

ISSN 2348-084X

COLLEGE POST

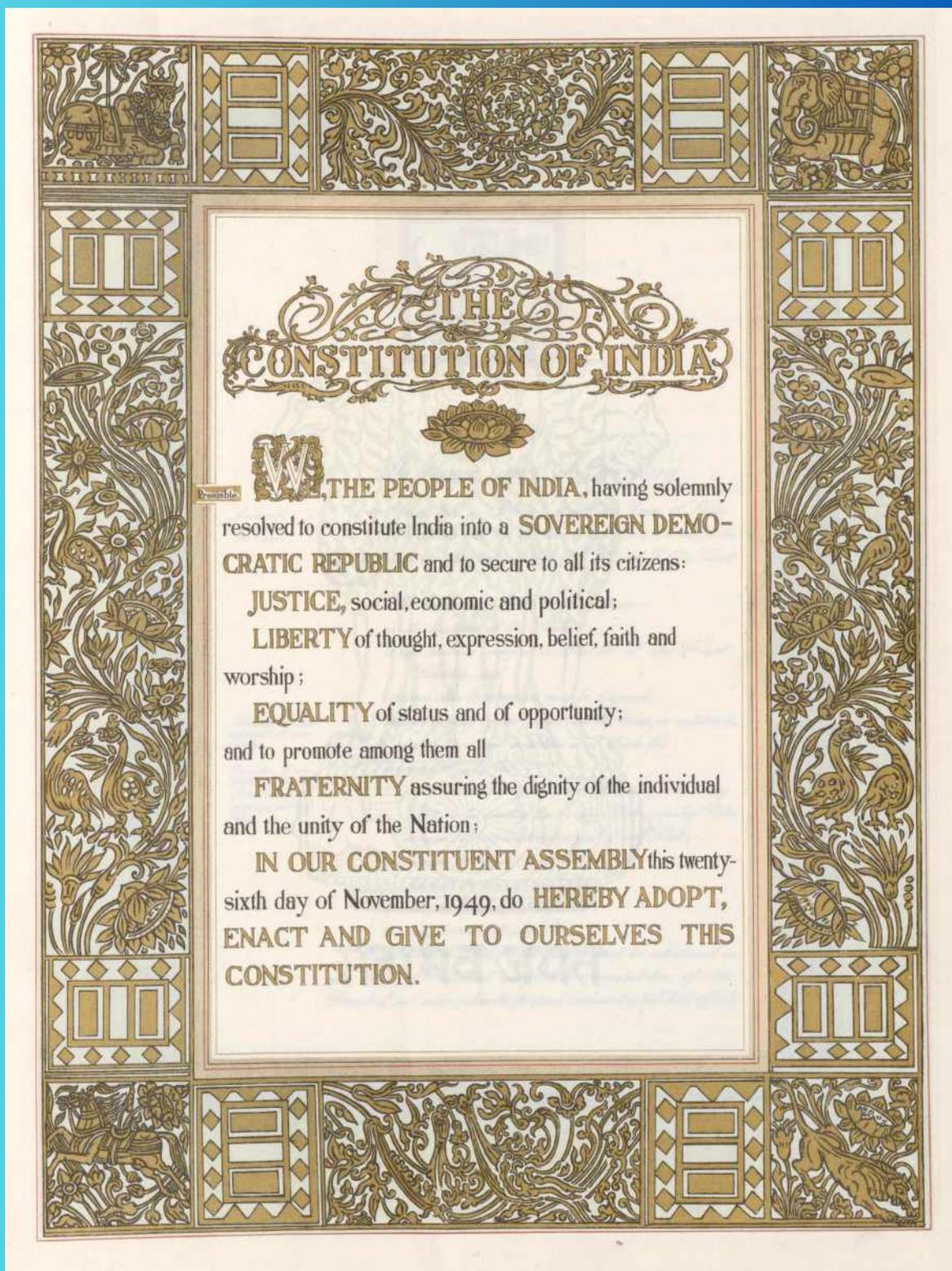
the higher education journal

VOL. 22, No. 4

October, 2023 - March, 2024



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People's Constitutional Pledge – Celebrating Constitutional Day of India– November, 26th

**SOCIETY FOR EDUCATION AND ECONOMIC DEVELOPMENT
NEW DELHI**

College Post Editorial Board :

GD Sharma, Baldev Mahajan, M.M. Pant, S. Bhushan, S.C. Sharma, Kavita Sharma & Kunal Mathur

EDITORIAL

FUTURE OF HIGHER EDUCATION - 2050



UNESCO International Institute of Higher Education for Latin America and Caribbean countries solicited the views of people through public consultation on what should be the future of higher education in 2050. Under the theme of pathways of higher education in 2050 and beyond. The highlights of this consultation are summed up in a call for action. These pertain to (1) Advocating the right to higher education (2) Addressing the barriers that limit participation (3) Open up access to knowledge (4) Strive for higher education to be more relevant (5) Empower the next generations (6) Become a futures thinker.

On higher education in 2050, the report summarized that "The message from respondents was clear: higher education plays a crucial role in individual empowerment, community development, societal progress, and global cohesion. As more people graduate from higher education, the higher level of education in societies will make sustainable development more attainable".

One respondent from Cameroon said "Higher education can be shaped as a public good and as a driver of social and economic growth. Values such as respect, empathy, equality, and solidarity should be at the core of future higher education institutions and their missions. Also, climate change and violent extremism can be tackled if we have viable and strong higher education systems and institutions." Most of the respondents flagged the aspects of affordable and quality higher education.

It reported that "Higher education for all "Is available and affordable to all" Across age groups, gender identities, professions, and world regions, there was consensus among respondents that becoming more inclusive and open to all are the most important ways in which higher education in 2050 contribute to better future." It is further said "This focus on access and inclusion generated more than twice as much attention as any other topic.

Many developing countries are struggling to attain a respectable level of eligible age group population to participate in higher education owing to several barriers that limit access to quality general and professional higher education.

NEP-2020 had projected participation of nearly 50 percent of the eligible age group population by 2035. The position of participation i.e., Gross Enrolment Ratio (GER) in higher education at present is 27 percent. A detailed analysis of the possibility of attaining the projected level of GER in higher education in India was published in the July-December, 2021 issue of the College Post titled NEP-2020 and Challenges of Achieving 50 GER in Higher Education. The article reflected on the level of gap in GER among the states and Union Territories of India and pleaded for a "strategic approach to fill this gap. The article also reflected on quality GER taking some parameters and concluded that "Adequate budgetary allocation is a challenge for the overall implementation of NEP-2020 and reaching the targeted GER and quality GER." The situation has not changed much since then. Hence the right to higher education is still a farfetched dream for India.

About" affordability and inclusive "situation is very scary. Most of the expansion in general and professional education from 2000 to 2012 was in the private sector. From 2013 to 2022 it is again in the private sector. Income inequality is increasing in society. Therefore, affordability may assume a greater challenge. It will dampen the possibility of attaining even the projected GER by the targeted date.

Yet another challenge for making higher education relevant to society and social justice is academic freedom in higher education. Professor Francis Pedro, Director of the Institute mentioned above reflecting on some questions posed to him about the future of higher education and on the aspect of "Academic freedom and participation of all stakeholders. He said "HEIs are well-placed to offer a safe space to present and assess a diversity of views and engage with society in public debates on complex issues. It is essential to protect the academic freedom of staff and students from

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Editor

G.D. Sharma

Co-editor

Baldev Mahajan

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SEED-ICF has conducted a Faculty Development Programme in Collaboration with Lakshmibai College, Delhi University, and under aegis of Madan Mohan Malviya Teacher Training Mission GOI organized by Guru Anga Dev Teaching and Learning Centre at Khalsa College, Delhi. The title of the FDP was Making Teachers Future Ready. Nearly 100 teachers drawn from Lakshmibai College and other colleges in India participated in the FDP programme. The online Programme was held from 26th June 2023 -2nd July 2023. It was addressed by very eminent persons in higher education. The programme was inaugurated by Dr. A.K Bakhshi, Director GAD TLC, and a valedictory address was given by Dr. Kavita Sharma former President, of South Asian University, Delhi. The programme was directed by Dr. P. Vatsala, Principal, Lakshmibai College, Delhi. The programme was coordinated by Dr. Anita Malhotra, Vice Principal, Lakshmibai College along with a team of dedicated teachers namely, Dr. Pracheta, Dr. Priyanka, Dr. Prasant Kumar, Dr. PP Meena. Dr. Reshma Vats of Jindal University an honorary member of SEED coordinated the programme from the side of SEED_ICF along with Sarika Wadhawan, Manoranjan Kumar, and Tejender Singh Panwar.

Professor MM Pant, Professor Patnaik, Dr. GD Sharma, and Dr. RC Sharma were an advisor to the programme. The following eminent persons interacted with the participants:

Prof. MM Pant, Dr. GD Sharma, Prof. A.K Bakhshi, Prof. K. Srinivas, Dr. Snehal Moghe, Dr. Kapil Murdia, Dr. R.C Sharma, Prof. Haritma Chopra, Dr. Rahul Agarwal, Dr. Vandna Guliya, Dr. Reshma Vats, Prof. K. Ramachandran.

Participants also attempted quizzes and assignments as part of the evaluation of the programme. Participants were awarded certificates. The programme was highly appreciated by the participants report of the same is available on seededu.org

SEMINAR ON NEP-2020 AT MEERUT COLLEGE, MEERUT

SEED- ICF in Collaboration with the Department of Bio-Technology, Ministry of Science, GOI, IQAC, of Meerut College, Meerut jointly organized a one-day seminar on the Implementation of NEP-2020 with a focus on Multidisciplinary orientation, Values, and Life Skills, and use of Technology in Education- AI in higher education. Dr. B. K. Tyagi, Secretary General was the organizing Secretary, and Dr. Anjali Mittal, Principal of the College, was convenor of the Seminar. Dr. Yudhveer Singh, Dr. Punjab Singh, Dr. Archana Sing, and several faculty members acted as coordinators of the programme. The Programme was held on 3rd December, 2023. Nearly 50 senior academics, Principals of ICF member College, and other colleges in the city attended the Seminar. The Seminar was inaugurated by Professor NV Varghese,

former VC National Institute of Educational Planning and Administration, New Delhi. Dr. GD Sharma, former Secretary of UGC, and President of SEED gave the keynote address. Dr. K. Ramachandran, addressed the delegates on Multidisciplinary Orientation of higher education. Dr. RC. Sharma spoke on use of Technology -AI in higher education. Dr. GD Sharma also spoke on Values and Life Coping Skills. Professor H.S. Singh gave a Valedictory Address. There was a very lively discussion on the themes of the seminar by the delegates.

THE SIGNING OF THE MOU WITH SKYLINE UNIVERSITY COLLEGE, UAE

SEED has signed an MoU with Skyline University College, UAE for sharing academic information, working jointly for the development of higher education, and participating in academic activities of mutual interest. The purpose of the MoU is to promote higher education in India and UAE with cooperation.

SIGNING OF MOU WITH READ, AFGHANISTAN

SEED has signed the MoU with the Research and Education Association for Development, Afghanistan to collaborate in research, Training, and quality improvement activities for school and higher education.

REVAMPING INDIAN COLLEGE FORUM

An attempt is being made to organize a meeting of state-level chapters and also constitute state-level executive committees. The fourth industrial revolution more particularly the development of Open AI, ANI, AGI, and generative AI impacted the teaching-learning process in colleges and universities. Implementation of NEP-2020 has also posed several challenges regarding converting colleges to Autonomous colleges with consolidation and degree-granting status. The concept of multidisciplinary and holistic education calls for colleges to restructure their curriculum and introduce semester and credit systems as well as any time entry and exit system. Added to this is ensuring the quality of education processes and developing internal and external quality assessments.

SEED-ICF will strive to support the member colleges to effectively respond to these challenges. First, it is done through organizing seminars in collaboration with the state chapter to understand and work out strategies to implement the NEP-2020. Also, colleges may inform the SEED-ICF of the difficulty faced by the colleges in implementing the same owing to budgetary and other ground-level considerations. We will soon start virtual consultations with member colleges about the challenges in the implementation of policy. SEED-ICF will also approach appropriate authorities to resolve some of the hurdles in the effective implementation of the Policy.

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UNIVERSALIZATION OF FREE AND QUALITY HIGHER EDUCATION- OBSERVATIONS ON THE UNESCO-IESALC REPORT AND STATUS OF INDIA

DR. G.D. SHARMA *

UNESCO has advocated for free universal quality higher education to achieve SDGs. This paper reviews the global position based on the IESALC Report and the status of higher education in India.

THE UNESCO POLICY OBJECTIVE

UNESCO since 2022 has been pleading for the right to education at all levels including higher education. In 2022 UNESCO, while advocating the right to education including higher education, stated that "To ensure this right, it is essential that HE is made freely accessible and guaranteed for all. Tuition-free public HE is an important step towards making the right to higher education a reality (UNESCO, 2022)."

A recent policy observation paper on this aspect published by The UNESCO International Institute for Higher Education in Latin America and the Caribbean (IESALC) stated that "A country's decision to make public HE free can also be considered as a signal that it strives for a highly educated population to nurture and sustain its development. Previous research has shown that the removal of tuition fees in HE increases social demand for HE and, ultimately, the level of educational attainment of the population"

This paper on the multifaceted aspect of free and quality higher education states that "Ultimately, building accessible, high-quality, and equitable HE systems requires taking a multifaceted approach that considers tuition fees, other financial and systemic barriers to HE, and the funding needs of HE institutions to conduct their missions".

The institute carried out a study in its Policy Observatory asking the following questions to member countries of UNESCO:

Which countries have mandated free public higher education through their legislation? The specific question was: Which countries guarantee free public higher education by law?

The report of analysis of this question authored by Mathias Bouckaert, states that 150 countries responded to this question. The analysis of the responses of 146 countries was done region-wise and 145 countries by

income group-wise also.

The number of countries included in each of the regions was as follows:

Arab States - 19, Central & Eastern Europe - 12, Central Asia - 8, Eastern & Pacific - 17, Latin America & the Caribbean - 22, North America & Western Europe - 20, South West Asia - 6 (This includes Bangladesh, Bhutan, India, Sri Lanka, Nepal, Pakistan), Sub Saharan Africa - 42.

The responses were divided into three groups namely,

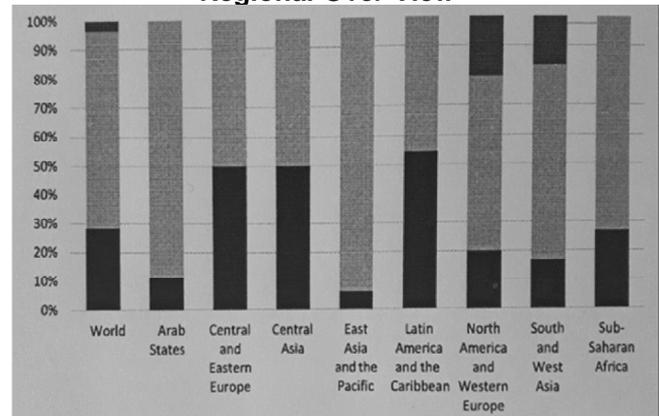
1. Free public HE is not established in the constitution or the national Laws on education and HE
2. Free public HE is established by National Law.
3. NA-Decision-making for this aspect lies at the sub-national level.

World Position

The analysis of aggregate data of the world revealed, quote "that out of the 146 countries included in the HE Policy Observatory, 41 of them (29%) legally mandate free HE at the national level, while 97 countries (68%) do not guarantee free public HE by law. In five countries, the decision-making power in this area belongs to subnational authorities (e.g., in federal systems) and the data is missing for four countries because the laws under consideration could not be found.

The World and Region position is shown in figure: 1

Regional Over View*



* Former Professor NIEPA, Former Secretary, UGC and former Director, CEC

* The figure is copied from the above-mentioned report. Deep Dark shade is showing mandated by law, Grey showing not mandated by law, and dark showing decision with sub-national level.

REGIONAL POSITION ANALYSIS

The regional position presented in the above figure in the report reveals that in Central Asia and Central and Eastern Europe, Latin America, and the Caribbean almost half the number of countries have mandated free public higher education by law. In North America Western Europe and Southwest Asia, the proportion mandating free higher education by law is less than 20 percent. But in a similar proportion of these countries, this decision lies at the sub-national level (federal government). For sub-Saharan region it is around 30 percent. The lowest is however for Arab Region and East Asia and the Pacific number of countries were very low i.e. 12 and 6 percent respectively.

THE INCOME GROUP ANALYSIS

For analysis by income groups, responding countries were put into four groups namely, low-income, lower-middle-income, middle income and high-income countries. The number of countries under these categories were:

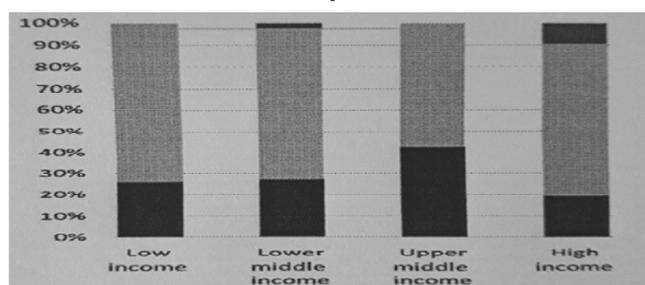
Low Income Group - 24, Lower Middle Income Group - 45 (This includes Bangladesh, Bhutan, India, Sri Lanka, Nepal, Pakistan, and other countries), Upper Middle Income Group - 33, High Income Group - 43.

ANALYSIS OF COUNTRIES BY INCOME GROUPS REVEALS THE FOLLOWING

About 20 percent of low- and lower-middle-income groups' countries have mandated free higher education by law. About 5 percent of lower middle-income group countries' decisions are at the sub-national level. Almost double low and lower-middle countries, upper-middle countries have mandated free higher education by law. Positions of countries in the high-income group are somewhat different as the proportion of countries mandating free higher education by law is a little less than low and lower-middle-income group countries. However, in nearly 10 percent of them, this decision is at the sub-national level.

The income Group position is shown in the following figure: 2

Income Groups Overview*



* Figure is copied from the above-mentioned report. Deep Dark showing mandated by law, grey showing not mandated by law, dark showing decision at sub-national level.

IMPORTANCE OF FREE AND QUALITY UNIVERSAL HIGHER EDUCATION

The issue of free and quality universal higher education assumes greater importance as the future means of production and distribution and the way the population on this planet works and lives would require a higher proportion of persons with higher education qualifications/knowledge. High-income group countries like the USA, Canada, UK, and Australia falling in the high-income group have almost achieved universalization of higher education, Irrespective of the fact that a small proportion of them have mandated free higher education by law. Therefore, mandating free and quality higher education by law and providing access to free quality higher education to all eligible age group populations is necessary to meet UN-SDG- 4 by 2030. The position of the countries in low-income and lower-middle-income group countries needs special global attention. Higher inequity in population with higher education would seriously impact the global development agenda.

POSITION OF INDIA

India had mandated free and compulsory education by the Act of Parliament in 2009 for a population up to the age of 14 years. Some of the states in India have made free higher education up to postgraduate level for girls. India also provides free education and scholarships for higher education to socially deprived sections of society. Similar provisions may be obtained in other countries too. However, the position of achieving the objective of free and quality universal higher education is very far. India has mandated achieving access to higher education by eligible age group population up to 50 percent by 2035. Five years after SDG - 4 date.

Besides global disparity in making free and quality universal higher education, there is also inter-state disparity. In India, some states have already achieved targeted access to higher education for 50% percent of the eligible age population. Many states are hovering around 30 percent.²

AFFORDABILITY-MULTI-FACETED ASPECT

Besides mandating free and quality universal higher education, the real issue is affordability, as mentioned in the above UNESCO statement on multifaceted aspects. India till its 7th Five-year plan i.e. 1985-90 followed a policy of provision of almost free higher education by providing

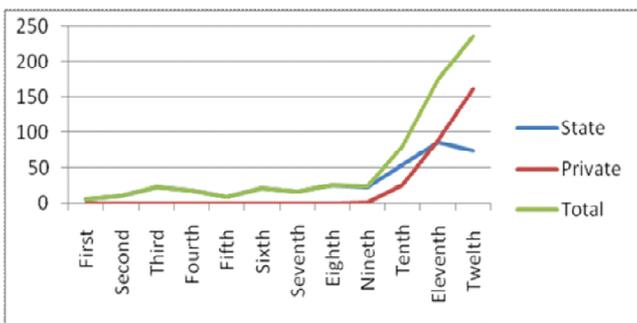
access to higher education by increasing universities in the public sector and increasing /incentivizing private non-profit sector to set up colleges. Private non-profit institutions provided infrastructure and the government gave grants in aid for working expenses and little for development work.

POST 7TH FIVE-YEAR PLAN SCENARIO

After the seventh plan, when India adopted a policy of liberalization under the Congress Government, under the influence of IMF/World Bank, adopted a slow withdrawal of state for providing access through setting up state-run and state-supported institutions of higher education. This process of liberalization picked up in the 8th plan, wherein the number of institutions added by the private sector (non-government colleges) increased. During this plan also some private colleges, earlier charging nominal fees, changed their character. This was particularly true in the field of professional educational institutions namely, Engineering and Medical Colleges by charging almost full institutional cost from students. Initially from a certain percentage of students. However, the process gained strength in the 9th plan. In 1997 Ministry of Finance, Government India brought a discussion paper on Government Subsidies in India, and investment in higher education was viewed as subsidies.³

The trend continued in the 10th and 11th Plans i.e., from the 1992-2012. First private self-financing (a term for full cost + recovery from students) university was set up in the 9th Plan. During the 10th, 11th, and 12th plan, this number increased to 25, 90, and 162 respectively. This change is visible in the following Figure 3:

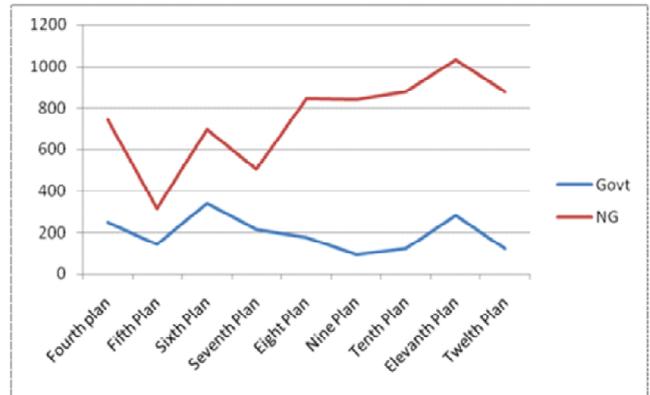
Figure- 3: Growth of State and Private Universities for over 5 years Plans -1st to 12th Plans



Source: *Impact of Policy of Liberalization on Growth and Development of Higher Education, SEED, 2020*

The increase in private self-financing colleges was also very high. The following figure is a vivid example of the same.

Figure - 4 Growth of Government and Non-Government College during 4th to 12th Plans



Subsequent governments, after the seventh plan, followed the policy of encouraging private sectors to set up self-financing colleges and universities. The state subtly withdrew from making provisions for free or least-cost access to higher education. Though public sector institutions provided access to relatively least-cost education in the Central and state-funded and/or managed institutions, their number was far less than the demand for higher education.⁴

GROWTH HE INSTITUTES DURING 2013-14 TO 2020-21

Universities: This trend of self-financing institutions of higher education continued till 2021. The Data for the years 2013-14 to 2020-21 show that the number of private universities (Self-financing) in 2013-14 were 233. This number increased to 446 in 2020-21. Thus increase was 91.4 percent over this period. Public Universities in 2013-14 were 490; it increased to 667 in 2020-21. Thus increase was 36.12 percent over this period.

Colleges: The number of self-financing colleges increased to 28467 in 2020-21 from 16485 in the year 2013-14. The increase is 72.68 percent over this period. There were 9158 public colleges in 2013-14 which increased to 15329. Thus the increase was 67.38 percent over this period. Thus the trend of self-financing (full cost recovery + from students) in Universities and colleges increased significantly during this period also.⁵

NATIONAL EDUCATION POLICY 2020

The government of India announced the National Education Policy in 2020 and attempted to implement the same. The policy does not mention universal free and quality higher education. It does mention achieving a Gross Enrolment Ratio of 50% in higher education by 2035 of the eligible age population. It also proposes to increase the allocation of education to 6 percent of GDP over a period and also increase of 20 percent allocation annually on higher education. It does mention the

commercialization of higher education will be discouraged and only philanthropic institutions will be permitted to set up institutions of higher education. It also encourages foreign universities to set up campuses in India with the freedom to charge fees to students. No specific target of expansion of public sector institutions has so far been announced to meet the requirement of GER 50% by 2035.⁶ No specific policy pronouncement has been made to mitigate the problem arising out of high education costs, except for the provision of loan facilities at the prime lending rate has. The scenario on the allocation of funds for higher education before or post NEP-2020 has not been encouraging.

THE CHALLENGE OF MEETING SDG POLICY OBJECTIVES

Affordability Per Capita Income: This scenario poses serious challenges to achieving free and quality universal higher education given the low and skewed per capita income of the people of India. The share of households by gross annual income in India in 2021 shows that 3 percent of rich households had over 3 million INR, Middle Class had 500,000 to 3 Million INR. More than half of households called aspirers (52%), had 125,000 INR. Another 15 percent of households called destitute had less than 125,000 INR.⁷ The range given for the middle class is quite large. Most of them may be clustering around the initial figure. In 2023 the average salary was Rs.31,900 INR per month i.e. 383,000 INR per annum.

Tuition Cost: The tuition fees charged by the students in good private universities range from 2-3 hundred thousand for general Arts, Social Science, and Science courses and 10-20 hundred thousand for professional courses per annum. This is hardly affordable to a largesection of the eligible age group population in the aspirer income group which accounts for almost half of the households of India. Another 15 percent of the destitute have no chance of even good schooling let alone higher education. The middle-class range is wide but with the average income being less than 5 hundred thousand per annum, it would be necessary for them to trade off between saving and dignified life and education.

STUDENTS' LOAN FACILITIES

Student loan facilities have been introduced through loans from banks at Prime Lending Rates, yet the number seeking loans is not very high. The 2022-23 (till December, 22) show a decline in applicants from 6.81 hundred thousand to 4.97 hundred thousand. 8 There are several

barriers even to seeking loans. There is fierce competition among students for public sector HE. Middle and upper-middle-income groups' parents have to spend a considerable amount on the preparation of their wards for competition for seats in public sector institutions and even for private sector institutions in professional courses.

MIGRATION FOR STUDIES

There seems to be relatively less cost of education to students if they migrate to other countries for studies for professional courses. A large number of them are studying medicine and engineering in Russia, China, and Ukraine, besides English-speaking countries like the UK, Australia, and the USA. The access provided to professional education by both public and private sector institutions in India is far less than required. There may be a certain number of students migrating for other considerations, but a good proportion does so due to a lack of opportunities to access quality higher education in India.

NEED TO RESOLVE CONFLICTING POLICY PRESCRIPTIONS

This scenario is an outcome of national policies opposite to the policy of free and quality universal higher education as proposed by UNESCO. This scenario is not typical in India. This holds for all those countries that adopted the policy of liberalization under the influence of the IMF/World Bank, which considers investment in higher education as a subsidy. And budgetary management policy of the IMF compels low and middle-income groups' countries to adopt a policy that is anti to SDG .4. There is a need to resolve these conflicting global policy advocacies.

REFERENCES

1. UNESCO-IESAC Policy Observatory Report on Free and Quality Higher Education-specific policy question which countries guarantee free public higher education by law?
2. Data have been published in the College Post issue of July-December 2021.
3. Government of India, Ministry Finance, Department of Economic Affairs, May 1997).
4. Impact of Policy of Liberalization on Growth and Development of Higher Education, SEED, 2019 Report of a study sponsored by NIEPA, New Delhi.
5. All India Higher Education Survey, 2013-14 and 2020-21
6. Government of India, National Education Policy, 2020
7. Statista-24.
8. Google Search.

College Post acknowledges the partial support of the Indian Council of Social Sciences, GOI, New Delhi for its publication - Editor

SOUTH ASIAN UNIVERSITY - A DREAM AWAITING REALIZATION

DR. KAVITA SHARMA *

South Asian University was established as a part of regional cooperation of the South Asian Region. The paper analyzes the genesis and challenges to realize the dream.

THE BEGINNING

South Asian Regional Cooperation has been an agenda for regional development through a network of countries in this South Asian Region. Accordingly eight countries namely, Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka came together and formed the South Asian Association of Regional Cooperation (SAARC) in the year 1987. Besides, other areas of cooperation one of the key aspects was cooperation in education and research for the development of the region. Accordingly, at the 13th SAARC Summit in Dhaka in 2005. Prime Minister Manmohan Singh proposed the idea of setting up a South Asian University to create regional harmony through an educational institution of excellence in South Asia. The idea was to have first-class facilities, both academic and physical. It was to attract talented faculty to build education and research expertise in all the countries of the region.

Professor Gowher Rizvi, a well-known historian and scholar from Bangladesh and the international adviser to Sheikh Hasina, the President of Bangladesh, was requested to prepare the concept paper. Professor Gowher Rizvi prepared a detailed concept paper after consultation with all member states of SAARC. The note was circulated to the member states, who agreed with it.

Consequently, the Expert Group Meeting was held in March of 2007 to finalize the modalities of establishing the University in New Delhi. An inter-ministerial agreement for establishing a South Asian University was signed on April 4, 2007, during the 14th SAARC Summit in New Delhi.

A Project Office was set up and Professor G.K. Chadha former VC of Jawaharlal University, was appointed its CEO. Following this, in several meetings, the funding modality of South Asian University and the draft Statutes, Business Plan, Rules, and Regulations were discussed and finalized. The University finally started functioning in the academic year of 2010.

* Former President of South Asian University, and former Director, IIC, New Delhi

RATIONALE, VISION, AND MISSION

The backdrop of the Region: Professor Gowher Rizvi's note is a detailed and comprehensive one. South Asia is one of the world's most populated regions, with 18 to 22% of its population being young. About 60% of the world's youth population, between 15 to 24 years, lives in this region. India has the highest number of young people below 35 years of age. This region is also conflict-ridden, with both interstate and intrastate conflicts. While Southeast Asian countries have progressed and prospered through collaboration, SAARC countries have not done so because they are unable to rise above their historical rivalries and animosities. They remain mired in

This region is also conflict-ridden, with both interstate and intrastate conflicts. While Southeast Asian countries have progressed and prospered through collaboration, SAARC countries have not done so because they are unable to rise above their historical rivalries and animosities.

conflict, wasteful wars, and persistent efforts to impoverish and beleaguered each other. There have been extraordinary individual achievements and success stories from the SAARC region, but the region remains impoverished. Almost 45% of the region's population lives below the poverty line. It is ranked low down in most human development indicators. Gender inequalities are rampant, leaving 50% of the workforce unemployed or in unpaid employment.

Poverty and inequality are, for human development, factors for a fertile ground in which religious extremism and intolerance breed. The memories of partition and consequent animosities have not diminished. Bangladesh's second partition and creation have only created further insecurities and a lack of trust. Prejudices, as Prof Gowher Rizvi points out, have been passed from one generation to another, and these remain embedded in the psyche of young people because they have so little contact with each other. There are no opportunities to meet, and no personal bonds are formed. Their mindsets are moulded by prejudices embedded in textbooks, hostile propaganda, and jingoistic nationalism.

The Rationale: Yet when one visits the countries of SAARC, the people-to-people goodwill is palpable. If the hostilities between governments can be overcome, developing a more peaceful and cooperative relationship between the neighbors may be possible. If one goes back to the time before the colonial period, what emerges and often gets obfuscated is the region's shared culture, history, and civilization. These countries have shared

history, music, art, architecture, philosophy, literature, preliminary traditions, and a syncretic culture.

Vision: The South Asian University is supposed to build on this and shape future leaders and citizens by providing world-class education to bring about peace and progress in the region. A world-class university of academic excellence in the region with highly skilled young people who have forged bonds with each other is expected to contribute to a peaceful and powerful future for South Asia.

As Rizvi says, the University must make strategic choices to achieve these ambitious goals and create the greatest impact by focusing on leadership development in the shortest possible time. The financial investment in such a universal would be high. Still, the proof of the return on the investment will be the ability of the students to contribute far more than their numbers to South Asia in different fields and sectors.

The final mission and vision of South Asian University have been culled out from the above backdrop and aspirations, and these form the basis of the vision statement. Many of these expectations can at best said to be aspirational but far removed from ground realities.

Expectations: It is now a truism to say that the 21st century is a knowledge-based society. Leadership in higher education would lead to leadership in the global polity. Hence, South Asia would have to be both a consumer and a producer of knowledge. Extraordinary talent exists in South Asia, irrespective of the financial status of the people. The university would have to nurture talent wherever it is found, irrespective of the person's economic ability. Talented and meritorious students would not be denied admission because of their inability to meet the cost of higher education in South Asian Universities. Hence, compelling regional needs were stated for establishing South Asian University.

REGIONAL DIVERSITIES

South Asia is a region of extraordinary diversity and plurality. Its education system has pockets of excellence, but a major part of the higher education provided in this region is mediocre, churning out graduates that swell the ranks of educated unemployed. They cannot find local employment, much less compete for employment globally. There are many reasons for mediocrity in educational institutions. But the most fundamental is rigid bureaucratic control that stifles academic autonomy, quality, and creativity.

The region also has low access to higher education. Hence, many are left out without opportunities to gain higher education. Those historically disadvantaged still struggle despite affirmative action policies. The rise of the private sector has created its complexities and widened the gulf between the rich and the poor in their ability to access higher quality higher education. Most

higher education institutions are in urban areas, creating an inbuilt bias against rural areas.

South Asian University is supposed to provide opportunities to this large group of deprived students in South Asia without lowering its academic standards. This is a tall order because higher education institutions are affected by the quality of school education. The quality of school education is uneven, both within individual countries and between countries.

OPERATIONAL ASPECTS

Students Admission: The admission test, conducted by the South Asian University, simultaneously in all eight countries, manifests the differing levels of competence reached in various countries. Also, since the university has postgraduate courses alone, the quality of undergraduate education, too, must be considered. The admission intake from different countries has to be done, but the admission test marks have to be moderated according to the students to be taken from each country. This naturally results in moderating standards at the entrance levels and also in classrooms to allow all students to comprehend the subjects taught in the classes. With the diversity of standards in a class, the pedagogy has to be continuously adapted to take everyone along.

Gender Aspect: Furthermore, the region has a high degree of gender inequality. While the number of women entering higher education is quite high at the undergraduate level, many get denied access to quality education. It is easier for boys than girls to move to boarding houses and city hostels. Hence, some opportunities are limited. Socially restrictive practices exacerbate these. Today, we also see an increasing number of even middle-class families from South Asia sending their sons abroad, often after making great sacrifices. Comparatively, fewer girls get the same opportunities. The lack of access to quality higher education reinforces the traditional subordinate status of women in South Asia. The university is expected to provide opportunities to girls not available in their countries. This is idealistic as few girls, denied the same opportunities as boys, could travel to a coeducational institution and live independently.

MIGRATION AND BRAINDRAIN ASPECT

Most students who go to Western countries for higher education do not return to their home countries after completing their education. It creates a brain drain, which is currently rationalized as a brain bank/ circulation. However, it is a loss to the sending country in whatever way it is seen. The South Asian University is expected to provide the same opportunities as the best universities overseas, thereby retaining talent.

Attracting Talents: It is also expected to reverse the

brain drain by attracting academics from SAARC who have gone abroad to seek teaching opportunities at the university and other regional higher education institutions. This expectation is unrealistic because academics teaching at prestigious institutions abroad usually find relocation difficult.

It is not only the attractiveness of the job that makes a person relocate but also the general living conditions, environmental conditions, employment opportunities for the spouse, children's education, loss of social interaction, and others that also count. Even within the region, people find it difficult to relocate elsewhere after a certain stage in life and career. This is borne out in South Asian University. Very few academics from SAARC have been attracted to join the University. Looking at short-term assignments like a semester rather than regular faculty from outside India may be more realistic.

Hence, South Asian University is supposed to respond to a multiplicity of needs and problems in the region. These are unrealistic expectations, at least in the short term. Many of them are beyond the scope of the University, like the economic growth of countries, their development of world-class infrastructure, or the reversal of brain drain. Even to attain world-class standards of teaching and research with varying standards of academic competence at the entrance level is a tall order.

THE MISSION PROBLEMATIC

The diverse expectations from the South Asian University exist in the intergovernmental agreement between the SAARC member states by which the university is to be established and in the university's vision statement.

The university will enhance learning in the South Asian community and promote an understanding of each other's perspectives to strengthen regional consciousness and bring about regional harmony and consequent progress. It will provide liberal and humane education to South Asia's brightest and most dedicated students to nurture a new class of quality leadership. It will enhance the capacity building of South Asian nations in science and technology, especially in information technology, biotechnology, earth and environmental sciences, medicine and management sciences, and other vital areas to improve the quality of life in the region.

THE CHALLENGES

Curriculum: The first academic challenge to be met is the framing of the curriculum. Apart from differing levels of educational attainment, there is the question of mindsets. Curricula in national universities in the region are designed to reinforce a strong sense of nationalism. The countries have fought wars with each other, and this, too, is reflected in the curriculum. Teachers and students are both shaped by that spirit of nationalism, which can

also become narrow. It is to be found in textbooks and pedagogy. By the time the students enter the university at the postgraduate stage, they already have a particular mindset shaped by their countries' learning and teaching processes. This is true of students from all the SAARC countries. Different countries interpret the same events in history and politics in different ways. The challenge in front of teachers and students is to turn their minds from the nation and learn to look at the region as a whole, shedding narrow nationalistic perspectives. This requires a conscious effort, but true regional consciousness begins from there.

Research: The university is proposed to be research-based. The research will be the nucleus of the teaching-learning process. Junior faculty will be encouraged to conduct research for which the University will provide the seed money. In addition, some innovations will be made to encourage interdisciplinary and multidisciplinary research. One is a think tank within the university, the Institute of South Asian Studies, and the other is the Interdisciplinary Research Centres. These entities will research relevant and challenging issues from a regional perspective and attempt to evolve shared approaches to solving these problems. By integrating teaching, research, and creativity, the goal will be to make South Asian University the premier research institution in the country and one of the leading research institutions in the world. It will also create a South Asian community of intellectuals, expanding mutual trust and appreciation of one another's problems.

STRUCTURE -FUNCTION DICHOTOMIES AND PERFORMANCE OF UNIVERSITY

As of now, the university has not lived up to its promise. There are several reasons for this. One reason that has been advanced is that the university campus is in the capital of India.

Concept of multi-caucuses: Professor Imtiaz Ahmad of JNU said that perhaps it would have been better to have different faculties located in different member countries, according to the potential. According to him, the university should have been physically removed from any capital, let alone the region's most powerful one.

A mechanism like South Asian University Grants or Higher Education Commission could have been worked out for its governance, which could have been in any of the capitals of a member country. This would have required an unknown mechanism that would have needed a different mindset, administrative and bureaucratic creativity, and mutual trust, which is sorely lacking in the region. The University of West Indies, Trinidad and Tobago, Antigua, and Barbados, founded in 1948, is a model that could have been examined, although it too has its struggles. This is only one example. There are other multi-country higher educational institutions also.

The Business Plan of the South Asian University does provide for regional campuses after the main campus in New Delhi has been completed. However, that may be difficult to achieve, although Sri Lanka has shown an interest in running the medical faculty under the umbrella of South Asian University. If the model itself had been diverse, thinks Imtiaz Ahmed, it would have been easier to create a collective sense of ownership and consciousness about the University. It would have been a radical and bold design, and it is understandable to have apprehensions about the pitfalls of a new model while setting up a multi-country university.

The Visa Regime: Then, there is the highly problematic visa regime, which makes it very difficult for students from other countries to come to India. This is despite having a special visa for South Asian University. Amazingly, this problem has not been solved after so many years. What is worse is that often, students are given visas only for six months or less, even if they have been admitted to a postgraduate course or the PhD program. The requirement is for them to return to their country to obtain the renewal of their visa. This is problematic. Who is to pay for their journey back and forth? How much time would it take? Sometimes, it takes several days or even a month. How is the time lost in obtaining visas to be made up academically in the classes that they have missed? It makes nonsense of attendance requirements. Students from Pakistan have found it more difficult than the rest to obtain visas. Now, Afghanistan has become a problem. However, even for others, obtaining a visa is difficult and uncertain for most students. After obtaining the visa, too, the problem is not resolved. There are laborious procedures to be followed, police reporting, and no objections from different ministries.

Even a conference involving members from SAARC member states in the university is problematic as clearances from different ministries are still required, even for a few days. In such an environment, it is difficult to have good scholarly exchanges. Often, a visa is denied for the flimsiest reasons at the last minute. The academic event in such a situation becomes a lame-duck event.

As the countries have grown in affluence, their elite prefer to send their children to Western countries—only those who cannot afford it are likely to come to the South Asian University, at least in the current situation. Many of the students, therefore, come from economically disadvantaged backgrounds. They require scholarships, fellowships, and other instruments of financial aid that need to be granted to them before they can join the university. This mechanism is not in place. They are required to apply for financial aid upon reaching the University. This creates problems and friction between

the students, administrative staff, and faculty. Therefore, the visa regime and the financial aid administration are both problematic.

Business Plan: After the first five years, when seven faculties were opened, the university was supposed to launch into the second phase, with the opening of five new faculties. Also, there has been a demand for undergraduate education from member states, which the Governing Body has agreed to fulfill. Faculty and support staff salaries in the South Asian University are very high and perhaps unsustainable. The Business Plan shows an awareness of this as it emphasizes the public and private ownership model after the first phase. It also envisages the creation of a corpus to the tune of 1000 million dollars to make the University self-sustaining. This is a tall order. As of now, there has been no public-private partnership, and the corpus is negligible, as member states have not contributed to it. With such a huge financial requirement for salaries, expansion can perhaps only be done after the salary structure is rationalized, at least for the incoming new faculty. However, without academic expansion and increased subjects available to the students, the University cannot fulfill its expectations or even become a vibrant university.

The Governing Structure: The governance structure of the South Asian University proves to be a hurdle in the university's growth. The Visitor of the University is the Chairperson of SAARC, which makes him far removed from the University. The Governing Body consists of two members from each member state to be nominated by their respective member states following the regulations of SAARC. The President of South Asian University is the ex-officio member of the Governing Body. The Governing Body's Chairperson is from a member state other than the state to which the President belongs. He is elected from among the Governing Body members for one year. Hence, the chairmanship of the Governing Body keeps rotating. Also, member states have been nominating joint secretary-level bureaucrats to be members of the Governing Body. This makes the Governing Body unstable because the civil servants are from transferable jobs and often need to be replaced in the middle of their term because they are posted to another assignment. Also, the bureaucracy is trained to look after the national interests. Therefore, it cannot rise above the mindset of regional rivalries, making it almost impossible to create a regional consciousness. For example, the chairmanship of the Governing Body should have gone to Pakistan in 2017. However, this could only be at the end of 2023, wasting six precious years as the Governing Body could not meet. This is when only one Governing Body meeting is held in a year. Further, the university is supposed to follow the SAARC norms of consensus. Hence, a Governing Body meeting can only

occur when all member states agree. Interpersonal issues prevent agreement among members. A lot of precious decision-making time is lost in the process.

Further, the presidency of the university should also rotate among member states. India took the first presidency and appointed Prof GK Chadha because it wanted to construct the campus. However, that could not be done, and the next presidency also went to India to make the campus. Over 25 lac square feet of space have now been constructed, but there are only 600 to 700 students. This infrastructure is enough to last the University for the next ten years. However, the presidency has once again been taken by India. According to the agreement, it should have gone to Maldives. The reasons for this can be analyzed, and it can be said that all the countries have concurred, but this is probably not the way to fulfill the ideal of creating regional consciousness or harmony. The general impression that gains currency is that the South Asian University functions like an Indian university rather than a regional university.

The university can have up to 3 vice presidents nominated by the President from professors working there. Subject to the availability of suitable candidates, the vice presidents should be from a country other than the one to which the President belongs. This has been problematic given the paucity of senior faculty members from member countries. Therefore, the governance structure is complex, making the University's functioning slow and laborious. This same vision pervades other structures of the University. For example, in the Executive Council, four persons are to be nominated from amongst the leaders of industry and commerce and professional, research, or educational institutions. These nominations are on a rotational basis from SAARC member states for two years from the date of nomination. Since different members finish their terms at different points and belong to different countries, there are always people in the Executive Council who do not have a sense of continued institutional knowledge. The Finance Committee, too, apart from ex-officio members, must have two persons from any two SAARC member states on the principle of rotation, of which at least one person should be an experienced chartered accountant nominated by the Executive Council. If one looks at the overall governance structure, in each body of the institution, members are being rotated at different times, and they belong to different countries, so it becomes difficult for them to develop an institutional memory and make decisions accordingly.

Financial Aspects: The financing of the University is equally complex since the university is like a state-sponsored institution jointly owned and governed by certain countries based on the accepted SAARC practices. The whole Phase I development expenditure for the main campus is to be funded by the host country,

India. SAARC member states share the operational expenditure and whatever the deficit is to be made up through the South's income. South Asian University, for this, has to raise funds through public-private partnerships, create endowments sourced from various quarters, develop a university-industry interface, and get grants for research projects to lower the dependence of the South Asian University gradually on funds from the respective governments. South Asian University's resource creation has not materialized as of now. India has had to pick up whatever the deficit is.

Each member state contributes according to the percentage of students allotted to it. According to the Business Plan, each country's quota for admission is not less than 4%, with 50% being the maximum limit for the host countries. The admissions are made online through a needs-blind entrance exam, and students are taken on merit according to the results of the entrance exams. Up to 10% of the students can come from non-SAARC countries but they must pay a hundred percent of the fee, meaning they are not entitled to free ships of scholarships. This precludes students from a lot of African countries.

The budget for each funding phase has to be presented before a committee, and sanctions are obtained every five years, creating a lot of uncertainty in the University. Of course, the realization of the sanctioned contribution is another issue that must be worked upon. The contribution from student fees is minimal. Although the fee has been kept at a modest USD 880 annually, a very small percentage of South Asian University students pay fees because they claim underprivileged backgrounds, which the University cannot check. Perhaps the help of the different missions of the member states can be taken, but that would be a long and laborious process and would defeat the purpose because a student truly lacking means would find it hard to survive without financial assistance while he waits for the check to be completed.

THE WAY FORWARD

Complex though it is, a way forward needs to be found as this is a flagship endeavor of SAARC, and its aims offer a beam of hope. Whatever the position of SAARC, with its ups and downs, South Asia remains with all its challenges. The university, appropriately named the South Asian University and not SAARC University, can contribute to ameliorating people's lives.

First: One way forward could be to encourage member states to build their campuses as envisioned in the Business Plan with faculties based on their strengths without duplicating the faculties established at the main campus. Of course, this runs the risk of each country making a full-fledged university for itself and breaking away or neglecting the main campus. But if the member

states are trying to build a regional consciousness, they may not do that. Suppose the rivalries win over the ideal of regional consciousness. In that case, the University can easily be converted into an international Indian university with students from SAARC countries. After all, South Asian students study in many public-sector universities, and even private universities like Symbiosis have many students from South Asia and Africa.

The South Asian University has the advantage over other institutions because of its vision and mission. It can develop a unique curriculum based on its mission to develop a regional consciousness. Its research can impact the region and not confine itself to individual countries. It can develop potential leaders who can rise above parochial concerns. For all this, every stakeholder, from those in governance and administration to teachers and students, would have to be conscious of the aim to develop a regional consciousness.

Second: the expenditure of the university will have to be rationalized. It cannot sustain the high salary structure and numerous scholarships, freeships, and other instrumentalities of financial aid together with heavy investment in research. While student aid and research

are important, it might be enough to give tax-free Indian salaries for the incoming human resources required for expansion. However, without expansion into more faculties, innovative research, world-class library facilities, and a viable student strength of about 5000 students, the University cannot be a vibrant and dynamic academic institution attracting brilliant faculty and students from the region and all over the world. It could become a niche university to study South Asia.

Third: The governance structure and financing would also have to be made less cumbersome to bring the right blend of adherence to university norms guided by its vision and mission and flexibility to achieve them. This would require the study of different models of multi-country universities, of which there are now quite a few, and to see what works for an international university in India. More ways must be found as the university is built with such hopes and imbued with so much idealism that it must realize at least some of them. And a resurgent India can deal with the current situation.

Success leads to success, and once a breakthrough is made, the momentum is bound to pick up.

...contd. from page 1

political interference. This requires a high degree of institutional autonomy and self-governance as well as an adequate balance between autonomy and public accountability." In recent times issue of circulars by some of the apex bodies in India impinging on academic freedom does not auger well.

On the issue of Inquiry, critical thinking and creativity, Professor Pedro said -HEIs have a unique responsibility to teach how to distinguish real evidence from fabricated information and to apply knowledge to problem-solving in every walk of life. Truth-seeking skills should be at the core of every curriculum at every educational level, including in

HED. HED has the power to enhance creativity, ignite imagination, and promote divergent thinking, preparing students to find innovative solutions to address global challenges" The call for action and reflection on the future of higher education are crucial for academics, academic administrators, and policy makers in India." It calls upon academia to debate and work out methods to enable students to distinguish real evidence from fabricated information. This is because the present technology has posed this challenge very seriously.

Let us engage ourselves on issues of the future of higher education in India and the world.

**Readers are encouraged to send their comments,
opinions, and alternative views on any of the issues
published in this issue for consideration by the
College Post.**

Editor

QUANTUM SUPREMACY

by Michio Kaku

Publisher Allen Lane, 2023 Penguin Random House, UK PP237

Hoping to Answer So Far Unanswered Questions- A Review Article

DR. G.D. SHARMA *

Quantum Computers are likely to revolutionize the way we live and work. This review article brings the key features of the highly readable above-mentioned book.

THE BACKGROUND

The development of mankind in this universe took a major change when we moved from human and animal sources of energy to mechanical sources of energy. Likewise, the invention of zero enabled science to unravel several mysteries of nature with the possibility of calculation to an infinite extent. But calculation/ computation was facilitated by 0 and 1 through the machine-the computer. Advancement in this 0 and 1 significantly facilitated the computation and helped solve several problems about life, nature, and human health-related issues. Nevertheless, it could not unravel several mysteries of life and nature.

THE BEGINNING

At the end of the digital age, Kaku writes "2019 and 2020, two bombshells rocked the world of science. Two groups announced that they had achieved quantum supremacy. The fabled point at which a radically new type of computer, called a quantum computer, could decisively outperform an ordinary digital supercomputer on a specific task." He says this can overturn every aspect of our daily life. Kaku then goes on to explain how?

The above book- Quantum Supremacy- contains four parts and 17 chapters. The author of the book, Professor Michio Kaku is a co-founder of string field theory of theoretical physics, science writer and TV host. The author, chapter after chapters glides through several issues and hopes Quantum computer will help answer some of the questions/challenges of understanding through this new revolution.

DAWN OF QUANTUM COMPUTER

In the first part, he deals with: 1.The end of the Age of Silicon, 2.The end of the Digital Age, 3.The Rise of Quantum, and 4.The dawn of Quantum computers. At the end of this part, in chapter 5 he says the race is on.

In the first chapter, he mentions that "Google revealed

that their Sycamore quantum computer could solve a mathematical problem in 200 seconds that would take 10,000 years on the world's fastest supercomputer. He quotes Sanjay Natarjan of Intel "We have squizzed, we believe, everything you can squeeze out of that architecture."

Kaku writes Richard Feynman, Nobel laureate in 1959 saw a difference in digital information. He asked: why not replace this sequence of 0s and 1s with states of atoms, making an atomic computer? Why not replace transistors with the smallest possible object, the atom? Kaku writes "So the atom can carry much more information, not just in a bit, but a qubit, that is a simultaneous mixture of up and down states. Digital bits can only carry one bit of information at a time, which limits their power, but qubits, or quantum bits, have almost unlimited power. The fact that, at the atomic level, objects can exist simultaneously in multiple states is called superimposition. --- In addition, these qubits can interact with each other, which is not possible for ordinary bits. This is called entanglement..... Hence quantum

computers are inherently exponentially more powerful than the digital computers, because, you double the number of interactions every time you add a qubit.

In this chapter also he sets a ground for further discourse on "revolutionizing the economy, merging quantum computers and AI, feeding the planet by deciphering the mystery of photosynthesis, and developing quantum medicine. This chapter opens up several possibilities including wars through quantum computers.

In other chapters, mentioned above he quietly makes us understand various aspects of quantum entanglement, micro and macro world, Schrodinger's Cat - the famous cat in the box live or dead, and so on.

In the chapter " the race is on", he gives the latest information about position of quantum computers: Osprey of IBM-433 Qubits, Jiuzang of China-76 Qubits, Bristlecone of Google -72 Qubits, Sycamore of Google-53 Qubits, Tangle Lake of Intel-49 Qubits. The higher the Qubits greater the performance.

2019 and 2020, two bombshells rocked the world of science. Two groups announced that they had achieved quantum supremacy. The fabled point at which a radically new type of computer, called a quantum computer, could decisively outperform an ordinary digital supercomputer on a specific task.

* Former Professor NIEPA, Former Secretary, UGC and former Director, CEC

QUANTUM COMPUTER AND SOCIETY

In Part ii Quantum Computer and Society, in four chapters namely, 6. The Origin of Life, 7. Greening the World, 8. Feeding the Planet, and 9. Energizing the World, Professor Kaku narrates how quantum computers will, through vast data analysis help us understand how life originated.

He discusses Miller's experiment that reveals that the coloration of brew made in a flask was caused by amino acids, which are basic constituents of the proteins of our body. Thus basic ingredients are formed without any outside interference. This was the first breakthrough. The second breakthrough was when Francis Crick a physicist and James Watson a biologist saw that if the basis of life could be found in a molecule, then their task would be to find this molecule and prove that it carried the code of life. The author says "Glancing at the X-ray photographs by Rosalind Franklin, Crick, and Watson saw a pattern that they recognized must be created by double helix, ... they were able to piece together the entire structure of DNA, atom by atom. Quantum mechanics gave them the angles formed by bonds containing carbon, hydrogen, and oxygen atoms. ... They were able to reconstruct the complete atomic structure of DNA explain how it was able to make copies of itself and provide the instructions for all biological development. Kaku further writes " We now had the architecture by which to create the DNA molecule by using mathematics of the quantum theory. This in some sense easy part, but the hard part is to decipher the billions of codes hidden within the molecule."

He also discusses Physics and Biotechnology, Computational Chemistry, and Quantum Biology. The author brings out that Google's Sycamore computer in 2020 was able to accurately simulate a chain of twelve hydrogen atoms using twelve qubits. Rayan Babbus, who was part of the team that did this task, says, " It shows that this device is a completely programmable digital quantum computer, that can be used for any task you might attempt " The classical built computer can not handle even simple complexity of substances as common as "caffeine".

In the Greening World Chapter, he discusses the quantum mechanics of Photosynthesis, Artificial Photosynthesis, and Artificial Leaf. He concludes Quantum Computers may play a key role in harnessing the power of photosynthesis, which converts sunlight into food and nutrients. But the next step is to have fertilizer to nourish the crops and help them flourish. This discovery, he says, of creating artificial fertilizer is credited to a German Scientist Fritz Haber. Kaku writes " He unleashed the Green Revolution, breaking open nature's secret to manufacture almost unlimited quantities of fertilizer that help feed the planet today. Haber discovered the crucial chemical process by which nitrogen could be taken from the air to create fertilizers. Haber saved half of humanity on this planet from possible famine and deaths

caused by it". Kaku writes "No one has been able to improve upon the Haber-Bosch process for a hundred years because it is so complicated at the molecular level." He hopes perhaps quantum computers will give us an improved alternative.

Yet another aspect of Haber -Bosch's process is to understand how nitrogen-fixing is performed by Mother Nature. The author talks of ATP: Nature's Battery. He says ATP (adenosine triphosphate) is so elemental that it is found in almost all forms of life, indicating that it evolved billions of years ago. Without ATP most of life on earth would die. In this chapter at the end he raises issues about the use of quantum computers.

The next chapter in this part deals with energizing the world. Here he discusses the Solar Revolution, History of Battery, Lithium Revolution, and Beyond lithium-ion batteries and Automotive Industries and Quantum Computers. He concludes the chapter by saying "...quantum computers are not just useful for creating newer, cheaper, and more powerful batteries and cars without destroying the environment. Eventually, it can free us from the dangers of dreaded incurable diseases that have afflicted humanity since the dawn of time".

QUANTUM COMPUTER AND MEDICINE

In part III the author discusses Quantum Medicine in four chapters namely, 10. Quantum Health, 11. Gene editing and curing Cancer, 12. AI and Quantum Computers, and lastly 13. Immortality.

In Chapter 10 the first chapter of this part he says "Unfortunately many of the breakthroughs in modern medicine were due to luck, not careful design." He writes in 1928 Alexander Fleming inadvertently observed that a particle of bread mold could kill bacteria in a Petri dish, he set a revolution in health care" Discovery of antibiotic like penicillin, which in human history could cure the patients. ... Soon there were antibiotics against Cholera, tetanus, typhoid, tuberculosis, and a host of other diseases. He discusses the rise of drug-resistant Germs, How antibiotic works, and talks of the Role of Quantum Medicine. Here he says since 100 years our strategy has been to test promising substances-determine if they can kill bacteria - and identify the mechanism. ... Quantum computers might upend this process. It could Identify the mechanism- determine if it kills bacteria - and test promising substances. He further says doing so would require 1086 bits of computer memory, far beyond the capability of any digital computer. But this is within the capability of a quantum computer. Following the same possibilities of deciphering the cause of killer viruses, the COVID-19 pandemic, the immune system, and the Omicron Virus. At the end of this chapter, he says "If the mystery surrounding our immune system can be solved using quantum computers, then we will also have a way to attack some of the greatest incurable diseases, certain

forms of Cancer, Alzheimer's, Parkinson's and ALS - amyotrophic lateral sclerosis, These disease do their damage at the molecular level, which only quantum computer can unravel and help fight".

In the next chapter he deals with gene editing and curing Cancer. He discusses Liquid Biopsies, Sniffing Cancers, Immunotherapy, CRISPR and CRISPR gene therapy. He concludes, "We may have the ability to completely cure an increasing number of cancers using this technology, but we probably will suffer from some forms of cancer, simply because there are so many cancers, like the common cold, a preventable nuisance.

AI AND QUANTUM COMPUTERS

In AI and quantum computers chapters he elaborates on learning machines, protein folding, the birth of computational Biology, Prions and incurable diseases, and good and bad versions of Amyloid Protein. The author writes "Quantum Computers may open up an entirely new ways to approach these incurable diseases that afflict the elderly.

In the immortality chapter he discusses various possibilities of finding out the key to Aging, DNA Repair, and Reprogramming Cells for youth, tissue Engineering, and the role of Quantum Computers in unravelling these challenges.

MODELLING THE WORLD

In Part IV of Modelling the World and the Universes in four chapters, the author deals with 14. Global warming, 15. The Sun in a bottle, 16. Simulating the Universe, and in chapter 17. A day in the year 1950.

This is the last part of the book. In CO2 and Global Warming, he states that "when all factors are carefully considered one finds that the earth absorbs more energy than it radiates back to space, causing the earth to heat up. If we compare the net amount of energy captured by the earth, it is about the same as the amount of energy generated by human activity. He also talks about Methane as a Greenhouse Gas.

On the aspects of Military Implications of Global Warming, he mentions the Pentagon's report on the worst-case scenario "if global warming grows out of control, the report identified one of the deadliest hotspots as the border between Bangladesh and India. Because of the sea level rise and intense flooding, global warming may one day force millions of people from Bangladesh to flee and rush the border with India. This mass of desperate people could easily overwhelm border guards. Then there would be mounting pressure on the Indian military to beat back wave upon wave of refugees trying to escape the floodwaters. As a last resort, the Indian military might be asked to protect its borders by using nuclear weapons.

This was a worst-case scenario, but it graphically illustrates what might happen if things spiral out of control."

To prevent the earth from heating up, he discusses Carbon Sequestration or separating CO2 at the oil refinery level and burying it. Another is Weather Modification, algae bloom. On algae bloom he says we are playing with life form, which we cannot control. It can reproduce in unforeseen ways. Rain Clouds, planting trees, calculating virtual weather, Hind casting, and so on. But data is so voluminous that normal computers cannot handle, here digital quantum computers will be of great help He concludes that it is important to investigate alternative sources of energy. One important source of cheaper energy in the future might be fusion power which harnesses power of the sun on the earth.

SUN IN A BOTTLE

In the next chapter, he writes about Sun in a bottle. In this chapter, he deals with solar energy and building a Fusion Reactor. For fusion, he says you need a source of hydrogen heated to many millions of degrees. Hotter than the sun, turning into plasma, which is the fourth state of matter (after solids, liquids, and gases) A plasma is a gas so hot that some of its electrons have ripped off. It is the most common form of matter in the universe, making up stars, interstellar gas, and even lightning bolts. "He writes the most popular design for the fusion reactor is called the "Tokamak", a Russian design. Start with a cylinder and then wind wire coils completely around it. Take the two ends of the cylinder and connect them, forming a doughnut. Inject hydrogen gas into the doughnut and then shoot an electric current through the cylinder, which heats the gas to enormous temperatures. To contain this hot plasma, huge amounts of electrical energy are fed into the coils that surround the doughnut, thereby containing the plasma with a powerful magnetic field and preventing the plasma from hitting the walls of the reactor.

Finally, once fusion starts, hydrogen nuclei combine to form helium, releasing vast amounts of energy. In one design, two isotopes of hydrogen, deuterium and tritium, are fused, creating energy, helium, and a neutron. This neutron, in turn, carries the energy of fusion outside the reactor, where it hits a blanket of material surrounding the tokamak.

This blanket, usually made of beryllium, copper, and steel, heats up so that water in pipes in the blanket starts to boil. The steam created in this way can push against the blades of a turbine, causing giant magnets to spin. This magnetic field, in turn, pushes against the electrons in the turbine, generating the electricity that eventually winds up in your living room." He says there is however delay in using fusion power. He says the problem is not of physics but of engineering. Fusion happens in nature because gravity is monopolar. However, electricity and magnetism are different, whereas the magnetic field is bipolar. It is exceedingly difficult to create a magnetic field to squeeze superhot hydrogen gas to the shape of a

doughnut long enough to create fusion. The author discusses the International Thermonuclear Experimental Reactor, ITER, which was built after WW II with international collaboration between the US, Russia, EU, Japan, and Korea. Here the issue is generating much more energy than it consumes. He says when $Q=1$ we hit the breakeven. Presently a fusion plant hovers around $Q=.7$ which means it consumes more energy than it produces. He says ITER is projected to hit breakeven by 2025. It is designed to eventually hit $Q=10$, generating much more energy than it consumes. He says a new design called DEMO may hit $Q=25$ and produce up to 2 gigawatts of energy by the year 2050. The author discusses competing designs and Laser Fusion. Then the problems with fusion. He writes "because of the toroidal nature of the magnetic field, it is difficult to sustain a stable fusion process for long enough to satisfy the Lawson criterion, which requires a certain temperature, density, and duration to create the fusion reaction, if there are tiny irregularities in the magnetic field of the tokamak, the plasma might become unstable.

The problem is made worse by the interaction between the plasma and the magnetic field. Even if the external magnetic field can initially contain the plasma, the plasma itself has its magnetic field, which can interact with the larger magnetic field of the reactor and become unstable.

The fact that the equations for the plasma and the magnetic field are tightly coupled creates ripple effects. If there is a slight irregularity in the magnetic field lines inside the doughnut, that, in turn, may cause irregularities in the plasma inside the doughnut. However because the plasma has its magnetic field, it can strengthen the original irregularity. Thus, there can be a runaway effect, with the irregularity getting larger and larger each time the two magnetic fields reinforce each other. These irregularities sometimes get so large that they might touch the walls of the reactor and burn a hole in it. This is the fundamental reason why it has been so difficult to satisfy the Lawson criterion and keep the fusion process stable long enough to create a self-sustaining reactor.

"This is where quantum computers come in. The equations for the magnetic field and also the plasma are both known. The problem is that these two equations are coupled to each other, so they interact with each other in complex ways. Unpredictable small oscillations can suddenly be magnified. But while digital computers have a hard time computing in this situation, quantum computers might be able to calculate with this complex arrangement." He says "quantum computers may hold the key to a pollution-free, cheap, and reliable energy future."

SIMULATING THE UNIVERSE

In the next chapter on simulating the universe, the author says quantum computers may be able to sift through astronomical towers of data to select crucial characteristics about celestial objects. Herein he discusses about Quantum Computers help us to give early warning about Killer Asteroids. They can also help us explore the Exoplanets, Extra-terrestrial in space, Stellar Evolution, Carrington Event - an event that took place in 1859 when a solar flare caused telegraph wires to catch fire over much of Europe and North America. He also describes a scene of unspeakable beauty observed by a gold miner CE Herbert. "Lights of every imaginable color were issuing from southern heavens, one color fading away only to give to another if possible more beautiful than the last..."

The Author discusses Gamma Ray Bursts, Black Holes, and Dark Matter. He says what scientists think the world is made of: Dark Energy -68%, Dark Matter-27%, H and He 5%, and Higher Elements - .1 %. Now we realize that many of the elements that make up our body only represent .1 percent of the universe. He discusses the Standard Model of Particles and beyond the standard model.

He also discusses about String Theory of which he is known exponent. He writes that "The aspect of the theory of everything should satisfy three criteria namely, (1) It must contain Einstein's theory of gravity. (2) It must contain the entire Standard Model of particles, with all its quarks, gluons, neutrinos, etc. (3) it must be finite and free of anomalies."

But string theory is a theory of the entire universe. Thus, you have to specify the initial conditions of the Big Bang. But no one knows the conditions that set off the initial cosmic explosion that created the universe. He, after describing the landscape problem owing to an infinite number of solutions to string theory, further says "At present, there is no consensus to resolve this problem. One solution might be to create a new generation of particle accelerators. Circular Electron Collider that China has proposed, or the International Linear Collider from Japan. He concludes, that there is no guarantee that even these ambitious projects will resolve this important question. One hope is that the true theory of the universe may arise from quantum chromodynamics (QCD)- the theory of subatomic particles that binds the quarks together to create the neutron and the proton. It was thought to solve QCD by using pure mathematics. But that proved elusive. Today physicists are trying to solve using gigantic super computers to solve these equations. This is called Lattice QCD. One solves the equation for one tiny cube, uses that to solve equations for the next neighboring cube, and repeats the process. Eventually,

the computer solves all the neighboring cubes, one after another." He concludes "One hope is that true theory of the universe may arise from this process. So quantum computers may hold the key creation itself."

The last chapter in this last iv part - A Day in the year 2050 is very imaginative of all the possibilities of changing the way we live and work.

QUANTUM PUZZLES

In Epilogue - Quantum Puzzles. He poses four key questions. 1. Did God have a choice in making the universe? - He writes - Einstein considered this to be one of the most profound and revealing questions one can ask. Could God have created the universe in any other way? 2. Is the universe a simulation?- Is everything we see and do a by-product of computer simulation? 3. Do quantum computers compute in parallel? - Can we resolve the measurement problems for quantum computers by simulating a multiverse of universes? Finally is the universe a quantum computer?

After deliberating on this question he concludes "strictly speaking the universe is not a quantum computer, but all phenomena with the universe can be codified by a quantum computer..... Interactions at the micro level are governed by quantum mechanics, which means quantum computers can simulate any phenomenon of the physical world, from subatomic particles, DNA, and black holes to the Big Bang. The playground for quantum computers is the universe itself. If we can understand quantum Turing Machine then perhaps we can truly understand the universe as well. He ends his excellent discourse on quantum supremacy by saying "Only time will tell"

ABOUT REVIEW ARTICLE

I thought of writing a review of the book, not from a physicist's point of view, but from a common person's point who is concerned about the things that are unfolding under the fourth industrial revolution. AI is making resounding changes, even to the extent of impacting the supremacy of human intelligence, making technocrats and humanists to regulate the research in AI. AI being merged with quantum computers may work as a super Turing Machine¹ to attempt answers to questions that so far remain unanswered for the benefit of humanity. Hence I could not resist narrating and ending it as a short review article.

¹Allen Turing accepted the challenge of Kurt Godel an Austrian mathematician. He asked the question can a computer prove everything?

To do this, he had to make the field of computer science rigorous, since it was previously a loose collection of disjointed ideas and inventions by eccentric engineers. There was no systematic way in which to discuss questions like the limit of what is computable. So in 1936, he introduced the concept of what is now called a universal Turing machine, a deceptively simple device that captured the essence of computation, allowing the entire field to be put on a firm mathematical basis. Today, Turing machines are the foundation for all modern computers. Everything, from the giant supercomputers of the Pentagon to the cell phone in your pocket, are all examples of Turing machines. It is no exaggeration to say that almost all of modern society is built on Turing machines. In 1950 he said I propose to consider the question can machine think?" This question had a profound impact on Artificial intelligence.

Contd. from page 2

GOVERNANCE OF ICF

As per the revised structure of committees, every state chapter needs to constitute a state-state-level committee, and where there are a large number of colleges in a district a district-level committee can also be formed. These state-level committees should meet at least once in six months to discuss the issues that are of utmost importance to them. They can also approach national-level committees to help them with aspects that need central-level support.

Implementation of Certificate Course on Introduction to Values in MES Keeveeyam College, Valanchery, Kerala and Majlis College, Puramannur, Valanchery, Kerala

After signing of MoU with the above-named colleges (as reported in the April-September, 2023 issue) Colleges have earnestly started implementing the certificate course on Introduction to Values. MES Keeveeyam

College inaugurated the course on 24th November 2023.

Professor GD Sharma while inaugurating the course said it will greatly help students in their personality development and framing their world view. Dr. Mohamadali Secretary of the College said that it is a great opportunity for the students to learn online on a very important course on Introduction to Values. Dr. Jameela MK coordinated the course and acted as a mentor for the students.

Nearly 300 students have joined the course and are working on Canvas LMS. The first unit of the course is likely to be completed soon. There is provision of one MCQ test based on the unit one and one assignment. Students would attempt to answer these as part of continuous evaluation.

The Majlis College, Kerala has registered more than 300 students for the certificate course on Introduction to Values. Students are working to access the LMS Canvas and will indicate the date by which they would be ready for assessment of Unit One of the course.

ACCREDITATION STATUS OF AFFILIATED COLLEGES OF KERALA- -AN OVERVIEW**

DR. M. USMAN *

Accreditation of Colleges by National Accreditation Council, India has been taking place in the country for decades. The paper reviews the status of accreditation of colleges in Kerala.

INTRODUCTION

Kerala is poised towards evolving as a Knowledge Society. In this mission the higher education sector of the state is expected to be the driving force with enhanced investment and reforms in governance and institutional structure. The State has a Gross Enrolment Ratio (GER) of 43.2%, the sixth highest in the country among States and Union Territories. It is much higher than the national average of 27.3%. The GER among Scheduled Castes (SC) and Scheduled Tribes (ST) students in Kerala is 33.7% and 29.1% respectively.

I. AFFILIATED COLLEGES OF KERALA- A QUICK REVIEW

Kerala has 16 state public universities out of which four (Kerala, Mahatma Gandhi, Calicut and Kannur) are general in nature. The Arts & Science Colleges of the state are affiliated to these four universities. The rest of the universities offer specialized courses in specified thrust areas. Sree Narayana Guru Open University has the mandate of open education of all categories in various disciplines. The Digital University, which is the first of its kind in the country, is meant to conduct academic programmes and research on cutting edge digital technologies and emerging knowledge domains. The National University of Advanced Legal Studies (NUALS) under State Government is meant for legal education. Besides these, the Central University of Kasaragod, IIT Palakkad, IIM Kozhikode and IISER Trivandrum are also functioning in the State.

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The affiliated Arts & Science colleges constitute the most important segment of the higher education sector of Kerala. They are classified as Government, Government Aided and Self Financing colleges. The table 1 present a summary view of the colleges in the state of Kerala:

An analysis of the data presented in table 1 reveals several important facts: Of the total colleges in the state Arts & Science Colleges constitute 46.60%, Engineering colleges constitute 11.1%, Medical institutions constitute 6.78%, Teacher Education colleges constitute 12.03%, Technical institutions other than Engineering colleges constitute 5.78%, Paramedical institutions constitute 11.76% and others constitute 5.91%. It shows the importance of Arts & Science Colleges in the higher education sector of Kerala. According to Economic Review 2022 published by Kerala State Planning Board, Government of Kerala a total of 3.48 lakh students had enrolled in various arts and science colleges (excluding unaided colleges) for various courses under the four general universities in Kerala in 2021-22. Of this, 2.27lakh (65.4%) are girls. The number of teachers in arts and science colleges (excluding unaided colleges) in the State in 2021-22 was 10,493, of whom 57.5% are women.

The table also shows the relative importance of unaided sector in the higher education sector of the state. Though Kerala boast of the legacy of public education, 64.76% of the HIEs in the state are in self financing sector. Only 13.43% are in the Government sector and 12.30% in the Aided sector.

Table 6 shows the comparative share of various sectors in the Arts & Science college segment of higher education in the state.

It is clear from the above that 58.77% of the Arts & Science colleges in the state are in the self financing sector, 22.82% in the aided sector and only 9.55% are in the Govt. sector.

The situation in professional education also shows the predominance of private sector. Of the total 167 Engineering colleges in the state 71.25% are in the self financing sector. The share of Govt. is only 8.38% and

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** This article is extracted from the Project Report entitled: 'Institutional Preparedness for National Education Policy 2020-An Analysis of Self Study Reports of Affiliated Colleges of Kerala in 2022', submitted in partial fulfillment of the requirements for the award of International Diploma in Educational Leadership-Higher Education, conducted by Society for Education and Economic Development, New Delhi 110075.

TABLE 1. CATEGORY WISE COLLEGES IN KERALA

Sl. No.	Type	Govt	Aided	Govt Self Fin.	University Self Fin.	Constituent	Recognised Centre	Private Self Finance	Total
1.	Arts & Science	67	160	19	38	1	4	412	701
2.	Engineering	14	3	24	0	6	1	119	167
3.	Medical	24	5	2	0	3	1	67	102
4.	Teacher Edcn	5	14	0	5	12	2	143	181
5.	Technical	74	3	0	0	0	1	9	87
6.	Para Medical	8	0	2	1	5	0	161	177
7.	Management	0	0	1	0	2	5	31	39
8.	Architecture	0	0	0	0	0	1	13	14
9.	Agriculture	0	0	0	0	5	0	0	5
10.	Fine Arts	4	0	0	0	0	0	0	4
11.	Law	4	0	0	0	0	0	19	23
12.	Veterinary	2	0	0	0	1	0	0	3
13.	Forestry	0	0	0	0	1	0	0	1
14.	Fisheries	0	0	0	0	0	0	0	0
Total		202	185	48	44	36	15	974	1504

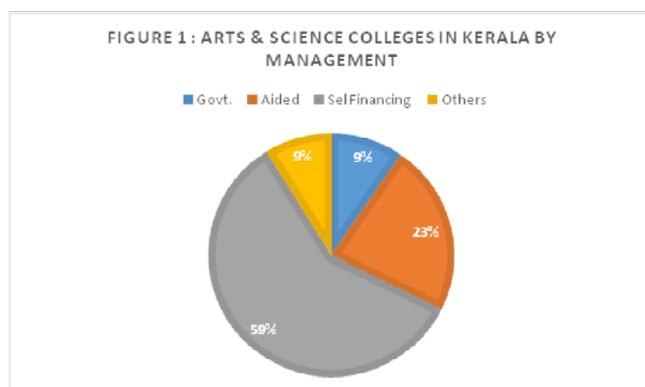
Source: A Report on All Kerala Higher Education Survey-2020, Kerala State Higher Education Council, Government of Kerala.

Aided sector only 1.79%. In Medical education it is 65.68%, 23.52% and 4.9% respectively. The corresponding figures for Teacher education colleges are: 79%, 2.76% and 7.73% respectively. The proportion of self financing institutions in Paramedical education is 79%, Management education is 79.48%, Architecture colleges is 92.85% and Law education is 82.6%.

TABLE 2. ARTS & SCIENCE COLLEGES IN KERALA BY MANAGEMENT

Category	Percentage
Govt.	9.55
Aided	22.82
Self Financing	58.77
Others	8.84

Source: Compiled from table 1



II. ACCREDITATION STATUS OF AFFILIATED COLLEGES OF KERALA

The HEIs of the state has been in the forefront in undergoing Assessment & Accreditation. This is more

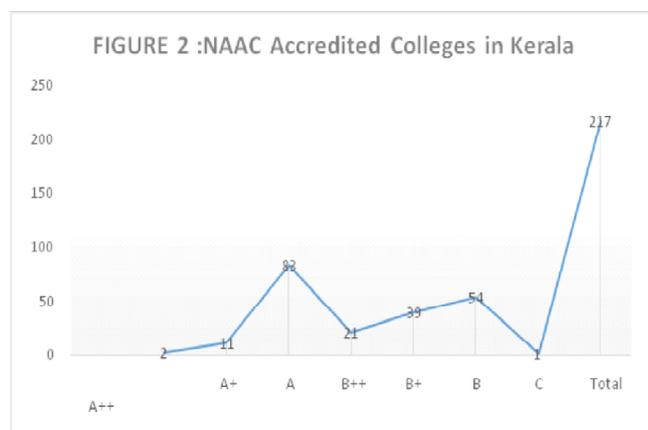
so in the case of Aided colleges of the state. The state has an accreditation culture. But the emergence of self financing colleges recently in the state has put the figures at a lower order. Most of the Aided colleges have already been accredited. The Govt. of Kerala has been encouraging and facilitating the accreditation of Government colleges. It has yielded positive results. Total number of Govt. colleges accredited as on 28-12-2020 was 35, Aided colleges 140 and Self financing colleges 42. In the Post Covid period there is an increasing trend in the process. The introduction Revised Accreditation Framework (RAF) has given great impetus for the HEIs of first cycle of assessment and accreditation. The Government of Kerala has set up State Assessment and Accreditation Centre (SAAC) with the objective of accomplishing the task of assessing and grading the institute affiliated/educational institutions.

The following table 3 shows the details of accredited colleges of Kerala:

TABLE 3. NAAC ACCREDITED COLLEGES IN KERALA

Grade Obtained	No. of Colleges	Percentage
A++	02	0.92
A+	11	5.06
A	83	38.27
B++	21	9.67
B+	39	17.97
B	54	24.88
C	01	0.46
Total	217	100.00

Source: Compiled from A Report on All Kerala Higher Education Survey-2020, Kerala State Higher Education Council, Government of Kerala.



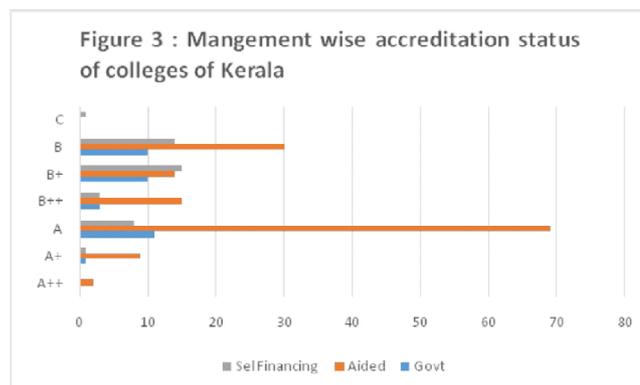
Of the total 217 colleges accredited in Kerala only two obtained the highest grade of A++. 11 of them got A+, 83 got A, 21 got B++, 39 got B+, 54 got B and 1 got C grade. More than 38% got A grade.

The following table 4 shows the details of Management wise accreditation status of colleges of Kerala

TABLE 4. MANGEMENT WISE ACCREDITATION STATUS OF COLLEGES OF KERALA

Grade	Govt	Aided	Self Financing	Total
A++	00	02	00	02
A+	01	09	01	11
A	11	69	08	89
B++	03	15	03	21
B+	10	14	15	39
B	10	30	14	54
C	00	00	01	01
Total	35	140	42	217

Source: Compiled from A Report on All Kerala Higher Education Survey-2020, Kerala State Higher Education Council, Government of Kerala.



According to the Report on All Kerala Higher Education Survey-2020 by the Kerala State Higher Education Council, Government of Kerala, of the total 35 Govt. colleges accredited no institution got the highest grade of A++. One institution got A+ grade, 11 got A grade, three got B++ grade and 10 got B+ grade. The performance of Aided colleges is highly commendable. Of the 140 accredited Aided colleges two got A++ grade, nine got A+ grade, 69 got A grade, 15 got B++ grade and 14 got B grade. The performance of Self financing colleges is also encouraging. Of the total 42 accredited colleges in this category, one of them got A+ grade, eight got A grade, three got B++ grade, 15 got B++ grade, 14 got B grade and one got C grade. The latest available data, though not complete show that the grade obtained by the colleges is improving. The number of A++, A+ and A grade institutions in Kerala have increased recently. Even Self Financing colleges in the state have been recently accredited with A++ and many colleges in the first cycle accredited with A+ and A grade. This shows

overall increase of quality consciousness among the HEIs of Kerala.

POLICY IMPLICATIONS AND CONCLUSION

The Aided colleges in the state of Kerala have been in the forefront in the implementation of academic reforms. The Aided colleges accredited with A++ are eligible to move to the Deemed to be University status. Since these colleges are bound by Direct Payment Agreement, amendments in regulatory framework is needed to protect the interests of stakeholders like staff and students. Hence amendments in regulations by the Government of Kerala for the smooth transition of eligible Aided colleges to Deemed to be University Status.

The problems faced by Autonomous colleges in the state of Kerala need special attention. Autonomous colleges of the state face several difficulties due to the inflexibilities of affiliating system. This necessitates granting of complete academic autonomy to these colleges as stipulated by the U.G.C. regulations on autonomous colleges. There are several Aided colleges and self financing colleges in the state which are eligible for autonomous status as per the latest regulations. The state Government and affiliating universities need to take a positive approach on this matter and extend support for these institutions for their transition.

Though Kerala boast of the legacy of public education, we have seen that 64.76% of the HIEs in the state are in the self financing sector. No planners and policy makers can go forward by neglecting this sector. The Arts & science colleges in the self financing sector are faced by numerous problems which needs to be resolved in a time bound manner. The current practice of giving only provisional affiliation to these colleges on yearly basis is the root cause of these problems. This has brought arbitrariness in all aspects of their academic and non academic activities including commencement of new generation courses, recruitment of faculty and staff, investment in infrastructure, admission of students, placements and opportunities for academic progression of students etc. This could be easily resolved by fixing a quality benchmark in terms of CGPA and grade in NAAC assessment and accreditation of these institutions for granting them permanent affiliation. It will enhance institutional efforts for attaining this quality benchmark thereby leading to overall quality enhancement of colleges in this sector. Absence of a permanent fee regulatory mechanism for the self financing Arts & Science colleges is long overdue in Kerala. The state Government and affiliating universities through the College Development Councils should take proactive and positive approach towards these institutions for enhancing institutional quality and supporting them to undergo assessment and accreditation in a time bound manner.

The benefits of the opportunities opened by the implementation of NEP 2020 can be reaped by Kerala only by careful planning at various levels, without compromising on the sustainable goals of Kerala Model of Development. At institutional level the preparation of Institutional Development Plan (IDP) in tune with the policy prescriptions is essential for this. Safeguards are required to ensure that the academic autonomy and flexibility offered to HEIs under the new policy regime are not misused. Similarly unbridled private investment with only commercial interests, crowding out public investment in higher education is undesirable. The indiscriminate opening up of higher education sector for foreign players can be adverse to national and social interests and detrimental to the basic goal of increased access with equity.

REFERENCES

1. All India Survey on Higher Education (AISHE)2020-21, Government of India, Ministry of Education, Department of Higher Education, New Delhi.
2. All Kerala Higher Education Survey-2020, Kerala State Higher Education Council, Government of Kerala, Thiruvananthapuram, June 2021.
3. Annual Report 2020-21, University Grants Commission, Ministry of Education, Government of India, New Delhi.
4. Economic Review 2022, Vol. 1&2, Kerala State Planning Board, Government of Kerala, Thiruvananthapuram, January 2023.
5. Manual for Self Study Report -Affiliated /Constituent Colleges, National Assessment and Accreditation Council (NAAC) Bengaluru, December, 2022
6. National Education policy 2020, Ministry of Human Resource Development, Government of India, New Delhi.
7. Transformative Reforms for Strengthening for Periodic Assessment and Accreditation of All Higher Education Institutions in India, Report of the Overarching Committee, Department of Higher Education, Ministry of Education, Government of India, New Delhi May 2023.
8. Usman. M, Public Funding and Public Private Partnership in Higher Education in Kerala: Issues, Problems and Implications', Final Report of Project sponsored by Kerala State Higher Education Council, Government of Kerala Thiruvananthapuram, 2011.
9. Usman.M, 'Institutional Preparedness for NEP 2020- A Perspective from Assessment & Accreditation', unpublished paper (key note address) in the one day seminar under UGC PARAMARSH Scheme, organized by IQAC of Nehru Arts & Science College, Kanhangad, Kerala on 26-11-2022.

ECONOMIC FRAMEWORKS, FINANCING AND DEVELOPMENT OF HIGHER EDUCATION - A GLOBAL ANALYSIS PROMPTED BY ACHIEVING SDG- 4.3 BY 2030

DR. G.D. SHARMA *

The paper attempts to analyse the Financing and Development of Higher Education keeping in view different economic, social and political frameworks obtaining among the countries of the world. This part deals with economic frameworks of the countries. The second part would deal with analysis of financing and development of higher education to meet the objective of SDG 4.3 by 2030

I PART CAPITALIST ECONOMIC FRAMEWORK

Least state interference in market economy to welfare state market economy

Since the days of classical economists, there has been a debate on how the education of people of the country should be financed. Should the receiver of education pay for his or her education? Should the state that works for governance and development of the state should make provision for finance out of the tax it collects from people? This is particularly because everyone owing to skewed income distribution may not be able to pay for education. It could be from the point of developing a civilized society and harnessing the knowledge and skill for development the state should pay for education. Or should it be a mix of students, state, and society contributing education of people? This debate took place role of the state in a laissez-faire framework. This debate also continued in increasing state expenditure and

Since the days of classical economists, there has been a debate on how education of people of the country should be financed? Should receiver of education pay for his or her education? Should state which works for governance and development of the state should make provision of finance out of the tax it collects from people? This is particularly due to the fact that everyone owing to skewed income distribution may not be able to pay for education.

changing the role of the state as a welfare state. The list of Capitalist countries is given in table No. 1

SOCIALIST ECONOMIC FRAMEWORK

Ownership of State on means of production and distribution for development

On the other spectrum of thought processes on governance, economic, political, and societal framework was the work of Karl Marx- Das Capital. Which seriously questioned the capitalist-market framework of economic, governance, and social system. Seeing the conditions of the working class in England he founded a concept of a proletariat state during the process of development and once the system becomes more mature state would whether. This thought made the state to own, develop, and distribute the resources for the development of people. Expenditure on education, like expenditure for the development of any other sector, was the responsibility of the state. Here expenditure on education is

Table No. 1 List of Capitalist Countries

Sl No.	Name	Sl No.	Name	Sl No.	Name
1	Singapore	8	Switzerland	15	New Zealand
2	Australia	9	Ireland	16	Canada
3	Hong Kong	10	Taiwan	17	United Kingdom
4	United States	11	Denmark	18	Estonia
5	Georgia	12	Netherlands	19	Chile
6	Sweden	13	Lithuania	20	Luxembourg
7	United Arab Emirates	14	Japan	21	Mauritius

* Former Professor NIEPA, Former Secretary, UGC and former Director, CEC

part of input-output analysis in a matrix of economic and social development. The rate of participation of the

population eligible for education and higher education is expected to be almost all subject to educational attainment List of countries under these three groups is given in Table No.2.

Sl No.	Name
1	People's Republic of China
2	Republic of Cuba
3	Lao People's Democratic Republic
4	Socialist Republic of Vietnam

MIXED SOCIALISTIC FRAMEWORK WITH ECONOMIC FREEDOM

Yet another thought process, which a large number of countries adopted was the state taking major responsibility for education and the development of the economy. Therefore, making provisions for the financing of education and higher education of people and investment in the development of the economy through economic policies or mandating by law.

Countries having constitutional reference to socialism fall under the category. Some of them are former colonially ruled and economically exploited developing countries. Similarly former socialist countries -Non-Marxist- Leninist, with a focus on socialism also fall under this category. There is yet another group of non-socialist countries having socialist ruling parties that also fall under this approach Table Nos. 3, 4, 5 & 6.

CAPITALIST DEVELOPED ECONOMIES

As far as capitalist economies a good number of countries with kind of its economic development, the financing of higher education has not been a major issue as far as making provisions for access and quality higher education to eligible populations. This is because per capita income and per capita capital endowment in these countries are relatively high, contribution by industry and society is also very signification and the state also spends a higher proportion of GDP on education, higher education, and research. It also makes provision for tuition postponement, and income contingency loans to students who cannot afford them. It also makes provision for loan waivers. It is concerned that returns to education after graduation are not commensurate to the ability to pay the loan. (Obama)

With the employment rate being high students can take the risk of loans for studies. In these countries access to higher education is very high and the proportion population with higher education is also high. The number of graduates and Ph.Ds. engaged in research is also very high. Universities are also ranked high in these countries.

Institutions of higher education can have more students and are also able to attract students from other countries mostly self-funded. This also contributes to the financing of higher education. Nearly 3-5 % of students in these countries constitute overseas mostly self-funded students and they contribute to the finances of higher education in the country. Often marginal cost of additional students is very low.

1	People's Democratic Republic of Algeria	7	Democratic People's Republic of Korea
2	People's Republic of Bangladesh	8	Portuguese Republic
3	State of Eritrea	9	Nepal
4	Republic of Guinea - Bissau	10	Republic of Nicaragua
5	Co-operative Republic of Guyana	11	Democratic Socialist Republic of SriLanka
6	Republic of India	12	United Republic of Tanzania

1	Afghanistan	6	Bulgaria	11	East Germany	16	Mongolia	21	Russia/ Soviet Union
2	Albania	7	Cambodia	12	Grenada	17	Mozambique	22	Somalia
3	Angola	8	Congo	13	Hungary	18	North Vietnam	23	Tuva
4	Belarus	9	Czechoslovakia	14	North Korea	19	Poland	24	Ukraine
5	Benin	10	Ethiopia	15	Madagascar	20	Romania	25	South Yemen
								26	Yugoslavia

Table No. 5 list of Non-Marxist–Leninist Socialist states

1	Burma	6	Egypt	11	Libya	16	Sierra Leone
2	Cape Verde	7	Equatorial Guinea	12	Mali	17	Sudan
3	Chad	8	Ghana	13	Mauritania	18	Syria
4	Congo	9	Guinea	14	Senegal	19	Tunisia
5	Djibouti	10	Iraq	15	Seychelles	20	Zambia

Table No. 6 List of Non-socialist states with governing socialist parties

1	Angola	6	Greenland	11	Peru
2	Bolivia	7	Honduras	12	San Marino
3	Brazil	8	Iceland	13	Spain
4	Chile	9	Mozambique	14	Syria
5	Colombia	10	Mexico	15	Venezuela

Position of countries mentioned under above groups is somewhat fluid as the position is changing rapidly as many have introduced free trade.

SOCIALIST DEVELOPED ECONOMIES

A good number of Socialist developed economies have made provisions for the education of all and higher education for a very high proportion of students. They also spend resources on quality higher education and research. Access and quality of higher education in Science, Social Science, Mathematics, and Engineering is rated very high.

They also have spare capacity to enroll students from other countries. Nearly 3-5 percent of students in higher education are from other countries. Almost 90 percent of foreign students are self-funded. They also contribute finances of higher education at recently licensed private universities. Here also marginal cost of additional students is very low. Universities in socialist developed economies are also ranked high.

MIXED-SOCIALIST DEVELOPING ECONOMIES

A good number of these countries were under colonial rule and were economically exploited by colonial rulers. Similarly, a good number of them were former socialist countries. Yet another group has having constitutional reference to socialism. Within this category, the third group has a socialist party ruling the country.

These are struggling to cope with developmental challenges. A good number of them have adopted a socialistic economic framework. A good number of them mandated free school and higher education along with provision for scholarships. However, under economic

pressure, unfavourable terms of trade, and foreign exchange pressure they have also taken loans from the World Bank to meet their developmental needs and therefore had to make provisions for reducing the budgetary allocations on education. Many of these countries with signing as a member of WTO have liberalized their economies. They are also struggling with the challenges of competing demands. Therefore, they have to look for, other than revenue from the state, fees from students or alternative sources of financing for higher education.

In a good number of countries the Per Capita income is low, per capita capital endowment is low the affordability of students to pay for education is low. The risk of taking a loan and studying is also very high as employment opportunities with the capacity to repay are very low.

It is here the issues of making provision for education, higher education, and research are very challenging. State budgetary allocation is low, rate of participation is also relatively low as compared to countries of capitalist and socialist developed economies.

Here finding solutions to the problem of meeting competing demands for human resource development, physical infrastructure development, and development of sectors of the economy assumes greater challenges. Compromise on educational and higher education development of the population seriously impacts the future course of development of the economy. Not responding to the immediate needs of the population. Law and order,

external threats and development requirement further reduces the chances of growth in per capita income and per capita capital endowment. Leadership in these countries has to therefore, intelligently and judiciously work out economic development strategies keeping in view the relatively high growth of the youth population in some of these countries.

In Part II we will attempt to discuss the financing and development of higher education under these categories of countries and draw lessons for the development of higher education keeping in view the challenges posed by philosophical, and economic conditions and the global challenge of SDG-4.3 -making the right to quality higher education for all.

PROPOSED CHANGES IN THE SYSTEM OF ASSESSMENT AND ACCREDITATION OF HIGHER EDUCATION INSTITUTES

Professor Bhushan Patwardhan, while he was Executive Chairman of NAAC initiated the change in the accreditation of Institute of Higher Education as system of grading in cases found to be arbitrary. A committee was set up to study and make recommendations. Summary of recommendation of the committee is published for the benefit of readers. In December, 2023 UGC has announced to change the system of accreditation from Grading to Binary System. Summary of Recommendations of the Report** -

No	Point	Recommendation
1.	Amalgamate Programme-Accreditation and Institution-Accreditation	Composite assessment - Institution at the base, programme components as the star plots
2.	User choice	User specific weights and parameters
3.	Binary accreditation	Accredited/not accredited
4.	Mentoring	Institutions which are far below standards
5.	Accredited institutions to raise bar gradually	Level 1 to 4 institutions of excellence and level 5 multidisciplinary and globally reputed
6.	Accreditation cycle	Simplified first accreditation, thereafter 3-year cycle
7.	Coverage	All HEIs
8.	Category wise accreditation	Categories suggested are 1. Multidisciplinary 2. Research 3. Teaching 4. Specialized 5. Vocational 6. Community engagement. Another classification of old and new suggested
9.	Bases of accreditation	Inputs, process, outcomes and impact across different attributes of HEI encompassing (i) curriculum, (ii) selection of faculty, (iii) teaching, (iv) research, (v) community engagement, (vi) extracurricular, (vii) green initiatives, (viii) governance. (See appendix 1 of the report)
10*.	Linking Applicable Parameters and Essential Variables	i. evolving a harmonized set of parameters linked explicitly with the Inputs, Processes, Outcomes and Impact pertaining to each of the 8 (or more) attributes for each category of HEIs, ii. identifying simplified superset of the essential variables, iii. assigning weightages (business logics) for the varied purposes of approval, accreditation and scoring/ranking
11*.	'Unified Elicitation Tool'	A software is to be developed for the purpose. i. it will collect superset of data for approval, accreditation, scoring/ranking) with in-built design for collateral cross-checking to ensure authenticity of data, ii. It shall be technology-driven modern systems, to replace the existing manual/hybrid systems of assessment and accreditation thereby minimizing subjectivity and enhancing transparency and credibility. iii. Finally evolve one nation one data platform (See appendix 2 of the report)
12.	Public disclosure	Philosophy is trust institution, however, heavy penalty for wrong information
13.	Cover all HEIs	A robust outreach mechanism and transition to new accreditation system by 31 st December 2023
14.	Timelines	Suggested in section 8 of the report

*Required actions, report notes, are underway in mission mode

**Report of the Overarching Committee for Transformative Reforms for Strengthening Periodic Assessment and Accreditation of All Higher Educational Institutions in India

Readers are encouraged to express their views on this.

This column brings out briefs of : Ph.D, M.Phil Researches in Education, Economics of Education, Social, Political, Psychology aspects of education conducted in University /College departments. It also brings out briefs on researches done by Research Institutions, Industry and NGOs. This column was introduced from April-June, 2016 issue of College Post. Method of reporting the researches completed and in progress was given in that issue. Interested researchers, professors and Heads of institute are requested to send their brief accordingly. Purpose of this column is to high light the researches in education conducted in university and college departments and in any other institution / industry and NGO for the benefit of policy makers, research scholars, thinkers. Readers are welcome to encourage relevant person and institute to send briefs on research done and being done in education.

This issue brings to you briefs on following Researches in Education.

PH.D. THESIS

Title- Transnational higher education Economics of student mobility, Researcher Rajneesh Kier, Guide N. V. Varghese, University- National Institute of Educational Planning and Administration, New Delhi. Year of completion 2020

FOCUS AND APPROACH OF THE STUDY

The focus of the Study-is to understand and explore the factors influencing international student mobility at different levels and how unique they are in current regimes of globalization of higher education.

Approach-first by exploring the contemporary and emerging trends in global student mobility in recent times. Second, a comprehensive analysis was conducted focusing on determinants of global student mobility in recent times. The analysis was based on data and statistics from UIS and other data sources were explored to develop further arguments. Third. study focuses on student mobility among developing countries and its determinants. Fourth, determine the underlying factors influencing students' choice of India as a destination to study and this was perhaps the most important feature of current study.

KEY FINDINGS

(1) Policy initiatives indicate that the hunt for global talent is emerging as an important pillar to attract international students. In this process, the spill-over effects also are visible in developing economies. It is not the case where student mobility is concentrated in developed countries only. Developing countries in

Asia, Europe, and Latin America are also emerging as strong knowledge-based economies. Many countries have recently adopted policy initiatives to attract and retain international students.

- (2) Many countries have transformed into education hubs. Dubai is a good example of this case where "offshore campuses" of many Western Universities can be found. Students choose destinations approximate to their home, income, socio-cultural aspects, etc. along with academic value.
- (3) Transnational education makes this possible for students to pick up prestigious Universities in countries like the USA, UK, Canada, and Australia (major destinations) in much more economical parameters via transnational mode
- (4) Data of the top 50 countries which received the largest number of international students in the year 2016 show that 26 countries are developing. Although there are countries like India where such opportunities are still to be explored. However, among the top 10 developing countries, India is one of the major destinations.
- (5) Employment opportunities seem to be one of the important factors influencing student mobility globally. Especially mobility towards Western countries. The analysis done on data also supports this. Globally students build up on skills and try to get employment in the countries where they study outside their home.
- (6) Students also look at economic parameters while making decisions. On one side of the coin income is an important factor influencing student mobility and on the other side cost of living emerges as an important economic factor influencing student mobility globally.
- (7) On the academic side students are much more satisfied where enrolments are high but student-teacher ratio is low. Another important aspect is the presence of peer groups in the country where students potentially seek to study outside their homes.

DETERMINANTS OF MOBILITY

- (1) The top 10 developing destinations indicate that they receive a maximum number of students from developing countries only. The dynamics of determinants for choosing a developing country as a destination are different from those of developed countries as income and employment rates are high in developed countries but income and employment are low in developing countries. Here the value of a foreign degree in the home country and the rising level of income in the home countries determine the mobility of students.
- (2) Students' choice of India as destination - primary

survey reveals that lack of educational opportunities at home is the leading factor for the students to leave their home country and look for higher education opportunities abroad.

- (3) The improvement in employability skills and getting a better job at home after having a foreign degree is the second most important factor. Students choose developing destinations such as India since the value of a foreign degree is higher in their home country. The survey shows that the leading factor is better employment at home after studying in India.
- (4) Other core factors leading to students' choice of India as a destination are lower tuition fees and lower cost of living in India as compared to their home country.
- (5) Cost of living becomes an important determinant of choosing a particular destination and India as a destination is preferred by students to study. This is particularly as revealed by a Survey that most of the students and self-funded.
- (6) factors such as ease in the admission process, ease in visa processes, and the overall environment of the country also emerge as important determinants for choosing India as a destination to study
- (7) Factors such as safety and security, and racial discrimination are also considered by the students in making a decision.
- (8) An important factor in choosing a particular program is the strong and interesting curricula of the program. Next is Peer recommendation (especially the ones who are already studying in India) and the research component of the program.

The study also makes suggestions for policy measures and future strategies to enhance students' choice for studies in India.

Determinants of Supply and Demand in Coaching Industry an Economic Analysis of Supplementary Education Concerning Higher Education, Researcher: Sharma, Priyanka, Guide(s): Saran, Shweta, Department Zakir Hussain Centre for Educational Studies, Jawaharlal Nehru University, Completed Date: 2018, Abstract: newline, Pagination: xi, 185URI: <http://hdl.handle.net/10603/507066>, Appears in Departments: School of Social Sciences

THE SCOPE OF THE STUDY

Defining the Supplementary Education.

The study defines supplementary education as an umbrella term 'supplementary education' in a wider perspective which includes basic perceptible features of all popular terms used interchangeably. It states that "The new changes occurred like supplementary education has not

only transformed the modes and intensity of it, but also the probable implications of the same on Indian education system". The study has mostly confined itself to the supplementary education related to the preparation of the entrance of medical and engineering examination.

KEY FINDINGS

Effect of Macro-Policy Change on Supplementary Education

1. The study has found that the demand and supply of supplementary education have been driven by the neoliberal framework. Less regulation, government interference, lack of public funding, free hand to private players, and entry of foreign capital in disguised form have completely changed the nature of supplementary education.
2. The growing regional imbalance in the post-economic reform period in the expansion of medical colleges has also triggered demand for supplementary education. It can easily be noticed that most of the growth in private medical education has been concentrated in the southern states of Andhra Pradesh (including Telangana), Karnataka, Kerala, and Tamil Nadu, and the union territory of Puducherry; while states like Bihar, Chhattisgarh Jharkhand, Madhya Pradesh, Rajasthan, Uttarakhand and Uttar Pradesh are lagging.
3. Owing to an imbalance in the distribution of medical colleges in states, students resort to supplementary education for two fold reasons; to compete with other fellow applicants; and to take dummy school admission in a state where competition is comparatively less since the probability of selection in the medical college of a particular state is determined if 11th and 12th standards are passed from the same state. Such dummy admissions are easily facilitated by the coaching institution that provides supplementary education. It does not even require students to visit the school even in science subjects where there are lab classes.

Demand side Determinants of Supplementary Education mandatory.

1. The scarcity of reputed medical and engineering institutions is one of the most prominent reasons for increased competition in this sector.
2. The scarcity of reputed medical and engineering institutions is one of the most prominent reasons for increased competition in this sector. The other factors responsible for the increase in competition are high fees of private colleges, aspirations of parents and students, social prestige, number of seats compared to the number of appearing students, the existing

number of colleges, pattern of syllabus, state-wise variance in examination pattern, curriculum, disconnect between the pattern of school examination and entrance examination, and high expected returns in future.

3. The factors responsible for high competition for a seat in a reputed institution, raise the demand for supplementary education, as a means to facilitate admission. In this way, unlike the demand for many other goods and services, the demand for supplementary education is a derived demand. The uncertainty about selection pushes students to invest in supplementary education without taking any risk. Students do not want to delay their admission even for a year, which will further delay their entry into the labour market, and would result in foregone income.
4. The most surreal situation is in the case of engineering education. On the one hand, the market for private colleges is facing excess supply while the market for government colleges is facing excess demand. On the contrary, the market for medical education, government or private, is facing access demand.
5. The demand for medical college shows some kind of lexicographic preference where private medical college is demanded only when admission to Government College is denied. This fact is corroborated by a primary survey when not even a single student revealed his preference for private medical college if got any chance at a government medical college.
6. The results of the primary survey show that people from the general category and scheduled tribes (ST) are more likely to send their children for supplementary education compared to scheduled castes, OBC, and SBC. However, the high demand for supplementary education for scheduled tribes is specific to the Alwar district only since the relative condition of the Meena community, a scheduled tribe caste, is far better than any other scheduled tribe caste in the country.
7. A gender-wise analysis indicates a highly skewed picture of the access to supplementary education. Among all social groups, the access to coaching is lower for female than their male counterparts. The proportion of female students attending coaching classes was almost one-third of the male students attending coaching classes. Even among all social groups, the access to supplementary education for a female child was lowest among OBCs & SBCs, while it was highest among SCs followed by General Category students.
8. The primary data shows that the demand for supplementary education was mainly coming from urban pockets and approximately 65% of the students were residents of the city itself while the remaining were coming from rural pocket.
9. The higher the education and occupational status of the mother, the higher the ratio of female children accessing supplementary education to male children accessing the same. Most interesting was the fact that when mothers had secured government jobs the access to supplementary education for girl children was twice of their boy counterpart.

SUPPLY-SIDE DETERMINANTS OF SUPPLEMENTARY EDUCATION

1. The study also found that the growth of supplementary education has been the result of the adoption of neo-liberal policies by developing countries. The characteristics of neoliberal ideology such as commercialization, growth of capitalism, corporate influence, encouraging private players, focus on the role of the market, and ignoring the social welfare state are enlarging the role of supplementary education. The lack of regulation is promoting the corporatized nature of education providers.

SUPPLEMENTARY EDUCATION AND SCHOOLING SYSTEM

1. The coaching institutions have emerged as the substitute for the mainstream school system as all the material and resources are provided by the coaching centers. Coaching centers take all the responsibilities regarding the entrance examination syllabus and board examination. Their emergence as a total solution provider has automatically created their demand.
2. The results of a primary survey of a coaching institute indicate that approximately 90% of the students had the same timing for their schooling as well as coaching classes. This is not the phenomenon of just one coaching but almost all the institutes providing coaching for medical and engineering entrance. However, it would not be appropriate to directly blame only these coaching institutions since this is the result of a faulty education system
3. The findings show that they are trying to capture the mainstream education system by opening residential universities, public schools, Gurukul, K-12 schools, study centers, allied services like hostels, technical universities, etc. Apart from these initiatives, a skill development initiative has been taken by Career Point by setting up its new institution- Career Point Institute of Skill Development, for this purpose. The vertical and horizontal expansion of the coaching centers explains economic incentives in the existing supplementary education market.

The study makes some policy suggestions also.

UNIVERSITIES CONCERN FOR CLIMATE CHANGE

The concern for climate change affecting lives on the planet is a real one. After the Paris Agreement, the 2015 Annual meeting of COP has been working out policies and projects to deal with the impact of Climate Change. The Concern for Climate Change on campuses of universities also assumed importance. COP 28 in Dubai, UAE engaged in the Universities Network under Green Zone to address the issue of Climate Change. A report published in University World News by Karen MacGregor brings out the following.

"At the global climate summit COP28, 33 national and international higher education institutions based in the United Arab Emirates forged a Universities Climate Network to "drive engagement among youth and academia".

"The Universities Climate Network focuses on three key areas: knowledge-sharing activities in the Green Zone and beyond, public events focused on climate action, and enhanced youth engagement. For the COP28 presidency and directorate, the network provides a streamlined way to collaborate with higher education."

The idea of a climate network began in October 2022. Professor Mariët Westermann, vice-chancellor of New York University (NYU) Abu Dhabi and first chair of the network said Prof "We started with about 12 universities and colleges. The network took shape as teams within the universities worked on it together. We grew rapidly, to 33 institutions today."

The report of McGregor based on an interview with Professor Westermann brings out that "The network is built on four pillars that help universities to make contributions to COP28."

"First, we are a core youth engagement platform for COP28. We mobilize students from across the UAE and the world. Many of them are Emirati nationals. Others are nationals of other countries who grew up here. But many thousands of students come from other countries,"- around 150 countries.

The second pillar is research and innovation. Many universities in the UAE have outstanding laboratories and centers on climate research. The network is helping to disseminate and analyze the sector's climate research.

The third pillar is communal activations. "This is showing the unique role that an academic community can play in citizen science, in public engagement on climate change, and activities that entire families and schools can get involved in,"

The fourth, very important pillar, is the decarbonization

of universities themselves. NYU Abu Dhabi published its own Climate Action Plan, long in the making and launched in September 2023."

Source and Courtesy: Universities Climate Network drives engagement with COP28

Karen MacGregor 04 November 2022 University World News -Universityworldnews.com

FINDINGS OF STUDY ON EDUCATION ON SUSTAINABLE DEVELOPMENT

A report of Wagdy Sawahel published in University World News on 28 October 2023 brings out the findings of the study "Education for sustainable development and global citizenship education in the GCC: A systematic literature review". GCC stands for Gulf Cooperation Council (GCC), namely Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. The study was authored by Hira Amin, Alina Zaman, and Evren Tok of the College of Public Policy at Hamad Bin Khalifa University in Qatar.

The study suggests that leaders "should enable regional discussions and key stakeholders' meetings to create a new national framework for education" and that stakeholders should be "encouraged to think creatively and look for inspiration beyond the standard Western models".

The study suggests "exploring alternative means for education and shaping people's worldviews outside traditional educational settings, particularly social media as the region boasts some of the highest usages in the world".

It also calls for incorporating the experiences of policy-makers and ministry officials, rather than only analyzing official documents, "for a better understanding of the challenges top-down".

The author of the study told a reporter that an "interconnected sustainability ecosystem that connects higher educational institutes with local and regional industries, organizations and initiatives ... would ensure sharing of knowledge and providing real-world, transdisciplinary experiences for students and university staff",

It may be important to look for detailed findings of the study to frame suitable curricula, training programme, and research issues to develop educational frameworks for sustainable development in the light of fast-changing eco-systems.

Source and Courtesy: University World News report "Study finds 'universal' challenges to sustainability education" By Wagdy Sawahel 28 October 2023.

INTERNSHIP FOR THREE AND FOUR YEAR UG STUDENTS IN HUMANITIES AND COMMERCE

Education Times of January, 22, Priyadarshani Gupta reported that UGC issued Guidelines for research internship for Four Year Under Graduate Programme. It reported that Secretary of UGC, Dr. MR Joshi said "Internship are aimed to give exposure to students. We feel students should get feel of real life examples, they should be successfully apply what they have learned in the classroom. These types of internship are always recommended as it helps students in personality development as well as skill development." He further said "it is mostly popular among engineering students, professional courses. Now, we are of the opinion that humanities and Commerce students should also pursue internship. With the UGC move including all disciplines, the HEIs, are expected to support students with academic credits granted based on successful internship completion."

UGC Guidelines on internship has the following features: Two types of internship for: 1. Enhancing Employability, 2. Enhancing Research Aptitude. For enhancing employability if for both UG programme of 3 years and UG programme of four years. For 2- 4 credits during fourth semester. Enhancing research aptitude is for UG Programme of four years with research degree in 8th semester for 6 to 12 credits.

Employability aspect focus on: The internship programs should be well conceptualized and interactive for building research capabilities/aptitude/skills of our under-graduates/researchers/faculties for 1. Development of project and its execution, 2. Decision-making, 3. Confidence development, 4. Working/coordinating in a team, 5. Creative and critical thinking and problem-solving, 6. Ethical values, 7. Professional development, 8. Understand government/local bodies' world of work, 9. Reference of resource persons in the field, 10. Development of online/ simulation-based module for a virtual research internship, 11. Understanding the nuances of building a deep-technology start-up, 12. Study certain entrepreneurs, 13. Study of the enterprises, farmers, artisans, etc.

Research Aptitude aspect focus on: Ideation and conceptualization of a research question/problem ? Learning about new tools and handling of equipment ? Experimentation and collection of data ? Simulations and development of models ? Preparation and presentation of reports

There is provision of assessment of internship work on National Higher Education Qualification Framework which broadly correspond National Qualifications Framework's seven parameters.

- The students should be well-versed with the techniques and methods of research that would support knowledge creation.
- The students should have an understanding of complex problem statements and the ability to develop solutions for real-life problems.
- The students will possess a good comprehension ability to interpret the oral and written communications in research papers, and present own interpretations.
- The students will be able to communicate technical information, research findings to the peers.
- The students will be made aware of the research ethics, professional accountability, conduct and will be able to practice the research ethics and appropriate skills in in his/her own research work.
- The student will be able to enhance academic productivity by developing writing and reading skills and can make contributions towards social and economic issues from their research in future.
- The research intern can possess an attitude and skill of adaptability and flexibility for new challenges at organisational and individual level with a mind-set of teamwork and collaborations.

Internship Structure gives example of sixteen areas namely, 1. Trade and Agriculture Area, 2. Economy & Banking Financial Services and Insurance Area, 3. Logistics, Automotive & Capital Goods Area, 4. Fast Moving Consumer Goods & Retail Area, 5. Information Technology/Information Technology enabled Services & Electronics Area, 6. Handcraft, Art, Design & Music Area, 7. Healthcare & Life Science Area, 8. Sports, Wellness and Physical Education Area, 9. Tourism & Hospitality Area, 10. Digitisation & Emerging Technologies (Internet of Things/Artificial Intelligence/Machine Learning/Deep Learning/Augmented Reality/Virtual Reality, etc.) Area, 11. Humanitarian, Public Policy and Legal Service Area, 12. Communication Area, 13. Education Area, 14. Sustainable development Area, 15. Environment Area, 16. Commerce, Medium and Small-Scale Industries Area.

Guidelines also provides the mechanism of implementation. Though newspaper headlines mentions about the "UG students pursuing internships will be entitled to stipends, insurance and academic credits." However, except for academic credits mention about type, level, amount and period of stipend, insurance and by whom is not found in the guidelines.

The most talked about and debated issue is the possibility of Generative AI challenging human intelligence if not existence. This worried some of the researchers working in Open AI Chat GPT- A large Language modeling platform headed by Sam Altman. The story got wildfire when Sam Altman was fired from the firm. This led to many of his colleagues threatening to resign following the Sam Altman. However, within a few days, Mr. Altman was hired back by the board with Google Microsoft support to continue his work on Open AI.

This alerted the policymakers the world over and the group gathered to speak about regulating technology innovations so that humanity is not affected or human intelligence is not threatened. There were technology experts who believed that innovations should not be checked/controlled. European Union seems to have agreed to frame regulative measures to check the possibility of innovations threatening humanity. AI summit held last month in the UK focussed on minimizing the risk. India in its New Delhi declaration of the Global Partnership Summit on Artificial Intelligence (GPAI) stated to have drawn a middle path between the promotion and regulation of new technology.

THE STORY OF OPEN AI

The story of the development of Open AI LLM goes back to 2015. New York Times in their first essay on the series in Modern Artificial Intelligence states that a discussion between Larry Page and Elon Musk became contagious when the two debated - whether artificial intelligence would elevate humanity or destroy it. Larry Page whispered "Humans would eventually merge with artificially intelligent machines, he said. One day there would be many kinds of intelligence competing for resources, and the best would win." Musk said " If that happens, we're doomed. The machines will destroy humanity"

The article reports that "Mr. Page insisted his utopia should be pursued. Finally he called Mr. Musk a

"specieist," a person who favors humans over the digital life-forms of the future." That insult, Mr. Musk said "the last straw."

The article states "But eight years later, the argument between the two men seems prescient. The question of whether artificial intelligence will elevate the world or destroy it - or at least inflict grave damage - has framed an ongoing debate among Silicon Valley founders, Chabot users, academics, legislators, and regulators about whether the technology should be controlled or set free" Article reports.

"That debate has pitted some of the world's richest men against one another: Mr. Musk, Mr. Page, Mark Zuckerberg of Meta, the tech investor Peter Thiel, Satya Nadella of Microsoft and Sam Altman of Open AI. All have fought for a piece of the business - which one day could be worth trillions of dollars - and the power to shape it."

The article reports that a dinner meeting between Sam Altman -who was working on a tech incubator with several researchers and Musk resulted in a start-up Called Open AI backed hundred million dollars by Musk and other funders. The "lab promised to protect the world from Mr. Page's vision." Mr. Altman and his team led to creation of Chat GPT- Chat bot, Open AI has fundamentally changed the technology industry and has introduced the world to the risks and potential of artificial intelligence" According to some of the estimates Open AI is valued at more than \$80 billion. The board could not trust that AI would work for humanity and hence forced Altman out but within five days it backed out - "pressured by giant investors and employees who threatened to follow Mr. Altman out the door - backed down".

The article states that "there is a ferocious competition in Silicon Valley for control of the technology that is now quickly reshaping the world, from how children are taught to how wars are fought." It is this potential of technology that is making the world worried.

Let us wait and watch.

Book review...contd. from page 32

of international students is yet to fructify. Can India learn something from China in this regard? The book does not ask this question, and probably, it is also not the intention with which the book is written, but it does offer some important clues.

The two chapters on the ranking of higher education that presently dominates the discourse on quality in higher education are very useful. The higher education policy planners and regulators have been enamoured by the national and global rankings and have been busy linking grants and autonomy with ranking.

In comparison, China's approach to ranking has been to use it to do a SWOT analysis of their higher

educational institutions so as to take necessary action to address their deficiencies. The approach has indeed worked, and China today has many more of its universities appearing amongst the top five hundred in the world as compared to India.

Taken as a whole, the book is a must-read for those who are concerned with higher education.

* **Professor Furqan Qamar, Former VC, Central University of Himachal Pradesh, Former Secretary General AIU, Presently Professor of Management, JMI University.**

NEVER JUDGE A BOOK BY THE COVER, *India and China-Expansion, Equity and Excellence*, by Kavita Sharma (2023), Springer, Singapur, pp 259*

I would have easily overlooked the book boldly titled "India and China", assuming that it was a work on international relations and had nothing to do with my area of interest, but for three compelling reasons: It was sent to me for review by the editor of the College Post, who very well knew that my interest mainly lies in higher education and would not have trusted me for anything else.

Secondly, the book's sub-title read "Expansion, Equity and Excellence", a trio of terms invariably associated with something to do with education. Thirdly, the book was written by Kavita Sharma, who, having penned several treatises over the past three decades, is recognised as an accomplished author with a deep research interest in philosophy, history and governance of higher education.

As I opened the cover and glided through the contents, I realised it would take me some time to review the book, which required a careful and critical reading. At the same time, I could not resist the temptation of introducing the book immediately to the higher education fraternity.

It is yet another treatise on higher education by the author, and this time, she has chosen to fathom and present in a simple-to-understand manner the evolution, growth and development of higher education in the two very complex and one of the few oldest surviving civilisations of the world.

The chapter on the evolution of higher education policy in India, however, leaves readers wondering why the author has chosen to refer to the University Education Commission only in the passing, for this report had not only set the tone and broad contour of the development of higher education in India after independence but had also triggered a number of transformative initiatives.

One also wonders why this chapter is silent about the National Education Policy, the new education policy that was launched in 2020 and is being celebrated each year with much fanfare. One gets the answer when he/she reaches the last chapter of the book which offers a peak of things to come in future. It is here that the book discusses the provisions and implications of the new education policy. An eternal optimist, the author takes an optimistic view of the policy.

It is no ordinary and run-of-the-mill book on the broad history of higher education in India and China. These are the subject matters of the first three chapters. The significance of the book lies in the rest of the chapters, which deal with some of the most critical and contemporary aspects of higher education in the two societies and economies.

Until recently, China lagged behind India on all

indicators of higher education, institutions, enrolment, participation rate or gross enrolment ratio, quality, research, publication, citation, and innovation.

During the past three decades, China first inched and then surged ahead on these indicators, leaving India far behind and has finally established its supremacy over many other countries of the world, particularly the west. China, though, still does not attract as many international students as the US, the UK and Australia do.

This book provides readers with the vantage point to understand and explain the reasons. China realised the importance of higher education for its future growth, and rather than making tall claims or taking refuge in its ancient past, it started sending its students abroad, entering into agreements and relationships with universities and individual academics across the world and committing massive investment in improving its higher education infrastructure. India is yet to go along way to catch up with the contemporary development.

The book also offers an opportunity to see how the higher education systems of the two most populous countries of the world fared in terms of expansion, equity and affirmative action. This discussion on China comprehensively captures the tensions and contradictions it faces in ensuring equity and justice across ethnicities and minorities. The community takes precedence over individuals, but the market affects them differently. The chapter leaves people wanting to know more about the status of women and people with disabilities in Chinese higher education.

Equity and affirmative action in higher education is much more complex in the Indian context due to the many different kinds of diversity the nation has. The author has, however, chosen more to the legal and judicial aspects of the problem. It provides a good description of the challenges that India faced and the way affirmative action evolved. The discussion is, however, focused more on social group equities, particularly the backward classes.

The two chapters on the internationalisation of higher education in China and India are of extreme contemporary significance. Chinese initiatives on internationalisation of higher education appear more focussed on providing international higher education to its citizen and thus improving their quality and global competitiveness and, at the same, enabling the rest of the world to become more familiar with the knowledge, traditions and cultures of China. China invested heavily in these and has been reaping the returns for some time now.

India's initiatives in this regard have been sporadic and are yet to make any significant dent in internationalising its higher education. Truly, India, despite having the largest system of higher education found anywhere in the world has been and remains a net importer of higher education. Its desire to attract a larger number

Please read further at page 31

CERTIFICATE COURSES ON VALUES & LIFE COPING SKILLS

MODULE 01 - 2 CREDITS

THIS MODULE IS DIVIDED INTO THREE BROAD UNITS NAMELY:

(1) Value Orientation - Definition, Norms and Values, and Perennial Values-

- i. Sincerity
- ii. Concern
- iii. Seeking to do the best
- iv. Sense of thought and action which can harm the individual and the society.
- v. Sense of duty
- vi. Sense of character

(2) Values in Modern Society - (i) Modernization and Modernity, (ii) Rationalist and liberal model, (iii) Revivalist and Orthodox Model, (iv) Radical and Revolutionary model.

(3) Types of Contemporary Societies - (i) Traditional, (ii) Transitional, (iii) Modern Societies - Ethics and moral foundation and Culture (iv) Post-Modern Society.

- Each of the units has assignments. These will be supplemented with the latest ideas while interacting with specialists.

MODULE 02 - 2 CREDITS

THIS MODULE IS DIVIDED INTO THIRTEEN UNITS NAMELY:

- | | |
|--|---|
| 1. Emotional Intelligence | 8. Sense of Duty |
| 2. Self Esteem | 9. Habits of Thrift |
| 3. Yoga | 10. Environment Protection Policy of India |
| 4. Skills for Quality Life | 11. Fundamental Rights and Duties |
| 5. True North Principle | 12. National Security |
| 6. Potential for Four Human Endowments | 13. Personal Security with its several sub-aspects. |
| 7. Work | |

- Each unit and sub-unit have assignments to be attempted by the participants.

IMPORTANT NOTE-

Courses will be offered in collaboration with the institutions. Also, students can directly enroll for the Certificate Courses.

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College Post R. No. 65288/95
ISBN 978-81-929059-0-7

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- **Centre for Assessment of Standards in Education**
- **Centre for Public Policy and People**
- **Centre for International Cooperation and Peace**

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