ENVISIONING AND REIMAGINING INDIAN UNIVERSITIES

EN ROUTE TO A BETTER FUTURE

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India has had a very strong and functioning system of higher education – as early as 1000 BC– deeply rooted in religion and Vedic studies, fashioned for the dissemination of higher knowledge. The post-independence period witnessed expansion of the educational system in India due to greater emphasis on higher education. The role of education as an instrument of social change and development has been widely accepted. Change is inevitable in a society and education has been a fundamental factor in the development of a society.

The rate at which new knowledge is created today has spawned demand for alternative education providers in the higher education realm who are developing low cost, on-demand customized learning solutions in an attempt to cover the growing skill gap. Educational institutions will have to play a pivotal role in helping the current digital society to be future ready by imparting knowledge and skills requisite for the changing job world.

Prelude

"Know your past … out of the past is built the future. Look back, therefore, as far as you can, drink deep of the eternal fountains that are behind, and after that, look forward, march forward and make India brighter, greater, much higher than she ever was."
— Swami Vivekananda

Growing from the rise of industrialisation to the expansion of a market economy, India of the 21st century is marked by transformations triggered by disruptive technological change and the onset of the Industrial Revolution 4.0. India has expanded its global stature in many fields and is poised to be a significant contributor. We need to augur the pursuit and speed at which the country is moving forward by way of our contribution through enterprising ideas, innovative approaches, creative abilities and entrepreneurial spirit.

The symbiosis of ideas presented here and elsewhere will enable us to prepare much needed pathways of growth that shall emphasise on quality of our approach, innovativeness in our systems and outputs, focus on need-based research and concentration on skill development so that we make effective contributions to our great country.

Higher Education in India: A Glorious Past

India has had a very strong and functioning system of higher education – as early as 1000 BC– deeply rooted in religion and Vedic studies, fashioned for the dissemination of higher knowledge. Global exchange and student mobility are not new to India. India has an inspirational history of *Nalanda, Takshashila* and *Vikramashila* that served as educational destinations for scholars from across the world. These institutes attracted more than 10,000 students in more than 60 subjects as early as the 7th century. It has been observed through the works of Fa Hien and Hiuen Tsang about the Nalanda University that India had attained proficiency in the education field. The educational system of the past reflected its rich tradition and culture and attempted to fulfill the needs of the society, which was not borrowed from any other land but grew with the strong native origin.

The post-independence period witnessed expansion of the educational system in India due to greater emphasis on higher education. In the recent times, we have seen a phenomenal increase in the number of universities and educational institutions. However, it is a matter of serious concern that though we have had quantitative expansion; the requisite qualitative growth, yet, is a matter of concern.

Hierarchy of Changing Social Needs and Education

Education has a played a great role in the transformation of society as man progressed from most primitive forms of occupation to the current information-based occupations. The role of education as an instrument of social change and development has been widely accepted. Change is inevitable in a society and education has been a fundamental factor in the development of a society. There is enough evidence that education, over the past, has raised people's productivity and creativity and has promoted entrepreneurship and technological advancement. It has played a crucial role in man's economic and social progress. From time immemorial, education has played a transformative role. The history of civilisation was an era of primitive occupation wherein the need for writing and transmitting of vital knowledge made formal education indispensable. Societies that further transited to a stage in history where the dominant type of economic activity was agriculture. The agrarian society improvised efficiency, productivity and advanced food production due to accumulation of knowledge and expertise. Some studies have shown the positive benefit of productivity due to education. Introduction of commercialisation and mechanisation during this period led to the Industrial Revolution, which brought about far reaching consequences on societal structures. During this period, educational institutions played a pivotal role in offering technical knowledge, which enhanced the focus on educational institutions and witnessed a radical transformation of the economy from farming to manufacturing.

Currently, we are witnessing how information technology has progressed in leaps and bounds and created new tools and techniques whose functions are revolutionising the conduct of individual and commercial activities. The digital society, which we

are living in, has created connectedness and technological empowerment for people and communities. The young generation that is using technology for almost all work processes and other social connectedness, are a major part of the digital society. Smart technologies are promoting free use of information leading to the development of software systems that have created access to low cost tools and techniques, and are creating revolutionary changes in providing access to education and learning methods offered by educational institutions. Current technology that has supported open source systems and created free encyclopedia have connected people over the globe that has led to creation of new knowledge, information and experiences that can be shared by all. The current social and commercial fabric– enabled by digitisation, virtualisation and mass-personalisation– is giving each one of us global access. All services and products of business organisations can be offered locally and globally by using resources, both from local and global sources.

The digital technology coupled with artificial intelligence will automate the entire process, be it manufacturing or other service-based processes, and will result in shrinking requirement of human efforts to conduct such activities or processes. Machines that artificially think and assist in our services are used in all devices and equipment. As we move forward in the technology-based hyper-connected world, there will be radical changes beyond our imagination that will fundamentally alter processes, systems and business models. Though these are great opportunities to automate systems and increase productivity, they will pose challenges to us as there will be a massive shift of number and type of jobs and their skill requirements.

Educational institutions will have to play a pivotal role in helping the current digital society to be future ready by imparting knowledge and skills requisite for the changing job world. The educational institutions need to keep abreast constantly of these developments. In fact, technology-based systems will enable robots to deliver teaching material and content and conduct discussion sessions to solve doubts and queries. The role of a teacher will be fundamentally altered and new methods and concepts will have to be thought of. The digital world will also help reduce cost of education and associated content to a bare minimum, which has been rightly pointed out by an eminent Educationist and former Vice Chancellor of many Indian Universities Prof. Ram Takwale. In his view, digital content of the university can be downloaded/copied/used by anyone anywhere at zero or a marginal cost. Thus, the new education system will have to be re-imagined, with strong linkages to changing technology-based e-education and social development. All processes and systems of the digital society have to be a part of the new education system that shall always endeavor to transform teaching methodologies and learning systems.

Higher Education Sector: Some Challenges

Our institutions are growing, but only in terms of numbers, thus building discontent due to irrelevancy and dysfunctionality. It is important to note that we cannot create a ritual out of our current systems where-in we pass on information to students so that they get through examinations and get credited with degrees. It somehow may

seem that we conduct our activities without purpose. While setting objectives for our institutions, we should not set them as empty rhetoric, but rather articulate on its potential of building the individual, the institutions and the nation. Lofty objectives with low key implementation renders aimlessness of the academic system and with mere information offered as knowledge to students, it is difficult to tap the talent and potential of the student which otherwise can be of immense benefit for the many. Current contexts are constantly changing and higher education institutes should be more flexible rather than develop inertia and be unresponsive to the changes occurring.

The inability to keep abreast of modern requirements might lead institutions to obsolescence, deficiencies in curricula and face declining standards. Many books and journals of the libraries may be unread, which may hinder contributions to the body of knowledge due to intellectual apathy. It is a well-known fact that educational institutions are crucial to the progress and welfare of a country. The question is… Do our institutions contribute adequately to deserve the appreciation? In the current scenario, the need for competent and trained work force is demanded by industry; hence, institutions have this challenge of inculcating the much needed skills and capabilities in their students, rather than just awarding mere degrees with little capability of contributing at the workplace.

Some broader global challenges that are constantly posing a threat to educational institutions are:

- **Environmental**– climate change and the depletion of natural resources that require urgent action;
- **Economic**– unprecedented innovation in science and technology that forces creation of newer social and institutional models and processes;
- **Financial interdependence**– that has created global value chains and shared economy that have made us vulnerable to economic risks and uncertainties; and
- **Social Issues like population growth and urbanization--** that are reshaping communities and nations and also inequalities in standard of living.

Reimagining Educational Institutions

Education empowers individuals to realise their full potential, which indeed is the task of educational institutions in terms of accomplishing the goals of building capabilities and reimagining our role as institutions that impart academic excellence.

"Individuals or students won't learn to work – rather they will work to learn". This statement has strong connotations especially as continuous re-skilling and lifelong learning is the new norm; hence, transformative learning experience needs to be provided by our educational institutions. There is an urgent need to alter our academic and educational paradigm. Our educational system may seem to be oriented towards the industrial era; however, current businesses have moved far ahead towards the information era where cognitive abilities are the key tools required. In fact,

society has further moved towards augmented reality where key tools/skills required are development of creativity, agility, adaptability and cognitive augmentation. In this scenario, while every institution has in some way or the other adopted steps in conduct of programmes and methodologies to re-skill its students, the institutions may construe that majority of its students may be ready for employment. However, the reality may not be encouraging enough as employers still maintain that they find it difficult to fill entry-level positions.

Our institutions, in order to achieve its goal of providing world-class education, need to reimagine by considering the following approaches:

- **Learner-centric Approach** – having real world learning/experiential learning approaches;
- **Technology-centric Approach**– utilisation of emerging technologies;
- **Future-centric Approach**– focusing on future jobs and skills required thereof;
- **Employer-centric Approach** – partnering with employers right from the beginning

While there may be no single prescribed approach to bringing about changes in the way higher educational institutions function and develop competencies among its students, a variety of approaches may warrant consideration.

The landscape for higher education is beginning to evolve, triggered by the digital revolution. In choosing a college for study, students relied on reputation, ranking, advice from family and friends or counselors, which was the main source of information. However, very soon, students may use a data driven approach in selecting an institution through tracking views and information available in various social media platforms, as it is easy to trace the success of the alumni of an institution and the current position they hold, which may be key tools of decision making. Massive Open Online Courses (MOOCs) on new topics should be used as a medium through which interest should be generated in specific areas, as later, students may choose the institutions as part of their academic careers. Traditionally, higher education, is characterised by the lecture-based teaching methodology. Now, with the aid of latest technology based systems such as learning management systems and a host of others, along with a deeper understanding of how students tend to learn, institutions should initiate efforts towards offering personalised learning by combining the best of traditional teaching with digital technology. Institutions should also use data analytics to measure student success and focus on developing competencies and capabilities instead of clocking mere credit hours. The factory system of mass education or 'one size fits all' should be done away with, as educational institutions are not akin to manufacturing organisations that produce goods using a mechanised standard process. Rather, personalised experiences in the way students learn should be adopted as it is a well-known fact that no two students or individuals process information in the same way and that students are highly concerned about the kind and quality of education they receive. The ever-changing skill scenario due to fast-paced change in the industry, demands a competency-based learning methodology rather than

traditional learning models. Institutions have to align to industry requirement rather than run on traditional lines due to new emerging job categories and opportunities, evolving work environment and changing nature of work and the need for individuals to adapt to organisational change. Competency-based learning models aim at acquiring mastery of skills and knowledge through measurement of demonstrated proficiency irrespective of time taken. In essence, competency-based learning promotes learning by the students at their own pace and caters to students across various levels of learning.

The new education system should help enable students think and create plausible future scenarios rather than be influenced by current options. Activities, projects, assignments, etc. should be undertaken that are linked to such future scenarios and ensure progress of work that may be useful to the society. It should be kept in mind that educational development of students and benefit to the society on account of this education of the students should go hand-in-hand. Students should be able to set goals that are not only personal in nature, but ones that will benefit and ensure progress for both the individual and the society. The higher educational institutions must emphasise on excellence, high performance and problem-solving approach. As an instrument of social change, it should prepare the young generation towards a new design of living that is both sustainable and feasible.

Institutions have to be ready to change to a scenario where the degrees earned will be based on how much the students know rather than how much time they have spent in the classroom. The traditional student and the traditional education model where students complete a degree programme full time on campus, involving all student activities, is no doubt in vogue and shall remain so. However, the likely future scenario may require institutions to equip themselves with capabilities to offer degree programmes to non-traditional students, who may come from a variety of backgrounds and situations; who may have varying levels of experience; who may require programme flexibility and multi-disciplinary options; who may require customisation and personalised learning as the most preferred learning path; and who may work part time or full time and may have to manage other responsibilities while completing their studies.

Blended learning and flipped classroom tend to increase interest, improve comprehension and result in better scores. The traditional teaching methods has to be bundled with asynchronous self-paced online learning modes so that students learn core curriculum online and spend class time for practical implementation and problem solving. Through this, students learn and get access to the latest knowledge and developments in the field through digital modes and test this knowledge in an effort to push the boundaries of knowledge through immersive learning experiences.

Software platforms that use Predictive Analytics can offer our institutions more effective ways to track and calculate student progress. Notifications can be sent to students about their course progress and performance. This performance data helps faculty members to alter teaching strategy and interventions so that students are on

the right track and they can pay attention to learners that need additional assistance. This may result in a higher success rate of students graduating a programme.

The rate at which new knowledge is created today has spawned demand for alternative education providers in the higher education realm who are developing low cost, on-demand customized learning solutions in an attempt to cover the growing skill gap. Our institutions of higher learning will have to create such small courses in the form of MOOCs. In fact, with our inherent capability, it is essential to create such short immersive programmes that shall provide in-person lectures, hands on projects, networking opportunities in partnership with the industry so that students quickly acquire in-demand skills.

In the digitally networked society, collaborative commons are created by social movements that provide free access to learners. Thus, educational institutions should create systems of learning and development that rely on Open Educational Resources (OER), provide access to community groups for receiving free and open access to education for all. Educational institutions will have to adopt a stakeholder approach in developments occurring in the digital age. Social development in the new digital society cannot take place with individual contribution alone; rather, it is the group contribution that will provide benefits to all. Platforms for interaction and collaboration will have to be created to invite contributions from all for overall social benefit and development. Even institutions need to come together to work collaboratively along with communities to progress and contribute for the common good.

Developing critical thinking and analytical reasoning skills will be of utmost significance. An international survey of CEOs conducted by IBM in 2010[1] states that creativity will be essential to navigate through an increasingly complex world. Thus, improving learning outcomes and connecting these higher-level competencies back to real-world applications will be extremely critical. Institutions of higher learning will have to find better ways to connect with their students to instill in them an ability to learn how to learn, unlearn, and relearn. Institutions will have to create their unique proposition that can offer their students entry into a dynamic ecosystem providing access to the latest knowledge and fostering relationships with important stakeholders for career growth and support to the students. With the advent of new educational technologies, institutions are now better positioned to experiment and adopt solutions that facilitate better student focused outcomes. Innovation labs may be initiated to experiment with either technology tools, academic offerings, new models required in business, or disciplines, and new models of education. Such outputs will be beneficial to the institution as well as the industry and provide immersive learning experiences to the learners.

Rather than following the pattern what other institutions have been doing, institutions may attempt to carve out unique niches thereby differentiating themselves from others creating a unique value proposition. However, it does not mean shedding

off the other programmes available at the institution, but focusing on one essential programme, which could connect with all stakeholders.

We now live in a world where nearly half the jobs hadn't exist about two decades ago. With the emergence of entirely new types of jobs to be a common feature, lifelong learning will be recurring and permanent solution for professional development of learners. Creating an enabling infrastructure to support such lifelong learning endeavours will have to be evolved. A study by Wagner T (2010)[2] and the Change Leadership group at Harvard University titled 'Overcoming the Global Achievement Gap', states that students need seven survival skills to be prepared for the 21st century work; such as:

    i.   Critical thinking and problem solving;

    ii.   Collaboration and leadership;

    iii.   Agility and adaptability;

    iv.   Initiative and entrepreneurialism;

    v.   Effective oral and written communication;

    vi.   Accessing and analysing information;

    vii.   Curiosity and imagination.

However, it must be noted that it will be difficult to navigate and determine the best option that may meet the needs of potential employers. Emphasis may be laid on helping learners identify clear career paths, and provide the requisite skills and knowledge required by employers, so that learners may enroll for the right programmes to position themselves better for available job opportunities. In an attempt to bridge the skill gap, higher education institutions will need to work more closely with industry to promote job-skill alignment and develop learning solutions to impart the identified skills likely to be needed for tomorrow's jobs. While focusing on the essential 21st century skills that may be imparted to the students by the institutions, the study by Griffin, McGraw and Care in 2012[3], based on the Assessment and Teaching of 21st century skills project, categorised the 21st century skills into four broad categories: a) ways of thinking, b) ways of working, c) tools for working, and d) skills for living in the world. Thus, some or more courses/subjects within a programme should focus on competencies such as creativity, critical thinking and collaboration. Considering the value of imparting essential skills and competencies in the 21st century, the Delors' Report (1996)[4] produced by the International Commission on Education for the 21st Century outlines essential pillars of education which are summarised below:

(i)   ***Learning to Know***– Mastery of core subjects around 21st century themes is essential. The 21st century competencies must be identified on integrated content knowledge rather than being compartmentalised. Institutions must develop curriculum that weave 21st century interdisciplinary themes into core subjects. It is essential that learners must commit to lifelong learning, and continuously re-skill as changes demand from them to adapt to newer requirements.

(ii)   ***Learning to Do*** – Based on what Carneiro (2007) stated, students need both academic and applied knowledge; must be able to connect knowledge and skills; learning and competence; and transform them into valuable skills. Critical thinking is considered fundamental in the present times that highly rely on the ability to examine, analyse, interpret and evaluate. Problem solving ability needs to be built so that students would be able to find solutions from multiple domains to solve complex issues. Students have to develop the skills to understand perspectives, and take creative action based on inter-disciplinary expertise and with flexibility and self-direction. Learning to effectively apply requisite tools and techniques in the face of obstacles, must be imbibed by students.

(iii)   ***Learning to Be*** – It is important to prepare the youth to face the 21st century equipped with not just cognitive skills that are fundamental, but also with personal qualities that will help shape identities of each individual student. Good social and cross-cultural skills are crucial to the success of individual students as it helps them interact effectively, work in diverse teams, and be open-minded to different ideas and values. The ability to empathise and develop emotional resilience is considered essential due to socio-cultural dynamics and the turbulent environment in which organisations operate.

(iv)   ***Learning to Live Together*** --- 21st century learners must take part in educational activities that help them develop competencies in living and working together in culturally diverse societies and organizations. Cooperative learning through collaboration may benefit the students more than individual learning as it triggers increased transfer of learning, higher level of reasoning, better learning experience resulting in cognitive development. Institutions may have to collaborate with other institutions to facilitate such learning environments for its students.

Institutions of higher learning will have to go beyond the accreditation criteria and conduct honest assessments of the value they provide to its students. Institutions will have to constantly redefine themselves in order to clearly articulate and deliver unique value to its students and hence redevelop models of teaching and learning to improve their outcomes, which may lead to a greater recognition among stakeholders.

Reimagining education is all about transforming 21st century education so that learners are prepared to thrive and succeed in a competitive world that will provide many opportunities for highly skilled individuals; offer a work environment that requires far more thinking skills and content knowledge; require need for constant re-skilling and updating competencies so as to enable learners to adapt to new expectations; and the need to navigate through complexities through lifelong learning.

Education has a vital role to play in developing knowledge, skills, attitudes and values that will enable learners to effectively contribute and benefit from an inclusive and sustainable future. Formation of clear and purposeful goals, and finding untapped opportunities and identification of multiple solutions to complex problems will be the

cornerstone of the future institutions so that they can create young individuals who will excel professionally and also be more engaged and responsible citizens of the country.

Taking into consideration the rapidly changing scenario in higher education and the challenges that we will be facing in the near future, faculty will have more important, probably more specific roles, to play. Therefore, the time has come to consider merit-based and need-based short-term or long-term contract appointments of quality faculty in preference to the conventional recruitments. This measure will go a long way in achieving the desired quality and standards in higher education.

Tradition and Higher Education

As we all know, technologies have been constantly improvised and undergone innovations for making human life more comfortable. It is important not to ignore the fact that the unwarranted, excessive and unethical use of many technologies has disrupted the rhythm of nature. Unprecedented transformations in various fields and changing dimensions of the society have triggered off the disturbance of ecology thereby affecting sustainability. In this context, we should try and utilise the relevant traditional knowledge along with innovation and technological advances to our benefit. It will also be in the interest of sustainability. The Institutions must adapt to this quickly.

Tradition and Innovation

Innovation– thought to be associated with change that is incremental or disruptive –is a complex process and has a broader scope than just technological advancement. Past knowledge is often seen as a major contributor to the innovation process. Traditional knowledge – mostly composed of tacit knowledge – is complex, as it differs according to regions, practices, cultures, values imbibed etc. The interplay between tradition and innovation involves two apparent paradoxes. First, institutions involve tradition and stability, but they also allow change and innovation. This stable and routine nature of institutions requires change and innovation. Second is the simultaneous constraining and enabling nature of institutions. Tradition and innovation are complex dynamics and not linearly related. Varied types of innovations emerge from mixing traditional and modern approaches. Traditions may be supported by modern 'add-ons' and are not generally reinvented. Tradition and innovation can also be considered as an opportunity to shape the future (Cannarella and Piccioni 2011[5]; Voyatzaki 2013[6]).

Changing towards modernity by keeping the positives of a value system will involve a thorough understanding of concepts and relationships underlying Innovation Through Tradition (ITT) – an approach that provides an integrative framework of how institutions and firms can develop something new by leveraging on its past knowledge. The dynamic capabilities view (Helfat & Peteraf, 2003)[7] suggests that ITT is based on two key capabilities:

1.   *Interiorisation*– allows as simulation and sharing of knowledge pertaining to firm's tradition or the traditions of its territory across the entire organisation,

as reflected by the different forms of codified and tacit knowledge used to develop new systems/products.

2. *Reinterpretation*– allows the combination of selected forms of past knowledge with up-to-date technologies to develop new systems/products.

This approach helps to identify gaps in understanding of ITT and outlines questions for future research so that institutions and firms will be in a better position to leverage on past knowledge to innovate.

Our education system has its roots in traditional values and constructs of the society. Higher education is the acquisition of knowledge, skills, and competencies that help an individual as well as societies to achieve the aims of life. Our traditional knowledge and practices must be integrated in our higher education. Through higher education, we develop an environment of constant learning, researching, developing new ideas and contributing to the field of knowledge. A model of innovation through tradition is depicted in Fig. 1.

FIG. 1: A MODEL OF INNOVATION THROUGH TRADITION
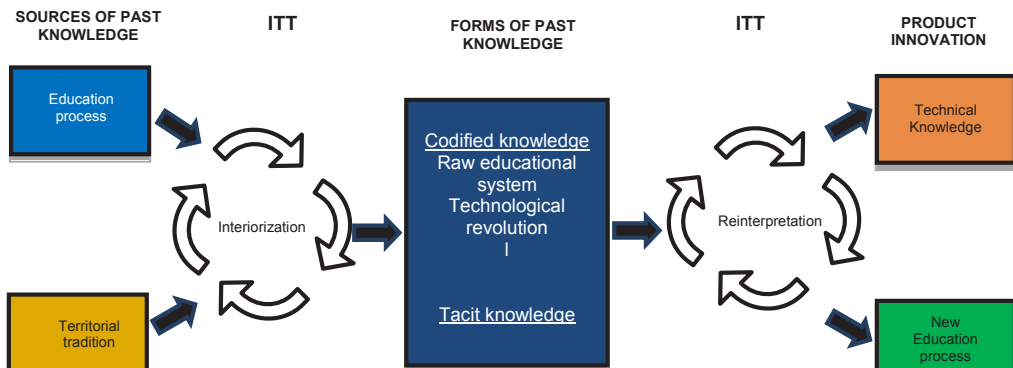
Source: Alfredo De Massis, Federico Frattini, Josip Kotlar, Antonio Messeni Petruzzelli, Mike Wright (2015)[8]

Today, it is a challenge to attain a just and sustainable society. There are certain locally relevant and socially significant traditions, which educational institutions have not substantially engaged in. It is expected to have greater community-university engagement for certain productive learning and de-learning purpose. A major role education system plays in this regard is to observe, study, analyse and evaluate the changing dynamics between traditions and innovations and attempt for maintaining a balance between two.

To have better understanding of the concept, some examples presented during IAU International Conference held on 13-15 November 2019 at Puebla in Mexico (Salunkhe M M)[9] in this context are being reiterated below:

Using Indigenous Traditional Knowledge Embedding Innovation for Sustainable Economy

In India, across the country, Ayurveda is an indigenous way of health treatment and life followed at individual and family level. Different parts of country have

their own methods as a branch of traditional knowledge and practice. Kerala is a state that institutionalised the Indic Ayurvedic healing practices, embedded with certain innovation for strengthening the travel and tourism. Though, initially, it was a subsidiary economic practice, now it is the prime attraction of tourism in Kerala illustrating innovation for sustainable economy.

Ice Stupa: Making Water available during Scarcity; Linking Tradition with Innovation

'Ladakh' is a cold desert of India in its Himalayan Range. Due to climate change, the region experiences hotter summers with increase in ice melts. Subsequently, during the spring season water is scarcer which in turn affects agriculture and food supplies. Sonam Wangchuk, a Magsaysay Awardee, noticed that the ice under a bridge was not melted since it was not under direct sunlight. Wangchuk realized that ice could last longer in Ladakh if it could be shaded from the sun. Since providing shade to larger water bodies was not possible, Wangchuk thought of freezing and storing water in the shape of a cone that offers minimum surface area to the sun resulted into Ice *Stupas*; in turn, water from these Ice *Stupas* is used in spring for agricultural purpose.

Camel Pastoralists Community from Rajasthan

Nomadic Communities across the world have survived and grown while preserving their tradition embedded with innovation. The traditional camel pastoralists of Rajasthan State of India are at risk of extinction due to climate change, growing populations and increasing farmland. But the traditional method of grazing was linked with innovation for creating biodiversity and combating desertification. Raika camel traditional pastoralist community lived an example of people-centered livestock development and the sustainable management of biodiversity rich agro-ecosystems in small areas where they could grow the trees, which will survive in desert and used as feedstock for camel.

Here it would be interesting to know what Yuval Noah Harari, an Israeli Historian and a Professor at the Department of History at the Hebrew University of Jerusalem and the author of '*Homo Deus: A Brief History of Tomorrow*' (2016)[10] writes in his book. The book sets out to examine possibilities of the future of *Homo Sapiens*. The premise outlines that during the 21st century, humanity is likely to make a significant attempt to gain happiness, immortality, and God-like powers. The book goes on to speculate various ways ambition might be realised for humans in the future based on the past and present. Among several possibilities for the future, Harari develops the term 'Dataism' for a philosophy or mindset that worships big data.

For generation to generation humans have prayed God, angels and saints, and have invented countless tools, institutions and social systems, but they continued to die in their millions from starvation, epidemics and violence. After every few years, the outbreak of some potential new plague, such as SARS in 2002/3, bird flu in 2005, swine flu in 2009/10, Ebola in 2014, and the recent Coronavirus disease

(COVID-19) alarm us. A small mistake or a bit of bad luck could easily be a death sentence for an entire family or village. Yet, now in the third millennium, humanity has been able to transform the numerous hardships and problems faced in the past from incomprehensible to manageable challenges. For example, smallpox has been completely eradicated.

We know quite well what needs to be done in order to prevent famine, plague and war – and we usually succeed in doing it. And, acknowledging our past achievements sends a message of hope and responsibility, encouraging us to make even greater efforts in the future. Earlier, knowledge of all systems around us, political, industrial economic etc., grew at a slow pace. In the current times, knowledge is increasing at an accelerated pace, so theoretically we should better understand the world. However, in an attempt to understand what is going on, there is accelerated thrust on accumulation of knowledge, which may lead to bigger upheavals, which in turn will lead us to knowing less of the present and predict the future. In the coming future, humans will have immense new powers that discoveries in science and technology will offer, the biggest question then, will be, what are we going to do with all the power? This power may be used to overcome epidemics; however, the same power can put humans into an unprecedented threat. It is within our power to make things better and to reduce the incidence of suffering even further. The big task then on all will be in finding the key to happiness, for, without the requisite economic resource, effective planning by the government and research, the quest for happiness by individuals will be a distant dream. All professional activities that are requisite in tomorrow's world which can be termed as 'Production', provides the material basic for happiness, as people don't only want to be involved in production activities, rather, they want to be happy. Production is only the means and not the end. However, despite our unprecedented achievements, being happy may not be easy.

Modernity

Modernity is like a contract. Right from the day we are born till the day we pass away, we sign up to this contract. Modernity, at the first instance, looks like an extremely complicated contract, hence few try to understand what they have signed up to, just like when we download a software or an online application, we don't care to read the lengthy legal agreement, but just scroll to the last part and click on to agree. This connotes that we don't mind giving up the meaning in exchange of access and constant pursuit of power. The pursuit of power has arisen due to association between scientific development and economic development.

The current times are such that there is constant research and discovery of newer theories, applications, etc., however there is the danger of constant threat and anguish lurking. The need to seek new knowledge will throw open the gates of scientific endeavor and lead to novel inventions, better methods, revolutionary systems etc., in an attempt to reduce resource scarcity. However, in this pursuit of scientific and economic development, the dangers of social and ecological imbalance is always at risk leading to devastations, far beyond repair.

Despite our efforts, in an accelerated manner to avoid economic busts and ecological damages, the speed at which we may attempt to avoid the same may create complexities. Decades of economic and scientific developments have not brought any respite to life; on the contrary, there is unprecedented pressure to produce more, making it difficult to exist amidst chaos. With yesterday's luxuries becoming a necessity today, the modern world will value only growth putting all that we have to risks of dangers.

In our quest to impart knowledge to individuals, we need to relook constantly at methods of acquiring new knowledge. Knowledge, in the modern world, can be gained through existing theory and literature; however developing the element of logic is important to understand the exact meaning; it can be gained through lots of empirical data but in developing the right tools to interpret it; and it can be gained through experiences and increasing sensitivity to better understand the experiences. However, with the future poised to becoming a data-centric world, encircled in data flow and data processing, this will challenge the traditional learning patterns of converting data to knowledge and wisdom. The work of processing data will no longer rest with humans, but with algorithms, whose capacity of processing data will far outnumber the human brain capacity.

While we need to plan our short-term strategy, for some of the measures which are described above, we also have to start thinking of a long term strategy for the time to come, say 20-30 years from now. Nobody knows what will happen in coming decades. Fast advances in technology make it very difficult to predict the number and kind of jobs, the skills required for the same, the teaching-learning methods in future. Let us stretch our imagination and try to visualize the possible scenario in 2040s—2050s. A possibility is what Harari, has to say on education in his book, '*21 Lessons for the 21st Century*' (2018).[11]

He claims that "change is the only constant". In a turbulent environment that is full of radical uncertainties and unprecedented transformations, the challenge remains as to how can we better equip ourselves and our students to face them? What skills and expertise should we impart right now so that youth and individuals can survive, say in 2050? These are questions that may seem difficult to answer given the unpredictable nature of the forces that are currently prevalent and the rampant use of technology to artificially think and alter; however, that shouldn't deter us in reimagining plausible scenarios, understand nuances and requirements and atleast trigger thoughts towards that direction.

Some Pertinent Points in View of Corona Aftermath

After the outbreak of COVID-19, the world has transited into a new epoch in which the rules of the game are altogether different. Answers to some of the questions are pertinent for reimagining new institutions in the context of post COVID-19 revolution of the world:

(i)   Post-Corona, at least for one or two years, we'll need to depend more on net-based teaching and learning. The students will prefer to join on-line programs. How are we poised to cater to these needs, especially for practical-based programs? Isn't the poor and non-continuous internet connectivity in many areas, especially in the interiors a problem ?

(ii)   As many have expressed, Corona pandemic will have a disruptive short term and long term effects on many sectors. To talk about higher education, there will be a major shift towards inevitable technology driven e-teaching and e-learning, resulting in reduced contact between teachers and students. In fact, there will be drastic change in the role of a teacher, from that of traditional teacher, trainer or a *Guru* to that of an assessor or an evaluator. Our culture is deeply rooted in the traditional *Guru-Shishya Parampara*, which inculcated fundamental values among the students and enabled our country to scale greater heights in the past. With reduced contact between teachers and students, are we not set to lose out on our culture and values which are our strengths? What will be the long term consequences?

(iii) It is difficult to predict the future job scenario and skill requirements a decade or two from now in the light of sweeping technological advances taking place. What kind of strategies we should adopt in higher education?

(iv)   With technological developments and digitalization, it can be visualized that the number of jobs for our graduate and postgraduate students will be much less in future. At the same time one of our policy goals is to increase the Gross Enrolment Ratio (GER) in higher education which will in turn result in more and more graduates and postgraduates coming out every year. Don't we need to think differently?

The questions are many. We'll need to think, plan and work together to find the answers.

Conclusion

The strengths that each of our institutions possess is unique. With these strengths we can draw a roadmap of success for our institutions given the formidable set of challenges that we are faced with constantly. Let our focus on quality, innovation, entrepreneurial spirit combined with our glorious rich past help carve out solutions that will truly transform the society and our country into a land of immense capabilities and uniqueness.

Individually, we are one drop. Together, we are an ocean.

...Ryanunosuke Sataro

Awake, Arise! Strive for the Highest and Be in the Light

...Katha Upanishad

Notes and References

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Prof Manikrao Madhavrao Salunkhe is the President of Association of Indian Universities. He is also the Vice Chancellor of Bharati Vidyapeeth (Deemed to be University), Pune. He is an eminent and highly acclaimed Professor of Organic Chemistry. Earlier, he served as the Vice Chancellor of Shivaji University, Kolhapur, Maharashtra (June, 2004 to March, 2009); as the First Vice Chancellor of the Central University of Rajasthan (March 2009 to March 2014) ; and the Vice Chancellor of Yashwantrao Chavan Maharashtra Open University, Nashik (August 2014 to August 2016). He is a member and chair of several high powered committees of various apex bodies of higher education in India like MHRD, UGC, NAAC and AICTE etc.

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