures for all of us.
Advancement of global solidarity to end current levels of inequality: COVID-19 has shown us the extent to which our societies exploit power imbalances and our global system exploits inequalities. The circumstances call for renewed commitments to international cooperation and multilateralism, together with a revitalized global solidarity that has empathy and an appreciation of our common humanity at its core.

UNESCO's Global Education Coalition is an appreciated endeavor towards international collaboration and exchange to protect the right to education during this unprecedented disruption and beyond. Persuaded by UNESCO's gesture, the nations and governments worldwide should constitute Regional Education Coalitions or alliances to mutually aid each other for the advancement of their education and health sectors collectively.

Conclusion:
The shock of the COVID-19 crisis on education has been unprecedented. It has set the clock back on the attainment of international education goals, and disproportionately affected the poorer and most vulnerable. And yet, the education community has proved resilient, laying a groundwork for the rebound.

However, there remains a risk of a downward spiral, in a negative feedback loop of learning loss and exclusion. Yet every negative spiral of aggravating socio-economic circumstances suggests its reverse image of a positive spiral, one which would lead to the future of education we want: one of inclusive change in education delivery, of unleashing the potential of individuals, and of collective fulfilment, in all areas of life, through education investment.

There is unlimited drive, and untapped resources, we can count on for the restoration, not only of education's essential services, but of its fundamental aspirations. It is the responsibility of governments and the international community to stay true to principles and conduct reforms, so that, not only will the children and youth regain their promised future, but all education stakeholders find their role in making it happen.

Covid-19 has shown the extent to which the different system of education exploits inequalities. Thus, there is a need for renewed commitments to the synergy between the private and public education sector. In this context, there is a need to make education as a common good and digital innovation can help in achieving the feat.

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