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on
'Implementing National Education Policy–2020 to Transform Higher Education in India'

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Trends in the 21st Century Education#

S K Saidapur*

In nature living beings tend to evolve in response to many prevailing forces operating in the given environment. They essentially struggle, for resources like food, space, and mate. Additionally, it involves overcoming tussle with the neighbors (inter and intra-specific competition for food, space and mate), and also avoid parasites and predators. Thus, predators, parasites and neighbors are 3 major enemies of all forms of life. Who survive at the end? Obviously those that can overcome such challenges survive and/or reproduce. This defines the phrase 'survival of the fittest', a connotation that has no bearing to the physical fitness of an individual. It simply refers to the ability of organisms to leave behind fertile offspring. Such ability is largely due to (1) reshuffling of genes in each generation, (2) selection of useful (including harmless) genes, and (3) elimination of genes that are harmful particularly in early life. This is a very sketchy depiction of how in nature selection pressures work on living beings. Charles Darwin called it natural selection and proposed that through such a mechanism organisms evolve (Theory of Evolution-1958). It is a profound theory with ramifications even outside biological realms. For instance, market or socially driven forces, akin to selection forces in nature, affect evolution of human societies, trade and commerce, industrial production, political rise and fall of individuals, and behaviors like, nepotism, favoritism and corruption in public life. The Universities are also organic entities and they too are affected by the selection forces operating around them at a given point of time. Therefore, scenario of higher education at any given point of time in the history is a reflection of the quality of academicians and educational managers of that time; from faculty of colleges/universities, principals, Vice Chancellors, State Higher Education Ministers, State Councils of Higher Education, UGC, AICTE, IMA, ICAR, ICMR, Bar Council and other regulatory bodies. This prelude is merely to remind ourselves that we must own our responsibilities in addition to crying for our rights.

Evolution of Education System in India

India is indeed the mother of all civilizations as it represents one of oldest surviving of the 45 or so civilizations of the world. She will always be remembered for her many notable contributions in the fields of science and technology, medicine, yoga & meditation, metallurgy, architecture and engineering and more importantly universal message of spirituality to the whole world (Gautier 2013, 2019). India may well have been the world leader in promoting the

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pursuit of ultimate truth, knowledge, attainment of wisdom, man's role in the preservation of Mother Nature (biodiversity) and living in harmony with people of all faith, religion, culture and ethos, and citizenry. Literacy or attainment of various degrees, diplomas or certificates is not in itself the true indictor of education. The primary goal of education is to teach for 'life' rather than merely for living. Schooling should help instill self-esteem and national pride in the minds of the learners and promote embracing lingual, religious and ethnic diversities with reverence. Education is the operating system to help realize these goals. A clear understanding of the difference between literacy and education is vital before attempting to understand and undertake the management of higher education.

The origin of education system in India may be traced to the illustrious *Gurukul* system practiced from time immemorial. This may be regarded as Education 1.0 (E 1.0). Initially, a learned scholar, the Guru would go to the house of the pupil and impart knowledge gained by him over the years. As time elapsed, increase in the number of learners forced them to go to the homes of teachers seeking literacy, learning basic mathematics to enable maintenance of records and accounts. Make no mistake; India was beset with fund of knowledge in the form of Vedas, Upanishads, Puranas, Smritis (Smrutis and Shrutis), epics like Ramayana and Mahabharata, Panini's Ashtadyayi, Kautilya's Arthashastra, Bharata's Natyashastra, Medical treatises of Chakra and Sushruta, Dramas of Shudraka, Bhasa, Kalidasa, teachings of Buddha, Mahaveera and innumerable number sages from different parts of India. Apparently, prevailing wealth of knowledge was enough for establishment of Pathashalas, and even universities (e.g. Nalanda and Takshasila) during the early Christian era. Use of 'chalk and talk' and the blackboard was the main method used in teaching-learning process till the late 20th century. Education 2.0 (E 2.0) is a continuum of E 1.0 that began following the availability of teaching aids, like the over head projectors (OHP) and power point slides (PPTs) as additional tools of teaching during the last quarter of the past century. It did not differ much from the basic framework of education 1.0 except that it was more digitized. With the commencement of the 21st century, learning through newer ways became possible that include use of Smart Boards, Social Media, Emails, Wikis, Blogs, Facebook, Twitters and WhatsApp. The new avenues facilitated production and publication of the contents (even by the learners) and sharing through social networking, as well as open access to educational and research materials, and inter-institutional collaborations. Progresses in digital technology also enabled e-governance of education system (administration, teaching, evaluation and declaration of results etc.). This integration of education with technology represents the onset of Education 3.0 (E 3.0). Digital technology is now playing a key role in educational reforms and their management.

India can boast of much technological advancements especially in the fields of Information Technology (IT), Space science, Agricultural sciences and Biotechnology. However, the indigenous education system is yet to produce breakthrough research in basic sciences, innovations and patents that will enhance socio-economical status of citizens, and institutions of international fame. Regrettably, poor governance coupled with poor leadership has hastened the downfall of most universities in the country. There are many other reasons too. For instance, poor funding, ban on the recruitment of faculty, lack of competitive/vibrant academic ambience and infrastructure of the educational institutions and so on to name a few. Rampant corruption in the management of education systems (schools to universities), political interferences, poor governance and leadership encountered in recent times are like cancer and therefore a matter of utmost concern. If these issues are not addressed effectively there is no hope of making India great once again.

Dissemination of National Pride

India's real strength lies in areas like: mathematical sciences, astronomy, metallurgy, architecture, Ayurveda, Yoga, Meditation and, Spirituality to name a few. In addition, India has made significant gains in the field of space science and IT. Ours is the oldest surviving civilization with huge cultural and linguistic diversity. Yet, a matter of great concern for the nation is the loss of self esteem, national pride, respect for country's culture and ethos, and patriotism in the minds of our learners as these aspects are grossly overlooked in our curriculum. It is time that we now embark

rather seriously on teaching true history and culture of India at all levels, from school to University education. For this our history books need to portray the truth, good and bad, but as it happened (Gautier, 2013, 2019) and that should be taught to future generations of students. There is so much to learn from history. West remembers mass killing of Jews under German Nazi regime between1941-45 is remembered over and over through movies and social media. Likewise, India must remember the sad parts of history like the genocides during the Islamic invasions, destruction of temples, Goa inquisitions, forced religious conversions and Massacre of Sikhs in the year 1984, again and again through movies, and TV shows just as we remember Gandhi, Bhagat Singh, Veer Savarkar or other freedom fighters for their sacrifices and their tryst with the nation. Future generation of learners can discover a lot from the historical mistakes on one hand and on the other get inspired by the accomplishment Indians in science & technology, social sciences and humanities, narratives of freedom fighters, social reformers, kings and philosophers, forgotten heroes like Subhash Chandra Bose, performance of past Prime Ministers and governments and their policies. In short, there is much to learn from the history of India (see Gautier 2013, 2019). Let the new generation of students know the truth. Let us accept the past mistakes if any and move on. It is utterly unwise to bury India's history and glory and at the same time hope to learn from it. Let me recall the statement of Prof. D. S. Kothari who said, "How can we lament lack of national pride in Indians without first acquainting them with the country's phenomenal scientific achievements in the dim distant past"? It is time that academicians and the policy makers devise ways, without wasting time, for instilling national pride in the minds of learners which is long due.

Impact of Industrial Revolutions on Education

Education and Industrial Revolutions (IRs) impact each other as they are closely interlinked. Unfortunately, India missed the first two industrial revolutions; IR 1.0 occurring in England and IR 2.0 in America; both occurred during the time of British colonial regime. Consequently, India remained unmindful of the importance of the linkage between industrial revolution and education. In any case, the advancements in education and research show the way to development of technology. Sometimes, technology may come first without any knowledge of the underlying principles which get revealed afterwards. Briefly speaking, about IR 1.0 took place around the year 1780 in England and was characterized by mechanization of productions using water and steam power, and weaving looms. The IR 2.0 took place in America around the year 1870 which enabled mass production with assembly lines (division of labor) using electrical energy. The third, IR 3.0 took place around the year 1969 that enabled automation in the production of goods following advancements in the field of electronics and computer sciences. It was driven by simple digitization technology. Unlike the first three IRs there is little gap between 3rd and 4th IRs. In fact, the IR 4.0 commenced within a matter couple of decades after the onset of IR 3.0. The ongoing IR 4.0 has a massive impact on people, education, jobs, skill development and so on as it utilizes complex digitization technology (cyber physical systems). It is more powerful than the preceding IRs both in speed and impact due to great breakthroughs in internet related developments, robotics, driverless autonomous vehicles, 3-D printing, quantum computation, material science, nanotechnology, biotechnology, energy and data storage facilities, artificial intelligence (AI) and so on. A swift progress in IR 4.0 has made it possible for mass manufacture of products, rise in income levels and, improved quality of life. At the same time, a fallout of IR 4.0 is technology driven disruption in jobs. Several kinds of jobs and industries have succumbed to it. A classic example is the fall down of (leading) Kodak Eastman Company which unfortunately did not anticipate the impact of complex digitization technology. Seemingly simple and affordable devices like smart phones can now do innumerable types of jobs replacing the need for separate and multiple devices (ex: Telephone, TV, Radio, Computer, Calculator, Organizer, GPS, Dictionary & Thesaurus, Camera, Torch, Mobile banking, Online shopping, booking tours & hotels, accessing e-books, journals, content sharing, active participation in social media like the Facebook, Twitters, Blogs, Data storage and so on to name a few). As a result, many industries went out of business and were shut down and several types of jobs available hitherto have now disappeared. With specific apps in place, smart phones perform unimaginable number of tasks with ease and swiftness. Consequently, many

transactional reforms, have also taken place which are simple as well. The major drivers of the 4th IR are: increased use and application of computational technology, AI, rise of smart machines and systems, communication tools, new media literacy and media ecology, super-structured organizations, global connectivity, increase in human longevity etc. All these will greatly impact the labor market, income of workers, and displacement of workers by machine and AI. Technology driven disruption in jobs is indeed a serious issue but one need not become too gloomy because new technologies also create new jobs whose requirements will however change. For instance, maintenance of novel technologies and their up gradation will require new skills. Hence, there will be a growing demand for new skills like critical thinking, creativity, emotional intelligence, cognitive flexibilities, ability for co-working, co-creating with men and machine. In short, IR 4.0 calls for sustained creativity and eternal innovation. Expectedly, usage of 'Internet of Things' (network of physical devices, vehicles, home appliances, and other devices embedded with electronics, software, sensors, actuators, and connectivity which enables these objects to connect and exchange data) will become very common. In this process, many challenges will surface at the workplaces. So, the present and future generations of youth (Gen Z population) need to be prepared to meet these challenges. In reimaging education for 21st Century, Universities in India must address the issues of job disruptions and training the youth such that they shoulder the responsibilities courageously and also emerge successful as creative thinkers, innovators and entrepreneurs. Failing to do so, the prevailing demographic dividend in the form of soaring youth population can turn out to be catastrophic. Therefore, planning future education with great care is warranted to address the issues raised above as there is no escape from the impact of the ongoing industrial revolution. It calls for major changes in our education system, thinking, logistics and management if we have to stay relevant and sail through the global competition smoothly. Making innovations will remain focal point at all times to come.

Redesigning Future Education

In the beginning I emphasized that in nature living organisms evolve over time. Likewise, everything around us also changes over time, be it life styles, automobiles, music and dance, rules of politics and so on. Education system is no exception to this rule and it has also changed from the *Gurukul* system (E 1.0) practiced over many centuries to the present model (E 3.0) around the last quarter of the 20th Century. A major agent of this change is the ongoing industrial revolution. It is now imperative that the educationists and policy makers recognize the urgency and develop new education model to complement with the ongoing and foreseeable industrial revolutions, and their inexorable impacts. Following are some suggestions on reimaging future education.

Embracing New Education System

What are the major challenges posed by IR 4.0 on day to day life? First, it has caused disruptions in jobs. Second, it demands for new skills on a continuous basis. Hence, there is an exigency to redesign and develop a new education system - education 4.0 (E 4.0) with a clear *blueprint* for future teaching-learning processes. The new paradigm broadly includes blended learning, lifetime learning as well as learning to play a constructive role in the society. We need to foresee the future trends and needs and empower education system itself so as to promote innovations. This envisages a shift from 'brain as storage to brain as processor' model. Obviously, the new education system must focus on interactive learning with discussion and question and answer sessions, quizzes and seminars, problem solving, group learning, and project based learning. Such reforms will provide scope for customization and personalization of educational content and teaching-learning processes in relation to slow or advanced learners as well. The traditional classrooms will have to be transformed in to virtual and flipped classrooms to make them suitable for adoption of new pedagogies. This will promote conveying lectures (theoretical aspects) online and practical learning (hands-on experience) is done together in the labs not only with the guidance of the teacher but through interaction among the learners themselves.

The drivers of future education are mainly the future skills, digital networks and devices, personal data, shared content and resources, collaboration platforms, talent investment, 100 year life expectation, millennial mindset and social progress. A movement towards education 4.0 thus envisages a change in

the *mind* and the *mindset* of teachers, learners and the education managers. Of these, mind is no serious issue since it is as superior as that of say Anglo-Saxon, Caucasian or any other. However, mindset vis-à-vis our *attitude* can be a problem. Fixity in the attitude of the teachers can hamper implementation of future education policies. Anticipated hindrances may arise due to growing digital divide between the teachers and the taught in the future. Let me explain this briefly. Though at present one in thousand persons has a personal computer, the Gen-Z population of youth (those under 20 years of age) have access to smart phones and access to computers. They are also fast learners and more advanced in handling and using these devices compared to their teachers. Therefore, reluctance on the part of teachers to adopt digital mode of teaching though unfortunate is very much expected. Many teachers will continue to use 'chalk and talk' method and claim its superiority over the modern methods. True, teaching under the banyan tree or use of chalk and talk method when information was limited had their own merit. In this age of information explosion it is futile to evade modern methodology and swim against the current in vain. It is impossible to manage the information boom without the computers with large data storage and swift retrieval facilities. Undeniably, teaching is now largely aided by several modern /digital devices that help both teachers and the learners. Therefore, it is imperative to adopt more and more learner-centric teaching by meticulously planning to nurture creative thinking, group learning, blended learning, making innovations and so on. Obviously, to realize these goals teachers themselves have to be creative and continue to be lifetime learners. A teacher is no more a sage on the stage but only a guide on the side.

Future Trends in Teaching-learning Processes

Education is a dynamic process and it shall remain so always. It is poised to undergo rapid changes in the 21st century in tune with the technical and academic advances, industrial revolutions, and more importantly to remain relevant to the contemporary requirements of the learners and the society at large. Reluctance to change and adapt to the novel requirements will harm future generation of students and stunt national growth. What does the future education envisage? The major components of the future education scheme would be the following. First main component could be learner-centric teaching that is skill based and involves group learning (with due respect to aptitude and ability of learners). Second, teachers have to adopt new pedagogies to promote Self learning, Group learning, Blended learning (combination of offline and online learning: use of Learning Management Systems, the LMSs), using gadgets like the Smart Phones and Tablets, extensive use of Virtual class rooms (Flipped class rooms), and virtual labs, Problem solving and Monitoring progress of each learner, widespread use of Internet based technologies and so on. Expectedly, the time-honored class room teaching will be outdated. Third, new methodologies that involve teaching 'creative thinking' and making scientific 'innovations' will assume paramount importance in the future teaching processes. Fourth, learning through project mode and group learning will become vital. Consequently, a future teacher will become more of a facilitator, mentor, guide and confidence builder. Teachers have to be life-time learners so as to avoid widening the digital divide between them and the learners. Despite the limitation and affordability of digital devices, already half of the world population seems to be linked by the internet. So there is no escape from digital literacy and it's endless up gradations with time. Therefore, teachers have to be creative themselves as well as keep enhancing their own professional competency so as to stay relevant as well as sustain their own importance in the society. Evidently, novel reforms in the curriculum and assessment of learning outcomes are needed as soon as possible. Continuous assessment is more desirable than the semester-end examinations. Massive reforms in examination and assessment are required in any case (Saidapur, 2019).

Need to Strengthen State Universities

The State Universities have a major role in providing collegiate education. However, over the years, the vigor of State Universities has faded perceptibly due to several reasons: inadequate funding, extensive use of contract teachers in place of tenure track faculty, recruitment of poor and inbred faculty, segregation of professional courses from the traditional universities and establishing mono-faculty varsities. Seemingly, such developments have taken place more out of political than academic logic. It is heartening to note that the New Education

Policy (2019) recommends phasing out the mono-faculty universities and transforming them into regular multi-faculty varsities. Of course, this is easier said than done. The State Universities also became poorer following creation of islands of so called excellence; the IITs, IIITs, R & D Labs and Central Universities and more recently the IISERs /NISERs with liberal funding, sylvan ambience, better service conditions (age of retirement, salary, Medicare facilities etc.), as well as greater academic and administrative flexibilities, and other incentives. Hence, these institutes attract better talent, both students & faculty. As a result, it has been possible for these institutes to impart good education and produce export worthy students for postdoctoral assignments or jobs in industries and academic institutions. The faculty could establish linkages with foreign collaborators and publish papers in good impact factor journals. Yet, time has come to ask what is the outcome of all this? When an institution has best possible and highly motivated faculty, and students selected following severe competition of all India level, and the best possible research and teaching labs, modern library facilities, adequate funding, and vibrant academic environment in place, people expect cutting edge research, breakthroughs and, notable technological advancements. Such premier institutions should have contributed significantly not only to science and technology but to country's all round growth, the trade and commerce, foreign policies, production of advanced defense equipments, medicine, literature, philosophy, public hygiene and so on. Has this happened? Some introspection is needed. At the same time, we need to introspect over the plight and productivity of the large number of State Universities that impart education to over 80 per cent of the youth population. With minimum academic, financial and administrative supports, it is State universities that have been providing raw material- students for doctoral and postdoctoral research programs run in the premier institutions. In addition to carrying out the primary responsibility of teaching, State universities also contributed significantly to research and publications despite poor support and encouragement they receive. If meritocracy were to prevail, if university/college governance were to be good, if the these institutions were to be adequately supported and if they were to be protected from political interferences they would have made more significant contributions to education and all round development of the country. Sadly this did not happen. Undermining the importance of State Universities and pitiable governmental support has resulted in a wider gap between State universities and the premier institutions. Many State universities are in reality in a rather precarious situation. Academicians have become mute spectators. It is therefore high time that the people in power and the policy makers ponder over seriously on the importance of strengthening the State Universities and improve their status to the same level as that of the Central Universities, IIMs and IITs in all respects (service conditions, academic and administrative flexibility etc.). However, this requires an academic mindset, clear vision, political will, concern and commitment to the cause of fast evolving higher education system globally.

Conclusion

Before I conclude, let me touch upon two more aspects; national pride and women's' education. Every country has its own unique historical legacies, contributions to society through innovations in science and technology, literature and philosophy and so on. Respect for country's culture and ethos, ancient scriptures and epics, and ethics needs to be instilled in the minds of learners from the very early stages of education (school to doctoral degree levels) so as to make them feel proud of the country. These attributes will also go a long way in building a humane society. Secondly, women constitute approximately 50 per cent of our population. Right education of women is therefore very important. In recent decades, many 'Women's Universities' are established. The logic behind creating such gender specific universities is neither clear nor convincing. Were they created to isolate women from co-education? If so, it is clearly a faulty decision. In no stage of her life a woman lives isolated from man or vice versa. Depriving the benefits of co-education can be harmful as it can affect one's psychological growth and customary ability to deal with members of the opposite gender. Nevertheless, these universities can play some meaningful role in empowering women by offering courses that help them get jobs, become entrepreneurs (e.g. Fashion Design, Interior Decoration, Nursing, Air Hostess, Consoling and Counseling, Corporate Secretary, Translation of foreign languages, Social Work, Beautician courses, Horticulture and Floriculture, Bee Keeping,

Handicrafts, Bakery, Catering, Hotel management, Hospital Management, Stress Management, Event Management, Tax Consultancy etc.). In addition, they can be trained in Indian Classical Music/Dance, Gymnastics, Athletics, Swimming, Boxing, Karate & Self Defense, Yoga and Meditation as add-on courses. Such courses can help earn national / international recognitions in specific fields. Such training can be provided through certificate, diploma, graduate or post-graduate courses and boost self-esteem and self-confidence as well as sculpt personality of women. Such skill development programs will go a long way in empowering women whose demographic eminence is no different from that of men.

In summary, the urgency of revamping the higher education system as a whole to nurture the aspirations of the growing youth population and foreseeable compulsions described above needs no added emphasis. While we are yet to fully accomplish education for all and 'right to education' we must plan for 'right education' as well as 'right way of education'. The key feature of 21st century education is *education in innovation* and *innovation in education*. Failure to recognize this exigency is sure to demolish demographic dividend that we boast of. In a ruthless world that is witnessing rapid progresses in scientific technologies, industrial revolutions and job disruptions, the only way to be successful is by acquiring skills and competitiveness of global standards without further ado. Also, while we need to innovate for our own sake, we must keep track of the global trends while making innovations in order to stay competent and relevant, now and in future. If our inventions, discoveries and scientific advancements become trend setters, they can enrich not only India but the whole world. There is no scope for reluctance in transforming our education system or being apologetic about it. Change or perish is the new norm. Universities being the 'organic entities' they can not afford to remain stagnant and become fossilized.

Let me end by recalling the four major pillars of learning: 'Learning to know, Learning to do, Learning to live together and Learning to be' (source: Learning: The Treasure Within: Report to UNESCO of the 'International Commission on Education for 21st Century'). Alvin Toffler opined, *"The illiterates of the 21st century will not be those who can not read and write but those who can not learn, unlearn and relearn."* Trends in the 21st century education call for a change in the mind and mindset of teachers, and inspired leadership of education policy makers.

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University News Wishes its Readers a Happy National Education Day

Let's pay our tribute to Maulana Abul Kalam Azad, the first Education Minister of the Country whose Birth Anniversary is celebrated as National Education Day.

National Education Policy 2020: A Magna Carta for 21st Century Higher Education

Harshit Mishra*

Education has been seen as a core necessity of individuals, social groups, nations and human society. The modern world views it as a basic human right. Since the formation of the Indian Republic, most landmark committees or commissions on education have unequivocally underscored the idea of education for all but in a vast, populous and diverse country like India having staggering socio-economic differentials, the execution of policy has always been a challenge.

The last National Policy on Education was created in 1986. During these 34 years, the world has changed in unprecedented ways. Revolutionary alterations in the world's political economy, fuelled by technological developments, have significantly contributed to the dismantling of the barriers of gender, class, caste, culture, geographical distance, and so forth. All this has created a strong sense of aspiration and hope among the people. Rapid economic developments after 1991, the year when India opened economically, have triggered a high demand for knowledge and specialised skills. The National Education Policy (NEP) -2020, released on 29 July 2020, is an ambitious document. With an eye on the future, it speaks to all aspects of education during our times. A distinctive feature of higher education is that it produces knowledge resources through which all education takes place, resources used by society to chart out its progress over time. Recognising this, the policy envisions a 'complete overhaul' of the higher education system.

Some of the major problems highlighted by the NEP pertains to the Higher Education system in India include:

- A severely fragmented higher educational ecosystem;
- Less emphasis on the development of cognitive skills and learning outcomes;
- A rigid separation of disciplines, with early specialisation and streaming of students into narrow areas of study;
- Limited teacher and institutional autonomy;
- Lesser emphasis on research at most universities and colleges, and lack of competitive peer-reviewed research funding across disciplines;
- An ineffective regulatory system; and
- Large affiliating universities resulting in low standards of undergraduate education.

NEP also envisions a complete overhaul and re-energising of the higher education system to overcome these challenges and thereby deliver high-quality higher education, with equity and inclusion. Some of them are as under:

- Moving towards a higher educational system consisting of large, multidisciplinary universities and colleges, with at least one in or near every district, and with more HEIs across India that offer medium of instruction or programmes in local/ Indian languages;
- Moving towards a more multidisciplinary undergraduate education;
- Establishment of a National Research Foundation to fund outstanding peer-reviewed research and to actively seed research in universities and colleges;
- "Light but tight" regulation by a single regulator for higher education.

Big is Vital

The main thrust of the policy is to end the fragmentation of higher education by transforming higher education institutions into large multidisciplinary universities, colleges, and HEI clusters/Knowledge Hubs, each of which will aim to have 3,000 or more students. This would help build vibrant communities of scholars and peers, break down harmful silos, enable students to become well-rounded across disciplines. By 2030, at least one large multidisciplinary HEI will be established in or near every district. The aim will be to increase the Gross Enrolment Ratio (GER) in higher education including vocational education from 26.3 per cent (2018) to 50 per cent by 2035.

Why Consolidation

By the way of consolidation, usability of the all types resources (financial, human, land, physical etc.) will be enhanced. The ancient Indian universities Takshashila, Nalanda, Vallabhi, and Vikramshila, which had thousands of students from India and the world

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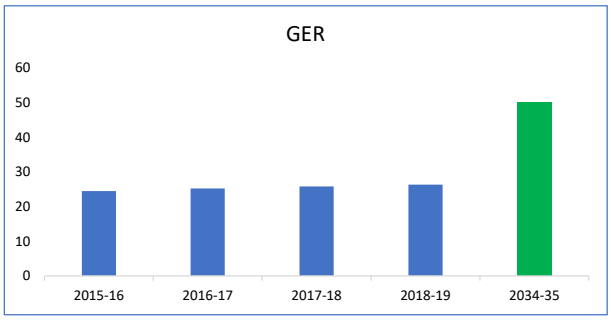
Figure -1 Gross Enrolment Ratio in India: Expected Projection till 2035



(Source: AISHE)

studying in vibrant multidisciplinary environments, amply demonstrated the type of great success that large multidisciplinary research and teaching universities could bring. India urgently needs to bring back this great Indian tradition to create well-rounded and innovative individuals.

Many factors favour the consolidation of universities. The most significant among them is quality education. National Assessment & Accreditation Council (NAAC) could so far accredit only 539 universities (54%) out of total 993 universities and 11,343 colleges (28%) out of total 39,931 colleges (as on 31st March 2018). The only way to control quality is rigorous assessment & assured progress accordingly on the weaknesses highlighted by the assessing agency in a time bound manner otherwise must be provisioned for mandatory & transparent punitive action.

NEP therefore, categorizes universities into three categories: the universities those place greater emphasis on research i.e., Research-intensive Universities (RUs), those place greater emphasis on teaching but still conduct significant research i.e. Teaching-intensive Universities (TUs) and an Autonomous degree-granting College (AC) will refer to a large multidisciplinary institution of higher learning that grants undergraduate degrees and is primarily focused on undergraduate teaching. HEIs will have the autonomy and freedom to move gradually from one category to another, based on their plans, actions, and effectiveness. These consolidated colleges will have at least three thousand or more students.

Multidisciplinary Education: A Much Awaited Reform

India has a long tradition of multidisciplinary learning from universities such as Takshashila and Nalanda. The very idea that all branches of creative human endeavour, including mathematics, science, vocational subjects, professional subjects, and soft skills should be considered 'Art', has distinctly Indian origins. This notion of a 'knowledge of many arts' or what in modern times is often called the 'liberal arts' (i.e., a liberal notion of the arts) must be brought back to Indian education, as it is exactly the kind of education that will be required for the 21st century.

Multidisciplinarity is the key. The decision to do away with the adamantine walls between different disciplines and the provision of freedom to exit and enter courses, as these will be credit based, will truly liberate learners. The policy grants them freedom to choose what to learn, how to learn and when to learn. Now, one can opt to study Sanskrit along with Mathematics or Music with Physics. The earlier segregation of streams, rather regimented, did not allow for any formal or institutional interface between the sciences, the social sciences and the humanities. This did not allow for a wholesome development of individuals. The NEP recommends to integrate engineering courses, at institutions such as Indian Institute of Technology (IIT) with the arts and the humanities in order to move towards holistic and multidisciplinary education.

There have been repeated calls for multidisciplinary research universities by leading scientists, including the committee led by Professor Yash Pal. Some are already doing this. For instance, at Azim Premji University (APU), undergraduates can major in, physics or biology or economics or humanities and opt for minors from other discipline or across many other fields. Subjects for minors include education studies, data sciences and development studies. At Shiv Nadar University (SNU), all undergraduate students have the flexibility to choose multiple university-wide electives.

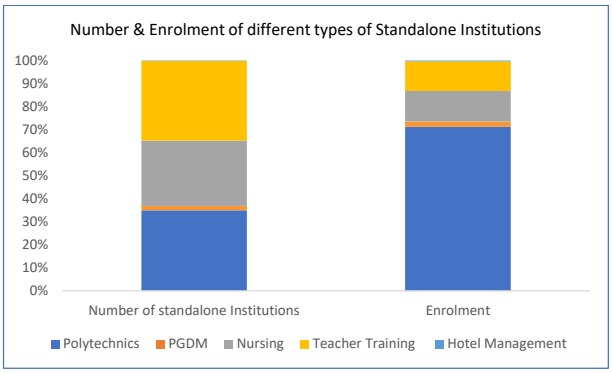
The University Grants Commission (UGC) had also earlier directed universities to adopt the Choice Based Credit System (CBCS) aimed at promoting interdisciplinary study and allowing students to choose their own subject combinations. The four-year undergraduate programme (FYUP) introduced at DU was also a major reform that aimed to encourage interdisciplinary education but had to be rolled back.

Now NEP recommends that large multidisciplinary universities and colleges will facilitate the move towards high-quality holistic and multidisciplinary education. This will create tremendous emphasis on communication, discussion, debate, research, and opportunities for cross-

disciplinary and interdisciplinary thinking. For example, a civil engineer from IIT can have the knowledge regarding the technicalities about a big dam project only, he would be unaware about the social & environmental issues pertaining to the dam but if the same engineer is having the knowledge of environment social sciences he then, must be aware about the environmental and displacement related issues. That is how multidisciplinary works.

NEP also recommends that all stand-alone Teacher Education Institutions will be required to convert to multidisciplinary institutions by 2030, since they will have to offer the 4-year integrated teacher preparation programme (Figure-2). The 4-year integrated B.Ed. offered by such multidisciplinary HEIs will, by 2030, become the minimal degree qualification for school teachers.

Figure-2 Number and Types of Standalone Institutions



(Source: AISHE)

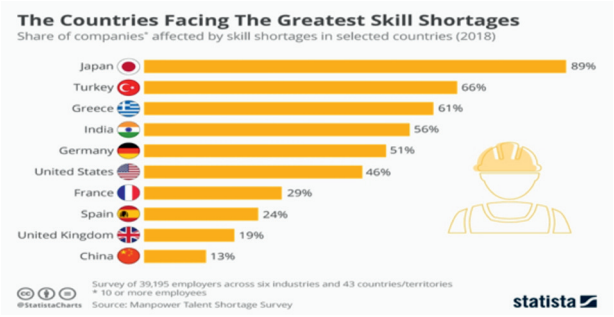
This may be termed as a master-stroke of the NEP and has a widespread range of effect as presently, Teacher Education is in complete chaos. Standalone self-financed B.Ed. colleges have become the B.Ed. degree granting shops. The Teacher-Education regulator National Council of Teacher Education (NCTE) which is supposed to cure the disease, has itself become the central cancerous chronic ailment, spreading infections to everywhere. By repealing the NCTE Act, 1993 and by proposing Higher Education Commission of India (HECI), an overarching regulator, by subsuming all regulators in to it including UGC, AICTE and NCTE, the policy has tried its best to establish a ray of hope in the otherwise dark tunnel of regulators in the country.

Employment Vs Employability: India's Dual Challenges

Most of the young Indians worry about the employment opportunities in the country in the Covid and post-Covid era. According to the World Bank, over 30% of Indians between the ages of 15-29 are NEETs (not in education, employment or training). In 2016, National Skill Development Corporation (NSDC) trained more than 5.5 lakhs workers, only 12% of these trainees found jobs. The government has two big challenges ahead: India needs to create some 10-12 million jobs a year. The models of job creation that have worked in the past, will not work in future. Until the turn of the century, jobs were created in capital-intensive sectors. Investment in manufacturing, mining, power plants etc has created jobs before. The public sector banks have been large employers. Automation is making that opportunity disappear. Many of the jobs that have disappeared have been blue collared jobs. A good case in point is the Hyundai plant in Chennai that churned out a car every 72 seconds last year. 500 robots are deployed along with the 8,500 workers. The robots do not take days off and the employers do not need to worry about robot unions. The fact to be kept in mind is that the top five companies of the world (Apple, Alphabet, Microsoft, Amazon, Facebook) are tech companies. Their combined market value stands at $3.5 trillion. The entire stock market in India stands at $2.3 trillion. Means, the majority of jobs in future will be Tech-jobs.

As per India Skills Report 2019-20, only 46.21 % students were found employable or ready to take up jobs in 2019, compared with 33 per cent in 2014, and 47.38 per cent in 2018. As per Centre for Monitoring Indian Economy (CMIE) unemployment data, unemployment rate was as high as 22.89% (May, 2020) due to Covid crisis to now somewhat stabilize at 7.65 % (Aug, 2020). So, on one hand, the country has 7.65% unemployed youths, on the other hand only 46.21% of the youths are employable. Also, 56% of companies have been affected by skill shortage in the country (figure-3).

Figure 3 Countries Facing Skill Shortage



According to the Manpower Talent Shortage Survey-2018, rapid globalization and technological change have shaped the world's job market and

skill shortages have become a growing problem for employers(Figure-2). The scale of the problem varies hugely between countries and it is most pronounced in Asia. Japan was the country most severely affected, with 89 percent of companies affected with the problem. China improved their supply of skilled workers significantly since 2014, with its rate dropping from 24 percent to 13 percent. India also improved its performance as rate is dropping from 64% (2014) to 56% (2018). Figure-4 is showing 2015 Skill Gap analysis, expected shortfall in industry in 2022. Though the conditions has improved since 2015 as per India Skills Report 2019-20, but the projection may provide an approximation regarding the probable skill gap in 2022 (Figure-4).

Figure 4 : Skill Gap Analysis

Bottlenecks in Employability

Major bottlenecks in Employability are discussed here.

- ***Low Coverage***

  One of the major reasons for India`s Employment Vs. Employability, a double edge sword syndrome, has been a very small percentage of the Indian workforce in the age group of 19–24 (less than 5%) received formal Vocational Education whereas in countries such as the USA the number is 52%, in Germany 75%, and South Korea it is as high as 96%. These numbers only underline the urgency of the need to hasten the spread of vocational education in India.

- ***The Demand-Supply Mismatch***

  The current Vocational programs are largely supply-driven and still lack of relevant training for available jobs. There is a need to improve links between schools and the industry to minimize this mismatch. A divergence between the skills that the population possesses and skills required by industry is a major cause of low employability among Indian youth.

- ***Poor Perception And Public Mindset***

  Many Indian parents want their children to pursue a clerical job or be an office assistant, not realizing that a technician can earn more than these jobs. In countries like India Vocational Education (VE) has always been considered by the public and parents as the career choice for the less academically-qualified with the impression that VE is for school drop-outs, rather than as an important strategy to train skilled workers. Too much attention and resources are given to 'academic' rather than vocational education. Vocational education has focused largely on Grades 11–12 and on dropouts in Grade 8 and upwards. Students passing out from Grades 11–12 with vocational subjects often did not have well-defined pathways to continue with their chosen vocations in higher education. The admission criteria for general higher education were also not designed to provide openings to students who had vocational education qualifications, leaving them at a disadvantage relative to their compatriots from 'mainstream' or 'academic' education. This led to a complete lack of vertical mobility for students from the vocational education stream. It is perceived to be inferior to mainstream education and meant largely for students who are unable to cope with the latter.

- ***Inadequate Academia-Industry Linkage***

  This results in low rates of employment due to the reason that what job providers are seeking for, are not communicated with the training sector. Besides it also affects the placement.

- ***Lack of Updated Curriculum***

  An updated curriculum which is relevant to present day need of the industry is a major requirement. The curriculum should be relevant to be need of the industry.

- ***Shortage of Qualified Teachers***

  Availability of good quality trained and qualified teachers and trainers is an important problem. Poor recruitment process of Governments is responsible for this.

Probable Solutions for Employment Problems as Recommended by NEP

NEP aims to overcome the social status hierarchy associated with vocational education and envisions

integration of vocational education programmes into mainstream education in all education institutions in a phased manner. Beginning with vocational exposure at early ages in middle and secondary school, quality vocational education will be integrated smoothly into higher education. It will ensure that every child learns at least one vocation and is exposed to several more.

By 2025, at least 50% of learners through the school and higher education system shall have exposure to vocational education. The development of vocational capacities will go hand-in-hand with the development of 'academic' or other capacities. Vocational education will be integrated in the educational offerings of all secondary schools in a phased manner over the next decade. Towards this, secondary schools will also collaborate with ITIs, polytechnics, local industry, etc. Skill labs will also be set up and created in the schools in a hub and spoke model which will allow other schools to use the facility. The B.Voc. degrees (introduced in 2013) will continue to exist, but vocational courses will also be available to students enrolled in all other Bachelor's degree programmes, including the 4-year multidisciplinary Bachelor 's programmes.

Light but Tight Regulation

The mushrooming of regulatory agencies in India is one of the prime reasons for India's problems in maintaining the quality of its higher education institutions. In the National Policy on Education of 1986 and Programme of Action of 1992, it was recommended that a National Higher Education Council should be established. Unfortunately, the recommendation was ignored. The National Knowledge Commission(2006-09) again raised the issue of having an autonomous regulatory body for higher education and it recommended the establishment of the Independent Regulatory Authority for Higher Education. In 2009, the Professor Yash Pal Committee Report on Renovation and Rejuvenation of Higher Education also recommended the constitution of a National Commission by merging the then more than a dozen higher education regulatory agencies.

Regulation of higher education has been too heavy-handed for decades; too much has been attempted to be regulated with too little effect. Heavy concentrations of power within a few bodies, conflicts of interest among these bodies, and a resulting lack of accountability are the major issues Regulatory system is suffering from. To address these issues, NEP envisions the distinct functions of Regulation, Accreditation, Funding, and Academic standard setting will be performed by distinct, independent, and empowered bodies.

To ensure that the four institutional structures carrying out these four essential functions work independently yet at the same time and work in synergy towards common goals, an overarching umbrella institution, the Higher Education Commission of India (HECI) will be established. Regulation, Accreditation, Funding and Academic standard, these four structures will be set up as four independent verticals under HECI.

HECI will be a new *avatar* of UGC with a different vision, focus and powers. HECI will also have penalization powers against the institutions on violation of rules. Substandard institutions can also be closed. Governments across political hues have advocated a single higher education regulator as this can help clean up the regulatory mess in higher education, do away with overlaps and create an ecosystem conducive to nurturing institutes of excellence.

- The first vertical of HECI will be the National Higher Education Regulatory Council (NHERC). It will function as the common, single point regulator for the higher education sector including Teacher Education and excluding Medical and Legal Education, thus eliminating the duplication and disjunction of regulatory efforts by the multiple regulatory agencies that exist at the current time. NHERC will be set up to regulate in a 'light but tight' and facilitative manner, meaning that a few important matters particularly financial probity, good governance, and the full online and offline public self-disclosure of all finances, audits, procedures, infrastructure, faculty/staff, courses, and educational outcomes will be very effectively regulated.

- The second vertical of HECI will be a meta-accrediting body, called the National Accreditation Council (NAC). Accreditation of institutions will be based primarily on basic norms, public self-disclosure, good governance, and outcomes, and it will be carried out by an independent ecosystem of Accrediting Institutions supervised and overseen by NAC.

- The third vertical of HECI will be the Higher Education Grants Council (HEGC), which will carry out funding and financing of higher education based on transparent criteria.

- The fourth vertical of HECI will be the General Education Council (GEC), which will frame expected learning outcomes for higher education programmes. A National Higher Education Qualification Framework (NHEQF) will be formulated by the GEC and it shall be in sync with the National Skills Qualifications Framework (NSQF) to ease the integration of vocational education into higher education.

- The professional councils, such as the Indian Council for Agricultural Research (ICAR), Veterinary Council of India (VCI), National Council for Teacher Education (NCTE), Council of Architecture (CoA), National Council for Vocational Education and Training (NCVET) etc., will act as Professional Standard Setting Bodies (PSSBs). They will play a key role in the higher education system and will be invited to be members of the GEC. These bodies, after restructuring as PSSBs, will continue to draw the curricula, lay down academic standards and coordinate between teaching, research and extension of their domain/ discipline, as members of the GEC.

Flexible Entry-Exit System

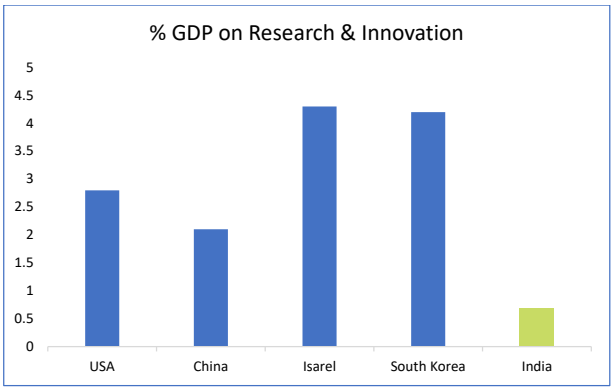
The undergraduate degree will be of either 3 or 4-year duration, with multiple exit options with appropriate certifications. A certificate after completing 1 year, or a diploma after 2 years of study, or a Bachelor 's degree after a 3-year programme. The 4-year multidisciplinary Bachelor's programme, however, shall be the preferred optionsince it allows the opportunity to experience the full range of holistic and multidisciplinary education in addition to a focus on the chosen major and minors as per the choices of the student.

Accordingly, there will be different designs of Master's programmes.A2year programme with the second year devoted entirely to research for those who have completed the 3-year Bachelor's degree, a 1 year Master's programme for students completing a 4-year Bachelor 's degree and also integrated 5-year UG-PG programme. Undertaking a Ph.D. shall require either a Master's degree or a 4-year Bachelor's degree with Research. The M.Phil. programme shall be discontinued.

Research & Innovation

India's research and innovation investment in terms of percentage of GDP vis-à-vis other countries of the world shows steady decline over the last decade, dropping from 0.84% in 2008 to around 0.69% of GDP in 2018 (Figure-5). In comparison, it is 2.8% in US, 2.1% in China, 4.3% in Israel, and 4.2% in South Korea. The number of researchers per lakh of the population is only 15 in India, compared to 111 in China, 423 in the United States, and 825 in Israel.

Figure 5. GDP of Different Countries on Research Innovation



India lags in number of patents and publications produced. According to World Intellectual Property Organization (WIPO) 2017 report, 13.82 lakhs patent applications were made by China, 6.07 lakhs by USA and a mere 0.47 lakhs by India, of which approximately 68% were made by non-resident Indians.

A report by US National Science Foundation showed that the share of scientific publication of USA is 17.8%, China is 18.6% and India is 4.8% in 2016. The quality of these publications in India has been lower than the global standard. Though in terms of total publication India stands at 5th position in the world, in terms of citation impact, we are at much lower at 11th position.

None of India's Institution is amongst the top 100 research and innovation institutions in the world. Key sectors of Indian economy such as defense, healthcare, transportation, aviation, manufacturing of electronic and communication devices are critically dependent upon import of primary and secondary goods from various parts of the world to cater to indigenous demand. In the defence sector, India has been the world's second largest importer of major arms in 2015-19 and accounted for 9.2% of the global total import, according to the Stockholm International Peace Research Institute (SIPRI) year book-2020. 70% of the India's defence hardware is imported causing great outflow of India's hard-earned foreign exchange. China, on the other hand has emerged as a major arms exporter.

Major Impediments to Research and Innovation are:

The absence of an integrated and comprehensive approach towards funding R&I initiatives and monitoring of the outcomes.

Lack of cognitive or critical thinking in large sections of our students.

Lack of research culture and mindset, limited funding, and lack of research infrastructure in most educational institutions further compounds the problem.

Duplication of effort and funding by multiple Ministries and Department of the Government of India with dedicated R&D institutions or funds for research in their respective domain.

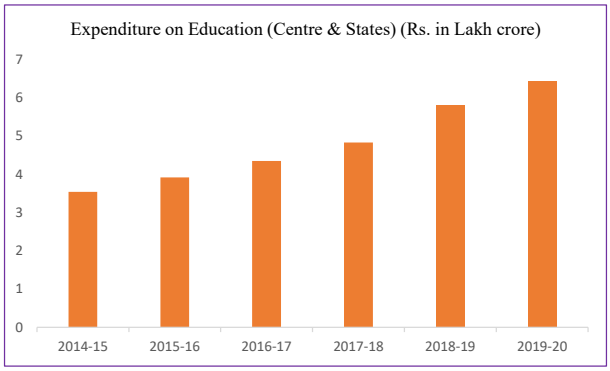
NEP therefore, envisions comprehensive approach to transforming the quality and quantity of research in India. This includes definitive shifts in school education to a more play and discovery- based style of learning with emphasis on the scientific method and critical thinking. To build in a synergistic manner and to thereby truly grow and catalyse quality research in the nation, NEP envisions the establishment of a National Research Foundation (NRF).

The NRF will provide a reliable base of merit-based but equitable peer-reviewed research funding, helping to develop a culture of research in the country. The NRF will competitively fund research in all disciplines. NRF will operate with a unique Hub and Spoke model, with the National Mission Projects (NMPs) as Hubs and a network of interconnected Institution's Innovation and Research councils (IIRCs) located across identified Higher Educational Institutions (HEIs) as Spokes. The NMPs will be 25 and each NMP will be attached to 80 IIRCs within its proximity. Thus, a total of 2000 IIRCs will be established within 25 NMPs.

Public Expenditure

India's public education spending has not been enough to either attract foreign talent to the country or develop indigenous top brains, a recent World Talent ranking report 2019 by IMD showed. India spends less on education per student, and the quality of education also remains dismal in the country according to the IMD report. This has resulted in a massive dip in India's world talent ranking and the country is just ahead of four other nations in attracting and retaining top talent. India was ranked 59th among 63 countries in the 2019 IMD World Talent Ranking released by International Institute for Management Development, a Switzerland based business school. In 2019, India slipped by 6 places as compared to 53rd rank in 2018 edition of this global annual list. Switzerland topped the list. India is also lagging behind fellow BRICS countries – China ranked 42nd, Russia (47th) and South Africa (50th). This is where country stands globally when as per Economic survey 2019-20, combined (Centre & States) expenditure on education has been continuously increasing as given in Figure 6.

Figure 6: Expenditure on Education



(Source: Economic survey 2019-20)

NEP also highlights that public expenditure on education in India has not come close to the recommended level of 6% of GDP, as envisaged by the 1968 Policy, reiterated in the NEP-1986 and further reaffirmed in the Plan of action (PoA)-1992. The current public (Union& States Governments) expenditure on education in India has been around 4.43% of GDP and only around 10% of the total Government spending is towards education. These numbers are far smaller than most developed and developing countries. The policy recommends to increase the public investment in Education sector to reach 6% of GDP at the earliest.

Way Forward

Padma Vibhushan Prof. Krishnaswamy Kasturirangan led National Education Policy drafting panel has accomplished its job and handed over a well drafted National Education Policy document to the Country. The Cabinet has accorded approval to the Policy and implementation has actually started with the rechristening of MHRD as Ministry of Education (MoE). The Policy contains rigorously thoughtful interventions like consolidation, multidisciplinary, flexibility, autonomy and enhanced focus on research & innovation, all of them have been widely recognized as the principles of highest quality across the higher

education fraternity globally. The policy provides a time frame of 20 years subject to the various recommendations. The real outcome of this entire process will definitely depend upon the implementation of the policy in letter and sprit by Union and States Government in best collaborative manner. Now, Governments (Centre & States) would come forward with the roadmaps of implementation, since education being a subject of concurrent list, the Centre-States team-India & cooperative federalism spirit will a play prominent role in the policy-implementation, that trulyought to be the final destination of all the recommendations, for a lot of them, the Country has been waiting since long.

Note

The views and opinions expressed in this article are those of the author and do not necessarily reflect the official policy or position of any agency of Government of India.

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Understanding Plagiarism for Ensuring Quality Original Work

Mushtaq Ahmed I Patel* and Mohasina Anjum A Ansari**

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-Rain Bojangles

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Historical Perspective

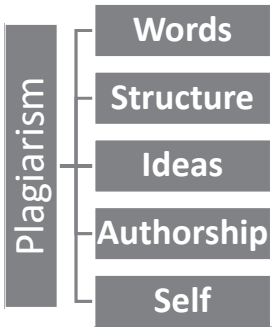
According to Pennycook (1996) the text ownership or authorship is a western notion. He also identifies three dominant paradigms of plagiarism as pre-modern, modern and post-modern (Kearney,1998). Before modern era it was believed that the knowledge belonged to God and benefitted whole society. In post-modern era western thinking replaced God with human as the source of imagination (Introna et al, 2003) cited in Dahlia (2009). According to Mallon (1989) cited by Park, C (2003) the Elizabethan playwright Ben Johnson was the first person to use the word plagiary, which mean literary theft at the beginning of the 17th century. The word 'Plagiarism' is derived from the Latin word 'Plagiare' which means 'to kidnap or abduct'. What Thomas (2000) called 'textual misappropriations 'became much more common as mass produced books, became more widely available and there was more material to steal from (Park C, 2003). Barnhart (1998, p.801) traces the etymology of the word plagiarism ('literary theft') from the earlier English word plagiary ('one who wrongfully takes another's words or ideas), derive from the Latin plagarius ('kidnapper, literary thief') from plagium (kidnapping) from plaga (Park C 2003, p-472). Some rhetoric of plagiarism are 'the unoriginal sin' (Colon, 2001),'Sin... against originality' (Anonymous, 1997) and 'a writer's worst sin' (Miller, 1993), 'a cancer that erodes the rich legacy of scholarship' (Park C 2003, p-472).

All the above definitions of plagiarism are pointing towards unethical, immoral act which involves stealing of others work and presenting it as our own. Even though ideas, concepts and words are not tangible items but stealing of these is also a crime. The consequence of this crime is very dangerous for the whole world of academics as this directly snubs the creativity and originality of budding writers and researchers.

Types of Plagiarism

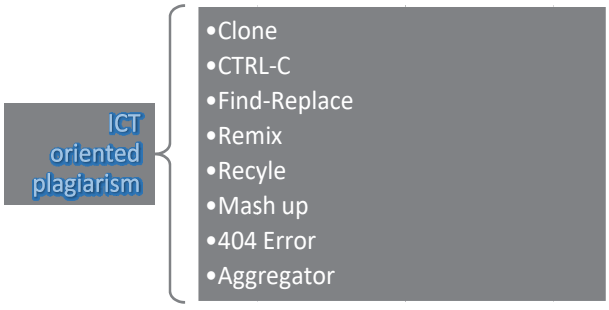
Basically, plagiarism is a process of stealing others work but it has different ways through which intentionally or unintentionally the people are committing this folly. Types of Plagiarism is depicted in Figure-1. Types of plagiarism mentioned by Theresa Ireton (2009) are discussed below. These types give us an idea where and how plagiarism occurs, so that novel writers can avoid to commit these mistakes.

Fig. 1. Types of Plagiarism



- ***Plagiarism of Structure***: Paraphrasing others' words by changing sentence construction that is just by using synonyms for the existing content. For example, many research scholars are very easily paraphrasing the content of other authors even scholars are paraphrasing the whole dissertation available on the websites and submitting the same. Internet is playing an instrumental role in the whole process of stealing.
- ***Plagiarism of Ideas***: This is taking away others' ideas as one's own without giving the person credit that means the whole idea of someone is stolen without acknowledging the main author. For example, the debutante Harvard student Kaavya Viswanathan was hoping for her first book, How Opal Mehta Got Kissed, Got Wild and Got a Life, was pulled down for being very similar to author Megan McCafferty's book Sloppy First and Second Helpings. Some of entertainers like film makers are accused of using others' ideas without proper acknowledgment.
- ***Plagiarism of Authorship***: This is tuning in a replication of others' work which also means reproducing others' work without their consent.
- ***Plagiarism of Self***: The use of one's own previous work for a new assignment. The use of previous original work in one's own new assignment is plagiarism of self-work. For example, a Rhodes Scholar with a writing job at The New Yorker, Lehrer was a rising star in the literary world. In June 2012, a few writers noticed that Lehrer had recycled some of his own previous material in several new blog posts for The New Yorker. The investigations on his new works resulted in a finding that Lehrer just modified his quotes in his Bob Dylan book, "Imagine," and plagiarized material in his writing for Wired.
- ***Reverse Plagiarism***: It refers to falsely giving authorship credit over a work to a person who did not author it, or falsely claiming a source supports that the source does not exist. There is rare incident of reverse plagiarism cases in literature and serious research. However, some students do this kind of plagiarism when they don't get the relevant source for references. The advent of social media like WhatsApp has increased reverse plagiarism. A few Urdu couplets are found to be attributed unknowingly to famous Urdu Poet Ghalib who originally did not author it.

Fig 2. Showing Methods of Plagiarism in ICT Era



- ***Accidental Plagiarism:*** Usually students commit this mistake in hurry. They unintentionally paraphrase and forget to mention the source or neglect proper citation etc. But anyway, whether it is intended or unintended this act is considered

as a theft and consequent material is known to be plagiarised.

Further another author Ramesh C. Gour has presented different techniques of plagiarism through which this intellectual crime is being carried out in the higher education institutions in present Information and Communication Technologies (ICT) era (Figure-2).

i. *Clone*: The cloning is submitting others' work, word-to-word, as one's own for example just replacing original author's name by own name.

ii. *CTRL-C*: This type of copied material contains significant portions of text from a single source without alterations. In this a part of the text is copied as it is and pasted in the document without attributing the author.

iii. *Find – Replace:* Here writer uses changing key words and phrases but retaining the essential content of the source is another way. Here the text changes but idea remains same, and original author is replaced by some other name.

iv. *Remix*: The writer paraphrases from multiple sources, makes it to fit together. That means writer is paraphrasing different text of different authors with same theme and claiming as own.

v. *Recycle:* Here one borrows generously from the writer's previous work without citation. This means repeating the same ideas of previous writing of one's own in new writing.

vi. *Mash up*: Mixes copied material from multiple sources this means copying from different sources but on single theme and claiming as own. It is difficult to detect such plagiarism easily.

vii. *404 Error*: Includes citations to non-existent or inaccurate information about sources this means giving improper references about the information.

viii. *Aggregator:* Includes proper citation to sources but the paper contains almost no original work. According to this the author is simply giving the reference without using the information in the paper.

The increased publication business in present circumstances has increased such ICT oriented plagiarism.

Plagiarism Perspective in Global Context

The rules and policies of plagiarism vary from country to country. According to Glendenning (2013) in Germany, it is mentioned in an unpublished report that 40 per cent of respondents admitted that they regularly cut and paste from sources without citing and referencing. In Impact of Policies for Plagiarism in Higher Education Across Europe (IPPHEAE) survey 11 per cent teachers admitted they may have accidently or deliberately plagiarised at some time previously. At post-graduation level they have set percentage-wise plagiarism and their respective actions to be taken. In France also a set pattern is there for plagiarism for example depending on percentage of content plagiarised, appropriate action is suggested, and more and more French universities are adapting anti-plagiarism software. The United Kingdom's Quality Assurance Agency (QAA) for Higher Education is more stringent. The Agency includes fraud, collusion, cheating, impersonation, and the use of 'inadmissible material' in their definition of 'academic misconduct'. This includes material which is downloaded from the Internet without proper acknowledgment. Copyright is a property right that gives the owner the exclusive right to exploit a work. The Copyright Designs and Patents Act 1988 (CDPA 1988) governs UK copyright law. One of the main differences between copyright and plagiarism is that copyright generally does not protect ideas, only the expression of those ideas.

Chinese pedagogy is influenced by Confucius and according to Confucius teachings, students are taught to respect those who provide knowledge. In China, students are expected to memorize and repeat classical text in school. Students are made to understand that knowledge belong to society as a whole and not to the individual alone. They are also taught that it is a disrespect to their teachers or readers if they cite their sources as this may imply that he or she did not already know the source. But technically theft of intellectual property is illegal in China. A study by Ramzan et al. (2012) reveals that Pakistan's graduate and postgraduate students fall into society and family pressures to get higher grades, and thereby improve achievement which in turn helps in getting employment and better status in the society. Due to these pressures, students get involved in unfair means such as plagiarism, as a short cut to perform better in exams and also they

produce greater number of publications of their works. It is not enough to create only awareness among the students about plagiarism or train them to improve their writings, the society should stop pressurizing the students for good marks or good jobs they should encourage for true learning and provoke for creative thinking. Tayraukham (2009) cited by Ramzan et al. (2012), conducted a study in Thailand where they found that students plagiarized to gain prestige in society and jobs. When under pressure, a significant number of students responded that plagiarism is the last resort to come up to the university expectations to publish research and complete assignments in time. The burden assigned to students by teachers in the form of lengthy assignment, a greater number of publications and project reports expected within a stipulated time frame are motivating students to resort for short cut methods of plagiarism.

Context of Plagiarism in India

Plagiarism exists in various forms in India. We need to understand the causes of plagiarism and try to solve these problems. When we closely look at the education system of the country, it is found that Plagiarism does not start at higher level of education, seeds are sown in childhood at primary and secondary level. During primary schooling, teachers asks the student to write the answer as exactly as in the text book, otherwise there is a threat to lose marks. This practice is gradually leading the minds of student just to memorise from books and reproduce in the exams. Students think textbooks are ultimate source of error free content. When students enter higher education, they carry forward in their mind habit of memorization and copying from books. Thus, they cannot write on their own and unintentionally commit the offence of plagiarism.

Tools and Techniques to overcome Plagiarism

Dawson and Overfield (2006) found that students were aware that plagiarism is bad, but they were not clear of what constitutes plagiarism and how to avoid it. Just announcing the penalties and actions about the plagiarism among students cannot stop them from committing this mistake, they need to understand the severity of this offence, for which there is a need to plan proper strategies and create awareness among the students. First of all, at lower level of education like primary and secondary, more emphasis should be given on writing skill and creative writing that makes them confident in writing. Teachers should encourage students for writing on their own rather than precisely copying from textbook. If someone writes by one's own, he/she will understand the importance of own write-up and others as well and thereby they will never like to borrow someone else's writing or idea without proper attribution.

Plagiarism can also be curbed by using Plagiarism detecting software, in which a file can be uploaded in the software, then the software compares the content of uploaded file with other files on the Internet and then gives the result of plagiarised material. According to Jagadish, J and Venkatesh (2016) following are the plagiarism Tools for detection of similarity of Contents: i. Ithenticate, California, USA. ii. Turnitin, California, USA iii. Write Check, California, USA vi. Viper, England v. Plag Aware, Ulm, Germany vi. Plag Scan, Germany vii. Urkund, Sweeden viii. Docoloc, Germany ix. Plagiarism Checker X, New York, USA x. Plag Tracker, Ukranian xi. Nitya D' Arch, Kottayam/Cochin, Kerala.

Laws Concerned with Plagiarism in India

Ideas, writing and quotes are abstract things, therefore stealing these things is unethical deed or immoral activity. Persons copying this cannot be punished like general punishment given for stealing of objects or money etc. However, this is an academic crime which is leading towards poor quality of research and snubbing the creative writing; therefore, it has to stop. This academic crime is more in Higher Education Institutions of India, therefore the Highest decision-making body like University Grant Commission has approved *Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institution Regulation 2018*. The UGC released the regulation on 23rd July 2018 for students, faculty, researchers and staff of all Higher Educational Institutions in India with immediate enforcement. If these regulations are followed to certain extent the intensity of plagiarism can be decreased.

The UGC regulation is based on four tiers or levels of plagiarism, in which the document, report or article is checked by percentage of plagiarised content (Figure-3). The first level is Level 0 in which the content "similarities up to 10 per cent," would

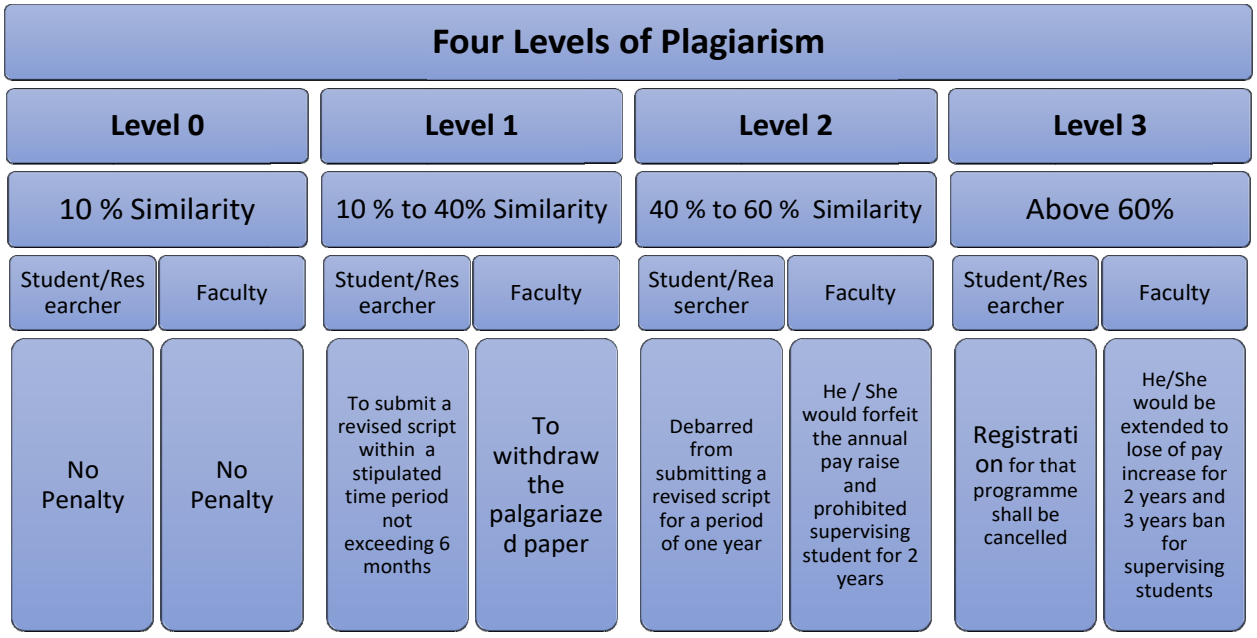
carry no penalty for both student and faculty. The second level is Level 1, in which 10 per cent to 40 per cent of a document is plagiarized, would require students to submit a revised manuscript (thesis) and faculty members to withdraw the plagiarized paper. The third level is Level 2 in which 40 per cent to 60 per cent of the document is plagiarized, a student would be suspended for a year and the faculty member would be penalised as loss of pay raise for one year and prohibited from supervising students for 2 years. The fourth level is Level 3 in which if more than 60 per cent is plagiarized then his/her thesis would be removed from the program and registration is cancelled. In case of teaching faculty concerned would lose of 2 years of pay increments and a 3-year ban on supervising students.

In addition to these the higher education institutions have to form a Departmental Academic Integrity Panel (DAIP) and Institutional Academic Integrity Panel (IAIP) to investigate the plagiarism cases by academic community of the institution. The HRD Ministry has also announced the introduction of 'Turnitin' software to curb plagiarism, at Ph.D. Before submitting the Ph.D. Thesis, it is being examined through Turnitin software to ensure plagiarism free thesis. Curbing of plagiarism may work if all the Universities in India start using such software and this will result in encouragement of original work.

Conclusion

Plagiarism is an academic dishonesty, an intellectual immorality and literary theft. It is really helpful for students and faculties who want Ph.Ds and publications without any effort with less time. Thus, it is also leading our scholars' towards stealing of others works without feeling guilty. Plagiarism snubs the creativity of individuals and finishes the originality of work. Internet must become facilitator in reference and creation of original thoughts avoiding literary theft. We are aware that India is producing a greater number of Ph.Ds. and thousands of publications every year and the graph is growing at higher side only. The quantity of the research work is increasing but the quality is not improving. The creative writing skill is getting snubbed and the whole academic atmosphere is getting polluted by this intellectual crime. To overcome the issue of Plagiarism UGC has taken some initiatives and released the regulations to the higher education institutions which can curb plagiarism and promotes the clean and healthy academic environment. This is high time when the plagiarism which has polluted the higher education needs a proper treatment. Hence, the UGC regulation for Promotion of Academic Integrity and Prevention of Plagiarism in Higher Education Institutions are to be strictly adhered to. We have to build a plagiarism free academic environment for our future researchers whose innovative ideas

Fig. 3. Four Levels of Plagiarism according to UGC (2018)



will contribute to the education system of India and abroad.

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COVID-19 CONCERN

An Appeal to Readers

The outbreak of COVID-19 commonly known as Novel Corona Virus has engulfed the entire world. The pandemic has emerged as one of the biggest ever faced by the human race. With great concern, University News appeals to its subscribers and readers to stay alert and cooperate with the government in adhering to all the social and health advisories issued from time to time. By being careful and cautious, we can beat the virus by breaking the chain and prevent it from spreading further.

We wish all the citizens of India, our subscribers and readers the best of safety and health, and appeal to each one of us to show solidarity in this hour of adversity.

#LetsBeatCoronaTogether
Stay Alert, Stay Safe

EDITOR

Higher Educands in India: An Employability Perspective

Md Nijairul Islam*

"Educated people have higher wages and lower unemployment rates,…But going to college is not enough. You also have to study the right subject."

– Alex Tabarrok
Canadian-American Economist

Higher education is a noble exercise for creation and dissemination of knowledge, understanding, and skill. However, among college and university pass-outs in India, unemployment is on the rise because these graduates and post-graduates lack employability skills. The main responsibility goes on what is taught and how it is taught in our Higher Education Institutions (HEIs). If we can re-configure higher education in such a way that students not only master the domain-knowledge, but also can apply it to solve real-life problems, we will be able to produce a new generation of educated and skilled youth. This article attempts to understand the current scenario of higher education in India, situation of skills-learning and employability among higher educands, the need of nurturing employability skills, reasons for their low employability, and the measures to adopt for increasing employability in them. After a rigorous review of literature, it is found that the majority of college and university pass-outs lack required skills for getting jobs. This article suggests, among others, that HEIs and industries should make joint efforts to develop job-oriented curricula at different levels of higher education

HEIs in India: An Overview

India has witnessed a dramatic increase in her higher education sector in the last two decades. As per All India Survey on Higher Education (AISHE) (2018-19), we have now 993 universities, 39931 colleges and 10725 stand-alone institutions. Among these, 385 universities are privately-run. In addition to one central open university, 14 state open universities and one state private open university, there are 110 dual mode universities. There are 548 general, 142 technical, 63 agriculture & allied, 58 medical, 23 law, 13 Sanskrit and nine language universities, and the rest 106 universities are of other categories. However, the all India average of one college per 3572 eligible population (in the age-group of 18-23 years) may not look encouraging enough, given the rising population of the land, and people's aspiration for accessing higher education.

Picture of Enrolment in Higher Education Sector

Enrolment in higher education sector has increased almost four times since 2001. With a gross enrolment ratio (GER) of 26.3 per cent, India is poised to achieving 32 per cent GER as expected by AISHE. However, India's GER is lower than the global average of 36.7 per cent at present. Distance enrolment constitutes about 10.62 per cent of the total enrolment in higher education. About 80 per cent of the total enrolment in higher education is in undergraduate level programmes. At this level, the highest number of students are enrolled in arts/ humanities, social sciences, science, engineering & technology, and commerce. Enrolment in diploma programmes has shot up in the last decade – from just 1 per cent of total enrolments in 2005, it now stands at 7.22 per cent. A small share of 0.44 per cent and 0.60 per cent of the total students are enrolled at certificate and PG diploma levels, respectively. Table-1 shows enrolment in some popular programmes and pass-outs at UG level in 2018-19 academic year.

Table 1: Enrolment in Some Popular Programmes, and Pass-outs at UG Level (2018-19)

Programme	Total enrolment	Number of pass-outs
Arts/Humanities	9349287	1999248
Science	4713301	1054155
Commerce	4030886	965966
Engineering & Technology	3852188	831504
Education	1449789	554968
Medical Science	1196758	226234
Social Sciences	905315	180507
IT & Computer	747327	160100
Management	650498	140181

Data source: AISHE (2018-19)

The pie-chart 1 shows programme-wise percentage of students at UG level.

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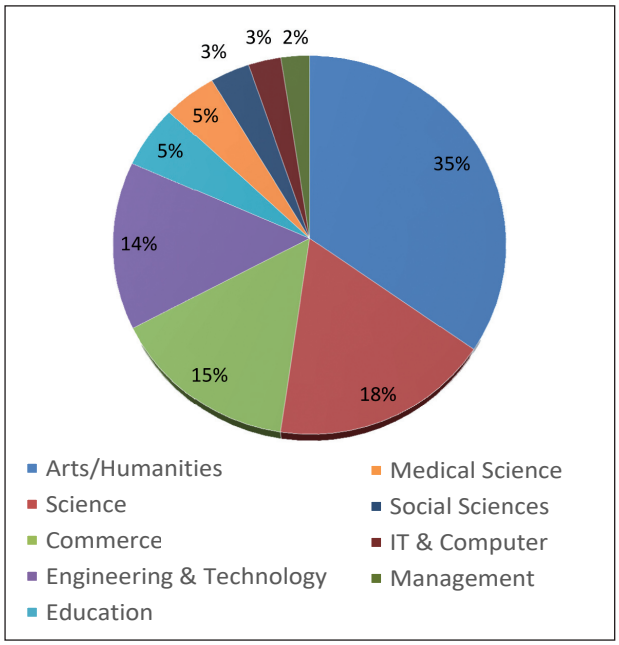
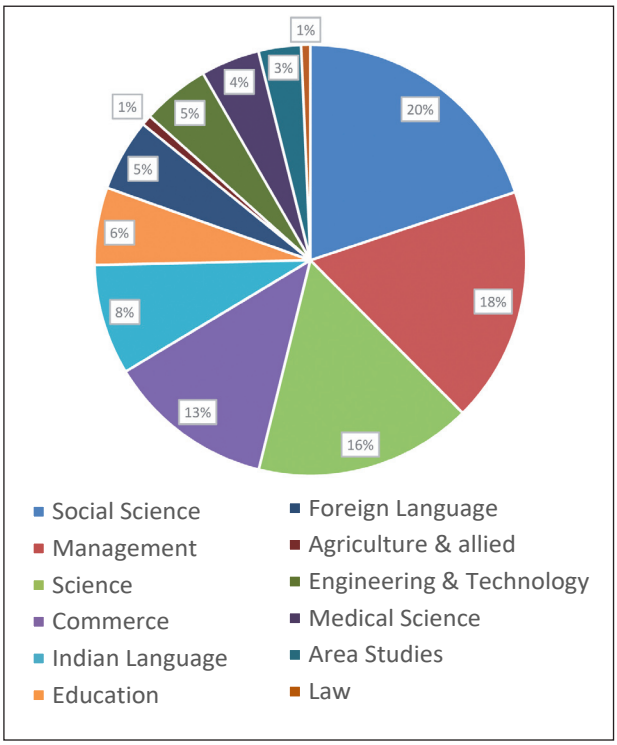
Pie-chart:1 Programme-wise per cent of Students at UG Level (2018-19)



About 10.8 per cent students of the total enrolment in higher education are in post-graduation (PG) level. A little above 9 per cent are enrolled in Ph.D., M.Phil., and some other courses. Table 2 shows enrolment at Ph.D., M.Phil., and PG level in some major programmes and pass-outs in 2018-19 academic year.

The pie-chart 2 shows programme-wise percentage of students out of total enrolment at Ph.D., M.Phil., and PG level in the same session.

Pie-chart 2: Programme-wise per cent of students out of total enrolment at Ph.D., M.Phil., and PG level (2018-19)



Question of Employment of the Pass-outs

Although education and employability are two separate constructs, it is assumed that possessing a higher degree guarantees a job.

Now obviously the question arises, whether would this large pool of higher educands be able to

Table 2: Enrolment at Ph.D., M.Phil. & PG Level in Some Major Programmes and Pass-outs (2018-19)

Programme	Total enrolment	Number of pass-outs
Social Science	715743	282518
Management	635399	220063
Science	587592	248414
Commerce	450333	160318
Indian Language	298289	133679
Education	209336	96342
Foreign Language	194702	68805
Agriculture & allied	27805	16146
Engineering & Technology	182187	81285
Medical Science	159250	49939
Area Studies	114654	44568
Law	24897	9778

Data source: AISHE (2018-19)

find jobs as per their requirement and qualification? Gone are the days when people would enter the arena of higher education for the sake of exploring oneself. The 21st century consumeristic society learners are being goaded by the motive of earning – rather securing a job – when they pursue higher studies. But sadly, all cannot secure jobs. The sole reason is that, these educated young people lack job-skills. In India, the unemployment rate among youth has been increasing, keeping a linear relation with the increasing rate of pass-outs in the higher education sector that continues to be largely substandard and has not made much impact on direct employability. Higher education, till date, depends mainly on rote-learning and gathering only bookish knowledge. Grades, grand total etc., rather than actual skills and competence, speak for excellence in the public eye. Students are simply chasing degrees, with a hope to securing a job, without acquiring the necessary job-skills. The syllabi offered in most of the HEIs care a little for nurturing these skills in the educands, in spite of the fact that globalization and digital revolution has made it imperative for the youth to imbibe these skills. Higher education in general courses often fails to equip graduates with necessary job-skills, such as critical thinking/problem-solving, communication, collaboration, leadership and creativity.

Employability Defined

In simple words, employability is the quality in an individual to attract job-givers to him. It is the ability to be equipped with needed skills, competencies and attitudes in order to be worthy of a job. Hillage and Polard (1998)opined that employability refers to a person's capability of gaining initial employment, maintaining employment and obtaining new employment if required. A widely accepted definition of employability given by ESECT (2014) held that employability is a set of achievements, skills, understanding and personal attributes that make graduates more likely to gain employment and be successful in their occupation which benefits them, the workforce, the community and the economy.

Employability Skills

Employability skills refer to ones that are required to acquiring and retaining a job. In the past, employability skills were thought to include only the academic skills or subject-knowledge. Current thinking, however, has broadened the definition of employability skills to include not only the foundational academic skills, but also a variety of attitudes. These include the ability to "solve complex, multidisciplinary problems, work successfully in terms, exhibit effective oral and written communication skills, and practice good interpersonal skills" (Robinson, Garton and Vaughn,2007). These are actually a blend of technical and soft skills. The first ones make the incumbent technically and the second ones behaviourally sound. The Future of Jobs Report (2018) remarked: "Proficiency in new technologies is only one part of the 2022 skill equation, however, as 'humane' skills such as creativity, originality and innovative, critical thinking, persuasion and negotiation will likewise retain or increase their value, as will attention to detail resilience, flexibility and complex problem solving. Emotional intelligence, leadership and social influence as well as service organization also see an outsized increase in demand relative to their current prominence". Some of the oft-discussed employability skills (Anonymous, 2019) are:

- ***Communication Skill*:** Ability to explain what one means in a clear and concise way through written and spoken means.
- ***Problem-solving Skill*:** Ability to understand a problem by breaking it down into relevant smaller parts, and identifying the key issues, implications and identifying solutions.
- ***Creativity, Initiative and Self-motivation*:** Having new ideas which can be transformed into a reality; showing a strong personal drive and not waiting to be told to do things.
- ***Planning, Organization, and Time Management*:** Being organized and methodical; able to plan work to meet deadlines.
- ***Inter-personal Relationship and Team Work*:** Ability to work with other people from different disciplines, backgrounds, and expertise to accomplish a task as a member of a team.
- ***Negotiation and Persuasion***: To take on board other people's feelings and express one's own requirements in an unemotional and objective fashion to achieve a desired outcome.
- ***Flexibility*:** Adapting successfully to changing situations and environments.

- ***Leadership Skill*:** Ability to motivate, take responsibility and lead other people, in order to achieve set goals.
- ***Technological Skill*:** Ability to use a range of computer packages and software, including email, word-processing, databases, spreadsheets, and internet.
- ***Numeracy Skill***: Ability to handle data to support evidence or demonstrate a point.

Besides the above-mentioned skills, some other such qualities that the employers generally look for in a job-seeker are:

- Fundamental knowledge of the discipline studied;
- Decision making ability;
- Critical/analytical thinking;
- Integrity;
- Willingness to learn, unlearn and relearn;
- Trustworthiness;
- Risk-taking ability;
- Discipline; and
- Respect for diversity.

India's Journey from Labour Economy to Knowledge Economy

At the time of Independence, agricultural sector used to contribute over 60 per cent and the service sector just 24 per cent of India's Gross Domestic Product (GDP). However, at present service sector is the largest contributor to our GDP. In 2018-19, this sector accounted for 54.40 per cent, and industrial sector contributed 29.73 per cent, while agriculture and allied sectors shared only 15.87 per cent of our GDP. (Statistics Times, February 8, 2019). These data indicate the emergence of a knowledge-driven economy in India. Given the unprecedented development in information and communication technology, a changing pattern of employability skills could be noticed at present. The executive summary of Higher Education in India: Moving towards Global Relevance and Competitiveness (FICCI Higher Education Summit Report, 2014) observed: "By 2020, 90 per cent of India's GDP and 75 per cent of employment is expected to be contributed by the services and manufacturing sectors… structural shift in employment will increase demand for sophisticated workers, innovators, and thinkers who can thrive in a globally-connected and dynamic economy." At present, with around 600 million people under the age of 25, there is seen a surge of enrolment in higher education sector, and the pass-outs are in search of opportunities in the globalized economy. The working age population (15-59 years old) in India is growing rapidly. Most of the developed countries are suffering from reducing working age population while India will add around 200 million to its workforce in next 20 to 30 years (Aiyar, 2018). Higher education is generally believed to help in developing knowledge-based economy and provide skilled manpower and training to execute specific tasks and jobs (CRISIL, 2010; Rahaman and Ramabrahmam, 2015). From the data, already given, it is true that we have enough degree-holders in our country; but they are not skilled, and hence, are not readily employable.

Present Scenario of Unemployment

Unemployment rate is highest among diploma-holders (37 per cent), graduates (36 per cent) and post graduates and above (36 per cent) (Quartz Creative, June 10, 2019). Technical programmes, on the other hand, are popular, as public think that pass-outs of these programmes find job more easily. However, there has been a decline in employability of people passing out with B. Tech., other engineering streams, MCA, technical, and computer-related courses. Aspiring Minds (2019)reported that 80 per cent of Indian engineers are unfit for a job in the knowledge-economy. According to ASSOCHAM Education Committee (India Today, February 6, 2018), only 7 per cent of management graduates are employable in India, other than the top 20 B-schools, including IIMs. AISHE, 2019 reported that, except for the IITs, some of the NITs and private engineering colleges could not make the candidates job-ready.

The organized sector, which most graduates expect to enter, makes up only 15 per cent of the job-market (Ministry of Labour, 2018). However, no job-skill training is given in these general UG programmes. Traditionally, graduates from these programmes apply for government jobs (Mehrotra, 2015). However, since the growth in enrolment has out-numbered the vacancy in government jobs, these pass-outs turn to private sectors for employment. Unlike technical colleges, only a few elite colleges have placement cells, leaving graduates ending up working in the unorganized sectors with lesser pay (ibid).

The NSS report (The Times of India, February 3, 2019) revealed that now unemployment has reached its highest level in the last 45 years and most of the unemployed are higher educated young people. One or two instances will speak volume about it. A report by The Times of India (July 11, 2017) showed that, among 300-plus applications that Malda Medical College in West Bengal received for two laboratory attendants whose job profile was to handle dead bodies and organs in post-mortem section of anatomy classes, one out of four applicants was either doing a Ph. D. or already had an M. Phil. Some candidates even had double M.A.'s and every third candidate was a graduate. More recently, The Anandabazar Patrika (September 12, 2019)reported that, for the post of 819 facility manager group III posts in Government hospitals in West Bengal, a whopping 3.5 lakh candidates applied. It meant 427.35 applications for a single post! Among the applicants, many were B.Tech., civil engineers and high-scoring candidates of science stream. All these reports are indicators of the huge army of educated youth waiting for any opening.

Results of Unemployment

We never expect our future generation carrying high-sounding degrees by their names and finding themselves unfit for job. Earning a college or university degree is of little use unless one is able to cash on it. Unemployability among college and university pass-outs is leading to their low self-esteem and depression, and that itself is an area of concern for their parents, society and the government. A nation, full of young people without employment can be a stumbling block for the upward pace of economy and the causes of various unforeseen nuisances to the society.

From Demographic Dividend to 'Talent Gap'

The present India is one of the youngest nations in the world with more than 62 per cent of the population in the working age group. The country's population pyramid is expected to 'bulge' across the 15-59 age group over the next decade. In the next 20 years, the demand of labour-force in the industrialized world will decline by 4 per cent, while in India it will increase by 32 per cent. These poses both a challenge and an opportunity. To reap this demographic dividend which is expected to last for next 25 years, India needs to equip her youth with employability-skills, so that they can participate productively to make India a developed economy (Sarkar, 2018).It sounds paradoxical that there are thousands of jobs, lying vacant, and there are millions of educated youth who cannot find their turn. A report entitled, "India's Demographic Dilemma"(The Economic Times, October 29, 2008) had estimated that India would face "talent gap" – the lack of proper skills for a career in the formal sector, as existing educational institution do not impart employability-skills.

Lacunae of Higher Education in India

The skill-gap and mass unemployment of the higher educands point to two problems – first is the lack of quality in many higher educational institutions, and the second is the lack of connection between higher education and the skills required in a workplace. The entire skill-set to hold a job has undergone change, and higher education cannot remain blind to this reality of the new millennium. Skills continue to change so much that The Future of Jobs Report (2018) argued that, by 2022, as many as 54 per cent employees will have to undergo re-skilling and up-skilling. It means that what we teach in HEIs today, will soon become obsolete if we do not plan it properly to meet the future challenges. Now, focus is being shifted from theoretical to experiential learning. Some of the serious concern raised in the tertiary sector of education are – outdated curriculum, lack of collaboration with industry, low research output, lack of quality faculty, faulty teaching-learning and evaluation methods, poor educational infrastructure including library and ICT facilities, poor planning and management skills of the leadership etc. According to the already-mentioned AISHE (2018-19) data, almost 4/5th of the enrolment in higher education is in the traditional liberal Arts, Science and Commerce streams, that have very little scope for direct employment. There is a mismatch between knowledge gained in these courses and its application in the job-world.

Reasons for Low Employability of Higher Educands in India

- Almost no or poor entry-level check for a particular educational programme. As a result, people having no flair for a certain job, undergo degree of that job.

- Being fluent in English increases the chance of getting a job. But we have kept our youth deprived from pursuing higher education in English medium.
- Curriculum is sadly backdated to meet up the demand of the day.
- Less focus on experiential learning.
- No connection between industry and academia.
- No scope to instill life skills and soft skills into the learners.
- Poor communication and inter-personal skill.
- Incompetent faculty to teach and train the learners.
- Lack of vision on the part of the HEIs.
- Ineffective evaluation system.

Measures to Adopt for Increasing Employability of Higher Educands

The challenge now facing the country is how to make our educated youth job-worthy. The following measures may be adopted to overcome this challenge:

- ***Introduce Outcome-based Education***: It is high time to move towards a more outcome-based education. In such education, students will have chances to demonstrate their competency in given areas – working through content, experiences and assessments.
- ***Allow Students Space for Self-exposure***: Focus should be shifted from teacher-talk to student-talk in the classroom. Thus, they can be exposed to presenting themselves before audience.
- ***Instill Critical Thinking and Problem Solving Skill into the Educands***: The aim of learning should be empowering students with the capacity of critical thinking. Techniques that may foster problem solving need to be stressed while teaching and evaluating their performance.
- ***Redesign Curricula***: "Knowledge doubles in every 13 months" (Fuller, 1981). The explosion of knowledge compels us to update curricula on a regular basis. While designing curriculum for any discipline, care should be taken to provide opportunities for acquiring fundamental knowledge, discipline-related skills and attitude, which the employers expect from a job-seeker. Curricula should focus on promotion of applied research, creativity, and innovation. There is a need to integrate higher education curricula to the issues of various government schemes and missions, like Digital India, Make in India and Skill India.
- ***Integrate Employment Skills into Curricula***: It is necessary to integrate the skill components into the curricula. Apart from skill specific short-term certificate/diploma courses, provisions could be made to have direct access to skill development programmes through SWAYAM, and MOOCs.
- ***Develop Global Competencies in Students***: With globalization of economy, education and human resource markets, it is important for HEIs to develop global competencies in students. Universities should make modular curricula which will familiarize students with different global cultures and social life to facilitate smooth transition from one culture and temperament to another.
- ***Role of Corporate/Private Sectors***: In the western countries, the corporate sector "give back to society" by doing some social welfare programmes, like save girl child, conversation of environment, animal rights etc. In India, few corporates have taken initiatives to shoulder social responsibilities. Time is ripe for corporate sectors to come forward to mitigate unemployment. The door to lots of jobs like chiefs, waiters, assistants, and drivers in hotel and travel industry, plumbers, fitters, electricians, mechanics, technical assistants, supportive staff in construction industries, personnel in security services and many more may be opened to our educated youth by the corporates. The corporate sector may come forward to remove the mismatch between demand and supply in the labour market.
- ***Take Steps for Industrial Growth*****:** Skill training alone would not solve the issue of unemployment unless there is industrial growth, leading to job creation in our country.
- ***Promote Linkage between Higher Education System and Industry***: Colleges, universities and research institutes across the country need to develop strong linkages with industries to ensure that the young workforce is trained on skills, knowledge and attitude.

- ***Stress on Communicative English***: Competency in verbal and written English would go a long way in securing employability of our educated youth.
- ***Nurture Soft Skills***: It is time to re-orient the system of higher education to incorporate life and soft skills to make it more inclusive and meaningful. Each degree programme can remain domain-specific, but it may be ensured that each student, irrespective of system or degree programme, must undergo rigorous training of life and skills. In order to do so, universities must allocate sufficient proportion of credit to life and soft skills, such as communication in English, problem-solving, critical-thinking, leadership etc. If in any case, it is not possible for a degree programme to incorporate life and soft skills into it, it may be made mandatory to pursue certificate courses offline or online and make up for it in order to receive the degree.
- ***Set up Skill Development Centres in HEIs****:* It is high time to open the door of vocational courses along with mainstream ones in the HEIs. To facilitate such large-scale skilling of the youth, it would be necessary to establish skill development centres in the premises of HEIs.
- ***Strengthen Quality Assurance Framework***: There is a need to improve the quality of a large number of middling quality HEIs. Assessment and accreditation for each HIEs should be made mandatory.

Concluding Remarks

Austrian-bornAmericanManagementConsultant Peter Drucker (1909–2005) once said: "Theonly skill that will be important in the 21st Century is the skill of learning new skills. Everything else will become obsolete." Higher education is a noble pursuit; it is a lofty exercise in the creation and dissemination of knowledge, understanding and skill. Higher education in India needs to make a change of goal from education for the sake of education to education for employment, by resetting vision and mission, and strategically correcting systemic disorders of the HIEs, and focusing on sustainable employability skills in order to facilitate the transition of higher educands to the world of work. If we can re-configure higher education in such a way that students not only memorize the concepts but are also able to express these concepts in an articulate way in order to solve real-life problems, we would be able to produce a new generation of educated and skilled youth who will be ever-ready for employment and can serve as driving force for development of the country.

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Weekly E- Essay Series of Scholarly Articles on Reimagining Indian Universities

A 'Weekly E-Essay Series of Scholarly Articles on 'Reimagining Indian Universities' was launched on AIU Website on 15th May, 2020 as a part of the change which AIU seeks to bring about in the academics in this day and age of COVID-19. The essays scheduled for release in this series are in a broad range of fields covering a variety of topics pertinent to 'Reimagining Indian Universities' received from distinguished experts and authorities in the area of Indian higher education included in the Book 'Reimagining Indian Universities' edited by Dr. Ms.Pankaj Mittal and Dr Sistla Rama Devi Pani. In the series, every week one scholarly article written by an erudite scholar of Indian academia is being released on the AIU Website. The series was initiated with the essay of Prof Bhushan Patwardhan, Vice Chairman, University Grants Commission, India on 15th May, 2020.

The essays are unique, enlightening and inspirational. Those who are interested in reading these essays may browse AIU *Website: www.aiu. ac.in.* ❑

Innovation: The New Age Mantra

G Satheesh Reddy, Secretary, Department of Defence R&D, Government of India and Chairman, Defence Research and Development Organisation delivered the Convocation Address at the Annual Convocation of University of Mumbai, Mumbai on 26th November, 2019. He said, "Colleges and research universities are the catalysts and facilitators for innovation and discovery. Universities, research institutes and industry should work together to bring in a *positive change*. World over, major innovations in science, engineering, technology, health or social sciences have had their roots in academic institutes. Universities send out *talent*, which is the fuel for innovation. Never before in the history of mankind has change occurred at a rapid pace as we are witnessing now. It is therefore imperative that we innovate. Else, we will be left behind." Excerpts

I deem it a privilege to speak to you at the Annual Convocation of the University of Mumbai, when we celebrate the academic accomplishments of the graduands, who will now step out into world to carve a *niche* for themselves. I commend the successful students, parents, teachers, staff and the management on this special day.

With a rich heritage of 163 years, the University of Mumbai is a premier 'Centre of Learning' in the country. I deem an honor and privilege to deliver this year's convocation address at the University that has as its alumini the 'Father of our Nation' Mahatma Gandhi, Dr Babasaheb Ambedkar, Jamsetji Tata among others. No other University would have five Bharat Ratna awardees among its alumni, and I consider myself to be fortunate to be here at such a hallowed place of education.

*Young graduands, a*s you step out as accomplished young men and women; and as citizens of our noble land, give your best in building a strong, self-reliant India. You are lucky to have received your education at a great place. Make your *alma mater* proud, with your deeds and accomplishments.

Science and Technology in the 21st Century

Let me share with you my views on the role of technology in our lives. The Science and Technology landscape has seen great changes with rapid developments in electronics, computer science and information technology. Never in the past has mankind been empowered in such a powerful manner. Technologies involving robotics and artificial intelligence, stem cell research, renewable energy generation and storage, augmented reality, space travel, space tourism and space mining, nanotechnology, anti-matter, to name a few, are beginning to play a greater role in our lives. To meet the challenges of the future, we need to constantly innovate. In fact, constant creativity, and the ability to sense new innovations and possibilities will help you stay ahead in the ever-changing world.

Innovation – The New Age Mantra

Let me take it a step further. While '*creativity*' involves '*thinking*' about new things, '*innovation*' is about '*doing*' things. The need of the hour is *innovation*, which involves *doing things* that would drive positive change in our lives. Subsequent to the industrial revolution and beyond, the paradigm was to '*perform, or perish*'. In our times, of the knowledge revolution, in addition to that paradigm, we have to perform based on the new-age adage "*innovate, or perish*".

Innovation is possible, only when we aim for excellence. Excellence in whatever we do – this is at the heart of all human achievement. From Copernicus who proposed the helio-centric nature of our solar system, to Newton to Einstein; from the ancient Indian Physician Sushruta, to Super-specialists; from Chanakya to Adam Smith to the present day experts; in all fields, man has always strived for excellence. In the highly competitive world of today, where we all run a seemingly unending race, the likely survivors are those who aim for excellence in all that they do.

The Four Es

Four *E*s drive the policies of the Government of India, for the empowerment of the younger generation. They are Education, Employment, Entrepreneurship, and Excellence. Education provided at seats of learning, like this University, would fetch you employment commensurate with your skills and academic calibre. However, entrepreneurship is a subjective trait, one that is solely dependent on how focused and single-minded a person is, to follow his/her passion and excel in the field of choice. The

passion to be *job provider*, not a *job seeker,* the passion to provide solutions to challenges – this makes all the difference.

Great thinkers have opined that '*excellence is not a journey, but a habit*'. Excellence is the result of what we repeatedly do. Excellence is driven by culture, by the environment. Academic institutes are required to make the learning environment congenial to 'aiming for excellence'. With more than 350 committed teachers, I am sure this University will help students excel on the path to excellence.

The Dream of India - A Developed Country

The dream of my teacher, Dr APJ Abdul Kalam, was to see India transform from a 'developing country' to a 'developed country'. We are now entrusted with the sacred mandate to contribute our best, in our respective areas of work, to build a strong 'developed' nation. Let us make our nation proud of us, by excelling in our chosen fields. In this context, I would mention two events in the recent past that truly represent the innovative endeavors of our scientists.

The first is *'Mission Shakti',* where a missile launched from a site in Odisha brought down a satellite in space with pinpoint accuracy. This mission was accomplished due to innovation in a number of path-breaking technologies that we worked on, and on the dedication and focus of our scientists and technicians. The success of this mission made our country only the fourth in the world possessing such capability.

The second is 'Mission Chandrayaan 2'. This mission was intended to put a lander on moon, at a place where no one – not even the USA - could do. We were almost successful in this effort – and we are sure, we will learn our lessons from this experiment. This again, was the result of indigenous innovation in critical areas. Friends, when we join hands and work together with single-minded focus, we will definitely succeed.

Colleges and research universities are the catalysts and facilitators for innovation and discovery. Universities, research institutes and industry should work together to bring in a *positive change*. World over, major innovations in science, engineering, technology, health or social sciences have had their roots in academic institutes. Universities send out *talent*, which is the fuel for innovation. Never before in the history of mankind has change occurred at a rapid pace as we are witnessing now. It is therefore imperative that we innovate. Else, we will be left behind.

Students and teachers must be encouraged to interact with research institutes in both the Government and Private sector, to get a hands-on experience with the state-of-art equipment and facilities. Incubation, innovation and research centres must be established within the campuses of learning. Proper mentoring by experts as and when needed must be provided. Establishing focused research hubs at R&D centres and academic institutes with adequate infrastructure is the need of the hour.

Students can be groomed to take up interesting, innovative projects under the *Startup India* programme. Providing required facilities and guidance will surely help them achieve breakthrough solutions.

Make in India Programme

The 'Make in India' programme of the Govt. of India encourages design, development and production of state-of-the-art systems within India, thereby encouraging in-house capability, and reducing dependence on external sources. This programme would also boost the country's exports and thereby help the economy grow. Make in India programme requires R&D institutes, academia and industry to work hand-in-hand and provide quality products and services. Focus is to be made on futuristic technologies to become a world leader. From nurturing and working on denied technologies, we need to leapfrog in capability and lead in technology. Today, the private sector already started playing a major role. In last 10 years, the private industries have graduated from mere component producers to a challenging role of developing the state-of-the-art sub systems and systems. For instance, more than 70% of the supplies for Akash missile system are coming from a conglomerate of private industries.

Friends, as confident men and women who have the important role as ambassadors of our great country, I am sure that you will put the knowledge imparted by your teachers to good use and bring laurels to yourself and your *alma mater*.

Make Innovation Your Mantra

Understand what the nation needs, learn *how to do* it, and let your deeds bring glory to you and to the country. Innovate for a stronger India.

Jai Hind!!

BOOK REVIEW

A Serious and Emphatic Account

Jayanti Dutta*

Chander, Rajesh Kumar (2019), Combating Social Exclusion: Inter-sectionalities of Caste, Class, Gender and Regions, New Delhi, Studera Press, Pages 254, Rs. 1295/

The status of Scheduled Castes in India has been in focus post-independence and several indepth studies have been undertaken to unravel different dimensions of lives of these communities surviving on the margins. This book under review is another one in the series, albeit throwing light on the dalits of India in general and of the state of Punjab in particular.

Rajesh Kumar Chander has done meticulous fieldwork in four districts and 19 villages of Punjab to create a profile of the Scheduled Caste communities by putting various pieces of the jigsaw puzzle, together.

It is well documented that the proportion of dalits (31.90%) in the total population of Punjab is highest among all the states of India and the state comprises of 39 dalit castes. The salient feature of the book is its coverage of all the regions of the state and 15 out of the total 39 scheduled castes (38.46%). When dalit profile is overlapped with the religious profile of the state which included not only the predominant ones like Sikhism, Hindus, Christians, Muslims, etc. but also various religious sects like *Dera Sachkhand Ballan*- new equations emerge. Other factors like migration to foreign shores, acquiring of educational qualifications, cultural and political assertion, implementation of State Intervention policies have definitely changed approach of the society towards dalits. More importantly, these have changed scheduled caste community's perception towards their own selves. At this important juncture in the history and politics of the country, where the government and judiciary are taking the initiative to redefine and rethink the affirmative action's for growth and development of dalits–it is highly relevant that more and more such evidence based works are produced. These could surely help the nation to correct its policies and programmes to do justice to the long suffering groups of dalits. This book thus is relevant to this contemporary reality and helps the reader to understand the findings and insights gained by the author.

In its seven chapters the book deals with eighty myriad facets of a dalit life in a Punjab village which encompasses a wide spectrum. It deals with issues of intersectionalities, religion, ownership of household assets and cattle, access to basic amenities including sanitation, educational qualifications, dropout rates, incidence of attached labour, religious sects, intercaste marriages, types of houses, indebtedness, separate Gurudwaras and cremation grounds, untouchability, gender inequality, diaspra effect, political assertion, gender discrimination, regional inequalities and impact of State Intervention Policy for Social Inclusion, etc. Some unusual aspects of dalit solidarity, autonomy of dalit *Panches* in decision making, inter-dalit discrimination have also been raised in the book.

Cultural aspects such as dalit poetry, literature, reclamation of public spaces are also upcoming aspects of dalit studies. Twenty-one caste studies of the most depressed dalits have been also produced in the book which provide a deeper peep into the dalit life and world while the quantitative methods augment the arguments put forth by the author. The book provides several such glimpses which forces the reader to sit up and notice. For instance, the sex-ratio among the dalits is evenly distributed among females and males. This in a state which is notorious for its plunging female birth rate tells a different story.

The book, with a nice get up and presentation will provide a handy documentation on dalits of Punjab and will be useful to students and researchers of dalit studies, exclusion-inclusion studies and social sciences in general. Policy makers, decision takers, authorities and intelligentsia responsible for the plight of dalits will also benefit from this book. Overall, it is a serious and emphatic account. ❑

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International Webinar on Exploring and Understanding the COVID-19 Pandemic

An International Webinar on 'Exploring and Understanding the COVID-19 Pandemic' was organized by Chhatrapati Shahu Ji Maharaj University (CSJMU), Kanpur, recently to address the different aspects of COVID-19. The Webinar had eminent speakers from across the globe. More than 1000 participants attended the Webinar which included educators from prominent universities and institutes, academicians, and research scholars from all over the world. All plenary sessions were followed by a brief questions and answers session wherein the participants interacted with the experts. Prof. Neelima Gupta, Vice Chancellor was the Patron of the Webinar. Dr. Rashi Agarwal and Dr. Sandesh Gupta from UIET, CSJMU conveners of the Webinar initiated the event with welcome note. Prof. Neelima Gupta, the Vice Chancellor, CSJMU delivered the Keynote Address on the theme 'COVID-19: Coping with Present Day Challenges'. Lamenting about the severe reality of the current situation, she discussed the process of creating a vaccine for COVID-19 that is presently going on and the significance of the convalescence period is in this process. She also pointed out the various steps that can be taken to meet the challenges posed by COVID-19 such as taking precautions issued by the Ministry of Health & Welfare, formulate effective and safe vaccines and improve our lifestyle. We can also leverage technologies and innovative solutions, bioinformatics, datasets, apps for diagnostics to fight against COVID-19.

Mr. Aditendra Jaiswal, Lead Enabler, Srijan Sanchar shared his thoughts on the volatile situation created due to the declining condition of the economy during this pandemic and 'How Should Startups Prepare to Survive Post COVID-19'. He said that a lot of businesses might be totally wiped out and there will be a demand for startups that can absorb the demands of these businesses. Three trillion worth of economy will possibly move out of China and India should be ready to take advantage of this responsibility as the supply chain of many businesses has been disrupted. He gave the example of the demand for ventilators and how India has stepped up to take up this responsibility. He discussed 'Value Added Services and Open Source Technologies' as opportunities to create products that serve the demand in the economy right now and the significance of the convalescence period. He also talked about the 'One District One Product' scheme in Uttar Pradesh and how startups can use this to empower the migrating workers and create new employments. Dr. Ruchit Agrawal, MBBS, DEM(RCGP, UK), MRCEM(UK), FACEM(Aus), Consultant, Emergency Medicine and Senior Faculty, School of Medicine, UoW. Co-Director Emergency Medicine Training, Wollongong Hospital, NSW, Australia spoke on 'COVID-19: Challenges in the Healthcare System'. He talked about the history of pandemics and the challenges with COVID-19. He said that due to high Ro and asymptomatic nature of COVID-19, it is overwhelming the healthcare system. There are limitations with wards and equipment, hospital staff is under stress. Another challenge is that patients do not come with a label or diagnosis. He talked about treatment challenges like spread of virus through O2 delivery devices, delays in results, false negatives and how some of the existing medications for chemotherapy, rheumatology, etc. can modify the virus. Hospitals preparedness includes cancelled leaves of staff, reemploying retired staff, recruiting more staff among the other steps, he said. Protecting the staff is also a priority during this pandemic. Operation theatres are closed which increases the ICO availability and more isolation wards have been created and the hospital has been divided into hot and cold zones. The society and community also helps by motivating, dedicating shopping hours to essential workers, staying home and avoiding unnecessary hospital visits.

Mr. Manav Khanna, Cloud, Identity and Data Security Product Management Leader, THALES, Texas, US and a TEDx Speaker talked on 'How to Combat Anxiety and Stress Due to COVID-19'. He said that we are living in a time of adversity and uncertainty due to the pandemic, therefore, it is important to understand the impact of this has on our mind. The thought of COVID-19 creates images and ideas of the present conditions and our mind reacts with anxiety and stress. This can cause us to create fears in our minds that might not necessarily be true. We should therefore break down our experience into outer and inner experience. Hence, we should take

control of these reactions and anxieties because any added stress makes it harder to deal with the existing stress and anxiety in our mind and to heal. This anxiety manifests itself physically as well and we should take care of ourselves by paying attention to these sensations. If we make ourselves aware of how our mind and body is reacting by observing the thoughts and the sensations that come with them, we can take care of the discomfort by directing our breathing towards it. Mr. Khanna suggested that we should take at least 5 minutes at the start and end of our day to do this because our mind may wander but the breath is a constant. He said that we can apply these tools to any situation that induces anxiety in our minds. He also pointed out that we can take the opportunity of the lockdown to focus on taking care of our minds and body. He concluded by saying that the mind comes first and the body follows and that we are bigger than our fears and if we take care of our mind, our mind can take care of everything else.

Mr Divya K S Rathore, Release Train Engineer, Elekta Ltd, UK discussed the 'Effect of COVID-19 on IT Industry'. He talked about the various sectors that will impact IT, ITeS and beyond and how there is a boom in the economy after any such intense situation as there is demand and improved credit. He discussed the outsourcing industry in India and huge IT workforce that is currently working from home. This has brought to the attention that the companies need only 25 per cent of their workforce in the office at a time. The pandemic has also affected how professional meetings are conducted in various sectors and activities like education and research, policy making sessions, workshops, online vendors, recruitments and associated networking events. He discussed these effects in detail and suggested solutions for the same. He also talked about the merits and demerits of the challenges and their solutions. In conclusion, he talked about how the fight against COVID-19 may be unpleasant but it can also be a catalyst for remarkable technical progress.

Online Workshop on Contract Management and Dispute Resolution

A two-day Online Workshop on 'Contract Management and Dispute Resolution' is being organized by National Academy of Human Resource Development (NAHRD) during November 26-27, 2020. The aim of the event is to deliver competency-enhancing learning to officials of Central Govt., State Govt., Public Sector Undertakings, Autonomous Bodies, Banks, Insurance Companies, etc. The event will address different types and facets of contracts and the rights, obligations and implications on business operations. It will introduce participants to the fundamental principles of contract management, including legal basis and purpose of a contract, structure and key contractual terms, different types of contracts and the management of the contract over its lifecycle. It will provide participants with practical understanding of contract management including strategies for improving negotiation and management of contracts over the contract lifecycle, negotiation of supplier relationships, dispute resolution, etc. The major aspects during the event are:

- Introduction to Public Procurement.
- Procurement Process and Cycle.
- Contract Negotiation and Contract Award.
- Execution of Contract.
- Role of Employer, Engineer and Contractor.
- Guarantee, Indemnity, Wagering and Contingency.
- Letter of Credit and Performance Guarantee.
- Force Majeure and Delays.
- Variation and Claims Management.
- Managing Contractual Disputes.
- Dispute Resolution Including Arbitration and Other ADR Methods.

For further details, contact Mr. Rohit Agarwal, National Academy of Human Resource Development (NAHRD), A-304, Defence Colony, New Delhi-110024, Phone- +91 9873057803, E-mail: rohit@nahrd.in.

International Conference on Equality, Diversity and Inclusivity: Issues and Concerns

A One-day International Conference on 'Equality, Diversity and Inclusivity: Issues and Concerns' is being organized by Lovely Professional University, Punjab during February 20, 2021. The prevailing intransigent global system and the left-over scars of the history has necessitated to address a person from being the just same or different to being an insider, an outsider or deviant in the prevailing multicultural society. This led to certain individuals and social groups becoming deprived or prevented from participating fully and meaningfully by virtue of their poverty, the lack of competencies, and lack of lifelong learning opportunities because of discrimination. To create opportunities and remove the barriers to reach

humans to enjoy their life in its fullest is the ultimate goal of any society. Given this context of social diversity and social inequality, the most important challenge the world face today is how to assure the equality in diversity through inclusiveness and make this world a better place to live in. The major themes of the event are:

- ***Social and Psychological Dimensions of Equality, Diversity and Inclusivity.***
- ***Political Dimensions of Equality, Diversity and Inclusivity.***
- ***Economic Dimensions of Equality, Diversity and Inclusivity.***
- ***Educational Dimensions of Equality, Diversity and Inclusivity.***
- ***Arts, Cultural and Linguistic Dimensions of Equality, Diversity and Inclusivity.***

For further details, contact Organizing Secretary, Dr. Pavitar Parkash Singh**,** Associate Dean and HOS, School of Humanities, Lovely Professional University, Phagwara, Punjab- 144411. Mobile: +91-7508144487, E-mail- pavitar.19476@lpu.co.in or *ediic@lpu.co.in.* For updates, log on to*: www.lpu.in*

International Conference on Global Approaches in Natural Resource Management

A three-day International Conference on 'Global Approaches in Natural Resource Management for Climate Smart Agriculture during Pandemic Era of COVID-19' is being organized by Shobhit Deemed-to-be University, Meerut, Uttar Pradesh during December 26-28, 2020. The Scientists, Faculty Members, Teachers, Professionals, Research Scholars, NGO's, Social Workers, Students, Farmers and others who are involved in practices and research areas related to Agricultural, Life Science and Applied Sciences may participate in the event.

Natural resource is living and non-living components of nature which are used by humans to meet their requirement. Natural resource is essential for accelerated growth and development of any nation. Since natural resources are available from the earth based on their abundance, natural resources are of two main types, inexhaustible and exhaustible. Inexhaustible natural resources which occur in such abundance that they are not like to get exhausted despite continues use, e.g., water, solar energy etc. and exhaustible natural resources which are available in limited quantity they may to get depleted by continuous and indiscriminate human consumption. Degradation of natural resource has been caused by a variety of social, economic, institutional and technological factors. Rapidly growing population, urbanization and industrial activities have all resulted in considerable deterioration in the quality and quantity of natural resources. Towards achieving the goal of livelihood security it is important to conserve the natural resources and improve the economic viability of life. However, the diverse changes and constraints as growing population, increasing food, feed and fodder needs, natural resource degradation, climate change, global warming, appearance of new threatening insect-pests and diseases, slow growth of farm income and new global trade regulations demand a paradigm shift in formulating the National Agricultural Research Programmes (NARP) to conserve natural resources and bio-diversity for achieving food security besides maintaining the ecological balance for sustainable agriculture. Natural resource management refers to the management of natural resource such as land, water, soil, plants and animals with a particular focus on how management affect the quality of life for both present and future generation. The topics of the event are:

- Natural Resources Conservation and Environment Sustainability.
- Land Resource Management and Land Use Planning.
- Management of Problematic Soil in India.
- Watershed Management and Sustainable Utilization.
- Nutrient and Bio Waste Management.
- Biodiversity (Plant/Animal) Resources and Their Conservation.
- Climate Change and Resilient Agriculture and Abiotic Stress Management.
- Environment Pollution Control and Management.
- Environment Monitoring and Surveillance.
- Sustainable Technology for Crop Improvement.
- Biotechnology, Genetic Improvement in Relation to Climatic Change and Food Security.
- Other Related Areas.

For further details, contact Organizing Secretary, Shobhit Deemed-to-be University, Meerut-250110, Uttar Pradesh, Mobile: 09760478520, 07017720161, E-mail: *gnrsaconference2020@gmail.com.* For updates log on to: *www.agriinventionjournal.com*

THESES OF THE MONTH

HUMANITIES

A List of doctoral theses accepted by Indian Universities
(Notifications received in AIU during the month of September-October, 2020)

Geography

1. Bharati, Gungan. **Bhagalpur Nagar ke vridh jansankhya kee samajik-arthik isthithi: Jansankhya Bhugol mein ek adhyayan**. (Dr. Rashmi Prakash), Department of Geography, T M Bhagalpur University, Bhagalpur.

2. Hmingsangzuala, C. **Spatial disparity in socio-economic development in District Lawngtlai, Mizoram**. (Prof. P Rinawma), Department of Geography and Resource Management, Mizoram University, Aizawl.

3. Kharat, Raju Uttam. **A study of Urban growth using GIS and remote sensing techniques: A case study of Aurangabad City**. (Dr. P A Khadke), Department of Geography, Swami Ramanand Teerth Marathwada University, Nanded.

4. Patil, Vidhyatai Shamrao. **Geographical assessment of sewage systems of Nanded City with remote sensing and geographical information system**. (Dr. Kadam Avinash Sopanrao), Department of Geography, Swami Ramanand Teerth Marathwada University, Nanded.

5. Sanap, Hanumant Sadashiv. **Spatio-temporal analysis of rainfall variability on sahyadri in Maharashtra**. (Dr. P A Khadke), Department of Geography, Swami Ramanand Teerth Marathwada University, Nanded.

History

1. Hanwate, Prem Gunaji. **British Kaalkhandateel Mahar sainkancha prakaram: Ek aitihasik abhyas (Isvi 1818-1947)**. (Dr. Pawar S S), Department of History, Swami Ramanand Teerth Marathwada University, Nanded.

2. Jayapaul, Babu Madira. **Historical review of the implementation of government initiatives for primary education to scheduled tribes: With special reference to East Godavari District in Andhra Pradesh, India**. (Dr. M Srinivasa Reddy), Department of History, Acharya Nagarjuna University, Nagarjuna Nagar.

3. Mangalagiri, Hari Prasad. **Lace work of Narsapur: A historical perspective**. (Dr. G Raja Mohana Rao), Department of History, Acharya Nagarjuna University, Nagarjuna Nagar.

4. Shivangi. **From God to Doctor: Paediatric medicine in colonial and post-colonial Uttar Pradesh (1880-1980)**. (Dr. V M Ravi Kumar), Department of History, Babasaheb Bhim Rao Ambedkar University, Lucknow.

5. Tamta, Isha. **Construction of shilpkar identity in colonial Uttarakhand**. (Prof. S Victor Babu), Department of History, Babasaheb Bhim Rao Ambedkar University, Lucknow.

Languages & Literature

Assamese

1. Sutradhar, Madhab. **Asomia ekankika natakar angik eti bisleshnatamak adhyayan: Nirbachita dahkhan ekankikar bishes ullikhansaha**. (Dr. Sumi Kalita), Department of Assamese, Bodoland University, Kokrajhar.

Bodo

1. Brahma, Bihung. **Influence of English, Assamese, Bengali and Hindi on Bodo grammar: A study in school level**. (Dr. Ismail Hussain), Department of Bodo, Bodoland University, Kokrajhar.

English

1. Amarnath. **A feministic approach to the novels of E M Forster**. (Dr. Gurudev Poddar), Department of English, T M Bhagalpur University, Bhagalpur.

2. Chandni Rani. **Nissim Ezekiel: His search for self and the design of his poetry**. (Dr. Shardendu Prasad Sinha), Department of English, T M Bhagalpur University, Bhagalpur.

3. Deshmukh, Jeetendra Nagorao. **A psychoanalytical study of V S Naipaul's Novels**. (Dr. K Rajkumar), Department of English, Swami Ramanand Teerth Marathwada University, Nanded.

4. Dhaygude, Kakasaheb Dhondiba. **Subaltern voices in the selected novels of Buchi Emecheta: A study**. (Dr. R D Kamble and Dr. M D Pathan), Department of English, Swami Ramanand Teerth Marathwada University, Nanded.

5. Hapgunde, Tukaram Rangrao. **Role of mass-media in developing English language proficiency among degree students of rural area: A study: With special reference to Hingolo District**. (Dr. D N More), Department of English, Swami Ramanand Teerth Marathwada University, Nanded.

6. Jadhav, Ashok Jagnnathrao. **A critical study of the select novels of Anita Desai, Arundhati Roy and Kiran Desai in the postcolonial perspectives**. (Dr. Gangane Atmaram Shamrao), Department of English, Swami Ramanand Teerth Marathwada University, Nanded.

7. Jain, Rajkumar Chandrashekhar. **A study of socio-cultural elements in select fiction of U R Ananthamurthy**. (Dr. B T Lahane), Department of English, Swami Ramanand Teerth Marathwada University, Nanded.

8. Kadam, Ravi Bapusaheb. **The craft of the screenplay: A critical survey of English screenwriting and analysis of**

select screenplays. (Dr. M M Nivargi), Department of English, Swami Ramanand Teerth Marathwada University, Nanded.

9. Mane, Rajabhau Sidaji. **The idea of superman in the plays of G B Shaw and Harley Granville-barker: A comparative study**. (Dr. Smita R Nagori), Department of English, Swami Ramanand Teerth Marathwada University, Nanded.

10. Pandya, Dipal Yogeshchandra. **Restoring Greenland: A study of ecological concern in selected African fiction**. (Dr. Darshana Bhatt), Department of English, Gujarat University, Ahmedabad.

11. Polisetti, C Viswanath. **Domestication and foreignization strategies in the translation of Telugu short stories into English: A case study**. (Prof. M Suresh Kumar), Department of English, Acharya Nagarjuna University, Nagarjuna Nagar.

12. Rao, Gopu Srinivasa. **A comparative study of learning results between conventional pedagogy and virtual pedagogy among the students of upper primary level of Guntur District in Andhra Pradesh**. (Dr. G Chenna Reddy), Department of English, Acharya Nagarjuna University, Nagarjuna Nagar.

13. Veliventi, Pawel. **A study of alienation in Upamanyu Chatterjee's English, August and the last Burden, Kiran Desai's the inheritance of loss and Neel Mukherjee's the lives of others**. (Dr. G Chenna Reddy), Department of English, Acharya Nagarjuna University, Nagarjuna Nagar.

14. Waghmare, Shivnarayan Subhashrao. **Indianization of English language in the fiction of Salman Rushide, Khushwant Singh, Upamanyu Chatterjee and Arundhati Roy**. (Dr. Atmaram Shamrao Gangane), Department of English, Swami Ramanand Teerth Marathwada University, Nanded.

Hindi

1. Bhatti, Arati Kantilal. **Surendra Verma ke natak: Charitroan se vyakat sandesh**. (Dr. S K Mehta), Department of Hindi, Saurashtra University, Rajkot.

2. Bibhuranjan. **Angika kahani sahitye: Ek vishleshnatamak adhyayan (Prarambh se 20vi shatabdi tak)**. (Dr. Madhusudan Jha), Department of Hindi, T M Bhagalpur University, Bhagalpur.

3. Choudhary, Amar Kumar. **Nand Kishore Naval kee alochna drishti: Ek vivechnatamak adhyayan**. (Dr. Yogendra Mahto), Department of Hindi, T M Bhagalpur University, Bhagalpur.

4. Jambhale, Rajesh Sakharam. **Mohandas Namishray ke sahitye mein dalit jeevan ka yatharth chitran**. (Dr. Ashok Jondhale and Dr. S L Munehwar), Department of Hindi, Swami Ramanand Teerth Marathwada University, Nanded.

5. Narayan, Dhepe Prashant. **Sanjeev ke katha sahitye mein upekshit samaj ka chitran**. (Dr. Ramkrishna Badne), Department of Hindi, Swami Ramanand Teerth Marathwada University, Nanded.

6. Prakash Kumar. **Kathakar Kashinath Singh ke katha sahitye mein samajik chetna**. (Dr. Yogendra Mahto), Department of Hindi, T M Bhagalpur University, Bhagalpur.

7. Puspa Lata Kumari. **Amritlal Nagar ke upanyasoan mein chitrit istri-samaj**. (Dr. Neelam Mohto), Department of Hindi, T M Bhagalpur University, Bhagalpur.

History

1. Lone, Maroti Ganpati. **Upekshit kaatkari aadivasi jeevnacha aitihasik abhyas vishesh sandarbh Uran Taluka Jilha Raigarh**. (Dr. Kondekar R S), Department of History, Swami Ramanand Teerth Marathwada University, Nanded.

Marathi

1. Ingle, Krishna Sudam. **Marathi gramin kadambriteel dushkaalthchitran: Ek vivechak abhyas: Isvi 1970-2012**. (Dr. Madhav Jadhav), Department of Marathi, Swami Ramanand Teerth Marathwada University, Nanded.

2. Pawale, Navanath Dnyanoba. **Laxman Gaikwad yanchya samagre sahityacha chikitsak abhyas**. (Dr. Prithviraj Taur), Department of Marathi, Swami Ramanand Teerth Marathwada University, Nanded.

3. Waghmare, Madhav Nagorao. **Nanded jilhyateel pryogrup lokkala va lok kalavantachey jeevan: Ek chikitsak abhyas**. (Dr. Madhav Jadhav), Department of Marathi, Swami Ramanand Teerth Marathwada University, Nanded.

Telugu

1. Lavanya, Pendyala. **Andhra Pradesh Loni aadivaseela samskruthi sampradaayalu pariseelana**. (Prof.G Krupachari), Department of Telugu, Acharya Nagarjuna University, Nagarjuna Nagar.

2. Prasadam, Srilakshmi. **Tanikella Bharani aadhyatmika saahityam-anuseelana**. (Dr. E Madhavi), Department of Telugu, Acharya Nagarjuna University, Nagarjuna Nagar.

3. Zupudi, Marjiyana. **Dr Addepalli Ramamohana Rao Sahithya vimarsha prasthanam-pariseelana**. (Dr. Ch Kalavathi), Department of Telugu, Acharya Nagarjuna University, Nagarjuna Nagar.

Urdu

1. Habeeb, Abdul Ateeque Abdul. **Iqbal kee Nazmun mein Hindustani tahzeeb ke anasir**. (Dr. Hameedullah Khan), Department of Urdu, Swami Ramanand Teerth Marathwada University, Nanded.

2. Iqbaluddin, Md Minhajuddin Md. **Marathwada mein Urdu Ghazal-wali, siraj aur Wajd ke hawale se**. (Dr. Hamid Ashraf), Department of Urdu, Swami Ramanand Teerth Marathwada University, Nanded.

Linguistics

1. Bharadwaj, Samhita. **An areal linguistic study of classifiers in Assamese Bodo and Rabha**. (Prof. Umarani Pappuswamy), Department of Linguistic, North Eastern Hill University, Shillong.

Performing Arts

Drama

1. Joshi, Anuradha Chandrakant. **Marathi Pouranik natak ani Ramayayan-Mahabharatateel istri vyaktirekha: Ek chikitsak abhyas**. (Dr. Sampada Kulkarni), Department of Drama, Swami Ramanand Teerth Marathwada University, Nanded.

Music

1. Neelam Kumari. **Sirmour Jile ke dhramik meloan ke bhakti sangeet ayojnoan mein pryukt lok vadhyantroan kee bhumika**. Department of Music, Eternal University, Sirmour.

Philosophy

1. Bhusare, Gidavari Narayanrao. **Jain ani yog darshnateel niti ani moksh sakalpana tulanatamak abhyas**. (Dr. Salunke Sunil), Department of Philosophy, Swami Ramanand Teerth Marathwada University, Nanded.

2. Hadule, Dhanraj Subhash. **Bhagwan Rajneesh (Osho) yanchey shikshnavisheyak vichar: Ek tatvik abhyas**. (Dr. Sunil Salunke), Department of Philosophy, Swami Ramanand Teerth Marathwada University, Nanded.

3. Manisha Priya. **Bhartiye Shad Darshan mein man: Ek vivechnatamak adhyayan**. (Dr. Nagendra Tiwari), Department of Philosophy, T M Bhagalpur University, Bhagalpur.

4. Rahman, Md Najibur. **Concept of man: A comparative study with special reference to Tagore and Gandhi**. (Dr. Shambhu Prasad Singh), Department of Philosophy, T M Bhagalpur University, Bhagalpur.

5. Singh, Rajesh Kumar. **Shiksha-darshan: tulanatamak adhyayan Mahatma Gandhi, John Dewey, Maria Montessori ke vishesh sandarbh mein**. (Dr. Purnendu Shekhar), Department of Philosophy, T M Bhagalpur University, Bhagalpur.

6. Tiwari, Dolly. **Swami Vivekananda ka karmyog evam Bhagavad Gita ka nishkam karm: Ek tulnatamak evam samikshnatamak adhyayan**. (Dr. Arti Kumari), Department of Philosophy, T M Bhagalpur University, Bhagalpur.

7. Yerule, Shital Rudramuni. **Bhartiye nastik darshnateel aatamvisheyak chintanacha vaigyanik drishtikonatun abhyas**. (Dr. Salunke Sunil), Department of Philosophy, Swami Ramanand Teerth Marathwada University, Nanded.

Religion

Buddhism

1. Nguyen, Van Bong. **The concept of Buddhist councils and its impact on society: The philosophical exposition**. (Prof. L Udaya Kumar), Centre for Mahayana Buddhist Studies, Acharya Nagarjuna University, Nagarjuna Nagar. ❑

teri school of advanced studies

10, Institutional Area, Vasant Kunj
New Delhi 110 070

VACANCY NOTIFICATION

POST : REGISTRAR

Applications are invited in the prescribed format from eligible and highly motivated candidates with proven track record of competence and performance for appointment to the post of Registrar on contract basis for a tenure of five-years for the TERI School of Advanced Studies, New Delhi. TERI-SAS is a Deemed to be University, established under Section 3 of the UGC Act 1956, New Delhi, vide Notification No.F.9-19/95-U-3 dated 5 October 1999. The format of application and other details, including pay and allowances, are available on the TERI-SAS website at **https://www.terisas.ac.in/registraradv.** The Search Committee may also approach eligible candidates whose application or nomination has not been received. The l**ast date of receipt** of hard copy of signed application generated online is **December 30, 2020.** Applications received after due date will not be considered.

Vice Chancellor

Shriram Shikshan Sanstha's

Shriram Institute of Information Technology, Paniv

Tal. Malshiras, Dist. Solapur 413113 (Maharashtra)

Website : www.siitpaniv.org

Email : shriram_sanstha@rediffmail.com

Phone No 02185-274011

(Affiliated to P.A.H Solapur University)

WANTED

(Permanently Non-Grant Basis)

Applications are invited from Eligible candidates for the following Permanent Non-grantable Posts

Sr No	Subject / Designation	Total vacant posts	Open Post	Reservation
1	**Principal**	1 Full Time	1	Open to all

Note: - 1) Apply giving full particulars **within 30 days** from the date of publication of this advertisement to the undersigned.

2) For detailed information about post, qualification and other terms and condition please visit **Website: www.siitpaniv.org**, **https://su.digitaluniversity.ac**

Place : Paniv
Date :

Secretary
Shriram Shikshan Sanstha, Paniv

PONDA EDUCATION SOCIETY'S

COLLEGE OF EDUCATION

Farmagudi, Ponda- Goa- 403401

VACANCIES

Application along with full bio-data containing recent photograph, telephone/Mobile no, email-ID, teaching/research experience etc. is invited by The Secretary, Ponda Education Society for its **P.E.S's College of Education (Self Financed)** from qualified and eligible candidates for the following posts so as to reach the undersigned **within 21 days** from the date of publication of this advertisement. Application must be accompanied by certified copies of statement of marks from S.S.C. and onwards and other relevant certificated including experience, change of name if any and filled API proforma with the evidence of API as applicable etc. addressed to **The Secretary, Ponda Education Society, P.O Box no 3, Farmagudi, Ponda, Goa-403401.** Applicants already employed must send their applications through proper channel. Incomplete applications will not be accepted. Break in service if any should be accounted for.

Sr. No	Posts	No
1	**Principal**	01*
2	**Asst. Professor in Education (Methodology of teaching Commerce & Economics)**	01 (Regular)
3	**Asst. Professor in Education (Methodology of teaching Marathi)**	01 (Regular)
4	**Asst. Professor in Education (Methodology of teaching Science)**	02 (Regular)
5	**Asst. Professor in Performing Arts**	01 (Regular)
6	**Asst. Professor in Health and Physical Education**	01 (Regular)

*Appointment tenure will be as per the relevant statues of Goa University.

Qualifications, Pay scale, Eligibility criteria and other service conditions are as prescribed by UGC, Goa University and Govt. of Goa, Ponda Education society and other competent authorities. Candidates should be conversant with English and use of latest technology in teaching and research. Incomplete applications will be rejected outright.

Essential: - 1. Knowledge of Konkani. 2. 15 years residence in Goa.

Desirable: - 1. Knowledge of Marathi

Kindly refer to the website **www.pescoe.com** for Educational Qualifications, Eligibility and other details of the advertisement.

(Mr. Ritesh R. Naik)
Secretary,
Ponda Education Society,
Farmagudi, Ponda-Goa

WANTED

Application are invited for the post of Principal to be filled in **Shahuraje College of Education Ahmedpur Tq. Ahmedpur Dist. Latur (Permanent Non-Granted)** Run By **Shivchattrapati Sevabhavi Sanstha Shindgi (Bk), Tq, Ahmedpur, Dist Latur (Maharashtra**) Eligible Candidates should submit their application along with all necessary document **within Fifteen Days** from the date of the Advertisement by Registered post only.

Sr. No	Name of Post	Number of Post	Reservation
01	Principal	01	Unreserved

Education Qualification:-

a) Academic and professional qualification will be as prescribed for the post of lecture.
b) Ph.D. in education and
c) Ten years teaching experience out of which at least five years teaching experience in a secondary Teacher Educational Institution.

Provided that, in the event of non-availability of eligible and suitable candidates for appointment as Principal/Heads as per above eligibility criteria, it would be permissible to appoint retired Professor / Head in Education on contract basis for period not exceeding one year at time.

The term of appointment of the college Principal shall be tenure with eligibility for reappointment for one more term only after a similar selection committee process.

Salary and Allowances:-

Pay Scales as per the U.G.C. State Government & Swami Ramanand Teerth Marathwada University's rules from time to time.
(Pay Scale Rs. 37400-67000+AGP Rs. 10000)

Note:-

1) Prescribe Application form is available on University Website **(www.srtmun.ac.in)**
2) No T.A./D.A. Will be paid to attend the interview.
3) Eligible Candidates those who are already in services should submit their application though proper channel.
4) All attested Xerox copies of certificates and other relevant document should be attached with the application form.

Address of Correspondence:-

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Thodga Road, Near Chame Garden
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Pin-413515

Secretary

Shri Vishweshwar Shikshan Prasarak Mandal's

SHIVLINGESHWAR COLLEGE OF PHARMACY

Almala, Tq. Ausa, Dist. Latur, Maharashtra

APPROVED BY AICTE AND PCI, NEW DELHI, DTE MUMBAI & AFFILIATED TO SRTMU, NANDED

WANTED

Applications are invited for the post of Principal to be filled in Shivlingeshwar College of Pharmacy, (Permanent Non Granted), Almala, Tq. Ausa, Dist. Latur run by Shri Vishweshwar Shikshan Prasarak Mandal, Almala, Tq. Ausa, Dist. Latur. Eligible candidates should submit their application along with all necessary documents **within Fifteen days** from the date of publication of the Advertisement by Registered post only.

Sr. No.	Name of Post (Designation)	No. of Post	Reservation
01	Principal	01	Unreserved

i. Essential:

1. Bachelors and Masters Degree in Pharmacy with First Class or Equivalent either in bachelors or Masters Degree.
2. Ph.D. or Equivalent in appropriate discipline.
3. Post Ph.D. publications and guiding Ph.D. students is highly desirable.
4. Minimum of 10 years experience in teaching / research / industry out of which at least 3 years shall be at the level of professor or minimum of 13 years experience in teaching and / or research and / or industry.
5. In case of research experience, good academic record and books/ patients record shall be required as deemed fit by the expert members of the selection committee.
6. If the experience in industry is consider, the same shall be at managerial level equivalent to Professor level with active participation record in devising/ designing, developing, planning, executing, analyzing, quality control, innovating, training, technical books/research paper publications/IPR/ Patients etc as deemed fit by the expert members of the selection committee.

Salary & Allowances: -

Pay scale as per the U.G.C., PCI, State Government & Swami Ramanand Teerth Marathwada University's rules from time to time.

Note:-

1. Prescribed application form is available on the University website w**(www.srtmun.ac)**
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4. All attested Photocopies of certificates and other relevant documents should be attached with the application form.

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