

Future of Higher Education

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The universities of any nation are built to prepare the youth, for today and tomorrow, to enable them to engage with life while building their own identity. Universities are the co-learning spaces, for the present and future generations, where the accumulated knowledge of centuries along with glimpses of the future are provided to prepare the students for the emerging world scenario. The universities create spaces where the students of any generation can come together to enter into a dialogue, discussion, debate and explore the world of wisdom. As the time changes and the transformation occurs, the universities become the harbingers of change and beacon the young generation to respond to the change with clarity, maturity and understanding. The universities of future will require the students entering its portals to be converted into complete human beings including their physical, mental, social, spiritual, emotional and psychological self while providing a learning centric environment.

The future learning spaces have to develop the culture of learning where every learner continuously seeks, shares, and applies new knowledge and skills effectively and efficiently. Peter Senge, in his book “The Fifth Discipline”, described them as places “where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together.” To achieve these ends, Senge recommended the use of five “component technologies” comprising of systems thinking, personal mastery, mental models, shared vision, and team learning.

The advancement in the field of technology leading to changes in social and cultural milieu, will urge the higher education to keep pace with the emerging trends and prepare students not only for the present life but also for the future reality. The COVID 19 pandemic has made us realize that the future world will be dominated by the technology, extensively be interconnected and largely be constrained for natural resources. Future Higher education spaces will be totally different than the present world with students having access to abundant learning resources. The challenge before us is to plan our higher education meticulously to produce knowledgeable and skilled graduates possessing a good value system. The future education must contribute to the social, cultural and economic development of the world while realising UN sustainable development goals.

The drivers of change would be emerging technologies of Artificial Intelligence, Machine Learning, Internet of Things, 3D Printing, Robotics, Drones, Blockchains, 5G, self-driving cars, Augmented reality, Virtual reality, Holograms and Quantum Computing etc. The need of the hour is to equip the students in these skills and to urgently work towards reducing the time lag between the speed of change and the time it takes to produce a workforce with the desired educational qualifications and skills and prepare graduates who can do more useful and valuable tasks than the mundane jobs that can be done using AI. It is the synergy of well-educated humans and the best machine learning models that will address the challenges the world faces today.

In the field of education and learning we are witnessing the 4th Education Revolution. In his book- “The Fourth Education Revolution Reconsidered”, Sir Anthony Seldon called on educators everywhere to open their eyes to the fast-approaching revolution in Artificial Intelligence, and has advocated for embracing this revolution and use AI to the best advantage of education and humanity as a whole. He underlined the potential of Artificial Intelligence to significantly transform the future of education. As per Seldon, nothing is more important than to ensure that AI works in the interests of all. He has suggested a five pronged strategy for reimagining our higher education institutions; First, we should *reduce early specialisation* at schools. All students until the age of 18 should study the arts including performing arts, history of art, philosophy, maths, science and a language. In India since ancient times, we are talking of a holistic education comprising of *64 kalas* (arts). Second, we must *emphasise on the human dimension* across all education. Much greater weight should be given to character building and value education, problem-solving, developing curiosity, project work, critical thinking, empathy, entrepreneurship, leadership and well-being. Third, we need to train staff to understand learning and analytics, machine learning and AI, and invest in technology to leverage the benefits of AI. Teachers need to be trained to deploy upgraded pedagogical techniques to facilitate learning experiences that are both socially enriching and tailored to the needs of each learner. Fourth, students need to adopt individualised learning programmes and learn from AI deployed methods of continuous assessment. All the students irrespective of their discipline should be taught computer, digital and AI literacy and Fifth, we must *enhance active learning and challenge preparation amongst* students. It is evident that if we can use AI to our advantage, we can considerably reduce the inherent problems being faced by our higher education today.

The future education will see a paradigm shift in education and learning, not only at the level of School, College or University, but throughout life. The 21st Century educator shall be a lifelong learner who in turn will develop other lifelong learners with a desire to learn coupled with the ability to learn fast. The learning in future will not be limited to a university in which one takes the admission or to the teachers who are teaching or to the duration for which he has enrolled for a given programme. As free online learning resources are in abundance today, the concept of compartmentalizing education into different academic programmes of a specified duration would be fast disappearing. The future of education will see the learner as a totally independent person who can learn from multiple sources for the life time and get employment opportunities based on the skills, talent and learnings rather than the degrees earned. Drawing analogy from the past, when theatre artists used to work on fixed salaries but are now free lancers, the teachers of future may also not be looking towards a salaried

job but may work as free lancers in multiple universities and obviously the best teachers would be engaged more often as compared to their counter parts who have not exerted much to acquire the required knowledge base and pedagogical skills. Rather the best teachers will be able to have their presence everywhere with their holograms, created in mixed reality studios, giving lectures in various countries that too in different languages attuned in their own voice.

Universities of future will be without any physical or geographical barriers as the students will have multiple options to learn multiple courses from multiple universities rather than getting a degree from a single university. The idea of a university would be in total variance with the today's structure of a university and future universities may be in the form of open universities providing multiple entry and exit options to the students. This concept has been envisaged partially in the New Education Policy 2020 of India where the concept of Academic Bank of Credit (ABC) has been envisioned to provide wings to the students for a free flight of knowledge with no boundaries of universities, disciplines or time.

ABC is conceptualized as a digital/virtual online entity to function on the pattern of a commercial bank with students as account holders to whom the bank shall provide a variety of services including credit accumulation, credit verification and credit transfer. ABC shall provide credit deposit accounts to all the students, whether they are studying in any higher education institutions or even those who are not enrolled in any higher education institution but wish to pursue education as a freelancer. The academic credits or micro credits earned by a student from multiple institutions both from online and regular mode can be credited to the student's account in the ABC and after accumulation of credits up to a given threshold level, a student can redeem the credits for an academic degree at any convenient time if so desired. The ABC shall facilitate student mobility across the system including movement between campus-based education and online mode, movement between skill-based programmes and formal degree programmes and movement between Indian and foreign universities. It will also allow the students to learn over a long span of time, thus promoting life-long learning. It shall be a service to integrate the campuses and distributed learning systems and allow student mobility within as well as outside the university system. It will help in seamlessly encouraging skills and experience into a credit based formal system by providing a credit recognition mechanism which will help the students to plan their own learning objectives and decide the pace at which they would like to learn and thus promote access, equity, quality, relevance, flexibility, mobility, collaboration, transparency, recognition and integration to improve the competitiveness and efficiency of Indian Higher Education system. The concepts similar to ABC will be the future way of learning for providing quality life-long education to the learner with complete freedom on what to learn, where to learn, how to learn and when to learn. The universities of future, in addition to the traditional degrees, may give micro - credentials as 'digital badges' which in due course may be managed as "Blockchains"

The future students would build up their profile opting for a 'pick and mix' model of credits on different courses gained from different universities across the world and thus experience an intellectually challenging experience rather than attending a single university. The campuses of the future will be more open, adaptive to changing needs, more environmentally conscious, physically, mentally and spiritually supportive and more grounded. Students will have the option to attend lectures in person, online or

at a later time as and when convenient to them. AI Apps will keep a track of the students in terms of what classes they have attended, the learnings they have gained, the use of academic spaces like labs and libraries, attendance in seminars and conferences, track their social media accounts resulting in their 360 degree appraisal. In fact, AI and related technologies can also help bring the excellent Oxford/Cambridge tutorial system to any university of the world that chooses to adopt it.

The universities of future will strongly rely on; AI in teaching, research and learning, have a liberal and flexible curriculum; provide multiple options for the students to engage with the university and the faculty; provide the value and moral education to take care of spiritual health and mental well-being of students. Universities of future will provide a personalized experience for the students depending on their individual potential and requirements. The future universities will engage students globally by promoting international collaborations, interdisciplinary teaching and cross disciplinary research. The flexibility will also be provided to choose between face to face and online education while ensuring that the quality is not compromised at any level and thus promote blended learning. Universities of future will have a physical campus as well as a campus “in the cloud”. Former faculty and graduated students can continue to take part in the “cloud events” even after leaving the Campus and the universities will continue to support their students with lifelong learning even after they have received their degrees so that they continue to (in the words of Alvin Toffler) learn, unlearn and re-learn.

While concluding, I would say that the education promotes an individual for critical thinking, acquiring skills like logical reasoning, application of knowledge, problem solving, imagination, rationalisation, visualisation, curiosity, design thinking, team working, communication, self-learning and innovativeness, etc. Eventually, the core objective of the higher education is to train the best minds to take care of present and future demands of the society. The need of the hour is to create a teaching-learning and research ecosystem for higher education in tune with the needs of the society and produce graduates with the ability to respond to real-time situations as well as the future challenges, both seen and unforeseen. Indeed, this is the time to reimagine higher education in all its dimensions.