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# UNIVERSITIES FOR THE FUTURE JOBS AND HUMAN EXCELLENCE

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# UNIVERSITIES FOR THE FUTURE JOBS AND HUMAN EXCELLENCE

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*Universities for future jobs, supporting the creation of a knowledge society tuned to the noble objective of human excellence are a matter of great interest in higher education around the globe. The power of innovation to create has now become increasingly clear as also its enormous power to cause disruption in all spheres of human activity, industrial, economic and social included. In this context the universities of future are to be reconfigured and restructured to unleash the enormous power of creativity and innovativeness of Young India as also to nurture peace, harmony and happiness of the enlightened human society that the object of university ordains. The universities of the future shall undoubtedly focus on knowledge creation through industry and society relevant Research and Development and shall be a major support system for local and global industrial growth. Employability, Entrepreneurship, Technology Incubation, IPR commercialisation and Community Outreach shall form the Panchtatvvas of universities of tomorrow that shall in true sense be UN13 universities of the third millennium.*

## PRELUDE

*“Education is the passport to the future, for tomorrow belongs to those who prepare for it today.”*  
— Malcolm X

Education earlier was conceived to be a valid means for enlightenment—a pathway for scholastic pursuit and an assurance of attaining glory (*Yasha*). In the *Taittiriya Upanishad*, the *Deekshant Upadesha* ordains the graduates of the university (*Gurukul*) to practice the knowledge acquired with a conduct and character akin to the righteous way of living with strict adherence to truth and humility, and working not just for self-glory but the welfare and wellbeing of the society at large. *Sahno Yasha, Sahno Bhamnvarchsam*, is the command of the *Upanishadic deeksha* (*Taittiriya Upanishad*, 1.11.2). Today, of course, education cannot remain confined to enlightenment and scholastic pursuits, as education is not just about ‘learning’; it is about ‘learning for creating a better world’, and about ‘learning to learn’. Further, the learning should pave the way to solve the problems at hand and that too with a scientific bent of mind to provide not just a unique solution, but one that is the very best under the given conditions. Learning should also empower us to envision a future with as much clarity as possible and enable us to achieve the goals and targets by employing the collective genius of the team. Education therefore is to be seen as a privilege to serve and excel alongside with attaining enlightenment and glory. It is also increasingly being asked if there is or would ever be an end to learning. These are some of the basic

questions that need to be answered as we design the learning systems for meeting the contemporary and future needs of the knowledge society of the 21<sup>st</sup> century.

The UNESCO Report on Rethinking Education Towards a Global Common Good (UNESCO, 2015) envisaged education for the third millennium to address these basic questions. It came out with the declaration that prompts rethinking on the education system from the point of view of making education more relevant to meet the aspirations of a knowledge society. Education for ‘learning to know’ is not enough. We need to also address the need for ‘learning to do’. In fact, ‘learning to know’ and ‘learning to do’ have to ultimately help create a human society that cultivates peace and harmony, and discovers a more profound purpose and meaning of life. Hence, the UNESCO Commission has also advocated to target education outcomes to include ‘learning to live together’ in peace and harmony as an essential component of the education system. The most influential concepts of the Delors Report-1996 UNESCO are the four pillars of learning. Formal education, the report argued, tends to emphasise certain types of knowledge that are essential to sustaining human development. It affirmed that equal attention should be paid to each of the four pillars in all organised learning (Delors, 1996):

- ***Learning to know*** – a broad general knowledge with the opportunity to work in depth on a small number of subjects.
- ***Learning to do*** – to acquire not only occupational skills but also the competence to deal with many situations and to work in teams.
- ***Learning to be*** – to develop one’s personality and to be able to act with growing autonomy, judgment and personal responsibility.
- ***Learning to live together*** – to develop an understanding of other people and an appreciation of interdependence.

The above four main pillars that was presented in Delors Report-1996 UNESCO are from the foundation of the university education that creates the work force of tomorrow, with human instinct embedded in their DNA. ‘Learning to live together’ is one of the most essential pillars that is needed to build a true and lifelong culture of peace through which respect, understanding, care, compassion, kindness and acceptance can be practiced to bring human excellence throughout the world. ‘Human excellence’ is also an important aspect which needs to be catered to while delivering quality education at the higher education level. In order to promote human excellence at the education level, we must first understand the meaning of human excellence. In simple words, it emphasises the awakening of human conscience, which is purely based on the purity of thought and character practiced with a righteous way of life. Some components that are an integral part of the righteous living are: purity of mind; *sattvik* and simple living; positive attitude; a caring concern for nature religious harmony; respect for life empathy; truthfulness; and fairness. These aspects of human life are

to be carefully nurtured during higher education in a university so that work ethics, professional morality, and personal integrity become the hallmarks of a graduate and are reflected in the educational outcomes of universities for future jobs.

The Future of Job report from the World Economic Forum 2018, clearly identifies the enormous skill gap that is created due to new and emerging technologies powered by the power of connectivity and networking. This is further enhanced by the power of innovation fuelling the growth of automated, connected and network systems, supported by machine learning and artificial intelligence, creating a new environment for industries in which innovative minds of humans and robotic co-workers jointly move the layers of quality and productivity in both manufacturing as well as in service sectors. The report provides a better understanding of the potential of new technologies – including automation and algorithms – to create new high-quality jobs, and also improve the job quality and productivity of the existing workforce vastly.

The universities of future jobs thus have a twin challenge of meeting the contemporary and future needs of the industries and creating a knowledge society that glows human excellence, work ethics, and professional integrity that are mandated in the digital era.

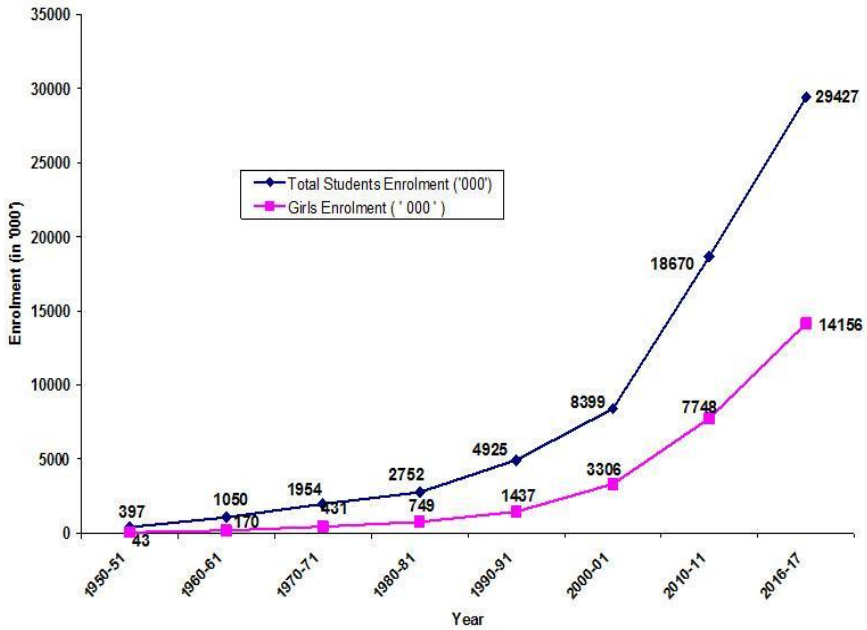
### **EDUCATION AS A RIGHT**

Education today has transformed a lot from what it used to be before. It is now an indispensable part of our society. Education is a ‘right’, which is also the responsibility of the society to ensure that no individual is deprived of this ‘right’. For individuals, education not only paves a way for their bright future, but also helps develop their beliefs which form the basis of their actions. Universities are drastically transforming in the way they are functioning these days and the quality of education being imparted is now increasingly focused on the requirements of the industry. There has been a drastic increase: both in the number of higher education institutes, as well as in the number of students enrolling in these institutions. Figures 1- 3 from University Grants Commission (UGC) Statistics will depict the scenario..

The Gross Enrolment Ratio(GER) has been a major parameter for planning for growth of higher education in India and has been greatly improved from 11 per cent in 2005-06 to 26.30 per cent in 2018-19 as can be seen from Table 1.

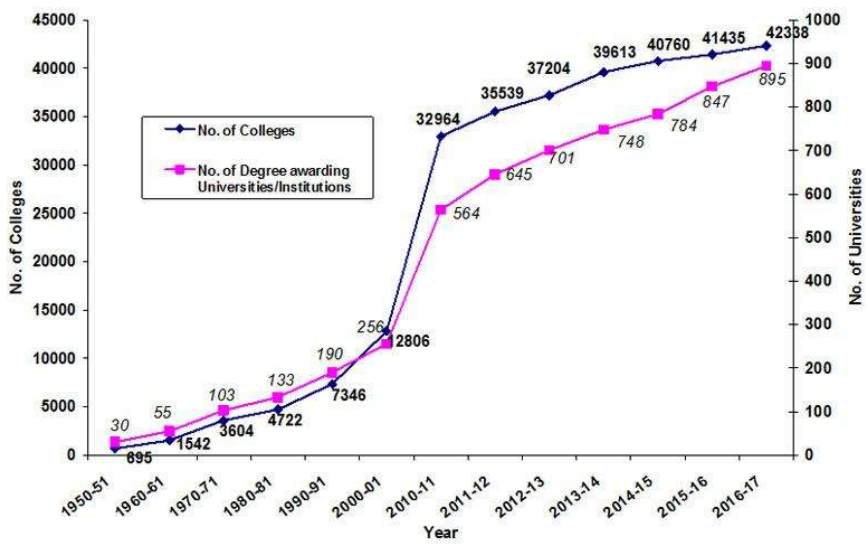
The increase in GER is also clearly reflected in the increase in enrolment in higher education in India, as can be seen form Fig. 4. India today has 1040 universities (50 Central Universities, 409 State Universities, 127 Deemed Universities and 349 Private Universities as on 1st February, 2020 and 39,701 colleges together enrolling 3,66,42,378 students of which almost 47.3 per cent comprise of girls students in higher education.

FIG. 1: STUDENTS ENROLMENT (BOTH THE TOTAL NUMBER OF STUDENTS AND THAT OF THE GIRLS) (1950-51 TO 2016-17)



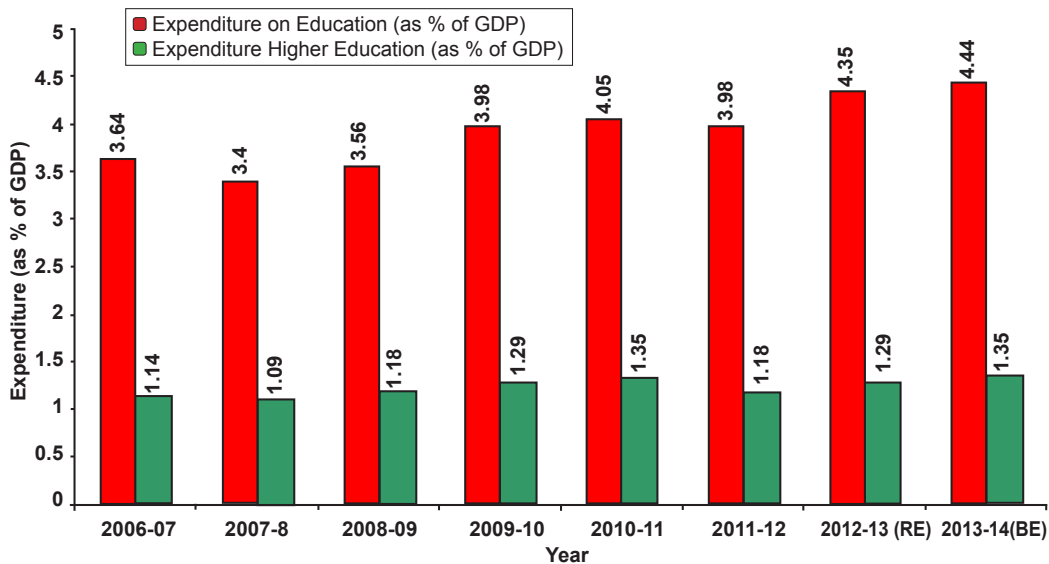
Source: UGC Statistics

FIG. 2: INCREASE IN THE NUMBER OF COLLEGES AND DEGREE AWARDDING UNIVERSITIES (1950-51 TO 2016-17)



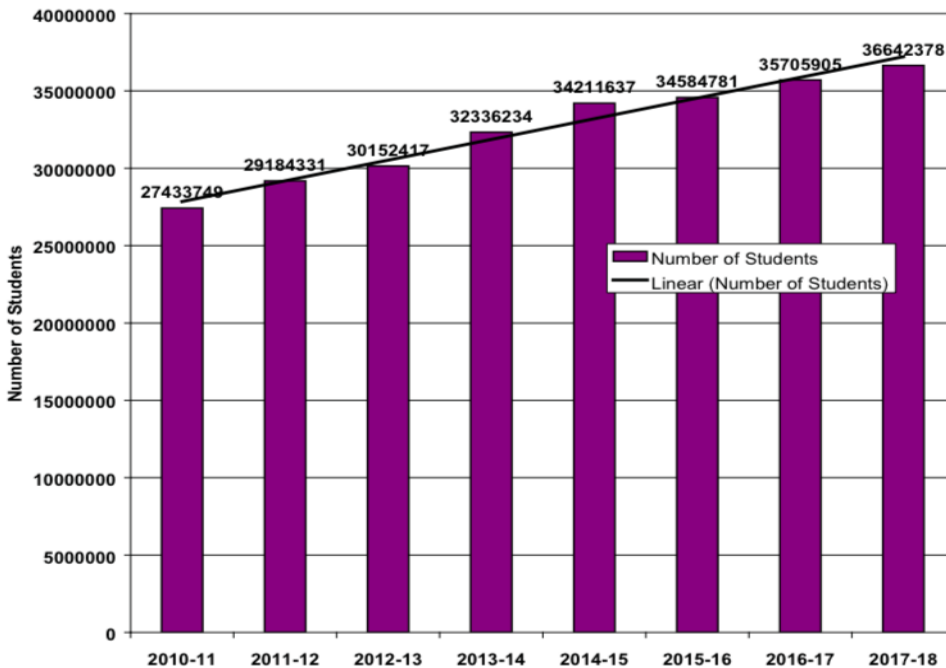
Source: UGC statistics

FIG.3: INCREASE IN THE AMOUNT OF EXPENDITURE BOTH IN THE EDUCATION INDUSTRY AND HIGHER EDUCATION (2006-07 TO 2013-14)



Source: UGC statistics

FIG. 4: YEARWISE GROWTH OF STUDENT'S ENROLMENT IN HIGHER EDUCATION 2010-11 TO 2017-18



Source: UGC Annual Report 2018

TABLE 1: GROSS ENROLMENT RATIO IN HIGHER EDUCATION

| Year  | GER   |
|---|-------|
| 2005-06   | 11.0  |
| 2011-12   | 15.0  |
| 2012-13   | 21.50 |
| 2013-14   | 23.00 |
| 2014-15   | 24.30 |
| 2015-16   | 24.50 |
| 2016-17   | 25.20 |
| 2017-18   | 25.80 |
| 2018-19   | 26.30 |
| <b>NEP-2019 proposes GER of 50 per cent by 2035</b> |       |

Source: UGC Annual Report (2020).

Thus, it can be clearly seen that the number of higher education institutes as well as the number of students enrolling are on a continuous rise since the time of independence which puts forth the importance of emphasising on quality education. The education as a right has undoubtedly resulted into a positive impact accelerating Gross Enrolment Ratio on one hand and the increased mobility of girl child to higher education on the other. However, as we move forward with high quality and relevance of education, the healthier and positive will be the lifestyles of citizens of the country.

### QUALITY AND RELEVANCE FOR FUTURE OF JOBS

We need to introspect as to whether the growth in the number of higher education institutions and increase in the number of universities, have been able to cope with the changing needs of the industry and meet the aspirations of the society? As per the World Economic Forum in its 2016 Report, *The Future of Jobs*, 65 per cent of children entering primary schools today will be employed in jobs that do not exist today. Some of these may include professions like data ecologists, gamification consultants, virtual environment engineers, and so on. The report clearly emphasises the importance of providing the students with not only quality education to meet the current and contemporary needs of the industries and corporates of today, but also to foresee the future needs, now that the pace of technology innovations has accelerated to unprecedented levels that is further fuelled by the creative power of innovation infinite.

The future of jobs in the coming days shall be dependent upon how the universities of tomorrow are able to transform their higher education system in tune with the requirements of knowledge and skills of the industries of tomorrow. A rapid paradigm shift is advocated to create a greater space for learning by doing, making autonomy of learning a reality in the educational system and empowering students and faculty with

ample opportunities for collaborative learning and nurture imaginative and intuitive faculty to capture new ideas and thus make innovation a habit. Various modern techniques in teaching-learning such as digital education, ICT in teaching-learning, innovations, startups, e-governance, autonomy, MOOCs, flip classrooms and virtual realities should be implemented across the universities and institutions in India. On a positive note, with different kinds of support being made available and implemented by the government and with the adoption of various innovations in higher education by the universities, higher education may soon become more 'revolutionary'. Some of the important ways to attain it are:

- Curriculum innovation;
- Tech-savvy teaching-learning environment;
- Academia, industry and society integration;
- Connect to global knowledge network;
- Global outlook, local and regional aspirations and focus on ground realities;
- Focus on relevance driven educational and research excellence; and
- Creating abilities to remain agile rather than just enlightened.

Some of the strengths of Indian education system in this context are (Figure-5):

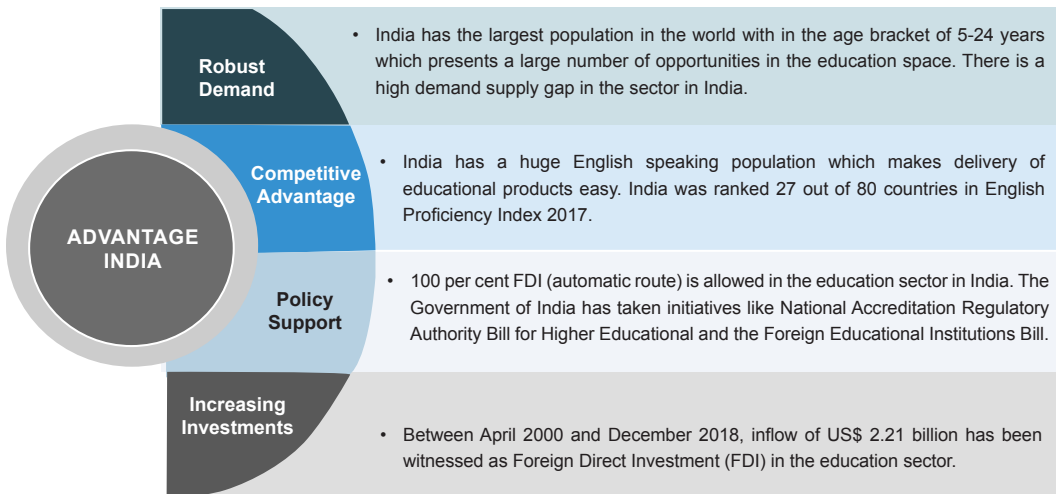
- ***Robust Demand*** – India has the largest population in the world in the age bracket of 5-24 years, thereby increasing the opportunities in this sector.
- ***Competitive Advantage*** – India has a huge 'English' speaking population with a rank of 27 out of 80 countries in English Proficiency Index 2017.
- ***Policy Support*** – 100 per cent FDI is allowed in the education sector in India.
- ***Increasing Investments*** – Between April 2000 and December 2018, inflow of US\$ 2.21 Billion has been witnessed as 'Foreign Direct Investment (FDI) in the education sector.

According to The Future of Work - OECD Employment Outlook 2019, various points that need to be considered include looking at how education is related with future jobs. These points have been elaborately covered in the report under the column 'A transition agenda for a Future that works for all'. These include:

- Times are changing as uncertainty and disruption is the way of life.
- More people of working age are at work than in the past decades.
- Technological change and globalisation hold great promise for further improvements in work force performance.
- A better world of work is not guaranteed – much will depend on having the right policies and institutions in place.



FIG. 5: EDUCATION AND TRAINING INDUSTRY IN INDIA, DECEMBER 2019



Source: IBEF (2020)

- One thing is clear: action on the margin will not do. Change is required in the well-ingrained behaviour of individual workers, companies, social partners and, above all, in policies.
- Countries should assess how well current policies match the priorities and prevent the most vulnerable workers from being left behind.
- Shaping a future of work that is more inclusive and rewarding calls for a 'transition agenda' for a future that 'works for all' – a whole of government approach that targets interventions on those who need it most.
- This requires a paradigm shift in the way our workforce is prepared in the universities and institutions of higher learning.

## GROWING SKILL GAP FOR INDUSTRY 4.0 OF TODAY AND INDUSTRY 5.0 OF TOMORROW

We cannot ignore the fact that there still exists a huge gap between the skills that are being taught in the education institutes as compared to what is actually required in the job market. With 15 million youngsters entering the workforce in India each year, there is a common agreement that 65-75 per cent of them are not job ready or are almost unemployable. With such a huge redundancy of education for future jobs, it becomes highly demanding that a serious exercise of rethinking universities of tomorrow is carried out to assure the impact and importance of higher education for tomorrow's knowledge society increasingly being impacted by the power of innovations in the digital era.

Some of the major concerns of the digital age are: loss of privacy; risk to cyber security; lack of information integrity; loss of employment in traditional sectors; major

disruption of assembly lines and supply chain; and above all increasing levels of anxiety and mental stress at this age of uncertainty that has descended in all nations. Figure 6 puts forth the expected shortfall of skilled workforce for the industries in 2022.

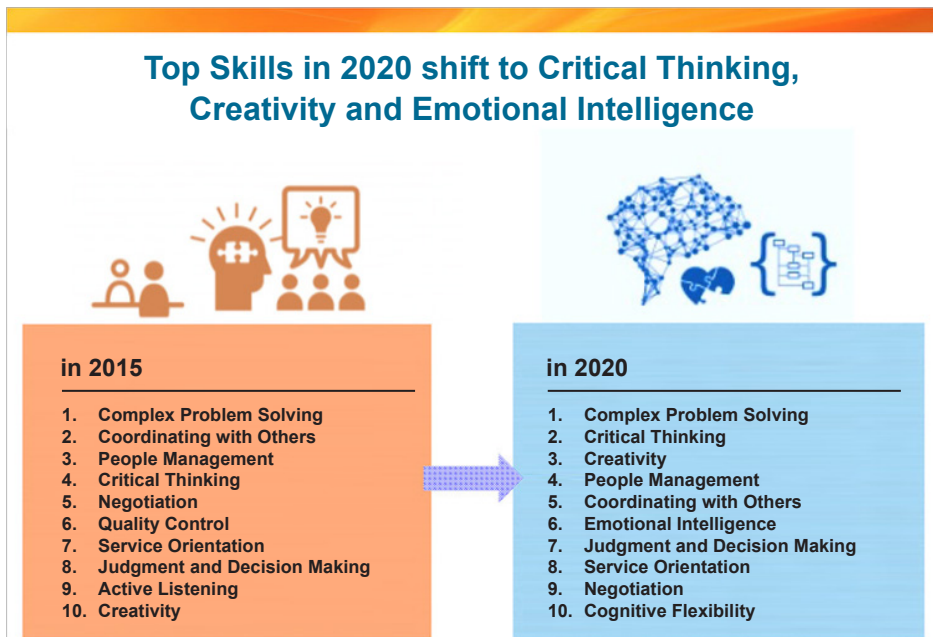
On the other hand, from the Future of Job Report 2016, it can also be seen how the top skills will be redefined by 2020 and will give a new perspective to jobs in India as can be seen from Figure 6.

FIG.6: THE EXPECTED SHORTFALL IN INDUSTRIES, 2022



Source: Info graphics, skills development

FIG. 7: FUTURE OF JOBS REPORT



Source: World Economic Forum, 2016

Figure 7 depicts how the top skills will be shifting to critical thinking, creativity and emotional intelligence by 2020. While talking about working on making our universities more futuristic and students more job ready, it's imperative to find solutions to some of the major challenges present in our higher education system like:

1. Lack of a robust regulatory system that pays greatest attention to quality of faculty and outcome of academic and research programs;
2. Lack of knowledge infrastructure and research facilities in great many universities, especially state funded and private universities;
3. Lack of research relevance;
4. Lack of qualified and trained teachers;
5. Lack of facilities for Innovation Incubation and entrepreneurship; and
6. Lack of collaborative environment between U&U, U&I and I&I.

Because of the rapidly changing demands of job markets, it is no longer possible to educate, up-skill or re-skill through traditional university systems alone. A more open system that harnesses the power of collaborative learning utilising a hybrid approach to imparting education would prove more effective, now that the knowledge warehouses are at a hand's reach.

### **A MIX OF HOPE AND AMBIGUITY**

The Deloitte Global's Readiness Report, January 2019, finds executives confronting a widening disparity between the technology and talent they have and what they will need to compete in the Fifth Industrial Revolution (Deloitte, 2019). It goes on to identify the mismatch as given in Fig. 8.

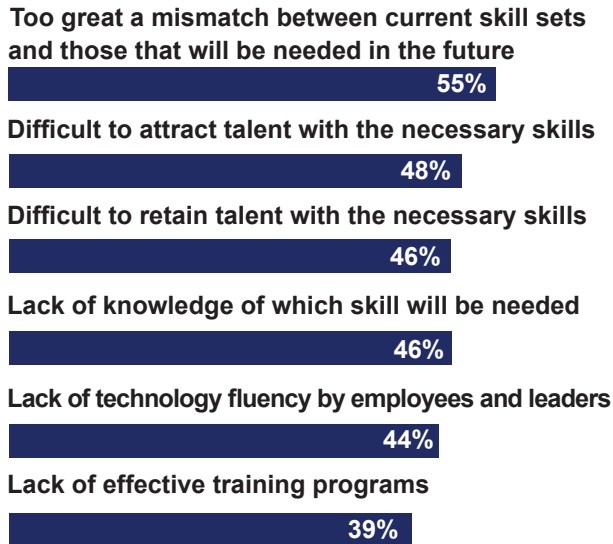
The report further highlights the complexity of evaluating future talent needs accurately, which is reflected in the fact that 46 per cent of executives cited a lack of what comprehension skills will be needed among their top challenges. So undoubtedly there are many challenges and opportunities available in higher education, but to overcome these challenges and get benefits from these opportunities is the need of the hour. It would therefore be absolutely essential to bring about various changes in the education system, which will not only help in providing quality education but also create a fertile ground for greeting the fifth industrial revolution that would address the challenge of sustainability along with increasing technology integration, for ease of work.

Figure 9 depicts a conceptual framework of the 21st century learning, which focuses on all-round development of the students and help inculcate the skills required for future jobs and achieving excellence. It would not be wrong to say that, "true education should not only focus towards imparting knowledge, but should also lead to the overall human development and human excellence."

FIG. 8: SUCCESS PERSONIFIED IN THE FOURTH INDUSTRIAL REVOLUTION,

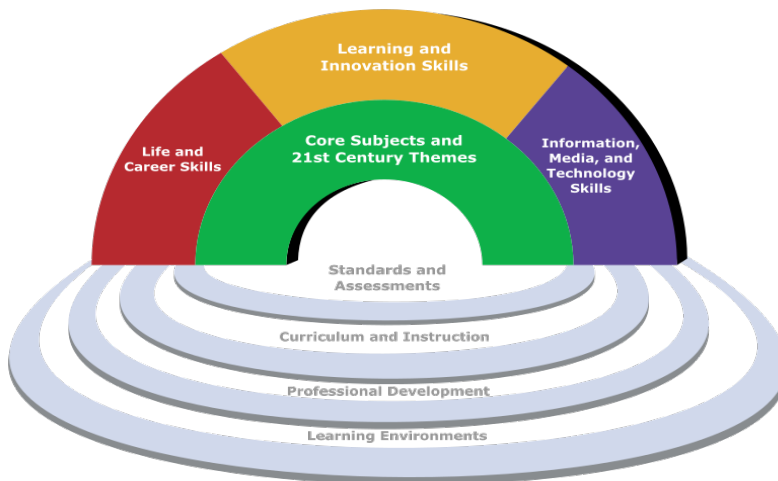
**Executives report a mismatch between the skills their workers have now and the ones they'll need in the future**

Top challenges in preparing the workforce  
(Respondents were asked to rank top three challenges)



Source: Deloitte (2019)

FIG. 9: SOURCE: P21's FRAMEWORK FOR 21<sup>ST</sup> CENTURY LEARNING



Source: OECD (2020)

The universities for future jobs thus have a mandate to adopt the *mantra* of 'Knowledge to Prosperity and Human Excellence'. Towards the end, it would be mandatory for all universities and institutions of higher learning to establish Knowledge and Innovation Incubation Centres and Knowledge Parks that shall facilitate startups and enterprise development, along with Skill Towers that shall provide ample opportunities to integrate knowledge and skill development for university graduates. The universities of the future shall undoubtedly focus on knowledge creation through industry and society relevant Research and Development and shall be a major support system for local and global industrial growth. Employability, Entrepreneurship, Technology Incubation, IPR commercialisation and Community Outreach shall form the *Panchtatvvas* of universities of tomorrow that shall in true sense be UNI3 universities of the third millennium.

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