Rs. 30.00
ISSN-0566-2257

UNIVERSITY NEWS

A Weekly Journal of Higher Education

Association of Indian Universities

Vol. 63 • No. 11 • March 17-23, 2025

Special Issue

on

EQUITY, DIVERSITY AND SUSTAINABILITY

on the occasion of

ASSOCIATION OF INDIAN UNIVERSITIES CENTENARY DAY

(MARCH 23, 2025)

&

AIU EAST ZONE VICE CHANCELLORS' MEET–2025

(MARCH 18-19, 2025)

SOMAIYA VIDYAVIHAR UNIVERSITY

Somaiya TRUST

A World of Knowledge with the Freedom of Possibilities

Somaiya Vidyavihar University, a multi-disciplinary University, guided by the mission of our founder, **Padmabhushan late Shri K J Somaiya**, aspire to create global citizens. Our approach transcends traditional classrooms, fostering a dynamic educational journey. Renowned for its dedicated educators, advanced facilities, and vibrant community, Somaiya Vidyavihar University is not just an educational institution; it's a crucible shaping the future. With a commitment to holistic development and sustainability, we foster lifelong learning for a meaningful difference.

- 8 Decades of Legacy
- 50 Acre Green Campus
- 13 Faculties
- 6 Centres of Excellence
- 10,000+ Students
- 450+ Eminent Faculty
- 16 Sports Facilities
- 24/7 Medical Facilities
- Incubation Centre - 255+ Startups with ₹ 300 Crores Revenue
- Research - 27 PhD programs
- Library - 2.10 Lakhs+ Books & e-Journals
- Collaboration with leading Foreign Universities
- Merit Based Scholarships + Financial Assistance upto ₹ 25 Crores
- 4 state-of-the-art Hostels

Accreditations

A Grade NAAC Accredited

AACSB ACCREDITED
K J Somaiya Institute of Management Studies

Top Global MBA Ranking for 2025
QS WORLD UNIVERSITY RANKINGS

NBA NATIONAL BOARD OF ACCREDITATION
K J Somaiya School of Engineering
B Tech (Mechanical Engineering_Tier I WA)

+91 70282 33777 | admissions@somaiya.edu | www.somaiya.edu | Know more

Vidyavihar (E), Mumbai – 400 077

UNIVERSITY NEWS

A Weekly Journal of Higher Education

Vol. 63 No. 11 March 17-23, 2025

Special Issue

on

EQUITY, DIVERSITY AND SUSTAINABILITY

on the occasion of

ASSOCIATION OF INDIAN UNIVERSITIES CENTENARY DAY

(MARCH 23, 2025)

&

AIU EAST ZONE VICE CHANCELLORS' MEET–2025

(MARCH 18-19, 2025)

Patron : Prof. Vinay Kumar Pathak

Editorial Committee Chairperson : Dr. (Ms.) Pankaj Mittal

Editorial Committee : Dr. Baljit Singh Sekhon

: Dr. Amarendra Pani

: Dr. Youd Vir Singh

Editor : Dr. Sistla Rama Devi Pani

Association of Indian Universities
New Delhi

&

JIS University, Agarpara, Kolkata

Welcome

The Delegates

of

AIU East Zone

Vice Chancellors' Meet–2024-25

(March 18-19, 2025)

Table of Contents

From the President's Desk... 7

Message From Secretary General, AIU 8

SAGA of A Hundred Years of The Association of Indian Universities
– *Pankaj Mittal and Sistla Rama Devi Pani* 9

Setting the Tone for AIU East Zone Vice Chancellors' Meet on
Equity, Diversity and Sustainability
– *Pankaj Mittal* 28

JIS University, Agarpara, Kolkata: A Profile 32

1. Equity, Diversity and Sustainability: The Overview of Interconnections
   – *Upinder Dhar and Santosh Dhar* 41

2. Equity, Diversity, and Sustainability
   – *Sanjay Kumar Bahl* 43

3. Equity, Diversity, and Sustainability in Higher Education: An Indian Context
   – *Pramod K Verma* 45

4. Catering to Equity, Inclusiveness and Diversity on Campuses: Policy and Action Frameworks
   – *Nazir A Ganai* 47

5. Higher Education for Equitable and Sustainable Development
   – *P B Sharma* 53

6. Equity, Diversity, and Sustainability in Open and Distance Learning under
   NEP–2020: A Path to Inclusive Learning
   – *Sanjay Tiwari* 56

7. Reimagining Indian Higher Education: A Needonomics Approach to Equity,
   Diversity, and Sustainability
   – *Madan Mohan Goel* 63

8. Incorporating Indian Knowledge Systems in Curriculum and Pedagogy: Bridging
   Ancient Wisdom with Modern Education
   – *Ram Kumar Singh* 67

9. Indian Knowledge Systems and Higher Education: Exploring *Bharatiya* Pedagogy
   – *G P Sudhakar* 72

10. Indian Knowledge System for the Modern Curriculum
    – *Ankur Arun Kulkarni* 77

11. Incorporating IKS from Mathematical Feats for Engineering and Technology
    Curricula: A Curated Content-based Inspirational Pedagogical Proposition
    – *Pranab K Dan* 80

12. Integrating of Indian Knowledge System in Technical and Higher Education: Challenges
    and Opportunities
    – *Goutam Sutradhar* 85

13. Developing Self Consciousness for Self Realization: Ancient Indian Approach
– *Gouranga Charan Nanda* 90

14. *Lokgyanpeeth* for *Swaraj* Education as an Evolutionary Process towards Renaissance
– *Chittaranjan Sarangi* 93

15. Origin of Psychology: The Indian Roots
– *D Srinivas Kumar* 100

16. Creating Green and Sustainable Campuses: A Vision for Indian Universities
– *Pramod Kumar Naik* 112

17. Green and Sustainable Campuses for Promoting Sustainability
– *Trilok Kumar Jain* 118

18. Creating Green and Sustainable Campuses
– *S Geethalakshmi* 120

19. A Roadmap for Evenhandedness, Assortment, and Sustainability in Indian Higher Education: Blueprint for Next-Generation Universities
– *Murari Lal Gaur* 126

20. Crafting Sustainable Campuses for Generations Ahead: The Green Blueprint
– *Uma Sekar* 129

21. Environmental Health and Ecosystem Vitality: A Case Study
– *Neelima Gupta* 134

22. Creating Green and Sustainable Campus: Tumkur University Case-in-point
– *M Venkateshwarlu and Nahida Zam Zam* 140

23. Universities as Catalysts for Sustainability: Gujarat Technological University's Green Campus Approach
– *Rajul K Gajjar, Jignesh Aminb and Neelam Nathanic* 144

24. Technology for a Change in Higher Education: A New Age Voyage
– *Vijayakumar Manavalan and Aswini Dutt Raghavendra* 152

Convocation Address
Pandit Shambhunath Shukla University, Shahdol, Madhya Pradesh 157

Campus News 162

Theses of the Month
(Science & Technology) 171

Advertisement 175

From the President's Desk...

With great pleasure, I extend a warm welcome to all the distinguished Vice Chancellors, academicians, and esteemed guests to the AIU East Zone Vice Chancellor's Meet 2024-25, hosted by JIS University, Kolkata, from March 18 to 19, 2025. This significant event stands as a beacon of our shared dedication to advancing the quality and inclusivity of higher education in India.

This East Zone Vice Chancellor's Meet coincides with the **Centenary Celebration of the Association of Indian Universities** which is completing its 100th year of establishment on March 23, 2025. Over these 100 years, we have traversed a long and glorious journey accomplishing many noteworthy feats. Over an impeccable journey spanning 100 years, countless individuals have contributed to our legacy, the remarkable achievements we have made together, and the unwavering spirit that has guided us through the years. I pay tribute to all those who contributed to the shaping of this magnificent Institution. This centenary is not only a time for celebration but also an opportunity for introspection. It is a moment for us to acknowledge the challenges we have faced, from evolving global educational trends to the rapid pace of technological advancements, and how we have adapted to meet these challenges. On this occasion, we must continue to be at the forefront of innovation, ensuring that India's universities remain globally competitive and relevant in addressing the needs of a dynamic world. I am delighted indeed to be the President of the Association of Indian Universities and at the helm of affairs in this centenary year carrying forward the legacy of the eminent educationists and visionary presidents of AIU including Dr Sarvepalli Radhakrishnan, Dr Syama Prasad Mookerjee and others who have contributed immensely to shape the Higher Education landscape of the country.

The theme for this year's meeting, "Equity, Diversity, and Sustainability," captures the essence of our collective mission to create inclusive, equitable, and sustainable educational environments. As leaders in academia, it is our responsibility to ensure that our institutions excel in academic pursuits and serve as exemplars of diversity and sustainability.

In line with the main theme, the sub-themes for this meeting address crucial aspects of our educational landscape viz. *Incorporating IKS in Curriculum and Pedagogy: Catering to Equity and Diversity on Campuses; Creating Green and Sustainable Campuses.* Additionally, the Meet will feature a dedicated *session on* ***Innovation, Skilling, Ranking, and Assessment***, where we will delve into innovative strategies to enhance our educational frameworks, equip our students with essential skills, and refine our ranking and assessment methodologies to meet the evolving demands of the academic and professional landscapes. I am confident that this meeting will serve as a platform for enriching discussions, the exchange of best practices, and the establishment of meaningful collaborations.

I would like to extend my heartfelt thanks to JIS University for graciously hosting this event and to all participating Vice Chancellors for their commitment and enthusiasm.

As AIU's Centenary Year President, I extend my heartfelt gratitude to every individual, community, partner, Government of India functionaries, AIU Governing Council Members; and Staff and officers at AIU Headquarters who helped us reach this remarkable milestone. I welcome one and all for the Centenary Year celebrations.

Vinay Kumar Pathak
President
Association of Indian Universities,
New Delhi.
E-mail: president@aiu.ac.in.

Message From Secretary General, AIU

It gives me immense pleasure to greet you all on the twin occasions of AIU Centenary Day and AIU East Zone Vice Chancellors Meet. On 23rd March 2025, the Association of Indian Universities is commemorating the 100th Anniversary of its establishment and on 18—19, March 2025 the AIU is holding its East Zone Vice Chancellors' Meet. With a humble beginning in 1925, as a flagship body of higher education, AIU has evolved into a unique institution, creating a rich legacy in the field of higher education and impacting countless other educational institutions. Over the past 100 years, the AIU has played a pivotal role in uniting Indian universities, facilitating dialogue, sharing knowledge, and advocating for policies that empower both students and institutions alike. From championing the pursuit of academic freedom to nurturing the intellectual development of our youth, we have continually strived to create a vibrant, inclusive, and forward-thinking educational ecosystem. As we celebrate this centenary milestone, we reflect on the remarkable progress we have made and the enduring legacy of the AIU in shaping academic excellence, fostering collaboration, and advancing the cause of higher education across the nation. It is an occasion to pay tributes to all who have contributed to this journey.

This Centennial Year offers the occasion to rededicate ourselves to the goals of creating a sustainable society. As we look to the next century, the task before us is clear. We must ensure that the benefit of education and research is extended to every corner of our diverse nation, breaking down barriers and fostering opportunities for all. To move ahead in this direction, we are deliberating on the theme *"Equity, Diversity, and Sustainability* in this East Zone Vice Chancellors' Meet.

While it is acknowledged that complete equality is unattainable, for the stability and longevity of sustainable practices, achieving fairness is essential. As we navigate the complexities of the 21st century, prioritizing equity is not a choice; it's a necessary path toward a truly sustainable world. Without equity, there is a risk of unrest and instability. The Meet aims to inspire new thinking and action toward a more sustainable and equitable future for all, presenting a blend of academic rigor and practical insights. I extend my heartfelt thanks to JIS University for hosting this event and to all participating Vice Chancellors for their contribution.

I extend my heartfelt gratitude to the AIU President, Governing Council Members, Member Universities, Officers, staff members, and partners for their unwavering support and dedication to our shared mission. Your contributions have made the AIU a beacon of excellence and unity for universities across India.

This celebratory year will be marked by a series of events aimed at honoring our past while looking toward the future. We invite one and all in the field of higher education to join us in celebrating this significant milestone. Together, let's reflect on our journey, honour our achievements, and inspire future generations.

Pankaj Mittal
Secretary General
Association of Indian Universities,
New Delhi

Saga of A Hundred Years of The Association of Indian Universities

Pankaj Mittal* and Sistla Rama Devi Pani**

The Association of Indian Universities (AIU) has successfully traversed a long journey of 100 years and is proudly commemorating its Centenary Day on 23rd March 1925. In these 100 years, many institutions have come up and slipped into oblivion. In contrast, an Institution distinct in character, distinct in nature, the resolute and resilient AIU grew continuously in strength and stature, carrying forward its rich legacy and glory, achieving several landmarks in the field of higher education at national as well as international levels. Today, it is an Institution of heritage in the landscape of Indian higher education. It is a matter of pride to celebrate this institution by recounting the story of the glorious journey and paying tribute to all who have connected us to this string of history-making. Our history is a vital part of who and what we are! Winston Churchill once said, "You know you will never get to the journey's end. But this, far from discouraging, only adds to the joy and glory of the climb." Yes! The end of the journey, of course, is not known, but looking at the significant role played by AIU, it is certain that it will continue to grow with glory for many more centuries to come.

Raison D'etre

The genesis of the present modern University System in India is attributed to the establishment of the first three universities at Calcutta, Bombay and Madras in 1857. Being only three universities in the whole country, each one of them had a vast jurisdiction. With the passage of time, the number of universities started increasing and their areas of jurisdiction decreased. But due to the large geographical area of the country spanning from present Ceylon to Bhutan and Pakistan, it was difficult for the universities to interact with each other. Consequently, they remained isolated and there was no coordination among them regarding their courses of study or mutual recognition of degrees. This created difficulty in the mobility of students or staff from one university to the other. Particularly, the admission of students coming to Indian universities for higher studies after attaining degrees from universities in other countries, ie foreign degrees, was a big challenge due to the lack of any standard equivalence mechanism. This created a need for an inter-university body to facilitate interaction among universities and create a standard mechanism for the equivalence of foreign degrees.

**Secretary General, Association of Indian Universities, AIU House, 16 Comrade Indrajit Gupta Marg (Kotla Marg), New Delhi-110 002. E-mail: sgoffice@aiu.ac.in*

***Editor, University News, Association of Indian Universities, AIU House, 16 Comrade Indrajit Gupta Marg (Kotla Marg), New Delhi-110 002. E-mail:rama.pani2013@gmail.com/ ramapani.universitynews@gmail.com*

The Genesis and Evolution of AIU

The legend behind the establishment of AIU reveals that the seeds of AIU were sown by Calcutta University Commission (The Saddler Commission) which, in 1919, pointed out the need for coordination between universities in matters relating to courses of study and recognition of degrees. The second congress of the University of the Empire – an association established in London in 1912 (the forerunner of the present association of Commonwealth Universities) resolved in its deliberations in Oxford in 1921, the necessity of having a body to look after the matters of common interest of Indian Universities. The Lytton Committee on Indian students studying in the United Kingdom also recommended that an inter-university body be established so that it could coordinate the courses of study in Indian universities and arrange for their recognition by foreign universities. The Government of India pursuing this line of thinking convened for the first time a *'Conference of Indian Universities'* at Shimla in May 1924. Among the delegates who attended this Conference were distinguished persons like Dr. C.V. Raman and Sir Nilratan Sircar from Calcutta, Sir Chimanlal H. Setalvad from Bombay, Mr. G.A. Natesan from Madras, Pandit Madan Mohan Malaviya, Mr. A.B. Dhruva, Prof. P. Seshadri and Dr. S.S. Bhatnagar from Banaras, Mr. S. Sultan Ahmed from Patna, Mr. A. Hydari and Dr. A. Siddiqi from Hyderabad, Dr. Zia-ud-Din Ahmad from Aligarh, Dr. Hari Singh Gour from Delhi, and Dr. Radha Kumud Mookerji from Lucknow. The Conference unanimously passed a resolution and called upon the universities to establish a central agency with the following objectives:

a) to act as an Inter-university organisation and bureau of information;

b) to facilitate the exchange of professors;

c) to serve as an authorised channel of communication and facilitate the coordination of university work;

d) to assist Indian universities in obtaining recognition for their degrees, diplomas and examination in other countries;

e) to appoint or recommend, where necessary, a common representative(s) of India at Imperial or International Conferences on higher education;

f) to act as an appointments bureau for Indian universities;

g) to fulfil such other duties as may be assigned to it from time to time by the Indian universities.

Implementing the resolution, on the 23rd of March 1925, representatives of 11 out of the 14 universities in existence in India met in the library of the University of Bombay and formed the Inter-University Board (IUB). The representatives were:

- The Rev. John Mackenzie, M.A., Principal, Wilson College, Bombay University
- The Rev.E.M.Macphail, M.A., D.D., C.I.E., C.B.E., Vice-Chancellor, Madras University,
- Mr. Manohar Lal, M.A., Barrister-at-Law, Dean of University Instruction, Panjab University
- Mr.A.B. Dhruva, M.A. LL.B., Pro-Vice Chancellor, Dean of the Faculty of Arts, University Professor of Sanskrit and Principal, Central Hindu College, Banaras Hindu University
- Mr. N.S. Subba Rao, M.A. Barrister-at-Law, University Professor of Economics, and Principal, Maharaja's College, Mysore University
- Mr. E.A. Horne, M.A., Professor of Economics, Patna College, Patna University
- Nawab Hyder Nawaz Jang Bahadur, (Mr. A. Hydari), B.A., Finance Member, Executive Council, and Member, University Council, Osmania University
- Mr. N.M. Sharif, B.A., Provost, Aligarh Muslim University
- Mr. P.J. Hartog, C.I.E., M.A., B.Sc., D.L., Vice-Chancellor, Dacca University
- Mr. N.V. Thadani, M.A., Rector, Delhi University
- Rao Bahadur V.R. Pandit, M.A., Barrister-at-Law, Nagpur University and
- Mr. R. Littlehailes, M.A., Officiating Educational Commissioner with the Government of India.

Once formed, the Inter-University Board kick-started assuming its responsibilities assiduously. The office of the Board functioned in a room in Maharaja's College, Mysore. Annual Meetings were held in which important issues pertaining to Indian universities were discussed and on the basis of consensus, resolutions were passed to improve the system. Quinquennial Meetings of Vice Chancellors were also held at different intervals of time. The IUB in 1927 passed a resolution: *'that the Board, while fully recognising the principle of trusteeship on the part of the Government for the proper utilization of public funds, is of opinion that... the main grants to the universities from the various Governments for recurring expenditure should take the form of fixed grants for definite periods of years and that the control retained by the Governments should be of such a general character as to reduce to a minimum interference with the autonomy of the universities'* showing its concern for the grants to the universities. The duration of the degree course is another topic which evoked from time to time, till now. In the Meeting of 1929, the three-year degree course was one of the topics of contemporary concern, featured on the agenda of a Board Meeting.

The 18th October 1930 Issue of the Educational Supplement of the London Times devoted a whole article to its work and pointed out the *'increasingly useful place the IUB had filled in the past five years.' 'It has', it observed, brought the universities into constant touch with each other and in many important directions has been the instrument of cooperative action'.* In the 6th Meeting of the Inter-University Board held at Mysore in 1931, the Secretary, Professor Seshadri, reported that the work of the Board had been very favourably reviewed in the press both at home and abroad.

In the field of academic activities, the Board played an important role in laying down conditions for recognition of examinations between universities. Originally, it was taken for granted that universities would recognise examinations of other universities on a reciprocal basis. But sometimes this was not possible as some universities considered the degrees of another one below par and declined recognition. The Board was approached to standardise the procedure in such cases, and it laid down the conditions under which recognition should be granted between the universities. This helped in maintaining some parity of standards. The Board also became an effective agency for advising its members as regards the standard of the degrees and diplomas of foreign universities and

official organisations and its services were no less valuable in securing recognition for Indian degrees abroad.

At the Quinquennial Conference in 1934, Sir C.V. Raman moved a resolution that technological training should form a part of university education. This met with general acceptance, but from some of his colleagues, it evoked a reaction that today seems to belong to another world. They protested that the conference was dealing with the matter more as politicians than as educationists. They resisted saying, *"Because of unemployment, let us not produce masons and carpenters!'* Prof Satya Murthy insisted that universities ought to be centres of 'real' culture where literature, history and philosophy were cultivated. They must not be converted into 'glorified or unglorified workshop!'. Another example of the change in attitudes is the issue of 'Education' as a discipline for study at the university level. Today, Education is one of the prominent disciplines. Prior to 1934, the universities flatly refused even to consider its inclusion among university disciplines. Efforts to promote inter-university sports began to gather momentum in 1941. At its 16th Annual Meeting held at Trivandrum in January of that year, the draft rules prepared by the Rules Committee were finally adopted and have since been considerably improved. They can still be regarded as the basis of the rules and regulations governing such tournaments. By 1945, not only had the number of universities increased but likewise their activities and problems. It was not now possible to do justice to the resulting volume of work in one annual meeting of the Board. Moreover, the problems which sometimes cropped up were urgent and required the Board's prompt attention. It was felt, therefore, that for a business-like administration, a Standing Committee should be created which would prepare the agenda, budget, and financial estimates for the annual meetings of the Board and also be responsible for dealing with inter-university problems that arose from day to day. The first Standing Committee was set up, at the instance of Sir Maurice Gwyer and Sir A. Lakshmanaswami Mudaliar in 1945, consisting of the Chairman and four other members. The first Chairman was Dr. J.C. Chatterji. Soon after this a regular constitution was framed, and the membership of the Standing Committee was fixed for a period of three years. Sir A. Lakshmanaswami Mudaliar was the first elected Chairman of the Standing Committee.

In the conference of Vice Chancellors and representatives of universities in India, held at Madras in 1952, the IUB established itself as the authentic spokesperson. The conference was convened to consider the Proposed Government of India Bill to set up a Central Council of University Education to ensure the coordination and determination of academic standards in institutes of higher education. Having considered this proposal in all its aspects the conference unanimously rejected it and requested the government to set up instead a University Grants Committee 'on the lines on which such a committee is functioning in Great Britain'. The resolution mentioned – *'While not interfering with the autonomy of the universities which are statutory bodies with special duties and responsibilities devolving upon the university authorities constituted under the various university Acts, the view of the IUB should be taken into consideration when large questions of policy are concerned, and it should be the endeavour of the universities to implement those views.'*

After independence a large number of new university Acts were passed and old ones were amended from time to time, the trend generally being to restrict academic independence rather than to liberalise it. In 1952, the Government of India made a positive attempt in the proposed Bill to curtail university autonomy through a statutory council, composed mainly of non-university educationists and public men. This was at the time openly resented by the Board and it deplored this tendency. After this, two authoritative bodies reported on this problem. The first was the Committee on 'Model Act for Universities' appointed by the Ministry of Education (1964). The Committee in its report said*: 'Autonomy for a university is not a matter of fundamental right, as it were, but is a condition for its efficient functioning and for enabling it to achieve the true ideals and aims of a university." A university needs autonomy if it is to discharge properly its functions and obligations to society and play an effective part in the development and progress of the country.'*

The second was the Education Commission (1964-66) whose report published in 1966 endorsed the general principles laid down by the Model Act Committee. The Commission said: *'It is important to recognise that the case for autonomy of universities rests on the fundamental consideration that, without it, universities cannot discharge effectively their principal functions of teaching, research and service to the community; and that only an autonomous institution, free from the regimentation of ideas and pressure of party or power politics, can pursue truth*

fearlessly and build up, in its teachers and students, habits of independent thinking and a spirit of enquiry unfettered by the limitations and prejudices of the near and the immediate which is so essential for the development of a free society…

> *…there could be other claims or situations which involve an undesirable infringement of university autonomy. For instance, it would be wrong if universities were expected to owe allegiance to any particular political party, or individual, or attempted to further the interest of such parties or individuals. It is equally wrong, as people in power in public life and even those within the academic community itself sometimes do, to influence appointments… and to interfere with the admission of students…Similarly, it is not proper that State Governments should try to give 'directives' to universities in academic matters… We also feel unhappy at restrictions placed on some of the universities in the country and at some recent attempts to curtail their autonomy.'*

The Board worked extensively on the issue of the medium of instruction and examinations both in secondary schools and universities. The Working Group appointed by the UGC (1961) to review the *'medium of instruction'* issue in the light of recent experience reported that English should continue as the common medium in the universities till it was replaced by Hindi in Devanagri script by easy and progressive stages, on fulfilment of two conditions:

(a) the availability of a fair number of books of a suitable standard for students and teachers covering the whole degree course;

(b) the making of arrangements for a period extending over at least one year to train teachers in the use of the new medium after a fair number of books had become available in the official language of the Union.

The Board in its Annual Meeting held in February 1963 stressed the following points in particular:

(a) Since the replacement of English as a medium is inevitable, every care should be taken by universities to ensure that the transition is made without jeopardising the quality of education and after careful preparation e.g. the co-operation of teachers and the availability of good standard books.

(b) Stress should be laid on the importance of teaching English as a compulsory subject. In a transitional stage, English should serve as a link between university men, and between university and university, in respect of the exchange of professors or migration of students.

(c) The Board, like the Council, hoped that English would thus be always an international link; its place as an internal link will gradually be taken by Hindi as it develops. It urges that at the university stage, the student should be equipped with a progressively better command of Hindi in addition to a good working knowledge of English.

(d) It is reiterated that the standard of teaching both in Hindi and English should be improved and maintained at a high level both in school and college.

(e) It seems natural that regional languages would gradually become the media of instruction at the university stage. The Board sees no reason why there should be any bar to the use of English or Hindi as the medium of instruction in a university or a college.

(f) There should be a provision in every university to permit the use of Hindi or English as an option for the regional language for answering examination papers.

To sum up, from the various discussions which took place in the IUB during this period of transition, three schools of thought emerged fairly clearly from the otherwise vague and confused opinion that often clouded the issue. These were:

(a) Education through the mother tongue is the most natural, and productive of original thought. Therefore, English as a university medium must be replaced immediately by the mother tongue. 'It is not only futile but also highly wasteful and even self-deceptive to wait for the preparation of textbooks for introducing this much-needed reform.'

(b) English, a foreign language, known to only 2 per cent of our population, must go. But it must be replaced not by a regional language, but one which can be a common medium to all universities. This can only be in Hindi. Therefore, English must be replaced by Hindi as the university medium.

(c) English has, for the past 100 years been the common medium of universities as well as of the higher intellectual life in the country. No Indian language has yet developed to that stage. Hindi has the further disadvantage of being unacceptable

to the Southern States as a common medium. Therefore, English which is also one of the best sources of modern knowledge should continue, if necessary, alternatively with the regional language. That will also prevent the fissiparous tendencies that different media in universities are bound to set in motion and will preserve the intellectual life of the country.

Establishment of the University Grants Commission (UGC)

The first reference to the establishment of a University Grants Commission appears as early as 1936 in a resolution moved by Dr. Amarnath Jha recommending the institution in each province or group of provinces of a University Grants Committee on the same lines as the UGC of Great Britain. The Board welcomed the proposal and circulated it to the universities for their reactions. It met with a very varied response. It was welcomed by Agra, Allahabad, Andhra and Delhi. But Aligarh, Madras and Rangoon did not view it with favour. The other universities did not see any need for it, especially in provinces where there was only one university. Seven years later when the memorandum on Post-War Educational Development came to the Board for consideration from the Government of India, the Board asked for the creation of a Central Grants Committee and also laid down its functions which were:

- to assess and distribute grants from public funds to the universities;
- to examine and advise upon all schemes for major developments;
- to visit the universities once in five years and make recommendations, if any, to them.

The Board also emphasised that the Committee should consist of men of academic eminence and experience in university administration in India. At the same time, it pointed out that *'any kind of control or inspection is not consistent with the dignity and autonomy of the universities, while the advice and cooperation of the Central Grants Committee will always be welcomed by the universities.'* The demand for the Grants Committee was repeated several times by the IUB. In 1949 the University Education Commission made this one of its important recommendations.

In 1951 soon after the Constitution of India was adopted, the Government of India circulated the Universities (Regulations of Standards) Bill to the universities and the Board. The Bill proposed to set up a Central Council of University Education for the maintenance and coordination of standards, with wide powers:

(a) to establish and maintain panels of advisers, inspectors etc.;

(b) to obtain all information from a university relating to the courses of study in the various branches of learning, taught in that university, together with all the rules and regulations relating to the standards of teaching and examination in that university, respecting each of such branches of learning;

(c) to direct the executive authority of any university to take such action as it may specify for the purpose of implementing the whole or any part of the recommendation of the Council.

The Central Council as visualised here was not to have any grant-giving functions as was proposed by the IUB in reply to the Post-War Memorandum and in subsequent resolutions on this subject. The Council was a body for collecting information from the universities on various matters and on this information, it would advise or even direct the universities to take certain steps to improve standards. The IUB objected to the right of the Council and described its establishment as a direct attack upon the autonomy of the universities. The Vice Chancellors and representatives of universities who met in a special conference to consider the Bill opposed it unanimously. The Vice Chancellor of Bombay University, Justice N.J. Wadia, opined that *'the passing of such a piece of legislation will completely destroy the autonomy of universities and will take away all the initiative from them'.* The Chairman of the Standard Committee, Dr. A.L. Mudaliar, pointed out that the Bill did not provide for the constitution of the Council, the qualifications of the members, or even the number of members. The whole thing was to be done by the rules framed by the Government. *'If it was a question of intention alone', he added, 'the world would be a much better place.'* The Conference unanimously requested the Government to withdraw the Bill and reiterated the often-repeated demand of the IUB that a University Grants Committee should be set up on the lines of the one in the U K.

Even after this conference, the controversy did not cease altogether. The Ministry did not agree to drop the Bill. The reluctance could perhaps be understood against the background of the constitutional provision under which the States were responsible for education

including higher education. Consequently, the States reacting to popular pressure started a large number of universities. A certain diversity of standards was inevitable in this process. But the Central Government was not altogether out of this picture because under another provision it was responsible for *'the coordination and determination of standards in institutes of higher education'*. The Government of India was, therefore, anxious to maintain some uniformity between these institutions especially since its finances were made available to the States for education. This was the primary motive behind trying to secure control over the universities. But the way the Government went about it caused fear and suspicion. That is why the universities could not relent in their opposition to the measure. The impasse had to be resolved and after another conference in 1953, a formula came to be evolved for setting up a UGC which substantially met the two divergent standpoints. There was at this time University Grants Committee functioned in the Ministry of Education which was a grant-giving body for the central universities. This Committee was dissolved and, in its place, a regular UGC was created. In addition to the grant-giving function, which was demanded by the IUB, the UGC was also vested with the power of coordination and determination of standards which was earlier proposed to be vested in the Central Council. In this way, the UGC came to be vested both with statutory and financial powers.

The establishment of the UGC is clearly traceable to the role played by the IUB. Though the UGC was supposed to be set up on the lines of the UGC in the U K., there was a difference between the two. The British Committee is purely a grant-giving body and is not responsible for the coordination and maintenance of standards. It is true that when it considers any request from a university for aid to carry out a project, establish a department, etc.; it visits the university and satisfies itself that the conditions there are suitable for undertaking such a project. This is necessitated by two factors:

(a) The Committee must be sure that the new project/ activity is such as will thrive in the background obtained in the universities.

(b) That it will answer a national need.

On the other hand, our UGC is not only a grant-giving body but under its Act, it is responsible for *'the coordination and determination of standards'* – a function which the IUB also has been carrying out under its constitution.

The point made by Dr. Rao regarding the UGC's responsibility to the IUB was a valid one. Usually, UGC's responsibility to Parliament on the political side is readily accepted. But the equally urgent need to consult the IUB in academic matters is not so easily appreciated. The statutory-cum-financial power of the UGC inevitably led to a bureaucratic temper and that temper was not always the right one in dealing with autonomous academic institutions. However competent the Commission may be in itself it cannot vouch that it will always be right in its approaches because of its official character. In the U.K. this danger was eliminated to a great extent because there was such an understanding between the UGC and the Committee of Vice Chancellors that the chances of 'freak' decisions were reduced to the minimum. As Prof. Samuel Mathai observed, "There is an opportunity both for cooperation and mutual criticism (between the two bodies). There is nobody in India to provide the same kind of 'tension' to the UGC. The IUB of India could have been such a body; but lack of funds, the relatively brief term of office of most Indian Vice Chancellors, rivalry among States and anxiety of individual Vice Chancellors, to avoid being too critical of the UGC, made the IUB a rather ineffective 'foil' to the UGC. Dr. C.D. Deshmukh realised the necessity of such an effective 'foil' and believed that without the IUB's cooperation, the UGC would not be able to fulfil its long-term objectives. The tendency of neglecting the IUB on the part of the Ministry and the UGC seemed to have grown after his retirement. This may be traced to various reasons among which may be mentioned the increasing bureaucratic climate at various levels.

Originally, the Board admitted only the statutory universities to its membership. Subsequently, however, some research institutes of good standing came to be conferred with powers of awarding degrees and diplomas by virtue of Section 3 of the UGC Act. The first such institute to apply for membership in IUB was the Indian Agricultural Research Institute (1961). In admitting it the Board resolved that *'such of the institutions as are recognised either on the recommendation of UGC or by legislation empowered to confer degrees be admitted as associate members.'*

In September 1961, the Board prescribed specific conditions for admission in view of some of the Bihar universities having provisions in their Acts (1960) which were out of keeping with the concept of university autonomy. Some of these were that:

1. They must be statutory universities.
2. They must have several faculties in the university.
3. The Act, Statutes etc. of the university must be in conformity with the general principles governing universities both in regard to administration and maintenance of standards, and the autonomy for academic purposes.
4. The Chairman should get a report on them from Visiting Committees appointed to study their functioning.

By 1963 the membership of the IUB rose to 48. It was therefore felt that the composition of the Standing Committee should be modified once again in order to give further representation to the different regions. Accordingly, at the Board's meeting in 1963, it was resolved that *'keeping in view the increasing membership of the IUB the strength of the Standing Committee be increased so as to have three representatives from each of the four zones and two additional members be co-opted by the Chairman of the Standing Committee'*. Of the three members to be elected from each zone, two should be selected on rotation based on the seniority of service of Vice Chancellors (seniority based on the total tenure of Vice Chancellorship in the country) in the zone concerned and the third member to represent the senior most university in the zone (seniority to be counted on the date of the establishment of the university).

Subsequently, the Board also approved of co-opting two members on the Standing Committee, such co-option being made by the newly constituted Standing Committee itself and of the co-option of the outgoing as well as the incoming President of the Board. In the early years, the membership of the Board had been open to all universities created by statute, and it was automatic. The Board was always anxious that all the existing universities should become its members, thereby adding to its strength and prestige. However, with the emergence of different types of universities, particularly private universities, the rules of membership have changed from time to time.

Looking at the new composition and structure of the Board, Dr. C.D. Deshmukh and Dr. B.D. Laroia, the then Secretary of the Board, mooted the idea of giving the Board a legal identity and Dr. C.D. Deshmukh gave the Board its motto :

संघात संजायते संधि
(From association is born integration)

Later, in 1967, Dr Amrik Singh got the Inter-University Board registered as a society under the Societies Registration Act-1860, and in 1973 it was rechristened as the 'Association of Indian Universities'.

Organisational Growth

As mentioned earlier, the Association of Indian Universities assumed a very important role since its inception and continuously added new responsibilities as per the growing requirement for higher education in the country. On the basis of responsibility new functional Divisions were added to it from time to time. Gradually, the Association grew into a full-fledged multifunctional institution. The landmarks of the growth of AIU activities and its divisions are presented here.

Evaluation Division (1925)

The Evaluation Division is the foundation pillar of AIU, embarked at the time of its inception in 1925 to fulfil its most important objective of assisting universities/ individuals in providing equivalence for their degrees. AIU is vested with the power of issuing academic equivalence to the degrees obtained from accredited universities outside India for admission to higher studies in Indian Universities as well as employment. The Division provides expert assistance on the status of foreign qualifications to the students, universities, central and state agencies including Ministries of the Government of India, etc.

The Division also provides assistance to evaluation/accrediting agencies of foreign countries. The Division helps the Ministry of Education to formulate proposals for Educational Exchange Programmes, between Indian Universities and Universities of other counties, on mutual recognition of educational qualifications. The Division provides expert assistance on the status of foreign qualifications to the Universities, Ministries of the Government of India, Union Public Service Commission, and other Central/State agencies, concerning the selection of students who have obtained their qualifications from abroad. The Ministry of Education, erstwhile Ministry of Human Resource Management Vide its letter No F.15-17/94-TS IV dated 13th March 1995 issued a Notification that 'those foreign qualifications which are recognized/ equated by the AIU are treated as recognized for the purpose of employment to post and services under the Central Government.

Apart from giving equivalence to Degrees, AIU gives equivalence to stand-alone programmes

or institutions outside the purview of the universities offering stand-alone programmes in the field of Management. In this series, it accords equivalence to the fellow programmes awarded by the AICTE-approved stand-alone institutions. As of now, the AIU is able to consider requests for the equivalence of the Fellow Programmes offered by the Indian Institutes of Management (IIM) only.

AIU has also been involved in granting equivalence to the Postgraduate Diploma in Management since the late 1960s. Originally, such equivalence was granted only to the PGDM Programme offered by the IIMs but with the advent of the AICTE-approved institutes offering PGDM, this facility was extended to them as well. Only such PGDM programmes are granted Equivalence which meets the laid down terms and conditions.

In 2021, AIU has also been mandated by the Department of School Education, Ministry of Education, Government of India to accord equivalence to the Indian Boards for the Secondary/Senior Secondary Examination vide Gazette Notification. The Gazette Notification No CG-W-2011-231254 dated 15th November 2021 and Letter No F.11-3.2016-Sch.3 dated 15th November 2021 from the Ministry of Education. This will help in addressing the difficulties being faced by the students in respect of the equivalence of certificates issued by the school education boards in India for admissions in higher education institutions and employment in Central/State Government. The equivalence granted by AIU will be automatically considered as inter-se parity between the Boards in India. Permitting smooth inter-school Education Board migrations and shall be valid at all India level for higher education and employment.

Sports Division (1928)

In University Education, Sports play an important role in the development of the integrated personality of the youth including – Body, Mind and Spirit. Accordingly, active participation of University students in competitive sports generates a spirit of healthy competition in daily life too. It is, therefore, necessary that the university youth of the country needs to be brought together on a "National Platform" through the media of sports and physical activities with a view to channelize youthful energy into constructive directions, as a nation-building process. The Sports Division was established in 1928. It functions as Inter-University Sports Board (AIU) for the promotion of competitive sports in the university sector which is full of sporting potential for excellence. The IUB realised the importance of sports and games for the youth in the universities and, therefore, created an independent Board for these under its auspices. The Inter-University Sports Board (ISUB) is the earliest and the largest sports organisation in the country. Knowing its importance in the life of the universities the competitions were kept open even for those universities which had not become IUB members. From such beginning, it has now developed into an organisation which sponsors combined university teams for participation not only in national but international events. This is a significant step in the national effort to create a cadre of sportspersons who could later participate in the Olympics.

AIU organizes National University Games and Special Coaching/advance Training camps for highly talented and selected athletes in collaboration with member universities, for the participation of Indian University teams/contingents in National and International Sports Championships. It also scrutinizes the self-calculated claim(s) of contesting universities for the award of the Maulana Abul Kalam Azad Trophy to be presented to the overall top-performing universities for promoting excellence in competitive sports. The MAKA Trophy is the most prestigious award, which is presented to the Vice Chancellor and Director of Sports of the winning university by the Hon'ble President of India on National Sports Day – 29th August, every year. Further, the AIU organizes Vizzy Trophy Cricket (M) Tournament in collaboration with the Board of Control for Cricket in India (BCCI) in which the top 4 teams (one from each zone) are selected during zonal cricket tournaments, based on the outstanding performance of the players, every year. Furthermore, the Champion Universities Hockey (Men) Tournament is also organized in association with the Jawaharlal Nehru Hockey Tournament Society, regularly. The AIU, being an affiliated member of the International University Sports Federation (FISU) arranges visits of Indian Universities teams for participation in World University Games/Championships and acts as a host to visiting university teams from other countries as and when required.

Another feather in the cap of the AIU was added when the Ministry of Youth Affairs and Sports vide letter No. F9-22/2007-SP.I dated 05-05-2008 elevated the status of the Inter-University Sports Board (AIU) to National Sports Promotion Organization (NSPO), on account of its meritorious contribution to the field of University Sports and placed university sports in the

"Priority Category of Sports" at par with other National Sports Federations for the purpose of promoting "Olympic Sports". Therefore, with the changed role and responsibility, the AIU established 16 Centres of Excellence in various universities for the purpose of talent search and talent promotion on scientific lines and in a professional manner to throw up an adequate amount of potential to feed the national stream.

After 1975, new Inter University Tournaments in 8 disciplines were added. In 1979, IUB floated a new scheme under the NSO programme under the title University Level Coaching Camps. According to this new programme 80 University Level Coaching Camps were organised annually in 10 selected disciplines i.e.: Athletics (M&W), Badminton (M&W), Basketball (M), Basketball (W), Football, Hockey (M), Hockey (W), Volleyball (M), Volleyball (W) and Wrestling. The period allotted for these camps was from May to September. The idea behind the scheme was to keep the University Sports Talent busy during this period when they tend to slack. Today, it is holding 225 events in 65 sports at regional and national levels including Khelo India University Games, the mega sporting event for universities and colleges.

The University News (1929)

University News is a Weekly Journal of Higher Education brought by AIU and referred nationally and internationally by the practitioners of higher education for the happenings in Indian higher education. Starting as a Bi-annual News Bulletin in 1928, the University News evolved into a premier Weekly Journal of Higher Education and an icon in the landscape of Indian higher education much sought after by academia in India as well as other countries. It has witnessed and documented the forces and factors that have shaped the Indian Higher Education System. Thousands of its volumes brought out all these years form a treasure-house of the records of developments, facts and happenings in higher education in all these 94 years. The news and reports published in the campus news column spread out a panorama of the activities and growth of the universities during this century of Indian Higher Education starting from 1928. The Journal contains a mammoth of information about world higher education in general and Indian higher education. A widely circulated medium of communication, it is indeed an indispensable reading for all those connected with higher education.

It was in its third Annual Meeting of the Inter-University Board (IUB) in 1928 that the members proposed that a bulletin of news relating to Indian universities be published under the auspices of the IUB, which can apprise the readers about the happenings in different universities. It was resolved in the Meeting to bring out a News Bulletin, which will appear twice a year. It was also decided that the representatives on the IUB i.e., Vice Chancellors, be requested to act as correspondents and where a representative does not find it possible to do so, then the Vice Chancellor of the university concerned be requested to nominate the correspondent in his place. The first Issue appeared in July 1929 and the second one in January 1930. The Volumes contained brief reports sent by the universities on the major events of each half year, staff appointments, retirements and resignations, distinctions conferred upon members, their travels abroad, distinguished visitors, endowments received, changes in curricula, description of university functions, etc. The old Issues of the Bulletin make interesting reading. As we glance from older to new volumes, the names of the great academics of the past flip across their pages, and the students swell in numbers from a few hundred to many thousands; departments of science and technology scarcely noticeable at first, begin to overshadow the others in size and importance; the lists of research papers steadily increased. With all this, the University News volumes offer excellent source material for research into the history of Indian Higher Education.

On 1st February 1963 the first Issue of the bulletin 'University News' appeared under the Editorship of the then Secretary, Dr B.D. Laroia as a bi-monthly. His successor Dr Amrik Singh soon converted the Bulletin into a monthly journal which started publication in January 1966. Several new contents were also added to it. In addition to the usual university reports, endeavour to spotlight educational problems in a proper perspective and keep the public informed of happenings in the educational world, it also highlighted the weak and strong points in planning, promoting an exchange of views and ideas among prominent educationalists, and disseminating information regarding new developments in the field of higher education in a compact form, scholarships and fellowships available for study in India and abroad, production of cheaper textbooks, the arrival of visiting foreign professors and a host of other academic and extracurricular activities. The Journal, which consisted of roughly 18 pages then, contained a lively account of the major events of the universities, and items of general educational interest and was embellished with a few excellent photographs. Each Issue also contained a chart illustrating important statistical information. The regular features of the Journal presently are:

3-4 Articles of topical interest in the field of higher education that delineate current, national and global thinking; Campus News about the happenings in various Indian Universities and institutions/agencies/apex bodies and Ministries in the field of Higher Education; reports of seminars/symposia/conferences held at various university campuses. It also provides updates on developments in the field of higher education, youth affairs, sports and culture; Doctoral Theses accepted by Indian Universities; Advertisements for openings in Universities, Institutions, Colleges and Research Institutions; Academic and other positions available in universities and institutions of higher learning in India; Admission Notifications; Calendar of Events; Convocation Address; Besides other regular features, Spreadsheet, Student Column, Communication, Viewpoint and Book Review columns have carved a special niche for themselves.

Later, Shri Sutinder Singh, Joint Secretary of the Library and Documentation Division, took over as Editor in January 1984 and continued till 2000. It was under the Editorship of Shri Sutinder Singh that the Bulletin took the periodicity of a Weekly and attractively got elevated to the level of an international Journal. It provided a platform for the academicians to contribute their views, opinions, and articles in a much more structured way. Owing to its popularity as a Journal instead of a News Bulletin, the name of the Bulletin was changed to 'University News: A Weekly Journal of Higher Education'. Prof K B Powar, Mr Sampson David and Dr Amarendra Pani took over as Editors for a short stint.

The co-author of this article, Dr Sistla Rama Devi Pani was introduced to the University News in June 1999, and she took over as Editor in 2004 and continues now. Under her Editorship, The University News has carved a niche for itself for its regularity of appearance and richness of its contents. It meticulously with all the columns initiated so far and got also enriched it with valuable columns like articles of topical importance, viewpoint, student column, a column on national specialties, debates, and symposia on different burning issues of Higher Education were also added. She introduced the concept of bringing out frequent thematic Special Issues on topics of contemporary significance. More than 250 Special Thematic Issues were brought out by her. These Special Issues included those that were brought out on demand from the Ministry of Education (Erstwhile MHRD) on various issues which required wider dissemination, discussion, debate, and consensus of the academia of the country. Special Issues on Bills Pending in Parliament, Special Issues on Rashtriya Uchchtar Shiksha Abhiyan (RUSA); Special Issues on National Knowledge Commission, Special Issues on National Education Policy –2020, etc., are some of them.

At Present, the President of AIU Prof. Vinay Kumar Pathak is the Patron of the Editorial Committee of the University News. The Present Secretary General of AIU, Dr (Mrs) Pankaj Mittal who is also the Chairman of the Editorial Committee undertook several new initiatives to makeover the journal to make it more attractive, relevant, interesting, and accessible. With these changes, the University News, which is going to enter its 96th year will reach newer heights.

Library and Documentation Division (1964)

Keeping in view one of the main objectives to act service agency and a Bureau of Information, a Library and Documentation Division was established in 1964. It provides its services to students/ researchers/faculty members of Higher Education as a Reference Library and Resource Centre and acts as a knowledge base on higher education. The Division has a very rich library of international and Indian books and journals on higher education. There are more than 21,000 documents and 150 current periodicals available in the Library. The Library is particularly rich in its collection of policy documents and reports on different commissions and committees established by the Government from time to time. The annual reports, calendars, handbooks and Acts and Statutes of various universities and Judgments of the Hon'ble Supreme Court on higher education and Volumes of Journals of University News to date are available in the library. On request, the Division supplies information on subject bibliographies and selective information on the higher education system. The Library and Documentation Division renders the following services to its users: Circulation, Reference Material, Press Clippings both physical and electronic versions, Bibliographic, Reprographic, Selective information dissemination, etc. The Division also brings out the Handbook on Library and Information Science, containing detailed information about the Library and Information Science Courses offered by various Indian Universities and a Bibliography on Doctoral Dissertations in the field of Social

Sciences and Humanities. Besides, the Division compiles the Doctoral Theses accepted by Indian Universities in the field of Science & Technology, Social Sciences and Humanities under the column 'Theses of the Month' published as a regular feature in the University News. Yearly Volumes of the Bibliography of Doctoral Dissertations are brought out on Science & Technology, Social Sciences and Humanities.

Keeping pace with the time and developments in Information and Communication Technology (ICT), the AIU Library is poised to become a digital library so that users can access the required material from their systems itself. The Division has already started sending Electronic Press Clippings through emails to all the Vice Chancellors of the country. These clippings have become very popular and sought after by the Vice Chancellors.

Publication and Sales Division (1966)

The Publication Division of the Association was set up in 1966. Later, it was converted into the Publication and Sales Division with two Units -Publication and Sales. The Publication Unit is responsible for meeting all the printing needs and its allied works about AIU. The sales unit looks after the advertisements, subscriptions to the University News journal, and sales and marketing of AIU publications. It procures advertisements for the University News. It also participates in the New Delhi World Book Fair annually and other such fairs. The Division actively promotes its publications through the distribution of promotion materials to universities and other users, publishers, booksellers, etc. The prominent AIU Publications include the University News: A Weekly Journal of Higher Education; Universities Handbook, Directories of AIU Member Universities; Bibliography of Doctoral Dissertations Research Reports, Monographs, Annotated Bibliographies, Occasional Papers, and Reports of the Workshop /Training Programmes/Seminar/ Roundtable Conferences; Report of Inter-University Youth Festival (UNIFEST); Annual Performance – National University Games; and various other publications time to time. The latest i.e. 35th Edition of the Universities Handbook and Directory of Member Universities-2024 are available for users. The task of compiling the next version of the Directory and 36th Edition of the University Handbook are under process.

Research Division (1974)

The Research Cell was established at AIU in 1974 on the recommendation of an Extraordinary Meeting of AIU Standing Committee Members, UGC Officials and Officials of the Department of Education to set up a Central Research Unit at AIU for devising measures that will stimulate latent intellectual energy among the Academic fraternity of the Country. Following a letter from the Ministry of Education, Government of India, the Research Cell was set up at AIU with the financial support of the Ministry of Education. Later, in 1993, the Research Cell was rechristened and elevated to Research Division with the wider mandate of covering the entire gamut of higher education.

Some of the reasons mentioned in AIU History 1925-85 by S S Bhandarkar, which led the Committee to recommend the establishment of a Research Cell at AIU, were:

a. For a long time, there were compelling demands from the universities to provide expertise on up-to-date developments in the field of advanced teaching and research and on experiments in the management and organization of higher education.
b. Looking at the increasing anxiety voiced by the universities concerning the all-round deterioration creeping over the entire university system including Government interference, the examination debacle and student unrest a growing demand for a detailed and systematic study of the defects in the present structure and functioning of the universities to search for ways of improvement was felt. There was an urgent requirement of creating a Central Examination Unit to investigate the problems of examinations in Indian Universities.
c. Seminars, Conferences and Workshops were being held by various universities but there was no agency to make a follow-up of the recommendations to draw full benefit from Seminars and Conferences. It was therefore felt that there should be an adequately staffed Central Office to collect and disseminate the relevant comments and criticisms voiced by various universities in the Seminars/ Conferences.
d. It was observed by a foreign visitor that an 'academic community was absent' in India despite individual scholars of eminence who have won acclaim for the depth of their scholarship and their dedication to Research. The Visitor observed that "These scholars, however, prefer to work in isolation and do not create an academic climate where the intellectuals thrive and the ideas and opinions fill the air with an agreeable clamour." To make our status quo-oriented academies stir

and respond to the winds of change, a Central Research Cell was required.

e. One of the foreign professors who visited a new university reported that the preliminary discussion which took place with a few teachers was concerned exclusively with comparative pay scales, and other emoluments of Indian and American Teachers and there was no academic discussion.

Now, the Research Division, one of the most dynamic and vibrant divisions of AIU has carved a niche by making a significant academic contribution to the higher education system of the country. It assumed the responsibility of providing an intellectual platform to the community of higher education for debating the issues and policies of emerging concern and providing research-based recommendations to the Government of India for enriching the policy framework on higher education. The Division, which takes care of all the academic activities of AIU, received accolades and recognition for its pioneering research work. The Division also facilitates the universities by providing expertise on up-to-date developments in the field of advanced teaching and research and on experiments in the management and organization of higher education both in India and abroad. The academic activities of the Division are conducted to create a solid theoretical and empirical foundation for policy-making and national reconstruction. The Division organizes several academic activities for promoting the cause of higher education. The regular academic activities of the Division include Research Projects, capacity-building programmes such as workshops/seminars, ANVESHAN – Student Research Convention, Vice Chancellor's Roundtable Conferences, database activities, and Publications. The Division conducts research studies on the various emerging issues related to different aspects of higher education for having a clear and broader picture so that pragmatic and research-based inputs could be provided to the policy-making bodies/agencies to prepare appropriate policy frameworks.

The innumerable innovative research projects conducted by the Division received input from the academia and intellectuals across the country, which are compiled, collated, analyzed and accordingly recommended for policy formulation. The Research Division conducts short-term Research Projects in-house and the long-term projects are conducted in collaboration with some of the member institutions of AIU. The Division aims to provide the required impetus to the scheme for realizing its objectives. Capacity Building Programmes, Workshops, Training Courses, Seminars, Conferences and Symposiums are organized on different themes and the publications are brought out. Research Methodology Workshops are organized to train budding researchers to pick up the right kind of research problem and equip them with the necessary skills to conduct quality research. Another important objective is to inculcate an intensive research culture in institutions of Higher Learning.

The Radhakrishnan Commission has spoken enough to declare that if they had to suggest any one single reform in university education, it would be that of examinations. Since then, several committees set up both by the Government and the universities have failed to achieve any tangible results. The evil had reached such dimensions that there was a real danger of a breakdown of the entire system. One of the concrete achievements of the AIU has been the promotion of practical steps towards examination reforms. At present, the Division is engaged in conducting the following types of activities:

- ***Undertaking Research Projects:*** Most important activity of the Research Division is to conduct research Studies in the current and emerging areas of concern in Higher Education**.** The Division has been conducting research projects on the various emerging issues related to different aspects of higher education for having a clear and broader picture of the problem so that pragmatic and research-based inputs could be given to improve the system.
- ***Providing Academic Support to Vice Chancellors' Meets:*** The second significant activity of the Division is to provide academic input and support to the Secretary General to conduct important Meetings, Seminars, Conferences etc. All the academic support for the National Seminar of Vice Chancellors at the Annual Meeting every year is rendered by the Division.
- ***Training and Capacity Building:*** Training and Capacity Building programmes are organized for all levels of functionaries in the University Sector viz Vice Chancellors, Officers and Staff of Administration, Finance and Examinations including Registrars, Finance Officers, and Controllers of Examination, etc. Seminars, Conferences, and Research Methodology Workshops for Academic Staff including

Professors, Associate Professors, Assistant Professors, etc.

- ***Research Conventions for Students:*** The Association of Indian Universities took a pioneering initiative in organizing *Anveshan* (Student Research Conventions) during 2007-08 for aspiring researchers throughout the Country. These conventions are aimed at identifying the young and raising talent who could be promoted through proper encouragement and incentive. Four Zonal and one National Student Research Convention in the Areas/Fields of 1) Basic Sciences, 2) Engineering & Technology, 3) Agriculture 4) Health Sciences and Allied Subjects including Occupational Therapy, Physiotherapy, Nursing, Pharmacy, Nutrition and 5) Social Sciences, Humanities, Commerce and Law were organized. The attempt was made to accelerate scientific research and innovation and the application of the same towards community development percolating to the grass root level.
- ***Creation of Databases:*** **The Division creates** Databases on different aspects of Indian Universities like Enrolment, Fee Structure, infrastructure, data on teachers, etc.; data on International Students in Indian Universities; and data on Foreign Education Providers in India, Institutional Linkages, etc., and many others.
- ***Publication:*** The Division brings out several Publications in the form of proceedings, reports, books, occasional papers, brochures, etc.
- ***Consultancy Services:*** The Division provides consultancy to various institutions on different areas of expertise.
- ***Promotion of Internationalisation of Indian Higher Education:*** The Division undertakes several activities like creating portals, providing consultancy, organizing seminars, and workshops, facilitating the signing of MoUs, interacting with international universities, etc. to promote the Internationalisation of Indian Higher Education.
- ***Miscellaneous Activities:*** The Division is involved in various miscellaneous activities of the organization like preparing various presentations for the projection of AIU, building research resources and preparing different documents for multifarious use.

The Research Division with its dynamic academic activities has carved a niche not only for itself but also for the whole AIU in the global higher education arena and achieved a well-deserved reputation by contributing to the development of higher education.

Youth Affairs Division (1984)

The Youth Affairs Division of AIU was set up in 1984 initially as Cultural Division with the objective of organizing cultural activities for the betterment and welfare of students, teachers and others connected with universities. In 1993, the Division was rechristened as Youth Affairs Division. The Division creates a common meeting platform for university youths to display their talents in a friendly atmosphere. The activities of the Division focus on promoting national and emotional integration, developing the holistic personality of the university/college youth; inculcating human values, creating and sensitizing feelings of love, peace, amity, unity, integration, tolerance, understanding, national belongingness and appreciation for one another. The Division organises Inter-University Youth Festivals (UNIFESTS) at Zonal and National level for 24 events in the domain of Music, Dance, Theatre, Literary Events and Fine Arts. Each main event is divided into various sub-events. Fine Arts Exhibition, Essay Contests, Elocution, Poetry and Quiz Contests, etc., for university students, are among some of the events organised for giving the students an opportunity to exhibit their talent. More than 5000 University Youth participate in the festivals every year. As a prelude to AIU UNIFESTS, prospective participants are screened from the Inter College Youth Festivals which are organized by respective universities on pattern of AIU UNIFESTS. The process runs from August to February yearly. These activities also provide the youth with an opportunity for healthy interaction thereby instilling in them an awareness of our historical and cultural heritage.

The Division organizes international events which include South Asian Universities Youth Festivals (SAUFEST) among others. In SAUFESTs, University Youth from 8 South Asian Countries participate. The Division also provides a forum for the youth to attend Youth Leadership Camps (YLC), and Inter-University Youth Programmes to promote human values, culture, social skills, national integration, and international understanding. Besides these, events like the Universities Action on AIDS (UNIAIDS), measures to tackle climate change, environmental protection, etc. are also organised by the Division.

Student Information Division (1997)

The activities of Students Information started at AIU in the year 1927 in the form of the Publication of Universities Handbook. In the year 1997, a division named Students Information Services was set up. The Division provides extensive information on university institutions, professional bodies, accredited courses conducted by all types of universities, teaching staff of university departments, etc. It brings out a comprehensive Universities Handbook giving detailed information about the universities, their faculty, administration, and disciplines in which it offers courses at all levels. It also brings out handbooks on professional courses including Management Education, Engineering Education, Health Sciences Education, Computer Education and Distance Education. The Division provides information to the stakeholders in India on their eligibility for admission to an Indian university or on the standing of an institution through e-mail, post and telephone.

International Division (2000)

The International Cell was established in AIU in the year 2000. Keeping in view the Globalization, Internationalization of Higher Education necessitating increasing international academic collaboration in the areas of common interest particularly exchange of students/faculty/research and technical staff, joint research projects, sharing of information, joint capacity building programme, credit transfer, dual/ joint degree programmes, recognition of courses and programmes, equivalence of degree etc. between the universities of India with Association of Universities of other countries and coordinates the activities related to the Division. The division also keeps records of MoUs/Collaboration with National/International Organisation and representation of AIU in various International forums. The division collects and collates the data of International Students in India and brings out the publication after analysis.

AIU at Present

The Association of Indian Universities (AIU) has now emerged as a research-based policy advice institution to the Government of India in the field of Higher Education, Sports and Culture. It is playing a vital role in shaping Indian higher education. Most importantly, AIU is vested with the power of according equivalence to Degrees/Qualifications offered by the universities across the world with those offered in India and also according equivalence to the Indian School Boards. Being an apex institution, it constitutes an integral part of all major decision-making committees and commissions in the country. As a representative body of Indian universities, it facilitates cooperation and coordination among Indian universities and liaises between the universities and the Government (Central as well as the State Governments) and also national and international bodies of higher education in other countries in matters of common interest. AIU conducts inter-university sports and cultural events at national and international levels. As a National Sports Promotion Organization (NSPO) it promotes sports among Member-Universities and maintains the standards in sports. The organization (IUB/AIU) which started with 14 universities in 1925 has now a membership base of 931 universities and works as a friend, philosopher, and guide for the universities.

Vision of AIU

To emerge as a dynamic service and advisory apex organization in India by undertaking such initiatives and programs which could strengthen and popularize Indian higher education as the leading-edge system in the world and promote greater national and international collaboration in Higher Education, Research and Extension, Sports, Youth and Cultural Activities.

Mission of AIU

To promote and represent the higher education system and Indian Universities on national and international forums and establish strong liaison with the government, National/International organizations of higher education, and sister associations world over and among universities through active support, cooperation and coordination among the member universities and all stakeholders for promoting quality education, research, sports, culture and values.

Objectives

The main objectives that AIU pursues now are:

- To serve as an Inter-University Organisation;
- To act as a bureau of information and to facilitate communication; coordination and mutual consultation amongst universities;
- To act as a liaison between the universities and the Government (Central as well as the State Governments) and to cooperate with other universities or bodies (national or international) in matters of common interest;
- To act as the representative of the universities of India;

- To promote or to undertake such programmes as would help to improve standards of instruction, examination, research, textbooks, scholarly publications, library organisation and such other programmes as may contribute to the growth and propagation of knowledge;
- To help universities to maintain their autonomous character;
- To facilitate student mobility and exchange of members of the teaching and research staff, sharing of infrastructure, joint-research projects and publications between universities in India or abroad;
- To sign MoUs with sister organizations of foreign countries in broad areas and to bring the universities together in the areas of mutual interest and to facilitate the signing of MoUs between them;
- To appoint or recommend wherever necessary a common representative of the Association at any conference or organization, national or international, on education;
- To assist universities in obtaining recognition for their degrees, diplomas and examinations from other universities, Indian as well as foreign;
- To undertake, organise and facilitate conferences, seminars, workshops, lectures and research on various themes pertaining to higher education;
- To act as a National Sports Promotion Organization (NSPO) for promoting sports among Member-Universities and maintain the standards in sports;
- To enhance participation in university sports at National and International championship competitions and make efforts to improvise upon the sports infrastructure in the universities;
- To establish and maintain linkages with organizations dealing with youth welfare, student information services, cultural programmes, adult education and such other activities as are conducive to the betterment and welfare of students or teachers and others connected with universities;
- To act as a service agency to universities in whatever manner it may be required or prescribed;
- To undertake and facilitate the publication of newsletters, research papers, books, etc.;
- To promote digitalization and provide value-added services to its member universities in the form of an Admission Portal. Job Portal & Collaboration Portal for promoting quality Higher Education.

The revised objectives as compared with those set out in the constitution originally indicated a greatly enlarged concept of the Association's functions and sphere of influence. It was no longer regarded as merely an administrative agency working primarily as a bureau of information and an inter-university body to represent the universities at Commonwealth and other international conferences. It had progressed in experience and prestige and become capable of promoting the academic interests of the universities as well as the welfare of their students. AIU is now a think tank body with the responsibility of undertaking academic activities such as: conducting Research Studies in higher education; acting as a bureau of information on higher education; liaising with international bodies and universities for the internationalization of Indian higher education among many others.

The more significant of the newly prescribed objectives were the promotion and organisation of programmes which would contribute to the growth and propagation of knowledge in this era of digital technology.

Constitution

AIU is constituted of the General Body ie all its members, Governing Council, and Officers and Staff at its Headquarters.

Organisational Set-Up

The AIU's organizational set-up comprises the President, Vice President, Immediate Past President, Secretary General, and Vice Chancellors/Directors of Member Universities. The President and the Vice President are elected annually for one year based on their seniority as Vice Chancellor/Director, while the Secretary General, who works as the Chief Executive Officer of the Association, is appointed for a term of five years by the Association after following due procedure.

General Body

The General Body, comprising all the Vice Chancellors/Directors of the Member Universities/ Institutes, is the supreme authority of AIU. The President of the Association is the Chairman, and the Secretary General is the Member Secretary of the General Body. The General Body meets once a year at the venue of one of its member universities to transact business following the aims and objectives of the Association in a particular order of business.

Governing Council

The Governing Council is the executive body of the Association. It manages the day-to-day affairs of the Association. It comprises 23 Vice Chancellors/ Directors including the Secretary General as its Member-Secretary and President as the Chairman. The Governing Council exercises all powers which are not specifically reserved for the General Body and is the final authority for taking decisions in regard to them.

Sub-Committees of Governing Council

To assist the Governing Council, various sub-committees namely Cultural Committee, Equivalence Committee, Finance Committee, Research Committee and Staff Affairs Committee are constituted.

Services Offered under Equivalence of Foreign Qualifications

AIU is the nodal agency for granting equivalence to the degrees awarded by accredited foreign universities and institutions for the purpose of admission to higher academic courses and employment. The equivalence of foreign degrees has been digitalized and automated by the AIU. AIU is also responsible to accord equivalence to the Two-year Full Time Postgraduate Diploma in Management (PGDM) and 04 years Fellowship Programme in Management (FPM) awarded by the stand-alone institutions falling outside the purview of universities equating their PGDM with Master of Business Administration and Ph.D. degree respectively of Indian University for the purpose of admission to higher studies.

Besides these, AIU provides professional assistance on the status of foreign qualifications to Universities, Ministries of Government of India, Union Public Service Commission, Indian Council of Cultural Relations, Medical Council of India, AAYUSH and other Central/State Government Agencies dealing with nomination/selection/ employment of prospective Indian students having obtained their degrees from foreign universities and also for deciding the eligibility of the foreign students

The Association of Indian Universities (AIU) is mandated by the Department of School Education, Ministry of Education (MoE), Government of India to grant equivalence to Indian Secondary/ Senior Secondary School Examination Boards both Government and Private for the purpose of admission to higher education and employment in the Government services vide notification No. F.11-3/2016-Sch.3 dated 15th November 2021.

Universities Handbook

AIU brings out a comprehensive Universities Handbook giving detailed information about the universities, their faculty, administration, and disciplines in which it offers courses at all levels, admission schedules and academic calendar. It also brings out handbooks on professional courses including Management Education, Engineering Education, Health Sciences Education, Computer Education and Distance Education. AIU provides information to the stakeholders in India on their eligibility for admission to an Indian university or on the standing of an institution through e-mail, post and telephone. The latest i.e. 35th Edition of the Universities Handbook and Directory of Member Universities-2024 are available for users. The task of compiling the next version of the Directory and 36th Edition of the University Handbook are under process.

Internationalization of Education

Keeping in view the Globalization, Internalization of Higher Education necessitates increasing international academic collaboration in the areas of common interest, particularly the exchange of students/faculty/research and technical staff, joint research projects, sharing of information, joint training credit transfer, dual/joint degree programmes, recognition of courses and programmes, the equivalence of degree etc. between the universities of India with their foreign counterparts, the AIU works in the area of internationalization. Besides updating, making the earlier MoUs functional, and collaborating with the universities of other countries, AIU also keeps records of the MoUs/Collaboration with International Organization and representation of AIU in various international forums. Keeping pace with the Globalization and Internationalization of Higher Education, AIU has enhanced its international interface further by collaborating with various national and international agencies for the sharing of best practices exchange and student research work etc. AIU has also contemplated establishing the Indian Network for Internationalization of Higher Education (INIHE) for establishing a Consortium of Indian Higher Education Institutions.

Services Offered by AIU to its Member Universities

(i) AIU maintains a close relationship with international organizations in the field of higher

education including the Commonwealth of Learning, the Association of Commonwealth Universities and the Commonwealth Secretariat. Also, AIU is a member of the following international organizations:

- International Association of Universities, Paris (IAU)
- University Mobility in Indian Ocean Region (UMIOR)
- Global University Network for Innovation, Cataluña, Spain (GUNI)
- National Association of Foreign Student Advisers (NAFSA), (USA
- India EU Study Centers Programme
- International University Sports Federation (FISU)
- Asian University Sports Federation (AUSF)

Also, AIU works closely with the following National Level Organizations:

- University Grants Commission, New Delhi
- All India Council for Technical Education, New Delhi
- Indian Council for Agricultural Research, New Delhi
- Indian Council for Cultural Relations, New Delhi
- Education Departments of various States and State Councils
- National Sports Federations of India

Being a member of the Association of Indian Universities, member universities get a platform to project their views in the above forums.

(ii) The Association of Indian Universities (AIU) organizes five Zonal Conferences and an Annual Conference of Vice Chancellors/Directors every year wherein issues of national importance relating to higher education are deliberated. The conference is attended by eminent educationists, international experts, representatives of UGC, heads of apex bodies, Vice Chancellors/Directors of AIU member universities, representatives of the State Higher Education Council, etc.

(iii) The AIU organizes various Round Table Conferences of Vice Chancellors on emerging issues of higher education. The main objective of organizing such programmes is to bring the Vice Chancellors Senior Academics and policymakers on a common platform to discuss and deliberate on the problems and issues relating to higher education. This paves the way for preparing a broader framework for policy formation on issues of national importance.

(iv) AIU conducts many academic research activities for its member universities and Ministry of Education which includes Research Projects, Capacity Building Programmes such as Workshop /Seminar, *Anveshan* – Student Research Convention, Vice Chancellor's Roundtable Conferences, database activities, Publications etc.

(v) AIU organizes various youth development programmes for the students of its member universities, especially on Human & Personality Development, Active Citizenship, Building Youth Leadership, National Character and Cultural Values. These activities provide an opportunity for the students at the AIU member universities for healthy interaction thereby instilling in them an awareness of our historical and cultural heritage. The list of important activities is enlisted below:

a) Inter-University National and Zonal Youth Festivals (AIU UNIFESTS)
b) South Asian Universities Youth Festival (SAUFEST)
c) Inter-University National Qawwali Competition
d) Youth Leadership Camps
e) Yoga Camps
f) Awareness Campaigns (eg. HIV/AIDS, Communal Harmony, National Integration)
g) DSWs & Cultural Coordinators Seminar
h) NSS Workshops
i) Seminars
j) Literary Contests
k) Indian Students Parliament
l) Home Stay Exchange
m) Fine Arts Youth Exhibition, etc.

(vi) AIU functions as a National Sports Promotion Organization (NSPO) for the promotion of competitive sports in the university sector, which is full of sporting potential for excellence. It organizes National University Games and Special

Coaching/advanced Training camps for highly talented and selected athletes in collaboration with its member universities, for the participation of Indian Universities teams/contingent in National and International Sports Championships. At present, 223 sporting events are being organized on an All India and Zonal basis for both men and women sections.

The AIU, being an affiliated member of the International University Sports Federation (FISU) arranges visits of Indian Universities teams for participation in World University Games/ Championships and acts as a host to visiting university teams from other countries as and when required.

Additionally, the selected University students at the AIU member universities get an opportunity to represent Indian Universities in World University Games, World Championship, and Asian University Sports Championships conducted by the International University Sports Federation (FISU) and Asian University Sports Federation (AUSF).

Further, AIU also organizes Capacity-Building and Sports Management programmes for updating professional knowledge and technical skills and promoting anti-doping awareness among the athletes and support staff on a regular basis. The continuous professional development of the faculty (coaches, trainers and Sports scientists) is of paramount importance for the effective management of university Sports, broad-basing Sports and achieving excellence at global competitions.

(vii) AIU promotes and facilitates the Internationalization of Higher Education necessitating increasing international academic collaboration in the areas of common interest, particularly the exchange of students/faculty/ research and technical staff, joint research projects, sharing of information, joint capacity building programme, credit transfer, dual/joint degree programmes, recognition of courses and programmes, the equivalence of degree etc. between the universities of India and other countries. The division also keeps records of MoUs/Collaboration with National/International Organization and the representation of AIU in various international forums.

(viii) AIU provides extensive information related to universities, institutions, professional bodies, accredited courses conducted by all types of universities, teaching staff of university departments, etc. It brings out a comprehensive Universities Handbook giving detailed information about the universities, their faculty, administration, and disciplines in which it offers courses at all levels. It also brings out handbooks on professional courses including Management Education, Engineering Education, Health Sciences Education, Computer Education and Distance Education. The Division also provides information to the stakeholders in India on their eligibility for admission to an Indian university or on the standing of an institution through e-mail, post and telephone. The AIU handbook is sent to all the AIU member universities on a complimentary basis.

(ix) AIU Library and Documentation Division provides its services to member universities/ students/researchers/faculty members of Higher Education as Reference Library and Resource Centre and acts as a knowledge base on higher education.

(x) AIU also brings out the University News, a Weekly Journal of Higher Education. The regular features of the journal are articles related to current, national and global thinking; Campus News; Doctoral Theses; Advertisements for Openings in Universities, Institutes, Colleges and Research Institutes; Admission Notifications; and Calendar of Events. It provides updates on developments in the field of higher education, youth affairs, Sports and culture. Over the years, it has gained immense popularity and has carved a niche for itself in regularity of appearance and richness of its contents.

(xi) AIU maintains the directory of the AIU member universities. The member universities are being provided with a Universities Handbook, Directory, Journal, Bibliography of Doctoral Dissertations and other publication on complimentary basis.

(xii) AIU provides various value-added services to its member universities through the AIU Portal.

(xiii) AIU provides consultancy services to AIU member universities.

Publications

AIU published the following publications and forwarded them to its member universities on a complimentary basis in the last 3 years:

- COVID-19 Response Toolkit for Indian Higher Education Institutions.
- Book on "Reimagining Indian Universities".
- Survey Report on Preparedness of Indian Higher Education Institutions for Online Education
- Measuring Access to Higher Education through Eligible Enrolment Ratio (EER)
- National Education Policy 2020: Proposals & Suggestions for the Implementation
- Compendium on *Anveshan*
- Book on "Protecting Academic Interest of Students during COVID-19 Pandemic – Best Practices"
- Indian Higher Education Profiles (2018-19 and 2019-20).
- A Survey of People of Indian Origin Occupying Various Eminent Positions in International Higher Education and developing a network for cooperation and benefit.
- The National Policy on Blended Learning in collaboration with Commonwealth Educational Media Centre for Asia (CEMCA)
- Edited Volume on The Realising United Nations Sustainable. Development Goals through Higher Education Institutions.
- Edited Volume on Implementing National Education Policy –2020: A Roadmap.

Conclusion

The AIU is the handwork of many generations of university men, particularly the President, who manned its committees and guided its activities. Many of them have passed away; among them, special tribute is due to Dr. A.L. Mudaliar, the doyen of Vice-Chancellors, Dr. C.P. Ramaswami Aiyer, Dr. S. Radhakrishnan, Dr. Zakir Hussain, and Dr. Syama Prasad Mukherjee for the yeoman service they performed. Each President has made his/her contribution to the strengthening and enrichment of the Board. Each took up those problems which happened to be most demanding during his term of office and tackled them with courage and energy. Needless to say, most problems re-emerge in new forms and continue to call for new solutions, so the President's work is never done! But the efforts that each one puts in making their impact help the Board to develop in many ways. The present President, Prof Vinay Pathak, has brought new dynamism and vibrancy to the organisation.

The main burden of the Board's work, however, naturally falls upon the Secretary and his/her staff. The first six Secretaries were honorary and part-time, and yet to judge from the records, they tended the Board in its infancy with great zeal. Professors N S Subba Rao and P. Seshadri are names to be specially remembered. Full-time secretaries have worked only since 1947. Mention has been made of Prof. Samuel Mathai and Dr. B.D. Laroia both gave new stability to the Board and introduced the element of continuity so necessary to its proper working. Dr. Amrik Singh, who served it for more than a decade as Secretary, with his characteristic zeal and devotion, imparted to it a new dynamism. Knowing that the Association can only be as strong as its members make it, he made a point of urging and driving the universities to participate in one or another of its activities and the various programmes initiated by him during and after the Fifth Plan are in no small measure due to his imagination and dedicated work. Prof. Jagdish Narain considerably added to the impetus generated by his predecessor. This was amply reflected in both the achievements in the last few years of his tenure and the fresh schemes which were undertaken. The AIU Building located in Delhi is the outcome of the intention and efforts of Prof Jagdish Narain. Prof. Agrawala's leadership has brought a remarkable height to AIU. Prof K B Powar elevated its new international horizons. He provided academic leadership to the universities as well as the Ministry of Education. Prof Qamar has shown exemplary leadership for the organisation. Now, when the AIU is celebrating its centenary year, it has taken up a large number of activities aimed at supplying information and assistance to its member universities and providing them with a forum for the mutual exchange of ideas. The achievements so far enumerated are very significant, but the greatest and most durable accomplishment of the AIU is that it has succeeded to a great extent in becoming a point of cohesion for the universities which are so varied in their history and tradition, a natural consequence of their functioning in a vast country. The universities are now becoming fused into a coherent society, which is a recognition of the indispensability of the AIU as well as a tribute to the status that it has achieved among them.

AIU will always work towards the fulfilment of its objectives while transforming itself with the changing landscape and use of technology and providing value-added services to its members and other stakeholders.

Disclaimer

The Content of this article has been prepared from the material collected from various sources, including the earlier volumes on the History of AIU. ❑

Setting the Tone for AIU East Zone Vice Chancellors' Meet on Equity, Diversity and Sustainability

Pankaj Mittal*

The Association of Indian Universities (AIU), one of the premier apex higher education institutions of the Country established in 1925, is a research-based policy advice institution to the Government of India in the field of Higher Education, Sports & Culture and internationalization. Dr. Sarvepalli Radhakrishnan, Dr. Zakir Hussain and Dr. Syama Prasad Mukherjee are among some of the stalwarts who served AIU as its presidents. At present, it has a membership of **1068** universities including **19** international universities. Since its inception, it has been playing a vital role in shaping Indian higher education. AIU is vested with the power for according equivalence to Degrees/Qualifications offered by the universities across the world with those offered in India. Being an apex institution, it constitutes an integral part of decision-making and facilitates cooperation and coordination among Indian universities and liaise between the universities and the Government and also national and international bodies of higher education in other countries in the matters of common interest. Also, AIU plays a dynamic role in shaping Indian higher education by being a research-based policy advice institution to the Government of India in the fields of Higher Education, Sports, and Youth Affairs & Culture. As a National Sports Promotion Organization (NSPO) it promotes sports among Member-Universities.

One of the significant activities of the AIU is to convene the Vice Chancellors Meets at the Zonal and National levels to discuss various issues related to higher education. India is a country with a large geographical area, for ease of reaching out, AIU has grouped the member HEIs into 5 zones i.e., North, South, East, West and Central. Thus, 5 Zonal Meets and one National Conference of Vice Chancellors are organized annually. These Meets are important platforms not only to discuss the significant issues of higher education but also to play a catalytic role in finding solutions for different problems of higher education through collective wisdom. Further, AIU carries forward the voice of the participating leaders of higher education to appropriate agencies and authorities for their dispensation. Every year in the National Conference of Vice Chancellors, a specific theme that is of topical significance for the higher education community is taken up for discussion. As a run-up, subthemes related to the main theme are discussed in the AIU Zonal Vice Chancellors Meets.

**Secretary General, Association of Indian Universities, New Delhi. E-mail: sgoffice@aiu.ac.in*

Themes for the AIU Zonal Vice Chancellors Meet–2024-25

Based on current drifts and latent progresses, it is the right time to discuss about role of India in shaping the future of higher education. Therefore, for the year 2024-25, AIU has chosen the main theme "Envisioning Future Higher Education: The Pivotal Role of India" for the AIU National Conference of Vice Chancellors and all the five Zonal Vice Chancellors Meets. Under this overarching theme, the following themes are proposed for the AIU's Zonal Conferences:

North Zone:	*Technological Integration in Higher Education*
West Zone:	*Leadership and Governance in Higher Education*
South Zone:	*Rethinking Assessment and Evaluation*
Central Zone:	*Globalization and Internationalization*
East Zone:	*Equity, Diversity and Sustainability*

AIU East Zonal Vice Chancellors Meet on "Equity, Diversity and Sustainability"

Equity, diversity, and sustainability are interdependent pillars essential for fostering inclusive and resilient communities. Equity ensures that all individuals have access to opportunities and resources, regardless of their background, thereby addressing systemic inequalities and promoting social justice. Diversity celebrates the richness of varied perspectives, cultures and

experiences, enhancing creativity, innovation and problem-solving in both organizations and society. Sustainability, meanwhile, calls for responsible stewardship of environmental, economic and social resources to ensure the well-being of present and future generations. When equity and diversity are integrated into sustainability efforts, they promote a holistic approach that not only protects the planet but also uplifts marginalized communities, creating systems that are not only environmentally sound but also socially and economically just. This synergy enables the development of sustainable practices that are inclusive, equitable, and adaptable, ensuring long-term progress for all.

The AIU East Zone Vice Chancellors' Meet – 2024-25 will be held at **JIS University, Kolkata, West Bengal during 18-19 March, 2025**. The broad theme of the Meet is ''**Equity, Diversity and Sustainability**". The East Zone is constituted of HEIs located in the states of Arunachal Pradesh, Assam, Bihar, Jharkhand, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Uttar Pradesh and West Bengal.

The main theme for the AIU East Zone Vice Chancellors Meet 2024-25 is '**Equity, Diversity and Sustainability**' and the sub-themes are *Incorporating IKS in curriculum and Pedagogy*, *Catering to Equity and Diversity on Campuses* and *Creating Green and Sustainable Campuses*.

Incorporating IKS in curriculum and Pedagogy

Incorporating Indigenous Knowledge Systems (IKS) into curriculum and pedagogy is vital for creating a more inclusive and culturally relevant educational experience. It acknowledges the rich traditions, wisdom and practices of indigenous communities, integrating their perspectives into mainstream education. This approach not only enhances students' understanding of diverse worldviews but also fosters respect for cultural heritage and local knowledge. IKS can be woven into various subjects, from science and environmental studies to arts and social sciences, providing contextual learning that bridges traditional and modern knowledge. Pedagogical strategies such as community engagement, storytelling, experiential learning, and collaborative projects can further enrich the learning process. By valuing IKS, educators create a holistic educational model that not only promotes academic excellence but also strengthens cultural identity, sustainability and social equity.

NEP–2020 also emphasizes, incorporation of IKS into the curriculum and pedagogy for creating an inclusive and multidisciplinary educational framework that values India's diverse cultural heritage. It underlines the integration of local and traditional knowledge into mainstream education to ensure that students are exposed to a holistic learning experience rooted in India's history, values and contributions. This can be achieved by including indigenous knowledge in subjects like environmental studies, health, agriculture and the arts, using region-specific content and pedagogical tools such as experiential learning, storytelling and community projects. Such an approach not only aligns with the vision of NEP 2020 to promote critical thinking and cultural literacy but also empowers students to appreciate and apply indigenous wisdom in addressing contemporary challenges, thereby building a stronger, more culturally conscious and sustainable society.

Catering to Equity and Diversity on Campuses

Catering to equity and diversity on campuses involves creating an inclusive and supportive environment where students, faculty and staff from all backgrounds feel respected, valued and empowered to succeed. This requires implementing policies that ensure fair access to educational opportunities, scholarships, and resources, while also addressing barriers faced by marginalized groups. It also includes fostering a campus culture that celebrates cultural, racial, gender and socio-economic diversity through diverse curricula, mentorship programs and student support services. Also, promoting open dialogue, organizing cultural events and building diverse leadership teams are essential steps to ensure that different perspectives are represented and included in decision-making processes. By embracing equity and diversity, campuses can cultivate a vibrant, collaborative community that not only enhances learning outcomes but also prepares students to thrive in a diverse and interconnected world.

To further strengthen equity and diversity, campuses should prioritize the creation of safe and inclusive spaces where individuals can express their identities and experiences freely. This can include initiatives such as establishing affinity groups, providing mental health support tailored to diverse

needs, and training faculty and staff in culturally responsive teaching and conflict resolution. Integrating diverse perspectives into research and encouraging cross-cultural collaborations can also enrich academic discourse and innovation. By embedding these practices into the institutional fabric, campuses can ensure that diversity is not just acknowledged but actively embraced, contributing to a more equitable and dynamic learning environment for all.

Creating Green and Sustainable Campuses

Creating green and sustainable campuses involves implementing strategies that promote environmental stewardship and resource efficiency across the institution. This can be achieved through the adoption of eco-friendly practices such as reducing energy consumption with renewable energy sources, implementing waste management and recycling programs and conserving water through efficient plumbing systems and rainwater harvesting. Furthermore, integrating green spaces, such as gardens and parks, enhances biodiversity and provides students with areas for relaxation and study. Incorporating sustainability into the curriculum encourages students to engage with environmental issues, fostering a culture of sustainability within the campus community. By prioritizing these initiatives, institutions not only minimize their ecological footprint but also create an inspiring learning environment that prepares students to address global sustainability challenges.

In addition to infrastructure improvements and curriculum integration, engaging the campus community is vital for fostering a culture of sustainability. This can involve creating student-led sustainability committees, organizing workshops and events focused on environmental awareness, and promoting initiatives like carpooling, bike-sharing, and community clean-up days. By encouraging participation from students, faculty, and staff, institutions can harness collective creativity and commitment to sustainability goals. Moreover, recognizing and celebrating achievements in sustainability, such as certifications for green building practices or successful recycling campaigns, can motivate ongoing efforts and instill a sense of pride and responsibility within the campus community. Through these collaborative actions, campuses can effectively promote sustainable practices and inspire future generations to prioritize environmental stewardship.

Session on Innovation, Skilling, Ranking and Assessment

In addition, a session on Innovation, Skilling, Ranking and Assessment will also be held at the AIU East Zone Vice Chancellors' Conference. Innovation, skilling, ranking and assessment are critical pillars in shaping the future of higher education in India, aligning with the transformative vision of the National Education Policy (NEP) 2020. Higher Education Institutions (HEIs) must foster a culture of innovation by integrating emerging technologies, interdisciplinary research and entrepreneurial mindsets into their academic framework. Establishing incubation centers, encouraging start-ups, and leveraging digital tools can drive creativity and problem-solving among students and faculty. Similarly, with a growing emphasis on employability and industry readiness, higher education must shift towards skill-based learning. Institutions should adopt competency-based curricula, integrate vocational training, and collaborate with industry partners to ensure students acquire relevant, future-ready skills. Also, upskilling and reskilling programs will also be crucial for lifelong learning and workforce adaptability. Also, quality assurance through robust ranking and assessment mechanisms enhances HEIs credibility and global recognition. Transparent and dynamic evaluation frameworks, such as NAAC accreditation, NIRF rankings, and global benchmarking systems, help institutions measure performance, identify gaps, and continuously improve. Outcome-based education models, along with data-driven assessments, can also enhance teaching and learning effectiveness. A strategic focus on Innovation, Skilling, Ranking and Assessment will certainly strengthen India's higher education ecosystem, making it more competitive, inclusive, and aligned with global educational standards.

Participation

Vice Chancellors/ Directors of Indian Universities/ Institutes, experts from the Government of India, senior officials of Apex Bodies of Higher Education and Academia will be Chairpersons and Speakers during the various session of the Meet. Experts from international organizations will also be invited to contribute during the discussion. All the deliberation will take place in English language. The sessions will be conducted in physical mode, however, in case any Chairperson/ Speaker is unable

to attend the meet through physical mode, she/he may attend the meet in a blended mode. However, the speakers, chairs and participants need to inform in advance about the mode through which they would like to attend the Meet.

The AIU East Zone Vice Chancellors Meet 2024-25 will also be attended by more than 100 Vice Chancellors/ Directors of AIU member Universities/ Institutes of the East Zone covering the states of Arunachal Pradesh, Assam, Bihar, Jharkhand, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Uttar Pradesh and West Bengal.

Format and Approach

The two-day event will include the Inaugural Session, Session on Interface with Officers from Apex Bodies i.e. UGC, AICTE, NAAC, NSDC and ICAR, AIU Business Session, Valedictory Session and 3 Technical Sessions to discuss the concerned topics.

The 3 Technical Sessions will be held on following sub-themes:

Technical Session 1: Incorporating IKS in curriculum and Pedagogy

Technical Session 2*:* Catering to Equity and Diversity on Campuses

Technical Session 3*:* Creating Green and Sustainable Campuses

Each Technical session will be of approximately of 1 Hour and 30 minutes. In each Session, there will be 1 chairperson and 3 speakers, including experts from Government and HEIs. Presentations will be followed by interaction and a Question-and-Answer session. Based on deliberations, a commitment statement will be framed for the universities to further the cause of Higher Education in India. In addition to academic deliberations, capacity development initiatives will be taken by forming a group of vice-chancellors who will work on various dimensions of leadership and governance in higher education.

Conclusion

In conclusion, the East Zone Meet 2024-25 promises to be a dynamic and insightful event, featuring on Equity, Diversity, and Sustainability, to be concluded with several key takeaways and proposed actions like: Incorporating Indigenous Knowledge Systems (IKS) in Curriculum and Pedagogy, Catering to Equity and Diversity on Campuses, Creating Green and Sustainable Campuses. Promoting sustainable practices within universities, such as reducing carbon footprints, implementing green technologies, and fostering environmental awareness among students and staff. Encouraging the adoption of sustainable infrastructure and resource management practices. Improving ranking and assessment methodologies to better reflect the quality and impact of higher education institutions.

These conclusions aim to foster a more equitable, diverse, and sustainable higher education landscape in the East Zone, while also promoting innovation and skilling to prepare students for future challenges..

The recommendations of this Conference will constitute the discussions in the Annual meeting. Based on the recommendations of this theme in the Annual Meet, '*Envisioning Future Higher Education: The Pivotal Role of India*' will be prepared which will be a handy guide not only for Higher Education Institutions of the Country but also for the universities of other countries. A Policy Document will also be prepared and presented to the Government of India. ❑

JIS University, Agarpara, Kolkata: A Profile

JIS University, Agarpara, Kolkata, West Bengal is hosting the East Zone Vice Chancellors' Meet of the Association of Indian Universities, New Delhi from March 18-19, 2025.

JIS University was established through the Legislative Act of the Government of West Bengal, viz. The JIS University Act, 2014 (West Bengal Act XXII of 2014) came into force in February 2015.

The University's mission is to be one of the top universities in India and a preferred destination for students, research scholars, and faculty members alike. Students aspiring to study in JIS University can be assured of quality education as all courses are duly accredited and affiliated by University Grants Commission (UGC), New Delhi; All India Council for Technical Education (AICTE), Bar Council of India (BCI), Pharmacy Council of India (PCI), National Council for Teacher Education (NCTE) and United Nations Academic Impact (UNAI). JIS University has also a member of the Association of Indian Universities (AIU) since 2017.

Education in today's world has become industry-need-oriented and it requires teaching methodologies to be fashioned in such a manner that suits this requirement. The Learning Management Systems (LMS) that JIS University has introduced will nurture future professionals who will be committed to transformation in our society. JIS University contributes to the growth of higher education, research, entrepreneurship, and skill development to blend traditional methods with modern technology-enabled teaching and learning practices and Research & Development.

Recognitions

JIS University has an objective to provide instructions, teaching, training, and research in various branches and specialised fields of Science, Engineering & Technology, Pharmacy, Management, Juridical Sciences, Education, Hospitality and Hotel Administration, Agriculture, and Advanced Studies and Research. Besides the traditional undergraduate and postgraduate courses. The University provides PhD programmes in various courses as well. Students are offered foreign language classes and are also exposed to international student internships through various student exchange programmes with foreign universities. The University always encourages entrepreneurship and skill development among the students for promoting entrepreneurship, employability, and self-employment.

JIS Group Educational Initiatives - the largest educational conglomerate of Eastern India with 37 Institutions, 170 programmes and 39,000 students began its journey 24 years back. The journey, though not easy, has been quite a successful one. JIS University was established through the Legislative Act of the Government of West Bengal, viz. JIS University Act, 2014 (West Bengal Act XXII of 2014) came into force in February 2015.

The University has a mission to be one of the top-class universities in India and a preferred destination for students, research scholars and faculty members alike. Students aspiring to study in JIS University can be assured of quality education as all courses are duly accredited and affiliated by University Grants Commission (UGC), New Delhi; All India Council for Technical Education (AICTE), Bar Council of India (BCI), Pharmacy Council of India (PCI), National Council for Teacher Education (NCTE) and United Nations Academic Impact (UNAI). JIS University has also a member of the Association of Indian Universities (AIU) since 2017. Our university's NIRF ranking is in the 101-150 range.

Research Centers

JIS University, Kolkata, houses the Centre for Data Science, a premier research center dedicated to fostering innovation and excellence in data science and interdisciplinary research. Established in 2019, the center is committed to bridging the gap between academic knowledge and industry demands by offering cutting-edge postgraduate and PhD programs in Engineering and Science. The Centre for Data Science at JIS University aims to create a highly skilled workforce capable of addressing the challenges of the modern technological revolution. Through a strong focus on translational research, the center provides students with opportunities to engage in industry-oriented projects and secure internships in leading industries and academic institutions across the country.

As an advanced research hub, the Centre for Data Science integrates fundamental scientific principles with technological advancements to address real-world challenges. The center is dedicated to fostering interdisciplinary research, innovation, and entrepreneurship to contribute to societal transformation and development. Recognizing the critical need for industry-aligned education, the center offers specialized postgraduate and research programs that equip students with the necessary expertise to excel in their respective fields.

Under the visionary leadership of Padma Shri (Prof.) Ajoy Kumar Ray, the Centre for Data Science at JIS University, has brought together distinguished academicians and scholars from India and across the globe. Their collective expertise strengthens the center's mission of advancing knowledge, fostering research excellence, and developing future-ready professionals.

Research Collaborations

JIS University, Kolkata, is committed to fostering a strong research ecosystem through strategic collaborations with prestigious academic and research institutions, aiming to enhance knowledge exchange, promote interdisciplinary research, and contribute to technological and scientific advancements. The university actively engages in Memorandums of Understanding (MoUs) with global and national institutions that facilitate faculty and student exchange programs, encourage joint research projects, provide access to advanced research facilities, organize conferences, workshops, and faculty development programs, and support the industry-academia interface for innovation-driven projects. These collaborations aim to bridge the gap between academic knowledge and industry requirements, ensuring that students and researchers gain hands-on experience and exposure to cutting-edge advancements in various disciplines. Key research collaborations include partnerships with institutions such as the Centre for Nanoscience and Nanotechnology at Mahatma Gandhi University, which focuses on nanoscience research and material sciences for industrial applications, Dhaka International University for cross-border academic exchange and collaborative research initiatives, Dukhulal Nibaran Chandra College for higher education research and innovation in emerging fields, and Mrinalini Datta Mahavidyapith for STEM research and interdisciplinary collaborations. The university has been actively involved in conducting various research-oriented activities, such as the Online National Conference on Research Advances in Science & Technology in partnership with the Institute of Engineering & Management, which saw participation from over 110 researchers and academicians; a One-Week Faculty Development Programme on Recent Trends in Nanotechnology, conducted in collaboration with the Centre for Nanoscience and Nanotechnology, attended by 62 faculty members aiming to enhance their expertise in advanced nanotechnological applications; and an International Seminar on Intellectual Property Rights organized with Mrinalini Datta Mahavidyapith College, where 56 participants gained insights into patents, copyrights, and the significance of intellectual property protection in research and innovation. Additionally, JIS University is focused on expanding its research initiatives to include industry-sponsored projects, strengthening global research collaborations, establishing dedicated research centers in fields such as Artificial Intelligence, Data Science, Sustainable Technologies, and Biomedical Engineering, and promoting open-access research initiatives to ensure wider dissemination of knowledge. The university envisions creating a robust research environment where faculty members, scholars, and students work collectively toward solving real-world challenges, thereby making significant contributions to technological innovation and societal transformation. Through these strategic research partnerships, JIS University is shaping a future-ready academic and research landscape that empowers researchers and students with the necessary skills, knowledge, and opportunities to excel in their respective domains, ultimately positioning itself as a leading institution in interdisciplinary research and innovation on a national and global scale.

Outcome Based Education

JIS University adopts Outcome-Based Education (OBE) to ensure a student-centric, skill-oriented, and industry-relevant learning experience. Unlike traditional education, OBE emphasizes predefined learning outcomes, ensuring that graduates acquire the necessary knowledge, skills, and competencies required in their professional fields. The university implements OBE through well-defined Program Educational Objectives (PEOs), Program Outcomes (POs), and Course

Outcomes (COs), aligning with global accreditation standards like NBA and NAAC. The curriculum is designed to be dynamic and interdisciplinary, incorporating skill-based courses, project-based learning, internships, and industry collaborations. Innovative teaching methods such as flipped classrooms, problem-solving sessions, ICT-enabled learning, and virtual labs enhance student engagement. A Continuous Assessment System (CAS) ensures comprehensive evaluation through assignments, quizzes, projects, and rubrics-based assessments. Additionally, JIS University fosters research, innovation, and entrepreneurship through state-of-the-art labs, hackathons, and incubation centers. Strong industry partnerships, guest lectures, and live projects bridge the gap between academia and real-world applications. As a result, JIS University produces industry-ready graduates with enhanced employability, critical thinking, and lifelong learning capabilities. Through its holistic and outcome-driven education model, the university continues to set benchmarks in academic excellence, preparing students for successful careers and meaningful contributions to society.

Central Library

The Central Library building of JIS University is situated in 1st floor of the university building with 5000 Square feet area and is separated into various sections like Acquisition Section, Technical Section, Circulation Section, Reference Section, Periodical Section, Text Book Section, Digital Library, Reading Room, Photocopy Section for the benefit of students, faculty and staff members. Quality Books are being added to the library on a regular basis. The Central Library collection encompasses Agriculture, Education, Engineering and Technology, Juridical Sciences, Management, Pharmacy, Sciences, Religious books.

All the students and employees of the University are eligible for membership of the Central Library. Library issued library membership cards to the registered members. The categories of the Library members are Students, Faculty Members, Staff Members, Research Scholars etc. At present, Library is catering to the information needs of more than 2,000 users with the help of its trained professionals.

The Total collection of Books in JIS University Central Library is more than 13,000 and collection of CDs/ DVDs is 500+. The collection of books includes general books, competitive exam books, text books, language books, reference books. The JIS University Central Library provides access to online Journals and e-Resources of International publications through eShodhSindu, Digital Library Consortium, INFLIBNET and also to subscription based e-Resources from various suppliers and renowned publishers.

The Resources available in JIS University Central Library includes Economic and Political Weekly, India Today, Sportstar, Yojona, Protiyogita Darpan, DELNET Database, J-Gate, Wiley e-Books, IEEE, EBSCO e-Books. Apart from these the library also subscribes print journals.

The Library operations are automated using LIB MAN as Integrated Library Management System. Users can find the latest additions of books and periodicals in the Library, status of books (issued/on-shelf) and against his account books overdue against his/her name. Using Online Public Access Catalogue (OPAC), users can search the Library Online Catalogue by Authors, Title, Subject, and Keywords. The entire Library collection is RFID Taged. RFID technology enables circulation of books in easy, reliable and user friendly manner. Apart from this, any member can also find the status of books issued in their name, overdue, fines, etc.

Library staff members provide guidance in the use of information resources to its newly admitted students through the Library Orientation Program.

There are also departmental libraries well equipped with books and journals under the Central Library. A separate section for the digital library to browse the e-Resources has been developed. Variously subscribed as well as open access, e-Resources can be accessed by the Users. Library provides photocopy services to the users. Apart from these, the Central Library is equipped with free Wi-Fi facility, Printers and Scanners.

The library provides email-based services which include Current Awareness Service, Selective Dissemination of Information, Content Page Service (Journals), Previous years' Question Papers Service, and New Arrival of Books service.

The library is using the Anti-plagiarism software Turnitin, in order to avoid any sort of plagiarism issues and improve upon the quality of publications from the University and also to improve the quality of the assignments/PhD theses submitted by the students of the University.

There is a Spiritual Library and Study Center along with the Central Library. The Spiritual Study Center organizes various spiritual programs and donates religious books like the Adi Sree Guru Grantha Saheb, Sukhmani Sahib.

Library is also actively depositing Ph.D. Thesis to the repository of Shodhganga of INFLIBNET (Information and Library Networking) Centre. Library is also equipped with CCTV cameras for better surveillance of the library to detect and minimize any unwanted activities.

Innovation and Entrepreneurship Activities (2023-24)

Introduction

The academic year 2023-24 witnessed a diverse range of activities aimed at fostering innovation, entrepreneurship, and skill development. These initiatives were driven by Self, MIC (Ministry of Education's Innovation Cell), Institution's Innovation Council (IIC), and various celebrations to enhance awareness, exposure, and practical learning.

Categories of Activities

The activities were classified under different levels, ranging from exposure visits to workshops, expert talks, competitions, and exhibitions. The key themes included Innovation & Design Thinking, Entrepreneurship & Startup, Pre-Incubation & Incubation Management, and IPR & Technology Transfer.

Key Highlights

1. Industry and Exposure Visits: Several visits were organized to research stations, agricultural farms, pre-incubation centers, and technology hubs. Notable visits include the ICAR-Central Soil Salinity Research Institute, Upendra Agri-Horticulture Farm, and Zonal Adaptive Research Station to explore innovative tools and modern agricultural techniques.
2. Workshops and Training Programs: A Faculty Development Programme (FDP) on Blockchain Technology and Cyber Security and a workshop on Prototype/Process Design and Development were conducted to upskill faculty and students.
3. Competitions and Hackathons: Events like SKILL-X 2024, an inter-college quiz competition, and a session/workshop on entrepreneurship with a competition provided platforms for students to showcase their innovative ideas.
4. Celebration of National Days: Special events such as National Youth Day, World Environment Day, National Science Day, and International Women's Day were organized to raise awareness about entrepreneurship and technological advancements.
5. Expert Talks and Panel Discussions: Sessions on Intellectual Property Rights (IPR), Technology Transfer, Business Model Canvas (BMC), and Achieving Problem-Solution Fit & Product-Market Fit helped participants gain insights from industry experts.
6. Innovation and Startup Ecosystem Development: Activities such as mentoring sessions with successful entrepreneurs, exhibition days, and poster presentations on innovative ideas created an ecosystem for entrepreneurship and incubation.

Cultural Tapestry at JIS University

JIS University stands as a beacon of academic excellence, enriched by a thriving cultural landscape that celebrates diversity, tradition, and creativity. The university takes immense pride in fostering an environment where students, faculty, and staff come together to honour cultural heritage through a myriad of vibrant festivities and events.

The **Cultural Club** at JIS University plays a pivotal role in orchestrating various cultural programs throughout the year, ensuring that every occasion is celebrated with enthusiasm and grandeur. The university organizes the **Student Induction Program**, welcoming fresh minds with a spirit of inclusivity and warmth.

Independence Day and **Republic Day** are commemorated with patriotic fervour, featuring flag hoisting, performances, and thought-provoking speeches. The spirit of reverence continues on **Teachers' Day**, where students express their gratitude through heartfelt tributes to their teachers.

The festive zeal is most evident in events like **Agomoni**, marking the joyous onset of Durga Puja, and **Freshers' Welcome Party**, which embraces new students into the JIS University family. The university also observes **Gurunanak Jayanti** with

devotion and harmony emphasizing on "Ek Onkar" meaning "One God". Adding a sense of camaraderie, the annual **Staff Picnic** offers faculty and staff a day of relaxation and bonding.

Marking the birth anniversary of Swami Vivekananda, **Youth Day** is celebrated with inspirational talks and activities that ignite young minds. The much-anticipated **Cultural Fest – Mridang** serves as a grand platform for students to showcase their artistic talents, while **JIS Spirit Cultural Competition** further enhances the creative expression among students in diverse fields like dance, drama, singing, recitation, anchoring, drawing, fashion show, photography, and others.

Spring ushers in a series of exuberant festivals, including **Vasant Panchami**, dedicated to Goddess Saraswati, and **Basant Utsav**, celebrating the hues of spring. The university proudly observes **International Mother Language Day**, emphasizing the importance of linguistic diversity and cultural heritage. **International Women's Day** is marked with events advocating gender equality and empowerment.

As the seasons change, **Barsha Baran** welcomes the monsoons with poetry and melody, and **Rabindra Jayanti** pays homage to the legendary poet Rabindranath Tagore through soulful renditions of his literary and musical works. Finally, the **Farewell Ceremony** is a bittersweet occasion, bidding adieu to graduating students with warm wishes for their future endeavors.

At JIS University, culture is more than just a celebration; it is an expression of unity, tradition, and artistic brilliance. With its dedicated **Cultural Club**, the university ensures that every festivity is a testament to its rich cultural ethos, fostering a dynamic and inclusive community. The JIS University Alumni Association also actively takes part in organizing some of the cultural activities of university

JIS University continues to be a place where learning meets tradition and where every student finds a stage to shine! Artha: The School of Economics at Shri Mata Vaishno Devi University shapes their cognition together and catalogue an event style 'ARTHA'. Based on the idea and concept that in human life there are four goals, one of them is Artha which means right means of wealth for sustaining life. Artha also means the material resource that creates happiness and joy for the society. The event witnesses various eminent personalities who share their ideas and views and enlighten the students with their wise words. Various fun activities and informative conferences are also organized.

Sports Activities

Yoga: The National Service Scheme (NSS), in collaboration with the Sports Club of JIS University, conducts yoga sessions on campus. These sessions attract a large number of students and staff who actively participate with enthusiasm. The primary objective of these sessions is to promote awareness of yoga's holistic benefits for a healthy lifestyle and overall well-being. On 21st June each year, International Yoga Day is celebrated on the campus with active participation from the entire stake holders of the university.

JIS Samman Sports: Each year, the JIS group organizes JIS SAMMAN to showcase the sporting and cultural excellence of students and staff across all the institutes of JIS Group. JIS Samman Sports is organized at three different venues. This mega event brings members of all the institutes together for three weeks. JIS University students and staff participate in all the categories that are organized in the event. This event features inter-institute tournaments across various sports, including Cricket, Football, Volleyball, Badminton, Table Tennis, Kabaddi, Chess, Carrom, and Athletics.

Rx Community Football Tournament: Department of Pharmaceutical Technology, JIS University along with the JIS University Students' Alumni Association organizes intra department football tournament during the week of independence day. Each year this event is organised to bring out new skilful students of the department who can join in the university football team. One alumni team of the pharmacy department participate in this event and make it a grand success each year.

Department of Pharmacy Cricket Tournament: The department of Pharmaceutical Technology organizes an intra-department cricket tournament before the commencement of JIS SAMMAN sports. This event is organised jointly with association of the alumni association of the university. Budding cricketers from the department take part in the event along with the staff and showcase their cricketing skills on the field. Attractive awards are given to the

participants and this makes a path for their entry in the university cricket team.

Hostel Accommodation

We have separate boys' and girls' hostels near the university campus. All facilities are available there, including WiFi, 24-hour water supply, a security system, and everything a student needs.. For this purpose, the University has set up fully furnished accommodation in Hostel Blocks separately for Boys and Girls, whose allotment is done by the Office of Dean Students Welfare. The rooms available for accommodation are Singlet type, Doublet type, Triplet type. Fresher students are normally allotted accommodation in Triplet and Doublet blocks where whereas the senior students are allotted singlet-type accommodation. Presently there are many Boys hostels and Girls hostels are situated near Universities near locations.

The hostel rooms are provided with furniture and fittings in each room comprising of bed, study table, study chair, Almirah and a book shelf rack. All the hostels have Internet connectivity. Strict discipline is maintained in the Hostels. The Hostels have other facilities also for the students such as Common room for indoor games viz Table Tennis, Carom, Chess etc.,fully furnished Mess, Common Reading room having sufficient News papers, Journals and Magazines, besides in the open space inside the hostels The students are not allowed to cook any food items in their Hostel's rooms. Each of the hostels has a separate Mess providing nutritious and whole some food to the students and cleanliness in the mess is given top most priority. Solar heater systems have been set up in each of the Hostels with the help of the various schemes of the Ministry of New and Renewable Energy.

University Social Responsibility

On 11th January 2018 the NSS Unit of JIS University conducted social awareness program at B.Ed College, Contai, Digha. The laws on Female Child Labour were explained in vernacular, and the drama related to Female child labour acted to show the criminal offense and its effect on society. The course of action was also explained, and it was mentioned where to go whether the Police Station or the Legal Aid Society of DLSA. Outcome -The event tried to sensitize the rural community and strengthen their rights with awakening and awareness creation. On 18th May 2018, the NSS Unit of JIS University conducted social awakening program at Ramchandrapur Pollimongol High School, Thakurnagar, North 24 Pgs. The laws on Dowery Death were explained in vernacular and the drama related to conduct of dowery and dowery death acted to show the criminal offense and their effect on society. The course of action was also explained and it was mentioned where to go whether Police Station or the Legal Aid Society of DLSA. Outcome - The event tried to sensitize the rural community and strengthen their rights with awakening and awareness creation. On 28th November 2018 the NSS Unit of JIS University conducted social awakening program at Gayeshpur Netaji Bidyamandir, Kalyani, Nadia. The laws on Gender Equality and POCSO laws were explained in vernacular, and the drama related to Gender Equality acted to show the criminal offense and their effect on society. The course of action also explained, and it was mentioned where to go whether the Police Station or the Legal Aid Society of DLSA. Outcome -The event tried to sensitize the rural community and strengthen their rights with awakening and awareness creation.On 12th to 14th April 2018, Legal Aid Awareness work was held at Vivekananda NGO, Contai Police Station. The program took place at Loksikha Niketan, Contai where the volunteers of the NSS Unit of JIS University acted out a play on old age rights and extensively explained old age rights. The residents were made aware of Child rights and women's rights enshrined under Indian Penal Code, CrPC. They were informed about right to adequate wages and the right against child labour. After Legal rights were explained, the right of maintenance and right against domestic violence were explained in vernacular language.On 14th February 2019, the NSS Unit of JIS University conducted a social awakening program at RCB Saraswat School, Nabadwip, Nadia. The Awareness on Beti Padhao Beti Bachao was explained in vernacular and the drama related to Saving Girl Child and killing of Female Foeticide acted to show the criminal offense and their effect on society. The course of action also explained and it was mentioned where to go whether Police Station or Legal Aid Society of DLSA. Outcome -The event tried to sensitize the rural community and strengthen their rights with awakening and awareness creation. On 25th September 2019 the NSS Unit of JIS University conducted social awakening program at Belgharia

College, Belgharia, North 24 Pgs. The Awareness on Gender Sensitization was explained in vernacular and the drama related to Breaking Gender Barriers acted to show the criminal offense and its effect on society. The course of action was also explained, and it was mentioned where to go, whether Police Station or the Legal Aid Society of DLSA. Outcome - The event tried to sensitize the rural community and strengthen their rights with awakening and awareness creation. On 3rd January 2020, the NSS Unit of JIS University conducted a social awareness program at Krishnanagar Girls High School, Krishnanagar, North 24 Pgs. The Awareness on Women & child trafficking was explained in vernacular and the drama related to Child trafficking acted to show the criminal offense and their effect on society. The course of action was also explained and it was mentioned where to go, whether the Police Station or Legal Aid Society of DLSA. Outcome -The event tried to sensitize the rural community and strengthen their rights with awakening and awareness creation.On 13th June 2020 the NSS Unit of JIS University conducted social awakening program at Khalsa Model School. The Awareness on Acid Attack on Women & NALSA's compensation scheme were explained in vernacular and the drama related to Acid Attack acted to show the criminal offense and their effect on society. The course of action also explained and it was mentioned where to go whether Police Station or Legal Aid Society of DLSA. Outcome -The event tried to sensitize the rural community and strengthen their rights with awakening and awareness creation. On 5th December, 2020 the NSS Unit of JIS University conducted social awakening program at Ariadaha Girls High School. The Awareness on Kidnapping was explained in vernacular and the drama related to Kidnapping acted to show the criminal offense and their effect on society. The course of action was also explained, and it was mentioned where to go, whether Police Station or the Legal Aid Society of DLSA. Outcome -The event tried to sensitize the rural community and strengthen their rights with awakening and awareness creation. On 11th January, 2021, the NSS Unit of JIS University conducted a social awakening program at Mrinalini Dutta Mahavidyapith College Campus. The Awareness on Bigamy was explained in vernacular, and the drama related to Bigamy acted to show the criminal offense and their effect on society. The course of action was also explained, and it was mentioned where to go, whether the Police Station or the Legal Aid Society of DLSA. Outcome -The event tried to sensitize the rural community and strengthen their rights with awakening and awareness creation. On 25th March 2021 the NSS Unit of JIS University conducted a social awakening program at Dhuturdaha Kalyan Parishad High School, Minakha, North 24 Pgs. The Awareness on Dowery Death was explained in vernacular, and the drama related to Dowery Death acted to show the criminal offense and their effect on society. The course of action was also explained and it was mentioned where to go, whether Police Station or the Legal Aid Society of DLSA. Outcome -The event tried to sensitize the rural community and strengthen their rights with awakening and awareness creation. On 15th July, 2021 the NSS Unit of JIS University conducted social awakening program at Vivekananda College, North 24 Pgs. Legal Rights and Advocacy Workshop to educate participants about their legal rights and empower them to advocate for justice and equality. Outcome -The workshop covered a variety of topics related to legal rights, including understanding the constitution, civil rights, human rights, and the judicial system. Legal experts, activists, and practitioners facilitated interactive sessions, providing valuable insights into navigating the legal landscape and accessing justice.On 27th September, 2021 NSS at JIS University conducted a Road Safety Awareness Program aimed at educating the community about safe practices on the roads at Krishnanagar High School. The program covered a wide range of topics related to road safety, including traffic rules and regulations, pedestrian safety, the importance of wearing helmets and seat belts, and the dangers of driving under the influence of alcohol or drugs. Experts in road safety and representatives from local traffic authorities delivered informative presentations and engaged participants in interactive discussions. The Road Safety Awareness Program exemplified the NSS's commitment to promoting community welfare and preventing road accidents. By equipping participants with the knowledge and skills to navigate roads safely, the event aimed to contribute to the reduction of road accidents and ensure the well-being of all road users. Outcome -Overall, the program was a success, raising awareness and fostering a culture of responsible road behavior within the community. On 17th August, 2022 the NSS Unit of JIS University

conducted social awakening program at Bamanpukuria SMM High School, Minakha, North 24 Pgs. The awareness on Beti Padhao Beti Bachao was explained in vernacular and the drama related to Saving Girl Child and killing of Female Foeticide acted to show the criminal offense and their effect on society. The course of action also explained and it was mentioned where to go whether Police Station or Legal Aid Society of DLSA. Outcome -The event tried to sensitize the rural community and strengthen their rights with awakening and awareness creation. On 18th April, 2023 the NSS Unit of JIS University conducted social awakening program at Krishnanagar Girls High School, Krishnanagar, North 24 Pgs. The Awareness on Women & child trafficking was explained in vernacular and the drama related to Child trafficking acted to show the criminal offense and their effect on society. The course of action also explained and it was mentioned where to go whether Police Station or Legal Aid Society of DLSA. Outcome. The event tried to sensitize the rural community and strengthen their rights with awakening and awareness creation.On 28th November, 2023, the NSS Unit of JIS University conducted social awakening program at Gayeshpur Netaji Bidyamandir, Kalyani, Nadia. The Awareness on Rape & Domestic Violence was explained in vernacular and the drama related to Domestic Violence acted to show the criminal offense and their effect on society. The course of action was also explained and it was mentioned where to go, whether the Police Station or the Legal Aid Society of DLSA. Outcome. The event tried to sensitize the rural community and strengthen their rights with awakening and awareness creation.On 18th December 2022, Legal Aid Awareness work was carried out at Adyapith temple. Speeches were given on rights against child labor, the right of maintenance of old people and dependents, rights of married women. With the outreach Legal Aid Camp in Adyapith on 18th December and the Legal Aid Society of JIS University advertised. Rural people in the districts are now aware of the law, their rights and type of Legal assistance, they will get from Legal Aid Cell JIS University. Outcome – The local people came across their rights related to Child Labor, marriage and maintenance of old age people.

Every year, our university organizes a visit to an old age home, where students spend a day with the elderly. This initiative helps bridge the gap between generations and brings joy to the senior citizens. Students engage in conversations, listen to their life experiences, and learn valuable lessons. They also participate in activities like singing, storytelling, and playing indoor games with them. Many students bring small gifts or homemade food to make the elderly feel special. The visit creates a warm and emotional connection between the students and the elderly residents. It teaches students the importance of empathy, kindness, and social responsibility. The elderly people also feel happy and appreciated, as they often suffer from loneliness. This meaningful interaction leaves a lasting impact on both students and the elderly. The university continues this initiative every year to spread love and happiness among senior citizens.

Smart India Hackathon 2024 (SIH 2024)

The 7th edition of the Smart India Hackathon (SIH) was held across 51 nodal centres in India, providing young innovators with an opportunity to develop solutions for a progressive and developed nation. Multiple teams from JIS University participated in SIH 2024, showcasing their innovative ideas and technical expertise. Among them, Team Debuggers from JIS University was selected for the Grand Finale. Team Debuggers focused on leveraging machine learning and artificial intelligence to monitor and measure counter services, demonstrating their skills in cutting-edge technology.

ICPC Asia West Regionals – Amritapuri Selection 2024 The International Collegiate Programming Contest (ICPC) is the oldest, largest, and most prestigious competitive programming competition in the world. Originating in the 1970s, ICPC is conducted across over 100 countries and involves participation from the top universities and colleges globally. The competition challenges students to solve complex, real-world problems using algorithmic approaches, testing their speed, precision, and innovation under time constraints. In India, ICPC is conducted at multiple regional sites, including Amritapuri, Chennai, Gwalior, Kanpur, and Kolkata, to name a few. It attracts participation from thousands of teams representing premier institutions such as the IITs, NITs, IIIT, and other top-tier colleges. Securing a position in ICPC is considered a significant milestone for any B.Tech student aiming to excel in the field of competitive programming. A team from JIS University has been

selected for the prestigious ICPC Asia West Regionals at Amritapuri. This achievement highlights their exceptional problem-solving skills and competitive programming expertise. The International Collegiate Programming Contest (ICPC) is one of the most esteemed coding competitions, where top programmers from across the globe compete to solve complex algorithmic challenges. This selection marks a significant milestone for JIS University, showcasing its commitment to fostering excellence in computer science and competitive programming. Our team, Compiler Error, secured the 79th rank among all college teams in India during the online preliminary round. This achievement has earned us the opportunity to participate in the Amritapuri and Chennai Onsite Regionals.

DSCI -EY Hackathon 2024

This milestone was reached by two students, namely, Suman Kundu and Sayak Nayak, who are third-year B. Tech CSE students of JIS University. Both these students belong to Team BACKTRACK, selected to take part in the much-awaited NASSCOM DSCI-EY Hackathon to be held on December 4 at The Pullman, Aerocity, Delhi. The entire selection started when the college issued application forms via email to applicants. After filling out the forms, candidates were called for a screening round after a few days where some questions related to cybersecurity were asked. Then, on November 17th, they received a confirmation email confirming their selection for the hackathon. At the event, their outstanding performance earned them an internship offer from EY, a global professional services giant. This is an achievement that reflects their exceptional talent, hard work, and dedication, all of which set them apart in the competitive world of technology and innovation.

Participation needed for competition at Acharya Satyendranath Basu Smarak Bijnan O Prajukti Mela At Hedua

The Acharya Satyendra Nath Basu Smarak Bijnan O Prajukti Mela at Hedua Park in Kolkata, West Bengal, invites students and innovators to participate in competitions and activities. Activities like Project presentations, Quiz competitions, Photography reels were there. Students from schools and colleges in the city and from engineering colleges participated. The event, organized by the Paschimbanga Vigyan Mancha, took place at Hedua Park from 22nd to 26th January 2025. Students from our institute also participated and showcased their projects. ❑

Edited Book
on

Realising United Nations Sustainable Development Goals through Higher Education Institutions

By

Dr (Mrs) Pankaj Mittal

and

Dr Sistla Rama Devi Pani

The Association of Indian Universities has come out with a new publication on the vital theme '***Realising United Nations Sustainable Development Goals through Higher Education Institutions'*** this year 2024. AIU undertook several initiatives, like organising consultancies, debates, discussions, and Vice Chancellors Meets with experts from the United Nations, the Government, NITI Aayog, and Industries to deliberate extensively on the various issues regarding SDGs. AIU also gathered articles from experts and erudite scholars on the implementation of the SDGs. Each article in the Book is unique and deals with a wide range of issues involved with SDGs in the words and opinions of the authors. This Book covers a range of articles on the status of implementation and the role that Higher Education Institutions can play in the speedy implementation of all 17 Sustainable Development Goals (SDGs). It certainly acts as a reference guide for those who are stuck in the process of achieving this extremely inevitable Agenda 2030. It provides a roadmap for the government and the universities to act timely to achieve the 2030 agenda for sustainable development.

For further details contact the Editors on Email Id : ramapani.universitynews@gmail.com

Equity, Diversity and Sustainability: The Overview of Interconnections

Upinder Dhar* and Santosh Dhar**

Equity refers to the principle of fairness and justice in the distribution of resources, opportunities, and benefits. It involves addressing and rectifying historical and systemic inequalities, particularly for marginalized and under-represented groups. The key aspects of equity are: *Fairness*: Ensuring equal access to opportunities and resources; *Justice*: Addressing and rectifying historical and systemic inequalities; and *Inclusion*: Creating an environment where everyone feels valued and respected.

Diversity refers to the presence of different groups or individuals with unique characteristics, experiences, and perspectives within a community or organization. It is the presence of a wide range of people with differences in terms of gender, age, race, nationality, religion, ethnicity, sexual orientation, socio-economic status, physical ability, or even political perspective. The key aspects of diversity are: *Representation*: Ensuring diverse groups are represented in decision-making process; *Inclusion*: Creating an environment where diverse individuals feel valued and respected; and *Cultural competence*: Understanding and appreciating different cultures and perspectives.

Sustainability refers to the ability to maintain or support a process, system, or community without depleting natural resources or causing harm to the environment. It is understanding that how we live today affects the ability of all future generation to lead a qualitatively good life. It is an organization's effect on the environment, economy and society. The key aspects of sustainability are: *Environmental stewardship*: Protecting and preserving natural resources; *Social responsibility*: Ensuring fair labor practices, community engagement, and human rights; and *Economic viability*: Maintaining economic stability and growth while minimizing negative impacts.

**Distinguished Professor and Vice Chancellor, Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore–450021, Madhya Pradesh. E-mail: vc@svvv.edu.in*

*** Dean, Faculty of Doctoral Studies, Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore-450021, Madhya Pradesh. E-mail: deanresearch@svvv.edu.in*

An organization's sustainability strategy typically aims to positively impact these areas, thus helping in addressing some of the most pressing present-day problems, such as climate change, depletion of natural resources, pollution, gender inequality, racial injustice, income inequality, fair working conditions, and human rights issues. It is not only the environment and society that benefit from sustainable businesses; the organizations too, gain substantial competitive advantage in terms of lower lifespan and higher returns.

Interconnections between Equity, Diversity, and Sustainability

- *Equity and Diversity are Essential for Sustainability*: Diverse perspectives and inclusive decision-making processes lead to more sustainable solutions.
- *Sustainability Requires Equity and Justice*: Ensuring fair distribution of resources and opportunities is critical for achieving sustainability.
- *Diversity and Equity Enhance Resilience*: Communities with diverse perspectives and equitable distribution of resources are more resilient in the face of challenges.

The practical applications are:

Inclusive Decision-making: Ensure diverse perspectives are represented in decision-making processes;

***Equitable Resource Distribution*:** Allocate resources fairly and address historical inequalities;

Sustainable Practices: Implement environment-friendly practices and reduce waste;

***Cultural Competence Training*:** Provide training on cultural competence and inclusive practices; and

Community Engagement: Engage with local communities and involve them in the decision-making process.

By understanding and addressing the intersections of equity, diversity, and sustainability, one can create a more just, inclusive, and thriving society for all.

Diversity, Equity, Inclusion, and Sustainability are Interrelated

Inclusive leaders have higher cultural intelligence and the necessary skills to manage diversity: Leaders need to communicate with people from different backgrounds effectively and at different levels – internally and externally to improve a company's environmental footprint. Diversity helps form better policies and strategies: Having a workforce representing different demographics, communities, and locations helps to better understand the actual impact the organization and its operations have on the surroundings – both positive and negative. Further, it helps to build better strategies to support society and the environment.

Focus on Equity

Focus on equity and inclusion helps in making the processes more equitable and inclusive; it is vital to include all the stakeholders and generate processes that make every individual feel heard and supported to successfully integrate sustainability into a business strategy. The organisation can miss out on a significant portion of the participation of stakeholders without this.

Focus on Diversity

Diversity leads to more innovation and ensures that the organisation is better prepared to take bold steps. Environmental efforts usually require aggressive actions like breaking customs, rethinking product design, reconsidering the supply chain, and changing certain behaviours and practices within the company toward more sustainable choices. Equity ensures that everyone has the opportunity to participate in the organisation's sustainability efforts. When employees feel valued, they have the comfort and courage to speak up and give suggestions and feel like they support the organisation's measures and work towards a common goal.

Focus on Inclusion

Inclusion leads to more conscious decision-making. Inclusive leaders are aware of their own biases and privileges; hence, they challenge their habitual patterns and make more conscious, fair decisions. They are more likely to combat the old-fashioned methods and channel change at a pace matching current trends. It is essential for the long-term sustainable success of any organisation. Diversity and Inclusion help reach a wider audience. Having people from different backgrounds and including minority stakeholders gives the organisation an insight into the untapped markets. It also helps identify and reduce discrimination, making the organisation a trustworthy brand for its customers and employees.

Inclusive organisations promote transparency and empathy. When there are equal opportunities and a comfortable space for everyone, more transparent communication leads to good governance. Inclusive leaders are more empathetic and thus better equipped to deal with confrontations and conflicts of interest. It helps to maintain fair governance and strong leadership. Diverse and inclusive teams give the organisation a trustworthy brand image: In an inclusive and diverse work environment, the leaders are more open to understanding different opinions from stakeholders, employees, end-users & customers. Thus, it becomes easy to gain support and maintain trust.

Diversity increases creativity and profitability. Different thought processes and varied ideas from employees with diverse backgrounds can improve innovation while reducing risks, as a homogenous group might be drawing from a narrower set of experiences and skills. By understanding and addressing the intersections of equity, diversity, and sustainability, we can create a more just, inclusive, and thriving society for all.

References and Readings

1. *https://www.aihr.com/blog/diversity-equity-inclusion-belonging-deib/*
2. *https://www.linkedin.com/pulse/link-between-sustainability-dei-diversity-equity-/*

❑

To Our Readers

Knowledgeable and perceptive as they are, our contributors must not necessarily be allowed to have the last word. It is for you, the readers, to join issues with them. Our columns are as much open to you as to our contributors. Your communications should, however, be brief and to the point.

Equity, Diversity, and Sustainability

Sanjay Kumar Bahl*

India, a land of progress, prosperity, and boundless potential, is at the forefront of numerous fields, including science, technology, industry, agriculture, business, education, and research. With its rich cultural heritage and long-standing traditions, India continues to be a beacon of inclusivity, conceptual innovation, and unwavering commitment to development. Indians, with their human-centric approach, progressive mindset, and resolute work ethic, excel in all spheres, thriving with confidence, resilience, and a collective sense of purpose. Whether in the domains of scientific advancement or the preservation of cultural values, India has consistently demonstrated its ability to maintain a harmonious balance between modernization and tradition.

A nation that fosters a wide range of thought processes, religions, languages, cultures, and traditions, India has always championed unity, mutual respect, and social harmony. Despite its complex societal fabric, which comprises diverse castes, creeds, sects, and linguistic variations, the core values of Indian society remain rooted in inclusivity, cooperation, and collective progress. India's democratic structure ensures equality of opportunity for all citizens, enabling every individual to pursue their dreams and ambitions without fear of discrimination. The spirit of equity and inclusiveness forms the backbone of the country's societal and economic evolution, playing a crucial role in shaping its growth trajectory.

Equity and Inclusion: A Pillar of Progress

Equity serves as the foundation for a just and fair society, ensuring that every individual, irrespective of their background, has access to resources, opportunities, and rights. In India, policies and legislative frameworks have been developed to promote social and economic equity, enabling marginalized communities to uplift themselves through education, employment, and political representation. Affirmative action policies, such as reservations for Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBC), have provided socio-economically disadvantaged groups with opportunities to bridge historical gaps and compete on equal footing.

Women's empowerment has been another crucial area of focus, with numerous initiatives aimed at increasing female participation in education, entrepreneurship, and governance. Programs like Beti Bachao Beti Padhao, Stand-Up India, and the reservation of seats for women in local governance bodies have been instrumental in challenging gender biases and fostering gender equality. The LGBTQ+ community has also seen increasing legal recognition and societal acceptance, with progressive judgments such as the decriminalization of Section 377 and the legal recognition of transgender rights in recent years.

Despite these advancements, challenges persist. Gender pay gaps, disparities in educational access, and societal prejudices continue to hinder true equity. Bridging these gaps requires sustained policy interventions, community-driven initiatives, and an attitudinal shift toward embracing inclusivity as a shared societal responsibility.

Diversity: Strength in Plurality

India's greatest strength lies in its diversity. The nation is home to a vast spectrum of cultures, languages, traditions, and belief systems, each contributing uniquely to its rich heritage. From the colorful festivals of Holi and Diwali to the spiritual significance of Eid, Christmas, and Gurpurab, India embodies the essence of coexistence and cultural synthesis. The linguistic diversity, with 22 officially recognized languages and hundreds of dialects, further reflects the vibrant mosaic that defines Indian identity.

Diversity extends beyond culture and language; it encompasses economic, geographical, and ideological variations as well. Rural and urban India coexist, each contributing to the country's socio-economic fabric in unique ways. Indigenous tribes, with their age-old wisdom and sustainable practices, enrich India's understanding of ecological conservation, while metropolitan hubs drive technological innovations and industrial growth.

* *Vice Chancellor, Indus International University, Bathu, Haroli, Una, Himachal Pradesh-174301. E-mail: vc@iiuedu.in*

This coexistence is a testament to India's ability to harmonize the old with the new, ensuring that modernization does not come at the cost of erasing cultural legacies.

However, challenges remain in ensuring that diversity translates into equal opportunities for all. Regional imbalances, disparities in access to resources, and the persistence of communal tensions occasionally threaten the spirit of unity. Addressing these concerns requires continued efforts in education, policy-making, and inter-community dialogue to promote a truly inclusive society that values and respects its pluralistic ethos.

Sustainability: A Commitment to the Future

Sustainability is an urgent global imperative, and India has emerged as a proactive player in addressing environmental and socio-economic sustainability. The country has taken significant strides in promoting green energy, afforestation, and climate resilience. With ambitious targets like achieving net-zero carbon emissions by 2070 and scaling up renewable energy capacity, India is setting an example for sustainable development.

Traditional Indian philosophies have long emphasized sustainable living. Practices such as organic farming, water conservation, and Ayurvedic healthcare underscore the nation's age-old wisdom in maintaining ecological balance. Rural communities continue to uphold sustainable lifestyles, relying on natural resources judiciously and employing eco-friendly techniques in agriculture and craftsmanship.

However, rapid industrialization and urbanization pose substantial challenges to environmental conservation. Air and water pollution, deforestation, and the depletion of natural resources threaten long-term sustainability. Urban centers, while contributing significantly to economic growth, also generate immense waste and environmental stress. To combat these challenges, India has implemented policies such as the Swachh Bharat Abhiyan, the National Green Hydrogen Mission, and large-scale afforestation projects to promote environmental restoration and ecological balance.

Social sustainability is equally important. India's commitment to eradicating poverty, enhancing healthcare accessibility, and ensuring quality education for all is evident in initiatives such as Ayushman Bharat, the Mid-day Meal Scheme, and Digital India. By investing in human capital and fostering inclusive economic growth, India is laying the groundwork for a sustainable future where prosperity is not just limited to a select few but is widely shared.

The Role of Global Cooperation

As the world becomes increasingly interconnected, India's role in global sustainability efforts has expanded. The country is an active participant in international forums, including the United Nations, G20, BRICS, and the International Solar Alliance. Through diplomatic engagements and knowledge-sharing, India contributes to shaping global policies on climate change, social equity, and economic inclusivity.

Additionally, India's leadership in sustainable technology, particularly in solar and wind energy, has positioned it as a key player in the global transition toward greener economies. The Make in India initiative, with its emphasis on sustainable industrial practices and innovation-driven solutions, further aligns India's growth trajectory with global sustainability goals.

Conclusion

Equity, diversity, and sustainability are interwoven principles that define India's developmental ethos. As the nation progresses, it remains committed to fostering an inclusive, just, and environmentally responsible society. The path ahead demands collaborative efforts from the government, private sector, and civil society to ensure that these values are deeply embedded in all aspects of national and global progress.

By embracing the philosophy of '*Vasudhaiva Kutumbakam'* (The world is one family), India continues to pave the way for a future that harmonizes tradition with innovation, prosperity with inclusivity, and development with sustainability. The country's resilience, adaptability, and collective spirit will undoubtedly shape a world that thrives on equality, cultural harmony, and long-term sustainability for generations to come.

❑

Equity, Diversity, and Sustainability in Higher Education: An Indian Context

Pramod K Verma*

Higher education institutions in India are increasingly embracing equity, diversity, and sustainability as core principles to foster inclusive learning environments and ensure long-term societal benefits. This paper explores the intersections of these three pillars, emphasizing their mutual reinforcement and the role they play in shaping future generations within the Indian context. By examining best practices, challenges, and opportunities, this research highlights the critical need for India's higher education system to prioritize and integrate these values into its policies, curricula, and community engagements.

Higher education in India has historically reflected the nation's socio-economic and cultural complexities. While the country has made significant strides in expanding access to education, systemic inequities persist. Efforts to enhance equity and diversity are deeply tied to India's constitutional commitment to social justice and affirmative action. Simultaneously, sustainability has become an urgent priority as India faces environmental challenges such as climate change, resource depletion, and urbanization.

Equity, diversity, and sustainability are interconnected principles that can transform India's higher education landscape. Equity ensures fair access and opportunities for students from diverse socio-economic and cultural backgrounds. Diversity enriches the academic experience by integrating India's vast cultural heritage, while sustainability secures resources and fosters responsible citizenship for future generations. Together, these principles can empower higher education institutions to address India's unique challenges and opportunities.

Equity in Higher Education

Equity in Indian higher education focuses on bridging the gaps caused by socio-economic disparities, caste-based discrimination, and gender inequality. Key strategies include:

* *Kulguru, Maharishi Mahesh Yogi Vedic Vishvavidyalay, Dheemarkheda, Madhya Pradesh- 483332. E-mail: vc@mmyvv.*

Reservation Policies

Implementing affirmative action through reserved seats for Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Classes (OBCs), and Economically Weaker Sections (EWS).

Scholarships and Financial Aid

Expanding need-based scholarships such as the Post-Matric Scholarship Scheme for SC/ST students and state-level initiatives.

Support Programs

Establishing mentoring and remedial education programs for first-generation learners and students from marginalized communities.

Diversity in Higher Education

India's cultural, linguistic, and religious diversity provides a rich foundation for fostering inclusion in higher education. Efforts to promote diversity include:

Multilingual Education

Encouraging the use of regional languages in higher education alongside English to make learning accessible to a broader population.

Inclusive Curricula

Incorporating Indian histories, regional literatures, and indigenous knowledge systems into academic programs.

Representation in Faculty

Prioritizing the recruitment of faculty members from underrepresented groups, including women and minorities.

Sustainability in Higher Education

Sustainability in Indian higher education aligns with the nation's development goals and global commitments, such as the Sustainable Development Goals (SDGs). Institutions can lead by example through:

Green Campuses

Promoting rainwater harvesting, solar energy, and waste management systems in Indian universities.

Sustainability Education

Integrating Environmental Science and Sustainable Practices into Curricula across Disciplines.

Community Engagement

Partnering with local Communities to address issues like rural development, Water Conservation, and renewable energy adoption.

Intersections of Equity, Diversity, and Sustainability

The synergy between equity, diversity, and sustainability in India is evident in initiatives that address social and environmental justice simultaneously. For example:

Access to Green Infrastructure

Ensuring sustainable campus development benefits all students, especially those from rural or underserved areas.

Inclusive Leadership in Sustainability

Promoting leadership roles for individuals from diverse socio-economic and cultural backgrounds in sustainability initiatives.

Indigenous Knowledge Systems

Leveraging India's traditional practices for sustainable development while ensuring equitable recognition and representation.

Challenges and Opportunities

Implementing equity, diversity, and sustainability in Indian higher education faces several challenges, including inadequate funding, resistance to policy changes, and infrastructural constraints. However, opportunities include:

Policy Advocacy

Strengthening government policies, such as the National Education Policy (NEP) 2020, which emphasizes equity, inclusion, and sustainability.

Public-Private Partnerships

Encouraging collaborations to mobilize resources and enhance institutional capacities.

Youth Engagement

Harnessing the energy and activism of India's large student population to drive change.

Conclusion

Equity, diversity, and sustainability are essential components of a transformative higher education system in India. By integrating these principles, institutions can create inclusive, innovative, and resilient environments that prepare students to address the country's complex socioeconomic and environmental challenges. The journey requires commitment, collaboration, and continuous reflection, but the rewards—for students, communities, and the nation—are immeasurable.

References and Readings

1. Government of India (2020). *National Education Policy 2020,* Ministry of Education, Government of India, New Delhi.
2. Tilak, J., B., G. (2015). *Higher Education in India: In Search of Equality, Quality, and Quantity.*
3. UNESCO (2017). *Education for Sustainable Development Goals: Learning Objectives.*
4. Ahmed, S., and Swan, E. (2006). *Doing Diversity: Diversity Practices in Organizational Life.* ❑

The 'University News' Journal may also be subscribed through our website in Just 4 Steps:

Step 1 : Open the URL www.aiu.ac.in
Step 2: Click on the Payment Tab available at the top of the Home Page.
Step 3: Select University News Journal.
Step 4: Fill in the requisite details and click Pay Now.
(Payment may be made by any of the payment Modes (UPI / Debit Card / Credit Card / Net Banking).

For any query regarding subscription, please write to: subsun@aiu.ac.in, publicationsales@aiu.ac.in

Catering to Equity, Inclusiveness and Diversity on Campuses: Policy and Action Frameworks

Nazir A Ganai*

Globally, one in every six people experiences some form of discrimination. Such discrimination and inequality implicate long-term social and economic development, jeopardizes social cohesion, harm poverty reduction, and cause disparities in opportunities and outcomes, impeding economic efficiency. Promoting diversity, equity, and inclusion in educational institutions is an important step towards tackling inequality and eliminating discrimination (UN Global Impact, 2020). Educational institutions, including universities and colleges, are increasingly appreciating the importance of Equity, Inclusion, and Diversity (EID) at workplaces on the campuses. With greater access to education, the UN has identified three important SDG's (Anonymous, 2015) related to fair and just ecosystems in educational institutions that are enabling, motivating, non-discriminatory and promote the development of diverse social classes, including culturally, financially, and ethnically marginalised groups and also promote well-being and stress-free participation of diverse groups without any bias based on gender and class. The UN SDG 4 (Quality education), 5 (Gender equality), and 10 (Reduced inequalities) explicitly underscore the need for an effective equity, inclusion, and diversity framework in educational institutions. The major objectives of an EID framework are:

1. Create an enabling environment to equip university staff to carry out their roles and responsibilities with regard to equity, inclusion and diversity
2. Create a work ambiance that promotes collaboration, engagement and excellence and reflects our collective commitment to advance the instrumental work of equity, inclusion, and diversity
3. Identify, attract, and retain diverse communities across all levels
4. Implement programs, processes, and policy recommendations that work towards sustaining inclusive, non-discriminatory, welcoming, and highly productive workplace and professional environment

* *Vice Chancellor, Sher-e-Kashmir University of Agricultural Sciences and Technology, Kashmir, Jammu and Kashmir-190025. E-mail: vc@skuastkashmir.ac.in*

Components of EID Framework

Equity

Equity is the "fair treatment, access, opportunity, and advancement for all members of university community viz., students, faculty, and staff in every stage education and career development. A strong commitment to ensuring equity in higher education confronts the existing power dynamics and disproportionate access to resources (Rahman, 2017). In the case of universities, equity reflects the relationship between the university and its community, power, and privilege. An equity action plan seeks to create a more equitable university by identifying and overcoming structural and systemic barriers and confronts the way power and privilege function to exclude equity in higher education and invariably create barriers to the fruitful engagement of marginalized groups. The principle of equity acknowledges that there are historically underserved and underrepresented populations and that fairness regarding these unbalanced conditions is imperative to assist equality in the provision of effective opportunities to all groups.

Inclusiveness

Inclusiveness in higher education refers to the incorporation of community members including faculty, students, staff, and other stakeholders with diverse disabilities into academic, research and governance campus, across disciplines and departments with non-disabled peers. Everyone on the campus should feel valued, connected and become able to be their authentic self?" in fact, Inclusiveness is the emotional part of EID framework and ensures that everyone's ideas have been heard, respected and understood. It is the feeling of having personal involvement in an ecosystem, getting acceptance, being part of something and feeling supported as well as giving support to others in the system.

Diversity

Diversity in higher education institutions encompasses or reflects the different characteristics that distinguish one individual or group from another. In addition to race, ethnicity and gender, a broad definition of diversity includes representing

differences of national origin, disability, ability, sexual orientation, socioeconomic status, tribal affiliation, age, religion, education, marital status, language, veteran status and many more. Diversity in higher education institutions enriches the educational experience., promotes personal growth and a healthy society, fosters mutual respect and teamwork, and helps build communities whose members are judged by the quality of their character and their contributions. It also enhances the institution's academic and research competitiveness

Impact of a Fair EID Ecosystem on Scholarly Output

A fair EID ecosystem on campuses leads to tangible benefits, especially in terms of improved scholarly outputs. The diverse multicultural ecosystems promote greater engagement and lead to the convergence of diverse ideas, opinions and solutions among and between faculty and students.

Better Academic Performance of Students

The campuses with fair EID ecosystems see students, especially the ones from marginalized groups, as well as first-generation students, perform better academically. The students feel a sense of inclusivity and safety on campuses

Reduces Bias

EID ecosystems create diverse learning groups in campuses, leading to reduced bias and greater peer-to-peer contacts, which leads to increased understanding of diverse perspectives and development of trust. The students from diverse backgrounds, especially culturally marginalised once, feel less stressed, leading to better outcomes.

Engaged Faculty

The faculty at campuses with effective EID ecosystems promotes greater mentorship, leading to increased job satisfaction, and transparent hiring process.

More Engaging Curriculum and Learning Process

EID ecosystems lead to more engaged scholarship, leading to improved curriculum and engaged learning. Diverse faculty and student groups lead to greater innovations in curriculum development. The Engaged academic networks connect classroom learning to the challenges facing faculty and student communities and help overcome barriers to learning such as racial bias, and discrimination based on cultural background, gender and sexuality.

Development of Leadership Potentials

Students that are a part of diverse multicultural ecosystems have a greater tendency to become leaders, as such students are more engaged in their communities on account of better education. With better academic profiles, such students are more likely to participate in local governance and politics, and move into leadership roles in society. They also promote diversity in their new roles as local and national leaders and are more prepared for diverse professional settings.

Developing and Implementing an Effective EID Framework

In order to develop and implement an effective EID framework on campuses, a structured policy and action plan that caters to diverse dimensions of equity, inclusiveness, and diversity has to be put in place, including the setting of monitorable indicators. There has to be a periodic appraisal of the impacts of EID framework in terms of improved academic performance, faculty and student retention, increased diversity at different levels, and also undertake potential gaps in implementation. The various aspects of an effective EID framework implementation are presented in Table 1.

EID in the Indian Context

India is making significant strides in creating enabling educational institutions by promoting tolerance, inclusivity, and representation of all sections of society by removing the barriers created by prejudice, discrimination, and marginalisation due to socio-cultural differences. Diversity, equity, and inclusiveness are fundamental pillars of justice guaranteed by the Indian constitution as part of the fundamental rights of a person. Right to equality before the law and equal protection of the laws (Article 14), prohibition of discrimination on the grounds of religion, race, caste, sex, or place of birth (Article 15), and provision of equal opportunity for all citizens (Article 16). In the Indian legal framework, constitution of India ensures special protection and affirmative action for SC/ST and other socially and economically backward classes and EWS in the form of reservations of seats/ vacancies, and/or age limit relaxations, attempt relaxation as well as eligibility criteria both in educational as well as employment. Some of the legal frameworks that promote EID in institutions under the constitution of India are:

Table 1: Effective EID Framework Implementation and Indicators

Framework component	Action	Monitorable indicators
A. Academic support		
Identify students who require more academic support	• Constitute committees at campus levels to identify the students who require more academic support. • Remedial classes of such identified students should be arranged	Percentage of students transiting from one year to another
Improve language competency, soft skills and confidence levels	• Language labs shall be established in at all campuses. • Necessary physical infrastructure and trained manpower for developing such skills. • Curriculum restructuring for promoting soft skills and language competency.	• Enhanced communication skills of students will • More confident and students with expertise in public speaking
Financial support		
Scholarship for • SC/ ST/OBC • Economically weaker sections • Transgenders	Awareness regarding the various scholarship programmes among the students belonging to various categories	• Reduction in College / University dropouts • Students attaining education without financial problems. • Enhanced enrolment of SC/ ST/OBC/transgenders in the University.
Policy Support		
Gender-neutral Sexual harassment policy	• Every University should have a blue book containing information regarding sexual assault awareness and prevention would be Published & distributed among the University employees to know. • Organising awareness programmes would help people understand their rights, dos and don'ts, and complaint processes.	• Reduction or No sexual harassment cases in the University • More awareness about Sexual harassment and ways to combat this menace
Reservation for females and third gender in various University level Committees	Females and transgenders should be included in all the committees framed at campus and University levels as per the percentage decided by the University.	Promotion of Gender equality and fair representation of all genders in all spheres of the University activities
Training and Capacity Building		
On-campus training for female teaching and non-teaching staff	• On-campus training would be organised for the females who can't go out of the valley due to family obligations. • Experts (Trainers)from all over the country may be invited to the University campus thereby enhancing the skills and expertise of the female employees.	Females with enhanced skills and expertise

Framework component	Action	Monitorable indicators
Awareness programmes for the parents of the female students	Awareness programmes for the parents of the girl students would be organised at the university level so that they get motivated to send their girls outside the valley for higher education and also for other developmental programmes	• After graduating from institution, more number of girls would seek admission in other institutes of the country and abroad. • Participation of girl students in developmental programmes and training in India and abroad
Social Etiquette Trainings for the students & staff belonging to disadvantaged sections of the society	Trainings for the students by Etiquette experts	Refined students with ability to carry themselves in every social arena and professional world as well.
Celebrating Equity Week	• Awareness programmes, discussion, debates and brain storming sessions shall be organised to promote equity and equality • Recognising and presenting Awards for those who work for attaining equity and equality	Enhanced equality, fair and just environment in the University
Making Uniform mandatory for UG students in all faculties	Type and colour of the Uniform may be decided by each campus itself.	• Promote Sense of equality among students • More professionalism
Supporting economically weaker students who are interesting to become entrepreneurs	• Training them in making business proposals and their successful implementation • Establishing ties with angel investors to fund their projects • Helping them in availing benefits of various start-up schemes implemented by government.	Enhancement in the socio-economic status of economically weaker students.
Human Resource Development cells at campus level	Would identify the employees (teaching & non-teaching) that need training and development, thus making them competent like other employees thereby ensuring equality	Enhanced competence among the weaker employees.
Promoting Multicultural Engagement		
Awareness Programmes regarding Combating Ethnocentrism (Linguistic, Regional, Caste & Religion etc.)	• Making Cultural clubs and helping students to mingle with different cultural Clubs. • Encouraging students to Celebrate festivals together and respect each other's religion, culture and tradition. • Organise language days and motivate students to learn and appreciate the beauty and contribution of various languages in the societal development	• Promote equality • Shunning of belief that any culture, race, religion and language is superior than other leading to growth of students as better human beings.

Framework component	Action	Monitorable indicators
Grievance Redressal		
Grievance Redressal cells in all faculties	Constituting grievance cell with Convener, Advocate and other members	Satisfied students with appropriate redressal of their problems
Physical Infrastructure		
Creche for children of employees	Construction of creche (big room with pantry and washroom) in all the faculties	• Creche facility would allow women to continue their job as a professional as well as a mother. • The crèche facility would permit women to look after her child even during work.
Women hygiene facility	Installation of vending machine & incinerators	Stress free periods
Rest Room for girls	Identification of a room in every faculty as rest room	Rest room with basic facilities
Ramps & Wheel Chairs for Physically disabled	• Purchase of wheel chairs • Construction of Ramps	Ramps will facilitate the movement of Physically disabled
Washrooms for Physically handy caped	• Construction disabled friendly was rooms. • Approaching companies like Jaguar who have expertise in designing such bathrooms	• Disable people would go to washrooms without seeking help of others • Reduced stress among disabled people would give them feeling of being independent
Separate Car parking for physically disabled	Identifying appropriate car parking space for physically disabled with • appropriate area and • proper signs indicating that the parking space is meant for specially abled people	Enhanced comfort for Physically disabled
Make campuses physically and socially gender-friendly, including provisions for students of transgenders	• Counselling cells for transgenders • Separate washrooms for transgenders	More number of transgenders pursuing higher education
Prayer room for females and diverse religions	Identifying a room and naming it as prayer room for females	Prayers shall be offered exclusively in the prayer room instead of other places
Mess facility	Creating a separate mess facility with diverse food preference groups	Diverse food groups have food satisfaction.

- The Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989, entails a broader protection from insults, intimidations, humiliations, and maltreatments on the grounds of caste/tribe that may lead to enmity, ill-will or hatred against each other.
- The Equal Remuneration Act, 1976 ("ERA"), prevents discrimination against women employees in recruitment, work conditions, and remuneration to any person that are less favourable than those paid to workers of the opposite sex for performing the same or similar work.
- The Transgender Persons (Protection of Rights) Act, 2019 ("TP Act") stands for the prevention of abuses and discrimination towards transgenders.
- The Maternity Benefit Act, 1961 ("MB Act")

provides additional leaves and benefits to female employees, including fully paid maternity, while in case of a miscarriage or termination of pregnancy, it provides for entitlement to 6 weeks of paid leave.

- All institution having 50 or more employees are required to provide a crèche facility (or day care) within or near the campus.
- The Rights of Persons with Disabilities Act, 2016 ("PWD Act"), provides for equal opportunities to persons with disabilities and promotes job opportunities, accommodations, amenities, assistance, and other facilities on the campuses.
- The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 ("POSH Act") provides for the prevention of sexual harassment of female employees on campuses. Under POSH Act, the institutions are required to frame preventive policies and set up grievance redressal mechanisms as well as sensitize the employees towards the prevention of sexual harassment of female employees.

Promoting EID: SKUAST, K Initiatives

Throughout its 40-year history, SKUAST-K has consistently advocated a stand for equity, inclusion, and diversity, inextricably linked to our vision and mission and serve as a foundation upon which our renewed vision is built. We value our diverse and inclusive workforce, as well as the stakeholders that we serve, who have helped us engage with our communities and demonstrate excellence. Our EID action plan comes from a thorough assessment of where SKUAST, Kashmir stands with respect to EID, including inputs from our members and external stakeholders. We will work to apply an EID point of view to everything we do, starting with specific efforts focused internally related to age, ability, disability, ethnicity, gender, sexual orientation, language, personality type, race, religion, level of professional competence, job title and discipline.

As an institution of higher learning, SKUAST, K dedicates itself to providing equitable access to a diverse workforce and student community and becoming a mutually inclusive public university. It seeks to create a safe and respectful environment and learning communities that value diverse cultural, ethnic and gender backgrounds and respect dignity and promote inclusive excellence. SKUAST, Kashmir is committed to transforming the University community into one that promotes social justice and freedom, including but not limited to racism, sexism, ageism, and ableism. We support and encourage diversity among all our community members and in all staff, students, Farmers, volunteers, and audiences' participation in university programs, policy formulation, and decision-making. We are committed to equitable treatment and the elimination of discrimination in all its forms.

Conclusion

Diversity is an exciting trip that can only be successful if everyone is equally brought along. SKUAST, K's quest for greatness can be achieved by the Equity Action Plan. Diversity, Equity, and Inclusion can help institutions in implementing the university's highest values through EID action plan: fairness and respect for individuals and their ideals; opportunities for underrepresented and underserved groups; an inclusive student body and work environment; academic and research excellence through inclusive values; and measurable initiatives in place to ensure progress in diversity, equity, and inclusion.

References and Readings

1. Anonymous (2015). Transforming Our World: The 2030 Agenda for Sustainable Development. *www. docs.un.org/en/A/RES/70/1*
2. Rahman, S., B. (2017). Inclusion in Education Inclusiveness in Higher Education, MSc thesis submitted to North South University, 28pp.
3. UN Global Impact (2000). Diversity, Equity and Inclusion. *www.unglobalcompact.org/take-action/action/dei*

❑

Higher Education for Equitable and Sustainable Development

P B Sharma*

Higher Education, for a long time, has been a valid means for scientific, technological and industrial advancement and has been perceived as being pivotal to the economic growth and development of the nation in particular and the world at large. Great progress has been made from the 2nd World War onwards on the strength of science and technology advancement to create great economies of the world and to empower humanity with layers of prosperity and capabilities to scale new heights of human endeavors. Highly impressive advancement has been made in the areas of Information and Communication Technologies, new energy technologies, space science, medical diagnostics, robotics and automation and lately, the new high being created on the strength of AI, ML, Large Data Analytics, Nanoscience & Technology and Quantum Computing.

Higher education in the universities, including here in India, has played a highly significant role in creating the vital capacity to innovate and excel and strengthen the nation's resolve to march on the pathways of progress, prosperity and development. But then, with every development, there is an inherent price to be paid by humanity at large. It is this price that creates economic inequality, massive shift of population from rural to urban and environmental pollution creating global challenges such as climate change, bourdon of diseases, exploitation of national resources and above all an uneven balance of power. As such there is a case for new impetus and radical reforms in higher education and research ecosystem for creating a caring, compassionate, equitable and sustainable development.

Higher Education - The Engine of World Economy in the Age of AI

The world economy in 2025 stands at a crucial juncture to achieve accelerated economic growth on one hand and accomplish the gigantic task of achieving Net Zero Emissions and fulfilment of SDGs on the other. It is this twin task that invites higher education and research in the universities around the world, more so in developing economies like India, to undergo rapid transformation in creating the vital strength to accomplish this monumental task for a nation that is having its fastest growing economy.

It goes without saying that the world economy is a complex and interconnected system, driven by innovation, technology, and a highly skilled workforce. At the heart of this dynamic landscape lies higher education, a critical engine for growth, development, and global competitiveness. Investing in higher education is not merely an investment in individuals; it's an investment in the future prosperity of nations, and, in fact in the future of mankind. However, the success shall singularly depend upon our ability to achieve economic growth with sustainability and inclusivity and not otherwise.

India in the World Economy

India today stands at a crossroad, the pathways it chooses now on shall determine the future of the nation and its vast population, currently accounting to 17.78% of the world with its current share of GDP being 3.94 trillion US dollars, amounting to approximately 3.61% of the world GDP, as may be seen from the table below. Compared to India, the other most populous country, China with its 17.4% of population registered the GDP contribution of 17% of the word GDP, proving the point that human resource is a great advantage as it becomes human capital comprising of highly skilled and trained workforce which when backed by sound scientific advancement and technology innovations allows the nation to harness the great creative and innovative potential of its vast human resources. No wonder, the second largest economy of the world, China has also emerged as the top most contributor to scientific research and IPR creation, clearly demonstrating that the higher education and research propelled the rapid rise of China to great eminence in economic growth as can be seen from Tables 1 and 2 below. India, on its part has a great opportunity to harness its vast human resources and science and technology research and innovation capacity. Higher education and research in universities in India shall play a highly impactful role in the rapid transformation of India as a great economic powerhouse of the world. The opportunity to do so is truly great as India cruises to transform its economy to 30 trillion dollars by 2047 and also achieve Net Zero Emission targets by the time it celebrates the 100th year of its independence.

* *Vice Chancellor, Amity University Haryana, Gurugram, Manesar, Haryana,Fellow, World Academy of Productivity Sciences, former Professor of IIT Delhi, Founder Vice Chancellor of DTU and RGPV, Past President of AIU, President of the World Academy of Higher Education & Development. 122413. E-mail: pbsharma@ggn.amity.edu*

Table 1: Top 10 Countries by GDP and their Population Percentage

Rank	Country	GDP (USD) 2024	% of Total	Population %
1	**US**	**$28.78 Tn**	26.4%	4.23%
2	**China**	**$18.53 Tn**	17%	17.39%
3	**Germany**	**$4.59 Tn**	4.21%	1.04%
4	**Japan**	**$4.11 Tn**	3.77%	1.52%
5	**India**	**$3.94 Tn**	**3.61%**	17.78%
6	**UK**	**$3.50 Tn**	3.21%	0.85%
7	**France**	**$3.13 Tn**	2.87%	0.82%
8	**Italy**	**$2.33 Tn**	2.14%	0.73%
9	**Canada**	**$2.24 Tn**	2.06%	0.49%
10	**Brazil**	**$2.19 Tn**	2.01%	2.60%

Table 2 : Top 10 Countries for Patents Filing and Research Publications

Country	Patents Filed 2023	Percentage Change (2022 -23)	Publications
China	1642507	3.60%	3055269
US	518364	2.50%	1829022
Japan	414413	2.20%	372990
Republic of Korea	287954	5.70%	292461
Germany	133053	1.40%	539583
India	64480	15.70%	807549
France	52582	-3.20%	330027
UK	48227	0.80%	603765
Switzerland	41876	4.80%	47607
Italy	26818	1.30%	411288

But it may be worth noting that economic prosperity alone is not a sufficient condition for a nation's development; it requires each nation to march on pathways of happiness, good health, and sustainability. Table 3 below provides a comparative assessment of the Top 10 nations of the world in respect of their accomplishments on happiness and sustainability indices.

Higher Education for Skills and Research for Development with Sustainability

One of the most significant contributions of higher education is the creation of a skilled and adaptable workforce. Universities and colleges equip graduates with the critical thinking, problem-solving, and specialized technical skills necessary to thrive in an increasingly complex job market. In a world driven by technological advancements, these skills are not just valuable; they are essential for driving innovation and productivity. Companies across all sectors rely on a pipeline of highly educated individuals to fuel their growth and maintain a competitive edge.

Beyond workforce development, higher education institutions serve as vital hubs of research and development. Universities are where groundbreaking discoveries are made, new technologies are developed, and innovative solutions to global challenges are explored. This research fuels economic growth by creating new industries, improving existing products and services, and driving technological progress. From advancements in medicine and engineering to breakthroughs in artificial intelligence and renewable energy, higher education plays a pivotal role in shaping the future of our world.

In an increasingly interconnected global economy, higher education is also a key driver of national competitiveness. Countries with highly educated populations are better positioned to attract foreign investment, participate in international trade, and adapt to rapid technological change. A strong higher education system signals a nation's commitment to innovation and progress, making it a more attractive destination for businesses and talent.

Furthermore, higher education fosters an entrepreneurial spirit, encouraging graduates to take risks, start their own businesses, and create jobs. This entrepreneurial ecosystem is vital for economic dynamism and diversification, driving innovation and creating new opportunities for growth. Universities are increasingly supporting entrepreneurship through incubators, accelerators, and mentorship programs, nurturing the next generation of business leaders.

The benefits of higher education extend beyond economic growth. It also plays a crucial role in promoting social and economic mobility. By providing opportunities for individuals from diverse backgrounds to access quality education, higher education empowers individuals to improve their social standing and contribute to a more equitable society. This, in turn, strengthens the economy as a whole by unlocking the potential of all its citizens.

Looking ahead, a sustained focus on sustainability and research for development along the pathways of circular economy would be required to make higher education serve the needs of the humanity, now that we have a common future and are faced with challenges. In this respect higher

Table 3 :Top Countries by Global Innovation Index 2023 and Sustainability Index

S No	Country	GII 2024	Human Capital & Research	Knowledge & Technology Output	Creativity Output	Environmental Performance Index
1	Switzerland	1	4	1	1	9
2	Sweden	2	3	2	12	6
	USA	3	12	4		73
3	Singapore	4	2	9	3	44
4	Korea	6	1	10	4	58
5	Finland	7	6	6	7	4
6	Germany	9	5	11	18	3
7	Danmark	10	9	13	14	10
8	China	11	22	03	11	156
9	Japan	13	19	12	19	27
10	**India**	**39**	**51**	**22**	**52**	**176**

education will be instrumental in addressing the pressing global challenges of our time, from climate change and public health crises to sustainable development and resource scarcity. Universities are at the forefront of research efforts to find solutions to these challenges, educating the next generation of leaders and innovators who will be tasked with building a more sustainable future.

Addressing the Key Challenges a Must

However, realizing the full potential of higher education requires addressing several key challenges. Ensuring equitable access to higher education for all, regardless of socioeconomic background, is paramount. Maintaining high standards of quality and relevance is also essential. Higher education institutions must adapt their programs to meet the evolving demands of the job market and equip graduates with the skills they need to succeed in the 21st-century economy, which is driven by the ingenuity of man and the smartness and intelligence of machines. Finally, adequate funding and investment in higher education are crucial for supporting research, innovation, and infrastructure development. Much of this funding for research should flow from industries so that both the relevance of research is ensured and the gap between university research and industry innovative product development is bridged to the fullest extent.

Viksit Bharat@2047 Vision

The *Viksit Bharat* Vision focuses on various facets of development, such as accelerated economic growth, environmental sustainability, social progress, and good governance, to make India a developed nation by 2047. What's more, such phenomenal growth is to be achieved with Net Zero Emission targets by 2070 or even as early as 2047.

The latest report of the World Economic Forum on the Future of Jobs-2025 states that "Technological change, geoeconomic fragmentation, economic uncertainty, demographic shifts and the green transition – individually and in combination – are among the major drivers expected to shape and transform the global labour market by 2030". Two demographic shifts are increasingly seen to be transforming global economies and labour markets: aging and declining working age populations, predominantly in higher-income economies, and expanding working age populations, predominantly in lower-income economies. These trends drive an increase in demand for skills in talent management, teaching and mentoring, and motivation and self-awareness.

Climate-change mitigation is the third-most transformative trend overall – and the top trend related to the green transition and is expected to transform the business in the next five years. This is driving demand for roles such as renewable energy engineers, environmental engineers, and electric and autonomous vehicle specialists, all among the fastest-growing jobs. Climate trends are also expected to drive an increased focus on environmental stewardship, which has entered the Future of Jobs Report's list of top 10 fastest-growing skills for the first time. As such, higher education from now on is required to pay greater attention to creating a workforce not only capable but fully committed to the cause of environmental sustainability and research and innovations that prepare the nation and the global community to march on the pathways of peace, prosperity, happiness, and sustainability. It is this charter that requires university leadership to revitalize, even radically reform, the education and research ecosystem. ❑

Equity, Diversity, and Sustainability in Open and Distance Learning under NEP–2020: A Path to Inclusive Learning

Sanjay Tiwari*

India's open university system has been instrumental in providing accessible and flexible education to diverse populations, particularly marginalized communities, and learners in remote areas. This study examines the role of Open and Distance Learning (ODL) in promoting equity, diversity, and sustainability, with a focus on the reforms introduced by the National Education Policy (NEP) 2020. The policy emphasizes multidisciplinary learning, digital integration, and skill-based education to bridge educational disparities. Madhya Pradesh Bhoj (Open) University (MPBOU) served as a case study, showcasing its efforts to provide equitable learning opportunities through scholarships, gender inclusion programs, digital initiatives, and special provisions for disadvantaged groups. Additionally, this paper explores the sustainability initiatives undertaken by MPBOU, including digital learning infrastructure, environmental responsibility, and alignment with Sustainable Development Goals (SDGs). By integrating innovative learning models and inclusive policies, open universities have played a crucial role in reshaping India's higher education landscape.

India has a rich educational heritage, with ancient institutions such as Nalanda and Takshashila offering diverse courses. However, historical invasions and colonial rule have disrupted these systems, leading to the need for modern educational reforms (Mondal, 2023). To address the challenges of providing quality education to India's vast population, particularly in rural areas and marginalized communities, the country introduced an open university system (Singh & Mishra, 2023). This innovative approach aimed to expand access to higher education through distance learning and flexible study options. Students can pursue degrees at their own pace and balance their education with work and other commitments. Courses are delivered through various media, including printed materials, online resources, and occasional in-person sessions (Tomar, 2024). Open universities can serve students in remote areas and those unable to attend traditional institutions. Offerings range from undergraduate to postgraduate degrees, covering various disciplines. Generally, being more affordable than traditional universities makes higher education accessible to a broader demographic (Kawale, 2024). Caters to adult learners and those seeking to upgrade their skills or change their careers (Mishra & Mishra, 2024). The open university system complements traditional higher education institutions, helps to address the gap in educational access, and supports India's goal of increasing its gross enrollment ratio in higher education (Borah, 2024).

Open and Distance Learning (ODL) in India has been crucial for increasing educational access for learners who face financial, sociocultural, and geographical barriers. It offers flexible learning opportunities, allowing students to learn at their own pace and place, which has been instrumental in enhancing the Gross Enrollment Ratio (GER) in higher education (Radha & Arumugam, 2023). The system has been particularly beneficial in providing education to marginalized communities and those in remote areas, thereby promoting inclusive growth (Mangat, 2024). Before NEP–2020, the open and distance education system in India was primarily guided by the National Education Policy of 1986 and its revised version of 1992. These policies laid the groundwork for distance education but did not fully address the challenges of accessibility and equity (Sardar, et. al., 2024). The focus was primarily on traditional education models, with a limited emphasis on multidisciplinary and flexible learning approaches. The system lacks the flexibility needed to accommodate diverse learning needs and backgrounds (Rathi, 2024).

The open and distance education system in India played a significant role in promoting educational equity, especially before the implementation of the National Education Policy (NEP) 2020 (Tayade, 2024). This system aimed to provide educational opportunities to those unable to access traditional classroom settings because of various barriers. NEP 2020 marks a significant shift in India's educational

**Vice Chancellor, Madhya Pradesh Bhoj Open University, Bhopal B Gopal Krishna Sr Consultant, Madhya Pradesh Bhoj Open University, Bhopal. E-mail : stiwari@fulbrightmail.org*

landscape, introducing reforms to enhance accessibility, equity, and quality in higher education, including open and distance learning (Sharma & Solanki, 2024). The introduction of NEP 2020 has brought about a paradigm shift, aligning the system with global standards and Sustainable Development Goals (SDGs) (Chakraborty et al., 2021). The sustainability of open universities in India has also been influenced by NEP 2020, which emphasizes the integration of SDGs into higher education. Post-NEP 2020, there is a stronger alignment with the SDGs, promoting quality education and sustainable development (Priyadarshini & Abhilash, 2020). Prior to NEP 2020, initiatives, such as MOOCs through the SWAYAM platform, aimed to promote equity, quality, and access by providing flexible learning opportunities to a diverse range of students (Datta & Mete, 2021). These courses help integrate learners from various backgrounds, promoting inclusivity in education (Reshma, et. al., 2024).

The Indira Gandhi National Open University (IGNOU), established in 1985, is India's premier open university that serves as a model for other institutions in the country (Castro & Jabbour, 2013). To date, 16 state-level open universities have been established to cater to regional educational needs (Varghese, 2022). Madhya Pradesh Bhoj Open University (MPBOU), established in 1991 in Bhopal, Madhya Pradesh, is a pioneering institution in Open and Distance Learning (ODL). Named after the visionary 11th-century ruler Raja Bhoj, the university is dedicated to promoting inclusive and equitable education, ensuring that higher learning reaches diverse and underprivileged communities across the state and beyond (Annual Report 2023-24, MPBOU).

MPBOU prioritizes equitable access to education by addressing financial, geographical, and social barriers that prevent many individuals from pursuing higher education (Parvez & Agrawal, 2019). The university offers scholarships, fee waivers, and financial aid to marginalized communities, including Scheduled Castes (SC), Scheduled Tribes (ST), economically weaker sections, and persons with disabilities (Rajubhai, 2024). Special initiatives, such as education programs for jail inmates and flexible learning opportunities for women, further reinforce its commitment to bridging educational disparities (Borah, 2024). With a student base comprising individuals from various socioeconomic, cultural, and professional backgrounds, MPBOU fosters a diverse learning environment. The university provides multidisciplinary programs, vocational courses, and skill-based training to cater to different learner needs (Yadav, 2023). It actively supports gender inclusion through dedicated programs for female and transgender students, ensuring that education remains accessible to all. Additionally, MPBOU promotes regional language learning alongside digital and technical education, making it a truly inclusive institution (Priyadarshini & Abhilash, 2020).

The MPBOU integrates sustainability into its curriculum, digital infrastructure, and institutional policies. By leveraging Information and Communication Technology (ICT) tools, e-learning platforms, and digital libraries, universities reduce paper consumption and promote eco-friendly learning solutions (Chakraborty et al., 2021). Programs on rural development, environmental management, and sustainable practices equip students with the knowledge and skills required to contribute to global sustainability efforts (Castro & Jabbour, 2013). The university's efforts align with the Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education), by ensuring lifelong learning opportunities for all (Parvez & Agrawal, 2019). Through its emphasis on equity, diversity, and sustainability, the MPBOU continues to transform higher education in India. By aligning with the National Education Policy (NEP) 2020, the university is strengthening Open and Distance Learning (ODL) and contributing to a more inclusive, adaptable, and future-ready education system.

This article discusses the equity, diversity, and sustainability of Open University education systems by highlighting their role in providing accessible and flexible education. The reforms introduced by NEP 2020 to enhance accessibility, equity, and quality of education were also examined. Madhya Pradesh Bhoj Open University (MPBOU), Bhopal, India, has also explored how MPBOU has contributed to equitable and inclusive education through digital initiatives, scholarships, gender inclusion programs, and education for special groups such as jail inmates. It also highlights how NEP 2020 has facilitated multidisciplinary learning, the integration of technology, and skill-based education to cater to diverse learners. It also explores how sustainability principles, including digital learning, environmental responsibility, and inclusivity, are being integrated into the curriculum and operations of open universities such as MPBOU post-NEP–2020.

Equity and Accessibility

The National Education Policy (NEP) 2020 aims to transform the education system, including open and distance education, to make it more equitable and inclusive (Tayade, 2024). This policy introduced several reforms to enhance access, quality, and equity in education, particularly in higher education. NEP 2020 emphasizes equitable and inclusive education by addressing disparities and improving access for underrepresented groups, such as marginalized communities and children with disabilities (Singh & Mishra, 2023). This aligns with constitutional provisions and the Right to Education Act, focusing on strategies to bridge gaps and promote inclusivity. This policy also highlights the importance of girls' education and alternative forms of schooling to ensure that all sections of society benefit from educational opportunities (Mangat, 2024). Additionally, the introduction of the Gender Inclusion Fund supports female and transgender students by addressing challenges, such as sanitation and transportation (Borah, 2024).

NEP–2020 promotes the use of digital technology to improve the quality and accessibility of higher education. By integrating technology into education, the policy enhances learning experiences and expands access to students in remote areas (Datta & Mete, 2021). A focus on online platforms and high-quality digital content is expected to facilitate credit transfer systems and improve access to education, particularly for students who may not have the means to attend traditional institutions (Reshma et al., 2024). The open and distance education system focused on providing equitable access to education by integrating various ICT tools and e-learning platforms after the NEP 2020 (Chakraborty, e.t al., 2021). This approach aims to support inclusive growth by facilitating quality education and ensuring that all students have the opportunity to learn on the same platform. This system emphasizes making education available, accessible, and acceptable to all, which is essential for sustainable inclusive growth (Priyadarshini & Abhilash, 2020).

The policy encourages the use of digital platforms and high-quality content to improve access to education, particularly for students in remote areas. Digital adoption enhances the reach of open and distance learning, making education more accessible and flexible. The introduction of the Academic Bank of Credits (ABC) further supports this flexibility, allowing students to tailor their educational paths (Rajubhai, 2024).

NEP–2020 encourages multidisciplinary education and flexible curricula that are integral to open and distance learning. This approach aims to create well-rounded individuals equipped with 21st-century skills, fostering a more holistic educational experience (Sharma & Solanki, 2024).

Equity and Accessibility at Madhya Pradesh Bhoj (Open) University (MPBOU)

Madhya Pradesh Bhoj (Open) University (MPBOU) has played a crucial role in ensuring equity and accessibility in education, particularly in the context of Open and Distance Learning (ODL). MPBOU established 11 regional centers across Madhya Pradesh to facilitate student learning and support. These centers help students with counseling, assignment submissions, and academic queries (Annual Report 2023-24, MPBOU). The university offers undergraduate, postgraduate, diploma, and certificate programs across diverse disciplines, catering to a wide range of learners. The university aligns its efforts with the National Education Policy (NEP) 2020, which focuses on inclusive and equitable education for all sections of society, particularly marginalized communities, women, and students with disabilities (Parvez & Agrawal, 2019).

MPBOU utilizes Information and Communication Technology (ICT) tools and e-learning platforms to bridge the educational divide. These efforts facilitated inclusive growth by making quality education available to all students, ensuring that no group was disadvantaged by socioeconomic or geographical factors (Mondal, 2023).

- Digital and Technological Integration: MPBOU has adopted digital platforms such as Learning Management Systems (LMS) to enhance accessibility for students from remote and rural areas (Varghese, 2022).
- Gender Inclusion Fund: The university has adopted policies aligned with NEP 2020 to support female and transgender students by addressing challenges such as the fee waiver (Borah, 2024).
- Scholarships and Fee Waivers: The university provides fee concessions and financial aid for students from marginalized communities, ensuring that financial constraints do not hinder access to education (Radha & Arumugam, 2023).

- E-content and self-learning materials (SLM) are available in both print and digital formats, ensuring accessibility for diverse learners (Yadav, 2023).
- E-Mentoring and Digital Learning Resources: Online tools and Open Educational Resources (OER) facilitate self-paced learning (Priyadarshini & Abhilash, 2020).
- Support for Jail Inmates: Special provisions are made for incarcerated individuals, allowing them to pursue higher education (Rathi, 2024).
- Women's Education Programs: Special facilities and flexible learning options encourage female participation in higher education (Sardar et al., 2024).

MPBOU has made significant strides in achieving equity, and challenges such as the digital divide, infrastructure limitations, and variability in implementation at the state level persist. The university continues to work towards bridging these gaps through policy-driven reforms and technological integration (Castro & Jabbour, 2013). By aligning with NEP 2020 and adopting inclusive educational strategies, MPBOU reinforces its commitment to making education equitable, accessible, and transformative for all (Tomar, 2024).

Diversity in Open and Distance Education System

The National Education Policy (NEP) 2020 aims to transform the educational landscape by promoting inclusivity, flexibility, and accessibility, thereby enhancing diversity in India's open and distant education system (Tayade, 2024).

The key aspects of diversity in open and distance education post-NEP 2020 are as follows.

- Multidisciplinary and Flexible Education: NEP 2020 emphasizes multidisciplinary education and flexible curricula, allowing students to tailor their learning experiences according to their interests and career goals (Reshma, Vaddiraju, & Savitha, 2024).
- Integration of Technology: This policy promotes digital tools and e-learning platforms such as SWAYAM and DIKSHA to enhance accessibility and learning opportunities, particularly for students in remote areas (Datta & Mete, 2021).
- Increased Accessibility and Equity: NEP–2020 focuses on bridging disparities by providing quality education to marginalized and underrepresented groups through online and distance education platforms (Singh & Mishra, 2023).
- Vocational and Skill-Based Training: This policy encourages skill development and career-oriented learning, broadening the scope of education beyond traditional academic subjects (Rajubhai, 2024).
- Inclusive Education: NEP–2020 aligns with global standards such as Sustainable Development Goal 4, aiming to reduce disparities in educational access and outcomes across different communities (Borah, 2024).
- Promotion of Multilingualism: This policy supports education in regional languages alongside English, improving accessibility and learning outcomes for students from diverse linguistic backgrounds (Mishra & Mishra, 2024).
- Support for Open and Distance Learning: NEP 2020 recognizes the role of open and distance learning in increasing the Gross Enrollment Ratio in higher education. It supports the use of technology to enhance learning, assessment, and administration, thereby promoting inclusive growth (Tomar, 2024).

NEP–2020 emphasizes inclusive education by addressing financial barriers, digital infrastructure inadequacies, and language support for marginalized communities. However, challenges such as complex scholarship access and elitist curricula persist, necessitating targeted interventions and increased financial support to enhance inclusivity (Mangat, 2024). The policy aligns with Sustainable Development Goal 4, which focuses on inclusive and equitable quality education to bridge disparities across different regions and communities in India (Radha & Arumugam, 2023). NEP–2020 promotes a multidisciplinary approach and flexible curricula, aiming to create well-rounded individuals equipped with 21st-century skills. This flexibility caters to diverse learner needs and backgrounds, fostering a more inclusive educational environment (Sharma & Solanki, 2024). Massive Open Online Courses (MOOCs) play a crucial role in promoting inclusivity by offering flexible opportunities to diverse learners (Chakraborty et al., 2021). The SWAYAM platform, operating under the principles of equity, quality, and access, integrates learners from various backgrounds to enhance educational diversity in education (Mondal, 2023).

Diversity at Madhya Pradesh Bhoj (Open) University (MPBOU)

Madhya Pradesh Bhoj (Open) University (MPBOU) plays a crucial role in fostering diversity and inclusivity in Open and Distance Learning (ODL). By aligning with the National Education Policy (NEP) 2020, the university has expanded its reach to students from diverse socio-economic, regional, and cultural backgrounds, ensuring that education is accessible to all (Annual Report 2023-24, MPBOU).

With the implementation of NEP–2020, MPBOU has significantly expanded diversity and inclusion by introducing new policies and programs: MPBOU has witnessed a significant rise in student enrollments, including a balanced gender ratio and representation from marginalized groups. MPBOU actively supports tribal, rural, and economically weaker students through Fee Waivers & Scholarships: Special provisions for SC/ST, economically backward, and tribal students (Sardar et al., 2024).

- Women's Education Initiatives: Flexible learning, scholarships, and counseling services to increase female enrollment (Rathi, 2024).
- Support for Jail Inmates: Providing education to incarcerated individuals and helping in their rehabilitation and reintegration (Kawale, 2024).

MPBOU has introduced diverse programs to support students from different academic and professional backgrounds:

- Recognition from National Council for Vocational Education and Training, New Delhi as an Awarding Body (Dual).
- Diploma in Cyber Security, AI & Data Science, Business Administration, and Rural Management.
- Certificate courses in Human Rights, Indian Literature, and Yoga.
- SWAYAM & DIKSHA platforms for MOOCs (Massive Open Online Courses) (Priyadarshini & Abhilash, 2020).
- Inflibnet Learning Management System (ILMS) for flexible digital learning (Varghese, 2022).

MPBOU embraced diversity by implementing NEP–2020 reforms, introducing inclusive policies, digital education initiatives, and vocational courses. While challenges persist, universities' commitment to equitable education continues to enhance learning opportunities for students from all backgrounds (Parvez & Agrawal, 2019; Castro & Jabbour, 2013; Yadav, 2023).

Sustainability in Open Universities in India

The concept of Sustainability Science (SS) was recognized globally as essential for achieving sustainable development goals, but its presence in Indian higher education remained minimal (Priyadarshini & Abhilash, 2020). NEP 2020 aims to integrate development goals into higher education, promoting inclusivity, flexibility, and the use of digital technologies to enhance access and quality (Tayade, 2024).

1. Curriculum and Policy Alignment: NEP 2020 encourages the integration of SDGs into curricula to foster innovation, research, and sustainable development (Radha & Arumugam, 2023). However, SS, as a standalone course, remains limited, with sustainability principles mostly embedded in existing programs (Parvez & Agrawal, 2019).
2. Sustainability Models and Frameworks: The Infusion and diffusion models continue to be explored, while frameworks such as UI Green Metric and STARS assess university sustainability performance, although compliance is still developing (Castro & Jabbour, 2013).
3. Integration with SDGs: NEP 2020 aligns with SDG 4, promoting access to quality education and equipping students with sustainability-focused skills (Borah, 2024).
4. Indigenous Knowledge Systems (IKS): This policy supports integrating IKS with modern education to promote cultural identity and sustainability (Mishra & Mishra, 2024).
5. Lack of Comprehensive Curriculum: The absence of a dedicated SS curriculum highlights the need for a structured approach to sustainability education (Priyadarshini & Abhilash, 2020).
6. Implementation Challenges: Barriers include inadequate infrastructure, limited teacher training, and difficulties in adapting curricula to include sustainable content (Datta & Mete, 2021).
7. Potential for Growth: Universities integrating sustainability into operations and curricula, such as Ashoka University, can serve as models for others (Chakraborty et al., 2021).

8. Opportunities for Improvement: Digital adoption and flexible learning paths offer ways to expand sustainability education, especially in remote areas (Tomar, 2024).

To enhance Sustainability Education, there is a need to develop specific sustainability courses and improve teacher training programs for better alignment of higher education with the SDGs (Radha & Arumugam, 2023). There is a need to establish robust policies and monitoring mechanisms to ensure effective implementation and reporting of sustainability initiatives (Reshma, et. al., 2024).

Sustainability of Madhya Pradesh Bhoj Open University (MPBOU)

With the introduction of the National Education Policy (NEP) 2020, MPBOU has taken steps to integrate sustainability into its curriculum, research, and operational framework (Annual Report, 2023-24). Sustainability in education includes environmental responsibility, digital learning infrastructure, equity in education, and alignment with global sustainability goals such as the United Nations Sustainable Development Goals (SDGs).

i. Academic and Curriculum Sustainability

MPBOU has expanded its curriculum to align with sustainability goals. Some key highlights include the following.

- Offering new certificates and diploma programs focusing on the environment, rural development, and digital skills (Mondal, 2023).
- Adoption of digital learning platforms such as Learning Management Systems (LMS) and Self-Learning Materials (SLM) to reduce paper usage (Datta & Mete, 2021).
- Programs such as Certificate in Rural Development and Diploma in Energy Management contribute to sustainable development by training students in crucial environmental and socioeconomic subjects (Singh & Mishra, 2023).

ii. Technological and Digital Sustainability

- Digital Infrastructure: MPBOU leverages online resources, such as Swayam, e-PG Pathshala, and its LMS platform, to deliver content, ensuring accessibility to students across rural and urban areas (Tayade, 2024).
- E-Library and Open Educational Resources (OERs): The university provides digital textbooks and multimedia content to enhance learning flexibility while reducing the environmental impact (Mangat, 2024).
- Online Student Support: Use of a toll-free number, online feedback system, and digital grievance redressal mechanisms to ensure sustainability in administrative processes (Rathi, 2024).

iii. Inclusivity and Social Sustainability

- Equity and Diversity: MPBOU focuses on marginalized communities, including tribal populations, providing fee waivers and financial aid to underprivileged students (Mangat, 2024).
- Women's Empowerment: Special support for female learners, flexible learning options, and counseling programs help increase female participation in higher education (Sharma & Solanki, 2024).
- Education for Prison Inmates: The university extends educational services to incarcerated individuals and promotes rehabilitation through learning (Sardar, et. al., 2024).

iv. Environmental Sustainability Initiatives

- Paperless Education: With a shift toward online learning and digital materials, MPBOU significantly reduces its environmental footprint (Varghese, 2022).
- Green Campus Initiative: Implementation of environmental policies in university operations to promote sustainability (Rajubhai, 2024).

Madhya Pradesh Bhoj Open University is making significant strides toward sustainability by embracing digital learning, inclusivity, and environmental responsibility. While challenges persist, MPBOU has the opportunity to be a model for sustainable open universities in India through strategic investments in digital infrastructure, policy reforms, and enhanced sustainability-focused curricula (Kawale, 2024).

NEP–2020 is a comprehensive policy that seeks to revolutionize the Indian education system by making it more equitable and inclusive (Rathi, 2024). Through digital initiatives and a focus on marginalized communities, the policy aims to improve access to

education for all (Borah, 2024). However, successful implementation requires addressing challenges related to funding, resource allocation, and stakeholder collaboration (Sardar, et. al., 2024).

Before NEP–2020, the open and distance education system in India played a pivotal role in promoting educational equity by providing flexible and accessible learning opportunities (Mondal, 2023). NEP 2020 introduced major reforms to diversify and enhance the inclusivity of open and distance education (Tomar, 2024). By integrating technology, promoting multidisciplinary education, and improving accessibility, the policy aims to create a more flexible and equitable educational system (Yadav, 2023). These changes are expected to cater to a wider range of student needs and capabilities, fostering a more diverse and inclusive learning environment (Reshma, et. al., 2024).

NEP–2020 has significantly influenced sustainability in Indian open universities by aligning education with the SDGs, promoting quality education, and increasing access (Borah, 2024). Although progress has been made, further research and implementation efforts are needed to fully achieve sustainability goals in higher education (Chakraborty, et. al., 2021). NEP 2020 presents a transformative vision for higher education in India, focusing on equity, diversity, and sustainability (Rathi, 2024). While the policy offers significant opportunities for reform, its success hinges on addressing implementation challenges and fostering collaboration among various stakeholders to ensure an inclusive and equitable education system for all (Sharma & Solanki, 2024). By addressing existing challenges and aligning with global educational standards, the policy has the potential to revolutionize the educational landscape in India (Kawale, 2024).

Conclusion

The implementation of NEP 2020 marked a significant transformation in India's open and distance education system by fostering equity, diversity, and sustainability. This policy has enhanced accessibility through digital platforms, financial aid, and inclusive curricula, ensuring that education reaches underrepresented communities. Madhya Pradesh Bhoj Open University (MPBOU) exemplifies these efforts by addressing socioeconomic and geographical barriers, promoting multidisciplinary education, and integrating sustainability principles into its operations. Despite progress, challenges such as the digital divide, resource constraints, and implementation gaps remain. Sustained policy efforts, technological advancements, and collaborative strategies will be essential to fully realize the potential of open universities in achieving an inclusive and future-ready education system in India.

References and Readings

1. MPBOU (2023). Annual Report 2023-24, Madhya Pradesh Bhoj (Open) University, Bhopal, Madhya Pradesh.
2. Borah, C. (2024). The Need of Equitable Education in India through NEP 2020 in Light of Sustainable Development Goals, *International Journal for Multidisciplinary Research. https://doi.org/10.36948/ijfmr.2024.v06i03.23111.*
3. Castro, R., and Jabbour, C. (2013). Evaluating Sustainability of an Indian University, *Journal of Cleaner Production, 61*, 54-58. *https://doi.org/10.1016/J.JCLEPRO.2013.02.033.*
4. Chakraborty, A., Kumar, S., Shashidhara, L., & Taneja, A. (2021). Building Sustainable Societies through Purpose-Driven Universities: A Case Study from Ashoka University (India), *Sustainability. https://doi.org/10.3390/SU13137423.*
5. Datta, R., & Mete, J. (2021). Digital Initiatives of New Education Policy 2020 on Higher Education in India, *Asian Journal of Electrical Sciences. https://doi.org/10.51983/ajes-2021.10.2.3169*.
6. Kawale, P. (2024). Current Scenario of the National Education Policy (NEP) 2020. *Gurukul International Multidisciplinary Research Journal. https://doi.org/10.69758/gimrj/2409iii07v12p0008.*
7. Mangat, P. (2024). Inclusivity in Higher Education: Analysing the Implementation of NEP 2020 for Marginalized Communities in India, *ShodhKosh: Journal of Visual and Performing Arts. https://doi.org/10.29121/shodhkosh.v5.i1.2024.1990*.
8. Mishra, S., and Mishra, P. (2024). National Education Policy 2020 and Multilingualism in India, *International Journal of English Literature and Social Sciences. https://doi.org/10.22161/ijels.91.46.*
9. Mondal, S. (2023). Inclusive Growth, A Gateway of Sustainable Development of Higher Education Through Open and Distance Learning in India, *International Journal of Innovative Research in Multidisciplinary Education. https://doi.org/10.58806/ijirme.2023.v2i12n02.*
10. Parvez, N., and Agrawal, A. (2019). Assessment of Sustainable Development in Technical Higher Education Institutes of India, *Journal of Cleaner Production. https://doi.org/10.1016/J.JCLEPRO.2018.12.305.*

(contd. on pg. 32)

Reimagining Indian Higher Education: A Needonomics Approach to Equity, Diversity, and Sustainability

Madan Mohan Goel*

Indian higher education is undergoing a transformational phase but continues to grapple with several challenges that hinder its ability to provide quality education to all sections of society. These challenges include unequal access to education, lack of diversity, and unsustainable educational practices. Needonomics School of Thought offers a unique and pragmatic perspective on overcoming these issues by integrating the principles of equity, diversity, and sustainability.

By adopting Needonomics, higher education institutions in India can create a more inclusive and holistic learning environment. This approach aligns with the National Education Policy (NEP) 2020, which advocates for equity, diversity, and sustainability while promoting the inclusion of Indian Knowledge Systems (IKS) in mainstream education.

This paper explores how the principles of Needonomics can help address the critical challenges in Indian higher education, ensuring a more equitable, diverse, and sustainable academic ecosystem.

Needonomics Perspective

The Needonomics School of Thought acknowledges that Indian higher education is characterized by deep-rooted structural inequalities. Various socio-economic factors have led to disparities in educational opportunities, which, in turn, have created barriers to holistic and sustainable learning.

Needonomics emphasizes a needs-based economic and educational model that prioritizes what is necessary over what is superfluous. This model encourages stakeholders to focus on fundamental educational needs, such as accessibility, inclusivity, and sustainability. By applying Needonomics principles, higher education institutions can create a fairer and more balanced system that caters to the needs of all students, irrespective of their background.

** Formerly Vice Chancellor, Starex University, Gurugram, Jagannath University, Jaipur, and RGNIYD (Govt. of India), Tamil Nadu. Presently, Propounder Needonomics School of Thought, and Superannuated Professor of Kurukshetra University, Kurukshetra, eNM Research Lab, Global Centre for Needonomics, 894, Sector 13, Urban Estate, Kurukshetra -136118 (Haryana). E-mail : mmgoel2001@yahoo.co.in*

The integration of equity, diversity, and sustainability within the Needonomics framework can address existing educational challenges by promoting:

- Equitable access to quality education.
- Diversity in academic representation and participation.
- Sustainable policies and practices that benefit future generations.

Indian Knowledge Systems (IKS) for Holistic Education

Indian Knowledge Systems (IKS) offer a rich repository of traditional wisdom that can significantly contribute to creating a more inclusive and holistic education system. The integration of IKS into higher education can help:

Preserve and Promote Indian Culture and Heritage : IKS includes traditional sciences, arts, ethics, and indigenous knowledge that can help students develop a deep appreciation for their roots.

Enhance Interdisciplinary Learning : Combining IKS with modern scientific knowledge can foster innovative thinking and problem-solving.

Promote Sustainable Living : IKS emphasizes ecological balance, Ayurveda, and sustainable agricultural practices, which align with global sustainability goals.

Foster Ethical and Moral Values : Ancient Indian philosophies, such as Vedanta and Buddhist teachings, encourage holistic personal development.

By embedding IKS into the curriculum, higher education institutions can cultivate a sense of national pride and identity while equipping students with a broader understanding of India's intellectual and cultural contributions.

Aligning with NEP—2020

The National Education Policy (NEP) 2020 provides a progressive roadmap for reforming India's

education sector. Some key aspects of NEP 2020 that align with Needonomics include:

Emphasis on Equity and Inclusion

NEP–2020 calls for eliminating barriers to education based on gender, caste, economic background, and disabilities.

Integration of IKS

The policy highlights the importance of incorporating Indian Knowledge Systems into mainstream education.

Holistic and Multidisciplinary Education

NEP–2020 promotes a flexible and multidisciplinary learning approach, which aligns with Needonomics principles.

Focus on Sustainability

The policy encourages higher education institutions to adopt sustainable practices and instill environmental consciousness among students.

Needonomics complements the NEP- 2020 vision by advocating for education that meets the essential needs of individuals, society, and the environment.

Understanding Needonomics

Needonomics is a multidisciplinary approach that focuses on fulfilling the essential needs of individuals, communities, and ecosystems in a sustainable manner. Unlike consumerism, which emphasizes excessive consumption, Needonomics prioritizes necessity-based decision-making.

In the context of Indian higher education, Needonomics encourages stakeholders to:

- Prioritize essential learning over the excessive commercialization of education.
- Foster an inclusive and diverse academic environment.
- Implement sustainable and responsible education policies.

By adopting Needonomics, Indian higher education can shift from a market-driven model to a needs-based, value-driven framework.

Adopting Needonomics: A Call to Action for Stakeholders

To successfully integrate equity, diversity, and sustainability into Indian higher education, stakeholders must embrace the core principles of Needonomics. This requires a strategic commitment to:

Equity

Ensuring equal access to quality education for all students, irrespective of their socio-economic background, gender, caste, or region.

Diversity

Creating an inclusive academic environment that values and respects different cultures, perspectives, and identities.

Sustainability

Encouraging environmentally responsible practices in campus operations, curriculum design, and institutional policies.

Implementing Needonomics: Strategies for Stakeholders

To successfully integrate Needonomics into Indian higher education, various strategies can be adopted by policymakers, educators, and institutions:

Integrate Needonomics into Curricula

- Introduce courses that emphasize Needonomics principles, such as sustainable development, ethical governance, and holistic education.
- Include IKS-based learning modules in diverse disciplines.

Develop Inclusive Campus Environments

- Implement policies that ensure fair representation of marginalized communities.
- Organize cross-cultural events and exchange programs to promote diversity.

Foster Sustainable Campus Operations

- Develop energy-efficient buildings and renewable energy initiatives.
- Promote waste management and eco-friendly transportation systems.

Encourage Community Engagement

- Strengthen university-community partnerships through social outreach programs.
- Foster service-learning initiatives where students engage with rural and underserved communities.

Develop Needonomics-based Research

- Encourage interdisciplinary research on equity, sustainability, and diversity.
- Establish research centers focused on sustainable education practices.

Key Recommendations

To enhance the adoption of Needonomics in Indian higher education, the following recommendations should be implemented:

Incorporate IKS into Curriculum Design: Develop academic frameworks that integrate Indian traditional knowledge with modern education.

Promote Equity and Diversity: Strengthen policies that support disadvantaged students, including financial aid, mentorship programs, and affirmative action.

Foster Sustainable Practices: Encourage green initiatives such as renewable energy adoption, waste reduction, and responsible resource management.

Develop Holistic Education Frameworks: Prioritize physical, mental, and emotional well-being in academic programs, aligning with traditional Indian educational philosophies.

Encourage Collaborative Learning: Facilitate international and interdisciplinary collaboration to enhance global competitiveness.

Conclusion

The integration of equity, diversity, and sustainability into Indian higher education requires a paradigm shift in how education is perceived and delivered. The Needonomics approach offers a well-rounded framework that prioritizes essential needs while fostering a balanced and inclusive academic environment.

By embracing Needonomics, Indian higher education institutions can align with the NEP 2020 vision, promote holistic education, and ensure a more equitable and sustainable future for all learners. It is imperative for policymakers, educators, and stakeholders to join forces and implement this transformative model, paving the way for a more inclusive, culturally rich, and environmentally responsible education system

References and Readings

1. Goel, M., M.(2025). Ethical Pathways for IMF and World Bank Prosperity Sharing: Niti Gun Insights under the Needonomics Framework [Audio podcast], January 15, *AcadNews. https://acadnews.com/ethical-pathways-for-imf-and-world-bank-prosperity-sharing-niti-gun-insights-under-the-needonomics-framework/ with audio podcast.*
2. Goel, M., M. (2024). Vikshit Bharat: Bridging Dattopant Thengdi's Vision with Needonomics for Inclusive Growth [Audio podcast]., December 16, *AcadNews. https://acadnews.com/vikshit-bharat-bridging-dattopant-thengdis-vision-with-needonomics-for-inclusive-growth/*
3. Goel, M., M. (2024). Needonomics for Teachers and Researchers in Economics Part 3 [Audio podcast], November 26, *AcadNews*. *https://acadnews.com/needonomics-for-teachers-and-researchers-in-economics-part-3/*
4. Goel, M., M. (2024). Needonomics for Teachers and Researchers in Economics Part 2 [Audio podcast], November 12, *AcadNews*. *https://acadnews.com/needonomics-for-teachers-and-researchers-in-economics-part-2/*
5. Goel, M., M. (2024). Needonomics for Teachers and Researchers in Economics Part 1 [Audio podcast], October 16, *AcadNews. https://acadnews.com/needonomics-for-teachers-and-researchers-in-economics-part-1/*
6. Goel, M., M. (2024). Lessons of Needonomics for Service Sector in Present Times [Audio podcast], October 2, *AcadNews. https://acadnews.com/lessons-of-needonomics-for-service-sector-performance-in-present-times/*
7. Goel, M., M. (2024). Revitalizing Indian manufacturing with Needonomics: Leveraging labor for Viksit Bharat [Audio podcast], September 18, *AcadNews. https://acadnews.com/revitalizing-indian-manufacturing-with-needonomics-leveraging-labor-for-viksit-bharat/*
8. Goel, M., M. (2024). Needonomics: Implications for agriculture [Audio podcast], September 7, *AcadNews. https://acadnews.com/needonomics-and-indian-agricultural-policy-a-holistic-approach-to-farmers-well-being/*
9. Goel, M., M. (2024). Needonomics: Balancing 'how' and 'why' in an Era of Greedonomics and AI [Audio podcast]. *AcadNews. https://acadnews.com/needonomics-balancing-how-and-why-in-an-era-of-greedonomics-and-ai/*

10. Goel, M., M. (2024). Needonomics and its Implications for the Indian Systems of Medicine: A Path to Sustainable Health [Audio podcast], August 17, *AcadNews. https://acadnews.com/needonomics-and-its-implications-for-the-indian-systems-of-medicine-a-path-to-sustainable-health/*
11. Goel, M., M. (2024). Needonomics: Implications for the 16th Finance Commission of India [Audio podcast], August 5, *AcadNews. https://acadnews.com/needonomics-implications-for-the-16th-finance-commission-of-india/*
12. Goel, M., M. (2024). Needonomics: Implications for Needo-governance in a Democratic World [Audio podcast], July 18, *AcadNews. https://acadnews.com/needonomics-implications-for-needo-governance-in-a-democratic-world/*
13. Goel, M., M. (2024). Needonomics: The Key to Thriving in a Knowledge-based Economy [Audio podcast], July 8, *AcadNews. https://acadnews.com/needonomics-the-key-to-thriving-in-a-knowledge-based-economy/*
14. Goel, M., M. (2024). Needonomics: Implications for Traders and Exporters in a Changing Economic Scenario [Audio podcast], June 18, *AcadNews. https://acadnews.com/needonomics-implications-for-traders-and-exporters-in-a-changing-economic-scenario/*
15. Goel, M., M. (2024). Needonomics: Implications for Distributors in Changing Economic Scenario [Audio podcast], June 4, *AcadNews. https://acadnews.com/needonomics-implications-for-distributors-in-changing-economic-scenario/*
16. Goel, M., M. (2024). Needonomics: Implications for Producers in Changing Economic Scenario [Audio podcast], May 14, *AcadNews. https://acadnews.com/needonomics-implications-for-producers-in-changing-economic-scenario/*
17. Goel, M., M. (2024). Needo-consumption: Implications for Global Consumers [Audio podcast], April 22, *AcadNews. https://acadnews.com/needo-consumption-implications-for-global-consumers/*
18. Goel, M., M. (2024). Needonomics: SWOC Analysis [Audio podcast], April 9, *AcadNews. https://acadnews.com/needonomics-swoc-analysis/*
19. Goel, M., M. (2024). Unveiling the Perils of Greedonomics [Audio podcast], March 11, *AcadNews. https://acadnews.com/unveiling-the-perils-of-greedonomics/*
20. Goel, M., M. (2024). Needonomics: Queen of Social Sciences for Global Economy [Audio podcast], February 26, *AcadNews. https://acadnews.com/needonomics-queen-of-social-sciences-for-global-economy/* ❑

(contd. from pg. 28)

11. Priyadarshini, P., and Abhilash, P. (2020). From Piecemeal to Holistic: Introducing Sustainability Science in Indian Universities to Attain UN-Sustainable Development Goals, *Journal of Cleaner Production, 247*, 119133. *https://doi.org/10.1016/j.jclepro.2019.119133.*
12. Radha, L., and Arumugam, J. (2023). Integrating the Sustainable Development Goals (SDGs) in the Curriculum and Strengthening Teacher Training Programs to Align with NEP 2020, *Shanlax International Journal of Education. https://doi.org/10.34293/education.v11i4.6302.*
13. Rajubhai, P. (2024). New Education Policy 2020 on Higher Education, *Journal of Advances and Scholarly Researches in Allied Education. https://doi.org/10.29070/w22mtp65.*
14. Rathi, M. (2024). NEP 2020 Revisiting, Reimagining & Revamping Higher Education in India: Vision 2047, *mLAC Journal for Arts, Commerce and Sciences (m-JACS) ISSN: 2584-1920. https://doi.org/10.59415/mjacs.v2i3.173.*
15. Reshma, T., Vaddiraju, S., and Savitha, C. (2024). An Appraisal of National Education Policy 2020 of India for Higher Education, *Proceedings of the International Conference on New Trends in Teaching and Education. https://doi.org/10.33422/ntteconf.v1i1.559.*
16. Sardar, S., Saha, S., Akhand, M., and Scholar, P. (2024). The Challenges and Opportunities of NEP-2020 in the Reference of Inclusive Education in India: An Overview, *International Journal for Multidimensional Research Perspectives. https://doi.org/10.61877/ijmrp.v2i10.207.*
17. Sharma, M., and Solanki, P. (2024). A New Dawn in Education: The Promise and Potential of NEP 2020 for Students and Teachers, *International Journal of Science and Research Archive. https://doi.org/10.30574/ijsra.2024.13.1.1864.*
18. Singh, D., and Mishra, R. (2023). Equity and Inclusion in Indian Education: Constitutional Principles and NEP 2020 Approaches, *BSSS Journal of Education. https://doi.org/10.51767/je1208.*
19. Tayade, M. (2024). Paradigm Shift in Higher Education: National Education Policy (NEP 2020), *International Journal of Innovative Science and Research Technology (IJISRT). https://doi.org/10.38124/ijisrt/ijisrt24jul339.*
20. Tomar, K. (2024). Higher Education Reforms under NEP 2020: Opportunities and Challenges, *International Journal for Multidisciplinary Research. https://doi.org/10.36948/ijfmr.2024.v06i04.24220.*
21. Varghese, A. (2022). Sustainable Campus Life for Students of Higher Education Institutes (HEIs).
22. Yadav, M. (2023). Importance of Quality Education and Sustainable Development: An Indian Perspective, *International Journal for Multidisciplinary Research. https://doi.org/10.36948/ijfmr.2023.v05i04.4442.* ❑

Incorporating Indian Knowledge Systems in Curriculum and Pedagogy: Bridging Ancient Wisdom with Modern Education

Ram Kumar Singh*

This research paper examines the potential and practice of integrating Indian Knowledge Systems (IKS) into contemporary educational frameworks. Indian Knowledge Systems encompass a broad range of disciplines, including mathematics, astronomy, medicine, architecture, linguistics, ethics, and philosophy, that have evolved over thousands of years. The paper argues that these knowledge traditions offer valuable perspectives that can enrich modern curriculum and pedagogy. Through analysis of historical developments, policy frameworks, and case studies of successful implementation, this research identifies key approaches for meaningful integration of IKS in education. The findings reveal that IKS incorporation enables culturally responsive teaching, promotes cognitive diversity, enhances critical thinking, and fosters holistic development among students. The paper also highlights the challenges, including a lack of standardized resources, teacher preparedness, and potential cultural essentialization. It proposes a balanced framework that harmonizes traditional knowledge with contemporary scientific understanding while avoiding uncritical glorification or marginalization. The research concludes that the thoughtful integration of IKS can transform educational practices by offering alternative epistemologies and methodologies that complement Western educational paradigms while honoring India's intellectual heritage and contributing to global knowledge diversity.

The educational landscape worldwide is experiencing a paradigm shift from exclusively Western-centric frameworks toward more inclusive and diverse knowledge traditions. In India, this shift is manifested in renewed interest in Indian Knowledge Systems (IKS)—the vast body of knowledge encompassing sciences, arts, philosophy, and cultural practices that have evolved on the Indian subcontinent over millennia. The National Education Policy (NEP) 2020 marks a significant policy turn in Indian education by explicitly advocating for the integration of IKS into formal education. It states, "Knowledge from ancient India and its contributions to modern India and its achievements and successes will be included in the curriculum, as will tribal knowledge and indigenous and traditional ways of learning" (Ministry of Education 43). This policy orientation represents both an opportunity and a challenge for educators, curriculum developers, and educational institutions.

This paper, therefore, aims to analyze the conceptual and practical dimensions of IKS integration in education, examining its potential benefits, implementation challenges, and strategies for meaningful incorporation that balance tradition with innovation. It would also explore how IKS can enrich educational experiences while developing critical perspectives that avoid both uncritical glorification and unwarranted dismissal of traditional knowledge systems.

Theoretical Framework

Indian Knowledge Systems represent diverse epistemic traditions that have developed across different historical periods, geographical regions, and cultural contexts within the Indian subcontinent. These knowledge systems encompass multiple disciplines including mathematics (*ganita*), astronomy (*jyotisha*), medicine (*ayurveda*), architecture (*vastu shastra*), linguistics (*vyakarana*), ethics (*dharmashastra*), and philosophy (*darshana*) among others (Raju 12). There are several characteristics that distinguishes IKS from Western knowledge frameworks. First, IKS often feature holistic approaches that integrate multiple dimensions of knowledge rather than compartmentalizing them. Second, they frequently emphasize experiential learning and practical application alongside theoretical understanding. Third, many IKS traditions connect knowledge acquisition with ethical development and spiritual growth rather than treating them as separate domains (Kapoor and Shizha, 27). The integration of IKS into education draws theoretical support from various educational philosophies. Constructivist approaches emphasize that learning is most effective when it

* *Vice Chancellor, Binod Bihari Mahto Koyalanchal University, Dhanbad, Jharkhand-826004. E-mail: vc@bbmku.ac.in*

builds upon learners' existing cultural frames of reference and lived experiences (Vygotsky, 56). For many Indian students, indigenous knowledge systems provide cultural frameworks that can facilitate deeper engagement with educational content.

Critical pedagogy, as advanced by Freire, argues that education should empower learners to critically examine and transform their worlds rather than passively absorb predetermined content (72). Incorporating IKS can contribute to this critical consciousness by offering alternative perspectives to dominant knowledge paradigms and encouraging students to question epistemological assumptions.

Historical Context and Policy Evolution: Colonial Impact on Indian Education and Post-Independence Educational Policies

The contemporary marginalization of IKS in formal education has historical roots in colonial educational policies. Macaulay's infamous Minute on Indian Education (1835) explicitly aimed to create a class of persons Indian in blood and colour, but English in tastes, in opinions, in morals, and in intellect (Macaulay 8). This orientation systematically devalued indigenous knowledge traditions while privileging Western epistemologies. The resulting educational system disrupted traditional pathways of knowledge transmission and created linguistic and cultural disconnects between formal education and indigenous knowledge systems. The privileging of English and Western knowledge frameworks contributed to what Ngugi wa Thiong'o termed the 'colonization of the mind' (16), creating lasting impacts on how knowledge is valued, validated, and transmitted. Early post-independence educational commissions, including the University Education Commission (1948-49) and the Education Commission (1964-66), acknowledged the importance of connecting education with Indian cultural heritage. However, practical implementation remained limited as the education system continued to operate largely within frameworks established during colonial rule.

The National Policy on Education (1986) and its revised formulation (1992) advocated for value education rooted in India's cultural heritage but did not substantially address the integration of indigenous knowledge systems in core curriculum areas. The National Curriculum Framework (2005) made more explicit references to learning from community knowledge and traditional crafts but maintained subject boundaries largely defined by Western disciplinary categories.

NEP–2020 and Contemporary Developments

The National Education Policy 2020 represents a significant shift by positioning IKS as integral to educational reform. The policy emphasizes, "Knowledge of India will include knowledge from ancient India and its contributions to modern India and its achievements and successes" (Ministry of Education 43). It further advocates incorporating knowledge from tribal communities and traditional wisdom in areas ranging from agriculture to metallurgy, from mathematics to astronomy. This policy orientation has been accompanied by initiatives such as the establishment of the Indian Knowledge Systems Division by the Ministry of Education in 2020, tasked with promoting research and curriculum development related to IKS. Various educational institutions, including the Indian Institutes of Technology, have launched centers dedicated to IKS research and teaching.

Pedagogical Approaches for IKS Integration: Curricular Integration Models and Strategies

Various models exist for incorporating IKS into formal education. The additive approach involves adding IKS content to existing curriculum structures without substantially altering fundamental frameworks or assumptions. For example, including a module on Ayurveda within a conventional medical curriculum or discussing Panini's grammar alongside Western linguistic theories. The transformative approach involves a more fundamental restructuring of the curriculum to reflect indigenous epistemologies and methodologies. This might include organizing learning around indigenous categories of knowledge or adopting pedagogical approaches inspired by traditional teaching methods. For instance, a mathematics curriculum might be reorganized to reflect the sequential development and pedagogy found in traditional texts like Lilavati. The social action approach combines knowledge acquisition with practical application to address contemporary challenges. This could involve students applying traditional ecological knowledge to environmental conservation projects or exploring traditional water management systems to address current water scarcity issues. Mathematics education can be enriched by incorporating traditional computational methods (*ganita*), the study of patterns (*śilpa śāstra*), and geometric principles from temple architecture. Research has shown that teaching traditional

calculation methods alongside conventional approaches can enhance computational flexibility and conceptual understanding (Krishna, 65). Science education can integrate traditional knowledge about biodiversity, agriculture, metallurgy, and medicine. The study of traditional rainwater harvesting systems, for instance, combines principles of hydrology with sustainable development practices, allowing students to appreciate indigenous engineering solutions while developing scientific understanding. Language and literature curricula can incorporate classical and folk literary traditions, exploring indigenous narrative forms, poetic meters, and literary theories such as rasa theory. This integration enhances linguistic competence while providing cultural context for language acquisition. Social sciences can examine traditional governance systems, economic practices, and social institutions, encouraging critical comparison with contemporary frameworks. For example, studying panchayat systems alongside modern democratic institutions can deepen the understanding of governance principles. Experiential learning approaches align well with traditional guru-shishya teaching methods that emphasized practical application and direct experience. Workshop-based learning where students engage with traditional crafts, medical preparations, or agricultural techniques can provide embodied understanding of abstract principles. Project-based learning enables students to explore IKS through sustained inquiry. For instance, students might document local traditional knowledge about medicinal plants, analyze its validity through scientific testing, and develop resources that preserve this knowledge while subjecting it to appropriate critical evaluation. We can also use digital technologies that offer new possibilities for preserving and transmitting traditional knowledge. Virtual repositories of manuscripts, interactive simulations of traditional astronomical calculations, or augmented reality experiences of historical architectural principles can make IKS accessible to contemporary learners in engaging formats.

Case Studies of Successful Implementation: Primary, Secondary and Higher Education

The *Adivasi Shaala* initiative in the tribal areas of Maharashtra demonstrates the successful integration of indigenous knowledge in primary education. The program incorporates local tribal languages, traditional agricultural knowledge, and cultural practices into the curriculum while meeting state educational requirements. Evaluation studies indicate improved attendance, enhanced learning outcomes, and stronger community connections compared to conventional schools in similar areas (Deshpande, 112).

The Vidyodaya School in Tamil Nadu has developed a curriculum that weaves together tribal knowledge about forest ecology with standard environmental science content. Students learn to identify local plant species, understand their traditional uses, and conduct scientific observations to validate traditional ecological knowledge. The approach has fostered environmental stewardship while developing scientific inquiry skills (Ramdas, 78).

The IIT Gandhinagar's Centre for Indian Knowledge Systems has pioneered interdisciplinary courses that examine traditional engineering and architectural principles through modern analytical frameworks. Engineering students study traditional water harvesting structures, analyze their hydraulic principles using contemporary modeling techniques, and explore their relevance to sustainable design. This approach has strengthened students' technical understanding while connecting it to cultural heritage (Gupta, 45). The Traditional Knowledge Digital Library (TKDL) initiative has facilitated the integration of traditional medical knowledge into pharmacy and medical education. By documenting and validating traditional medicinal formulations, the project provides a bridge between traditional knowledge and scientific research methodologies, demonstrating how indigenous knowledge can be engaged critically while respecting its integrity (Mashelkar, 92).

The Regional Institute of Education in Bhubaneswar has developed teacher training modules that prepare educators to incorporate local knowledge traditions into teaching across disciplines. These modules focus on helping teachers identify knowledge resources within local communities, develop culturally responsive teaching strategies, and design assessment methods that value diverse ways of knowing (National Council of Educational Research and Training ,56).

Benefits and Outcomes

Research indicates that culturally responsive teaching that incorporates indigenous knowledge

improves educational engagement and outcomes for students from diverse backgrounds. When students see their cultural knowledge reflected in the curriculum, they develop a stronger academic identity and motivation (Batra, 83). The integration of IKS has been shown to enhance cognitive flexibility by exposing students to alternative problem-solving approaches and epistemological frameworks. For example, studies of students taught traditional Indian mathematical techniques alongside conventional methods demonstrated greater conceptual understanding and computational versatility (Kumar, 67). Critical thinking skills are strengthened when students compare and contrast different knowledge frameworks, analyzing their underlying assumptions and areas of application. This comparative perspective helps students develop a more sophisticated understanding of how knowledge is constructed and validated across different cultural contexts.

Incorporating IKS contributes to cultural preservation by creating formal pathways for knowledge transmission that complement traditional modes of intergenerational learning. As traditional knowledge holders age, educational integration offers mechanisms for preserving knowledge that might otherwise be lost. Students develop stronger cultural identity and pride when their heritage knowledge systems are validated within formal education. This cultural affirmation can be particularly important for students from communities whose knowledge traditions have been historically marginalized. Educational engagement with IKS can foster intercultural understanding by encouraging all students to appreciate diverse knowledge traditions. Rather than segregating indigenous knowledge as relevant only to particular communities, thoughtful integration emphasizes its universal relevance while respecting its cultural origins.

Challenges and Limitations: Practical Implementation Barriers, Conceptual and Theoretical Concerns

The limited availability of standardized teaching resources incorporating IKS poses significant implementation challenges. While some traditional texts have been translated and adapted for educational use, many knowledge areas lack accessible, age-appropriate materials that connect traditional content with contemporary educational frameworks.

Teacher preparedness remains a critical concern. Most teachers have been trained in conventional educational approaches and lack familiarity with IKS content and methodologies. Effective integration requires substantial professional development and support for educators to develop appropriate content knowledge and pedagogical approaches. Assessment frameworks often remain oriented toward conventional learning outcomes that may not adequately capture the types of knowledge and competencies developed through engagement with indigenous knowledge systems. Developing appropriate assessment approaches that value diverse ways of knowing presents ongoing challenges.

There exists a risk of cultural essentialization when incorporating indigenous knowledge—treating dynamic, heterogeneous knowledge traditions as static, homogeneous entities. Educational approaches must recognize the diversity and evolutionary nature of Indian knowledge systems rather than presenting them as unchanging artifacts. Balancing critical evaluation with cultural respect presents complex challenges. While indigenous knowledge should not be exempted from critical examination, such critique must be conducted with cultural sensitivity and awareness of historical power dynamics that have devalued indigenous epistemologies. Questions of knowledge validation arise when integrating traditional knowledge with contemporary scientific frameworks. Determining appropriate criteria for evaluating traditional knowledge claims requires nuanced approaches that neither dismiss indigenous knowledge out of hand nor accept all traditional claims uncritically.

Collaborative curriculum development involving traditional knowledge holders alongside academic experts can ensure authentic representation while maintaining educational rigor. Community elders, practicing traditional knowledge experts, and educational specialists should work together to develop materials that respectfully translate indigenous knowledge into educational contexts. Contextual rather than fragmented integration should be prioritized, presenting indigenous knowledge within its cultural, philosophical, and historical contexts rather than extracting isolated elements. This approach helps students understand knowledge systems holistically rather than reducing them to decontextualized facts or techniques. Developmental appropriateness should guide integration efforts, with content and methods aligned with students' cognitive development and prior knowledge. Primary education might focus on experiential engagement with local traditional

practices, while secondary and higher education can introduce more complex philosophical and epistemological dimensions.

Comprehensive teacher training programs should equip educators with both content knowledge about IKS and pedagogical strategies for effective integration. This training should help teachers develop confidence in navigating between different knowledge frameworks and facilitating respectful, critical engagement with diverse epistemologies. Ongoing professional support through learning communities, mentorship networks, and resource-sharing platforms can sustain integration efforts. Teachers implementing IKS integration need opportunities to collaborate, reflect on challenges, and refine approaches based on classroom experiences. Partnerships between educational institutions and traditional knowledge communities can provide teachers with direct access to knowledge holders who can serve as resources and co-educators. These partnerships should be structured to respect community intellectual property rights and ensure appropriate recognition and compensation for knowledge sharing.

Conclusion

The integration of Indian Knowledge Systems into contemporary curriculum and pedagogy represents a significant opportunity to enrich educational experiences while honoring India's intellectual heritage. This integration, when thoughtfully implemented, can enhance learning outcomes, foster cultural pride, and contribute to global epistemological diversity. The challenges of implementation—including resource limitations, teacher preparedness, and navigating complex questions of knowledge validation—are substantial but surmountable through collaborative approaches that bring together diverse stakeholders. Successful integration requires balancing reverence for traditional knowledge with critical inquiry, avoiding both uncritical glorification and unwarranted dismissal. The path forward involves developing educational approaches that honor the integrity of traditional knowledge frameworks while engaging them in dialogue with contemporary understandings. Such dialogue enables education to serve both as a means of cultural transmission and as a space for knowledge evolution and synthesis.

As Indian education continues to navigate the tension between global competitiveness and cultural rootedness, the thoughtful incorporation of IKS offers a middle path—one that prepares students for participation in the global knowledge economy while connecting them with their cultural heritage and diverse ways of knowing. This balanced approach positions education not merely as a vehicle for acquiring established knowledge but as a dynamic process of engaging with multiple knowledge traditions to address contemporary challenges.

References and Readings

1. Banks, James, A.(2015). "Cultural Diversity and Education: Foundations, Curriculum, and Teaching.", Routledge.
2. Batra, Poonam (2018). Curriculum in India: Narratives, Debates, and a Deliberative Agenda, *Critical Studies in Education*, Vol. 59, No. 3, pp. 75-92.
3. Deshpande, Madhav (2016). Indigenous Education and Curriculum Development: The Adivasi Shaala Experiencen, *Journal of Indian Education*, Vol. 42, No. 3, pp. 102-118.
4. Freire, Paulo (2000). Pedagogy of the Oppressed, *Continuum*.
5. Gupta, Rajat (2019). Bridging Traditional Knowledge and Engineering Education: Case Studies from IIT Gandhinagar, *International Journal of Engineering Education*, Vol. 35, No. 1, pp. 38-52.
6. Kapoor, Dip, and Edward, Shizha, (eds). (2010). "Indigenous Knowledge and Learning in Asia/Pacific and Africa: Perspectives on Development, Education, and Culture", Palgrave Macmillan.
7. Krishna, C., R. (2018). Traditional Computational Methods in Contemporary Mathematics Education, *Mathematics Education in India*, Vol. 7, No. 2, pp. 58-72.
8. Kumar, Vinay (2020). Cognitive Benefits of Traditional Mathematical Approaches: An Experimental Study, *Journal of Educational Psychology in India*, Vol. 29, No. 4, pp. 62-78.
9. Macaulay, Thomas, B. (1965). "Minute on Indian Education," Bureau of Education, Selections from Educational Records, Part I (1781-1839)", edited by H. Sharp, Superintendent Government Printing,
10. Mashelkar, R., A. (2007). Traditional Knowledge Digital Library: A Tool for Knowledge Protection, *Current Science*, Vol. 92, No. 8, pp. 88-97.
11. Government of India (2020). National Education Policy 2020, Ministry of Education, Government of India, New Delhi.
12. National Council of Educational Research and Training (2021). "Teacher Training Modules for Cultural Integration". NCERT Publications.
13. Ngugi wa Thiong'o (1986). "Decolonising the Mind: The Politics of Language in African Literature". East African Educational Publishers.
14. Raju, C., K. (2007). "Cultural Foundations of Mathematics: The Nature of Mathematical Proof and the Transmission of Knowledge in India", Pearson Education India.
15. Ramdas, Krishnammal (2018). Environmental Education through Indigenous Knowledge: The Vidyodaya Approach, *Environmental Education Research*, Vol. 24, No. 1, pp. 67-84.
16. Vygotsky, Lev, S. (1978). "Mind in Society: Development of Higher Psychological Processes." Harvard University Press. ❑

Indian Knowledge Systems and Higher Education: Exploring *Bharatiya* Pedagogy

G P Sudhakar*

Education in India has long been a bridge between tradition and modernity. From the rich oral traditions of the Vedas to the structured gurukul system, learning was once deeply experiential, holistic, and rooted in values. However, with colonial influences and later globalized educational models, many of these indigenous pedagogical insights faded into the background. Today, with the National Education Policy (NEP) 2020 emphasizing the integration of Indian Knowledge Systems (IKS) in higher education, there is a renewed interest in revisiting these time-tested approaches.

This article explores *Bharatiya Pedagogy*—an educational framework deeply embedded in Indian philosophical thought. Drawing insights from the Vedas, Upanishads, and later thinkers such as Swami Vivekananda, Rabindranath Tagore, and J Krishnamurti, we can examine how these ideas can shape modern higher education. More importantly, we need to consider how Indian universities can implement these approaches in real classrooms, making learning more meaningful, context-driven, and aligned with India's intellectual heritage.

Rather than offering a comprehensive historical account, this discussion serves as a starting point—an invitation to rethink education through the lens of *Bharatiya* wisdom. Can ancient pedagogical methods be relevant in an era of AI and rapid technological advancement? How can we blend critical thinking, experiential learning, and ethical values in today's classrooms? These are the questions this article seeks to explore, aiming to bridge the wisdom of the past with the demands of contemporary higher education.

Literature Review

The integration of Indian Knowledge Systems (IKS) into higher education has gained increasing scholarly attention, particularly in light of the National Education Policy (NEP) 2020, which emphasizes the revival of indigenous pedagogical traditions. This section reviews relevant literature that explores the challenges, strategies, and impacts of incorporating IKS into contemporary education.

IKS and Formal Education

Agarwal (2021) explored how holistic education can be enhanced through traditional Indian knowledge, emphasizing its role in fostering critical thinking and moral development. Similarly, Kumar and Jain (2021) discuss the implementation of NEP–2020, arguing that IKS must be systematically incorporated into curricula to ensure its relevance in modern education.

Pedagogical Approaches to IKS

Mukherjee (2022) highlighted the need for balanced curricula that integrate traditional and modern knowledge, presenting a framework for effective implementation. Sharma and Gupta (2020) argue that IKS can promote critical thinking through contextualized learning methodologies rooted in Indian traditions. A systematic review by Sharma and Tiwari (2021) further elaborates on pedagogical strategies for IKS integration, suggesting that interdisciplinary approaches can enhance its efficacy in contemporary education.

Institutional and Policy Support

The role of institutional policies in promoting IKS has also been examined. Rao (2022) discusses the establishment of centers of excellence dedicated to traditional knowledge systems, advocating for increased research and policy-level support. The Ministry of Education (2020) underscores the importance of NEP 2020 in providing a structured framework for IKS inclusion at various educational levels.

IKS in Global and Comparative Perspectives

Spivak (2005) examines the intersection of IKS and globalization, debating its place in a rapidly modernizing world. Panikkar (2007) presents an anthology of Vedic texts that demonstrate the universality of ancient Indian knowledge and its applicability beyond Indian contexts.

* *Honarary Professor, Centre for Educational and Social Studies, Bengaluru-560 072. E-mail: gp.sudhakar@gmail.com*

Contemporary Challenges and Future Directions

Despite its potential, the integration of IKS faces several challenges, including curriculum design, faculty training, and resistance from conventional educational structures (Bhardwaj, 2020). The reviewed literature suggests that overcoming these barriers requires a multi-pronged approach involving policy intervention, research initiatives, and innovative pedagogical frameworks.

Alignment with NEP–2020 and Integration of IKS

The National Education Policy (NEP) 2020 envisions a transformative shift in pedagogy, aiming to make education more experiential, holistic, integrated, inquiry-driven, discovery-oriented, learner-centered, discussion-based, flexible, and enjoyable. These principles align closely with *Bharatiya* pedagogical traditions, which have long emphasized learning through dialogue (samvad), experiential understanding (anubhava), and self-inquiry (atma vichara).

The policy underscores that education must build character, enable learners to be ethical, rational, compassionate, and caring, while at the same time preparing them for gainful**,** fulfilling employment. This resonates with the ancient Indian approach to education, which saw knowledge (vidya) as a means of both personal transformation and social responsibility. Traditional Indian learning systems emphasized not only intellectual rigor but also ethical living and spiritual growth, as seen in the teachings of texts like the Upanishads and the Bhagavad Gita.

A significant aspect of NEP 2020 is its call for instilling a deep-rooted pride in being Indian, not only in thought, but also in spirit, intellect, and deeds. This is directly tied to the integration of Indian Knowledge Systems (IKS) into higher education, ensuring that students engage with India's intellectual heritage while developing competencies relevant to a rapidly changing world.

Key NEP–2020 Directives and Their Alignment with *Bharatiya* Pedagogy

Moving Beyond Rote Learning to Real Understanding

NEP–2020 stresses the need to shift education away from the culture of rote learning and towards deeper comprehension and self-reflection. This echoes traditional Indian pedagogies that emphasized learning how to learn through introspection, questioning, and guided exploration, rather than mere memorization.

Interdisciplinary and Cross-Disciplinary Thinking

The policy highlights opportunities for cross-disciplinary and interdisciplinary thinking, which aligns with the way knowledge was traditionally approached in India. Ancient scholars like Panini, Aryabhata, and Charaka engaged in integrated studies, where philosophy, mathematics, medicine, and linguistics were interconnected.

Discussion, Debate, and Inquiry-Driven Learning

NEP–2020 calls for pedagogy to have an increased emphasis on communication, discussion, debate, and research—a principle deeply embedded in the Indian tradition of samvad (dialogue) and shastrartha (philosophical debates). Historically, scholars engaged in rigorous discourse to refine ideas, a practice that can be revived in modern classrooms to cultivate critical thinking.

Holistic and Well-Rounded Development

The policy advocates for a curriculum that includes arts, crafts, humanities, sports, languages, culture, and values, in addition to science and mathematics. This reflects the integrated education of the past, where students were trained in diverse disciplines, balancing intellectual, artistic, and physical development. The gurukul model, for instance, combined literary study with music, archery, ethics, and environmental awareness.

Ethical and Value-Based Education

NEP–2020 envisions an education system that nurtures character-building, ethical responsibility, and a commitment to sustainable development and global well-being. Indian traditions have long regarded education as a means of cultivating wisdom (jnana), self-discipline (samyama), and a sense of duty (dharma), making this an essential area of integration.

Making IKS Integration a Reality

To effectively integrate IKS within higher education, institutions must move beyond token references to Indian knowledge and actively restructure curricula, teaching methodologies, and research paradigms. This involves:

- Designing courses, parts of courses and programs that explore Indian contributions to various fields, from governance (*Arthashastra*) to medicine (Ayurveda), linguistics (Panini's grammar), and logic (*Nyaya*).
- Encouraging faculty training programs to equip educators with knowledge of IKS-based pedagogies.
- Creating research initiatives that merge ancient insights with contemporary advancements, fostering innovation rooted in indigenous wisdom.

By aligning with the vision of NEP 2020 and embracing *Bharatiya* pedagogy, Indian higher education can offer a uniquely transformative learning experience—one that is deeply rooted in tradition while preparing students for the challenges of the 21st century.

Key Aspects of *Bharatiya* Pedagogy

Bharatiya pedagogy is deeply rooted in the philosophical traditions of ancient India, emphasizing holistic education, self-awareness, and ethical living. Unlike conventional education models that focus primarily on information transfer, *Bharatiya* pedagogy seeks to cultivate wisdom, moral responsibility, and experiential learning. The following key aspects define this approach:

Gurukul Tradition and Experiential Learning

The ancient Gurukul system epitomized immersive and experiential learning, where students lived with their teachers and engaged in a comprehensive education encompassing philosophy, sciences, arts, and physical training. This system fostered self-discipline, character-building, and a deep teacher-student bond, which is still relevant today in mentoring-based education.

Samvaad (Dialogue) and Critical Inquiry

Bharatiya pedagogy values the tradition of *samvaad* (dialogue), where knowledge is explored through discussion and debate. Ancient institutions like Nalanda and Takshashila encouraged dialectical methods, ensuring that learning was not passive but interactive, inquiry-driven, and analytical. This resonates with NEP–2020's emphasis on discussion-based and research-oriented pedagogy.

Integral Education: Mind, Body, and Spirit

Education in the *Bharatiya* tradition is not limited to intellectual growth but extends to physical well-being (*sharirik vikas*), emotional balance (*bhava vikas*), and spiritual awareness (*adhyatmik vikas*). This holistic approach aligns with modern interdisciplinary and well-rounded educational models.

Self-Realization and Inner Growth

Inspired by the Upanishadic ideal of *'Aatmavidya'* (self-knowledge), *Bharatiya* pedagogy emphasizes inner growth and self-inquiry. Thinkers like Swami Vivekananda and Rabindranath Tagore stressed the importance of education as a means to self-discovery rather than mere preparation for jobs.

Influence of Modern Indian Thinkers

- **Swami Vivekananda** advocated for an education system that combines **s**piritual wisdom with practical knowledge, empowering individuals for both worldly success and higher realization.
- **Rabindranath Tagore** emphasized learning through nature, creativity, and self-expression, which he implemented at Shantiniketan.
- **J. Krishnamurti** promoted an education free from conditioning, focusing on freedom, self-inquiry, and holistic perception.
- **Sri Aurobindo** envisioned integral education, where intellectual, physical, and spiritual development combine, creating enlightened individuals.

Pratyaksha and Paroksha: Direct and Indirect Knowledge

Bharatiya knowledge distinguishes between *pratyaksha* (direct experience) and paroksha (indirect or inferred knowledge). True education is not about memorization but about experiencing knowledge firsthand, a concept highly relevant to modern experiential and problem-based learning methods.

Reimagining the Role of Educators: From Lecturer to Guru

One of the most significant shifts required to implement *Bharatiya* pedagogy in higher education is transforming the role of educators from mere instructors to true mentors or *Gurus*. This shift entails:

- **Encouraging Samvaad (Dialogue-Based Learning):** Moving beyond lectures to foster meaningful conversations and discussions where students actively engage in critical thinking.
- **Experiential Learning:** Incorporating fieldwork, storytelling, hands-on experiences, and direct knowledge (*pratyaksha jnana*) to deepen student understanding.
- **Holistic Teaching Methods:** Addressing the intellectual, emotional, and ethical development of students, ensuring their well-rounded growth.
- **Mentorship and Student-Centered Learning:** Establishing personalized guidance and mentorship, akin to the Guru-Shishya Parampara, where faculty members nurture students beyond academic instruction.
- **Assessment Aligned with *Bharatiya* Pedagogy:** Shifting from rote-based exams to evaluations based on applied understanding, critical thinking, and problem-solving skills.
- **Reviving Time-Tested Pedagogical Traditions:** Exploring ways to incorporate elements of the Gurukul system into contemporary classrooms, such as individualized learning, value-based education, and character development.

Implementing *Bharatiya* Pedagogy in Higher Education

Institutional-Level Implementation

- ***Curriculum Reform*:** Universities and colleges should integrate IKS into mainstream courses, ensuring that traditional knowledge is valued alongside modern disciplines.
- **DinaCharya** is managed by the individual, however Institutions and faculty need to facilitate practice of good Dinacharya by the discipline, culture and institutional mechanisms.
- ***Establishing Centers for Bharatiya Pedagogy*:** Institutions should create research hubs dedicated to ancient Indian educational methodologies, interdisciplinary studies, and knowledge dissemination.
- ***Training and Capacity Building*:** Organizing workshops, certificate programs, and faculty development initiatives focused on *Bharatiya* pedagogy to train educators in traditional teaching methods.
- ***Policy and Governance Support*:** Ensuring that academic policies encourage the incorporation of experiential learning, discussion-based education, and holistic assessments.
- ***Infrastructure Development*:** Designing learning spaces that promote discussion, experiential engagement, and interdisciplinary interactions.

Faculty-Level Implementation

- ***Redefining the Educator's Role*:** Shifting from being a content deliverer to a mentor who guides students through inquiry, ethical dilemmas, and self-discovery. The making of Gurus.
- ***Developing Personalized Teaching Strategies*:** Understanding student needs and implementing flexible teaching methodologies.
- ***Incorporating Traditional Learning Approaches*:** Using storytelling, experiential learning, and value-based education techniques.
- ***Implementing Mentorship Models*:** Strengthening the Guru-Shishya dynamic through close guidance and individual student engagement.
- ***Participating in Continuous Learning*:** faculty members to engage in lifelong learning and professional development in IKS methodologies.

By adopting these strategies, higher education institutions and faculty can create a transformative learning experience that nurtures holistic growth, critical inquiry, and a deeper connection with Indian knowledge traditions.

Transition to *Bharatiya* Pedagogy

To successfully transition to *Bharatiya* pedagogy, faculty members require structured training programs. These programs should include:

- Workshops on IKS-based teaching methodologies, including Samvaad (dialogue-based learning) and experiential approaches.

- Programs on mentorship and Guru-Shishya traditions, emphasizing holistic student development.
- Training in integrating traditional epistemological frameworks, such as *pratyaksha* and *paroksha*, into contemporary education.

Institutional Initiatives for Implementation

Institutions need to take certain initiatives like

- Developing IKS centers and departments to guide pedagogical transformation.
- Partnering with Sanskrit institutions, Veda Pathshalas, and traditional learning centers to identify expert trainers.
- Creating certification programs in Bharatiya pedagogy, enabling educators to gain formal expertise in IKS-based teaching.
- Organizing faculty immersion programs at institutions practicing traditional learning methods.
- Encouraging collaborative research with scholars of Indian Knowledge Systems.
- Designing curriculum development workshops that align modern academic disciplines with traditional wisdom.

Conclusion

The integration of *Bharatiya* pedagogy in higher education is not merely a revival of ancient practices but a progressive step toward a holistic, experiential, and value-based education system. By incorporating discussion-driven learning, experiential teaching methods, and mentorship-based education, institutions can create a transformative learning environment. Through systematic training programs and institutional support, *Bharatiya* pedagogy can bridge the gap between traditional wisdom and contemporary academic needs, fostering an education system that is both deeply rooted and globally relevant. Higher Education Institutions need to make concentrated efforts to bring *Bharatiya* Pedagogy into the curriculum. For now, it seems HEI's are focusing only on adding a few IKS courses, while pedagogy is the key to bring in the unique *Bharatiya* way of learning.

References and Readings

1. Agarwal, P. (2021). Holistic Education through Traditional Indian Knowledge Systems, *Journal of Indian Education*, 47(3), 123-135.
2. Bhardwaj, A. (2020). Revitalizing Indigenous Knowledge Systems through NEP 2020, *International Journal of Multidisciplinary Educational Research*, 9(4), 123-130.
3. Chakrabarti, K., K. (1999). *Classical Indian Philosophy of Mind: The Nyaya Dualist Tradition,* State University of New York Press.
4. Jhingran, S. (1992). *Aspects of Hindu Morality,* Motilal Banarsidass.
5. Krishnamurti, J. (1953). *Education and the Significance of Life*, Harper & Brothers.
6. Kumar, K., and Jain, M. (2021). *Education and Traditional Knowledge Systems: Implementing NEP 2020,* Sage Publications.
7. Mahadevan, B., and Bhat, V., R. (2022). *Introduction to Indian Knowledge System: Concepts and Applications*.
8. Mukherjee, R. (2022). Developing Balanced Curricula: Integrating Traditional and Modern Knowledge, *Education Research International*, 11(4), 201-214.
9. National Education Policy (NEP) 2020. (2020). Ministry of Education, Government of India. Retrieved from *https://www.education.gov.in/*
10. Panikkar, R. (2007). *The Vedic Experience: Mantramanjari – An Anthology of the Vedas for Modern Man and Contemporary Celebration,* University of California Press.
11. Radhakrishnan, S. (1948). *Indian Philosophy* (Vols. 1 & 2). Oxford University Press.
12. Rao, P. (2022). Centres of Excellence for Traditional Knowledge Systems, *Journal of Higher Education Policy*, 21(2), 102-117.
13. Sharma, A., and Gupta, M. (2020). Promoting Critical Thinking through Traditional Indian Knowledge Systems, *Educational Review*, 62(3), 345-360.
14. Sharma, A., and Tiwari, A. (2021). Integrating Traditional Indian Knowledge Systems in Modern Education, *Journal of Educational Collaboration*, 17(1), 45-59.
15. Spivak, G., C. (2005). IKS and Globalisation, *Indilinga African Journal of Indigenous Knowledge Systems*.
16. Sri Aurobindo (1990). *The Human Cycle, The Ideal of Human Unity, War and Self-Determination,* Sri Aurobindo Ashram Publication.
17. Swami Vivekananda (2011). *Complete Works of Swami Vivekananda* (Vol. 4), Advaita Ashrama.
18. Tagore, R. (2009). *The Religion of Man,* Rupa Publications.

❑

Indian Knowledge System for the Modern Curriculum

Ankur Arun Kulkarni *

The Indian Knowledge System (IKS) refers to the vast body of traditional, indigenous, and ancient knowledge developed in India over thousands of years. It encompasses various disciplines, including philosophy, science, mathematics, technology, medicine, literature, linguistics, architecture, and environmental sustainability. Rooted in texts like the Vedas, Upanishads, Puranas, and classical literature, IKS integrates spiritual wisdom with practical applications for a holistic understanding of life and the universe.

Incorporating Indigenous Knowledge Systems (IKS) into curriculum and pedagogy is essential for fostering inclusive, diverse, and holistic education. It ensures that indigenous wisdom, values, and cultural heritage are preserved and integrated into modern learning frameworks.

Need of IKS in Education and Research

Incorporating IKS into education and research is crucial for multiple reasons:

Preserving the ancient Indian Intellectual heritage

The oldest knowledge tradition in the world is Indian knowledge, which is rooted in Vedas, Upanishad, Ayurveda, yoga, darshan and arthashastra. Reviving and integrating IKS ensures that indigenous knowledge does not get lost in the dominance of Western perspectives.

Holistic and Interdisciplinary Learning

The present education system is a skill-biased system which majorly concentrates on material and technology, while the ancient Indian knowledge emphasis holistic learning by integrating mind, body, spirit, behavior, health, relationship and work for holistic development for creating an equitable and just society.

Contributions to Science & Technology

The ancient Indian scholars have contributed significantly to science and technology in holistic perspective. Some important contribution includes various discipline include mathematics (zero, decimal system, algebra, calculus), astronomy (Aryabhata, Bhaskara, Varahamihira), and medicine (Sushruta, Charaka) etc. Reviving and integrating these contributions into modern research can lead to innovation and self-reliance which will create Atmanirbhar Bharat.

Sustainable and Eco-Friendly Practices

Traditional Indian practices promote sustainability and environmental conservation, such as Vrikshayurveda (ancient plant science) for sustainable agriculture. Water conservation techniques like step-wells and rainwater harvesting. Vaastu Shastra for eco-friendly architecture and many more

Strengthening National Identity & Cultural Confidence

Learning about India's knowledge traditions fosters pride in heritage, strengthening cultural confidence and national identity. Helps counter colonial biases that have historically undermined indigenous knowledge.

Enhancing Well-being & Mental Health

Ancient Indian knowledge systems like Ayurveda, Yoga and Meditation are globally recognized for improving mental and physical well-being. Vedantic and Buddhist philosophies offer valuable insights into psychology, mindfulness, and emotional intelligence.

Global Relevance & Influence

Many elements of IKS have gained global recognition.

Yoga is practiced worldwide for health and well-being, Ayurveda is increasingly popular as an alternative medicine system. Indian mathematics and astronomy laid the foundation for modern scientific advancements.

Encouraging Innovation & Indigenous Research

IKS can inspire modern scientific advancements by integrating traditional knowledge with contemporary research. Example: Bio-mimicry based on ancient Indian architectural designs, herbal medicines, and AI-driven Sanskrit linguistics.

Benefits of the Indian Knowledge System in Curriculum

The Indian Knowledge System promotes sustainability, innovation, well-being, and cultural identity and helps to integrate traditional wisdom with modern advancements:

* *Vice Chancellor, SAGE University, Indore-452020, Madhya Pradesh. E-mail: vc.sui@sageuniversity.in*

Creating a foundation in the Advancements in Science & Technology Mathematics

India's contributions include the concept of zero, decimal system, algebra, trigonometry, and calculus (Aryabhata, Brahmagupta).

Astronomy: Ancient texts like Surya Siddhanta and works by Varahamihira provided insights into planetary motion, eclipses, and timekeeping.

Metallurgy: India pioneered rust-resistant iron (Delhi Iron Pillar), Wootz steel, and zinc extraction, influencing global metallurgy.

These contributions laid the foundation for modern mathematics, physics, and engineering.

Holistic solution for Medicine & Healthcare (Ayurveda & Yoga)

Ayurveda: Holistic healing system emphasizing herbal medicine, diet, and lifestyle (Charaka Samhita, Sushruta Samhita).

Surgery: Ancient Indian texts describe plastic surgery, cataract removal, and surgical tools (Sushruta - the father of surgery).

Yoga & Meditation: Now globally recognized for mental well-being, stress management, and overall health.

These all offers natural, preventive healthcare solutions while reducing dependency on chemical-based medicine.

Solution for Environmental Sustainability

Traditional Water Management: Techniques like step-wells, rainwater harvesting (Johads), and Karez systems ensured efficient water use.

Eco-friendly Agriculture: Vrikshayurveda (plant science) emphasized organic farming and soil conservation.

Vaastu Shastra: Principles for sustainable architecture and urban planning.

The ancient sustainability practices help tackle modern issues like climate change, water scarcity, and pollution.

Ethical and Valune based Leadership & Governance

Arthashastra by Kautilya (Chanakya) provided principles of economics, diplomacy, governance, and warfare.

Dharma-based leadership promoted ethical decision-making, ensuring justice and fairness.

This leadership and governance guidelines strengthens governance, business ethics, and strategic management.

Support to Sustainable Economic Practices

Swadeshi Movement & Self-Reliance: Inspired economic models based on local production, cottage industries, and self-sufficiency.

Handloom & Traditional Industries: Khadi, pottery, and handicrafts support rural livelihoods and sustainable economies.

The ancient sustainable economic practices support rural economy, entrepreneurship, and self-sufficiency (*Atmanirbhar Bharat*).

Studies in Linguistics & Literature

Sanskrit, Tamil, and Other Languages: Ancient texts in Sanskrit, Tamil, Pali, and Prakrit preserved knowledge in science, philosophy, and arts.

Panini's Ashtadhyayi (Grammar): The most advanced linguistic framework, now studied for Artificial Intelligence (AI) applications.

This ancient text helps in linguistic studies, AI development, and cultural preservation.

Exploring the Holistic Education & Learning Methods

Gurukul System: Focused on experiential learning, moral values, and skill-based education.

Interdisciplinary Knowledge: Subjects like Nyaya (logic), Yoga (self-discipline), and Vedanta (philosophy) provided a well-rounded education.

These holistic education & learning methods enhance critical thinking, problem-solving, and character development.

Strengthen the Indian Global Culture and intellectual presence

Ayurveda & Yoga have gained global acceptance for health and wellness.

Indian Mathematical Principles are used in computer science, cryptography, and space technology.

Ethical Philosophy & Mindfulness are influencing corporate and leadership training worldwide.

These areas strengthen India's global cultural and intellectual presence.

Curriculum Integration and Pedagogy

The Curriculum Integration includes infuse indigenous knowledge across subjects that embed IKS into science, history, geography, arts, and other subjects. The curriculum should highlight the indigenous ecological knowledge to teach sustainability, indigenous perspectives and historical

contributions. The curriculum enriched with IKS will have indigenous counting systems and problem-solving approaches. The Contextual Learning Materials to be developed accordingly. Such as creating textbooks and resources that include indigenous stories, proverbs, and case studies relevant to learners' cultural backgrounds. Also, it will promote the multilingualism, which includes indigenous languages in instruction, ensuring linguistic diversity and preservation.

The different pedagogical approaches can be adopted for the teaching of IKS, which includes experiential & place-based learning, storytelling and oral traditions, collaborative learning and holistic teaching. The experiential and place-based learning includes the use of traditional ecological knowledge through outdoor and community-based education while the storytelling & oral traditions include incorporate indigenous storytelling as a primary teaching method to convey values, history, and moral lessons. The teaching should encourage group discussions and intergenerational learning with elders and knowledge keepers as collaborative learning. All the teaching content should be thought by aligning lessons with indigenous worldviews that emphasize interconnectedness and harmony with nature.

The pedagogy should also include community involvement by inviting indigenous elders & knowledge holders for cultural immersion, co-teaching and creating curriculum materials. The workshops, seminars, conferences, short-term training program, and faculty development program to be conducted for the same. The policies, government and institutional management should support educators with the skills and knowledge to teach indigenous perspectives effectively. Government should collaborate with policymakers to ensure IKS is mandated in national education policies and should recognize that IKS is valued as a legitimate form of knowledge in academic institutions.

Conclusion

The Indian Knowledge System (IKS) is a practical, scientific, and sustainable approach to modern challenges. By integrating IKS with contemporary education, research, and governance, India can preserve its heritage, drive innovation, and promote sustainable development globally. The Indian Knowledge System (IKS) is not just a relic of the past but a living, evolving body of Knowledge with immense potential for modern applications. By incorporating IKS into education, policy, and research, India can create a self-reliant, innovative, and culturally rooted society while contributing to global knowledge.

Acknowledgement

Thanks for the contribution of IKS Center of SAGE University Indore and Prof. Dr Raghavendra Dubey.

References and Readings

1. Balasubramanian, R. (1990). *Indian Philosophy: A Counter Perspective,* Oxford University Press.
2. Capra, F. (1997). The Web of Life: A New Scientific Understanding of Living Systems, Anchor Books. *(Includes discussions on ancient Indian scientific perspectives)*
3. Kak, S. (2001). The Astronomical Code of the Ṛgveda, *Indian Journal of History of Science, 36*(3), 157–174.
4. Pingree, D. (1981). History of Mathematical Astronomy in India, *Journal of the American Oriental Society,* 101(2), 245–252.
5. Sharma, R. (2011). *Ayurveda: The Science of Self-Healing,* Motilal Banarsidass.
6. Government of India (2020). National Education Policy (NEP) 2020: Integrating Indian Knowledge Systems, Ministry of Education, Government of India, New Delhi.
7. Indian Council of Historical Research (2019). *Indian Knowledge Systems: A Research Perspective.*
8. Nair, C., G. (2018). Vedic Mathematics and its Applications in Modern Science, *Journal of Indian Knowledge Systems,* 5(2), 120–134.
9. Government of India (2022). *Indian Knowledge Systems Initiative,* Indian Knowledge Systems Division, Ministry of Education, Government of India, New Delhi.
10. UNESCO (2013). *Traditional Knowledge and Sustainable Development: Indigenous Wisdom for a Sustainable Future.*
11. Barnhardt, R., and Kawagley, A., O. (2008). Indigenous Knowledge Systems and Education, In M. Cochran-Smith, S. Feiman-Nemser, & D. J. McIntyre (Eds.), *Handbook of Research on Teacher Education: Enduring Questions in Changing Contexts* (3rd ed., pp. 223–241). Routledge.
12. Kumar, N., and Kumar, R. (2020). Indian Knowledge System and Education: A Contemporary Perspective, *Journal of Indian Education*, 46(4), 19–32.
13. MacLeod, L. (2021). More than Personal Communication: Templates for Citing Indigenous Elders and Knowledge Keepers, *KULA: Knowledge Creation, Dissemination, and Preservation Studies*, 5(1), 1–5. *https://doi.org/10.18357/kula.135*
14. Mishra, S., and Singh, A. (2021). Indian Knowledge System and Education: A Historical Perspective, *Journal of Indian Education*, 47(1), 5–18.
15. Robinson, J., V. (2015). *Algonquin Ekwânamo Matrix Project: "A Place to Interface," for Elders, Indigenous Scientists/Non-Indigenous Scientists, Indigenous Knowledge Systems and Western Science Systems* (Master's thesis, University of British Columbia). *http://hdl.handle.net/2429/55935*
16. Sharma, R. (2022). *Viksit Bharat Abhiyan*: A Mission for Developed India, Bloomsbury India.
17. Sykes, M. (1988). *The story of Nai Talim,* National Book Trust. ❑

Incorporating IKS from Mathematical Feats for Engineering and Technology Curricula: A Curated Content-based Inspirational Pedagogical Proposition

Pranab K Dan*

"*We owe a lot to the ancient Indians, teaching us how to count. Without which most modern scientific discoveries would have been impossible."*

- Albert Einstein

Many educators prefer to include Indian Knowledge System (IKS) into the learning environment, nevertheless, are not sure as to what the content or the pedagogy should be, particularly, for the Science, Technology, Engineering and Mathematics (STEM) areas, where the author has first-hand experience in his teaching career including institute of eminence. This study attempts to fill this gap to by focusing on the common denominator for science and technology disciplines, which may go as 'mathematics' for optimal dissemination. IKS can inspire a more holistic understanding, considering both theoretical concepts and practical applications. IKS, appreciably, relying on an algorithmic approach, for instance, can serve as a foundation for engineering and technology curricula by leveraging the contributions of Indian mathematicians to provide alternative approaches to problem-solving, enhance conceptual understanding and critical thinking skills, aligning NEP-2020. To fulfill such objectives, a few notable accomplishments of Indian scholars in the relevant domain have been curated and embodied in this text. The pedagogy, to be suited to a resource-constrained conditions, as prevailing in most institutions in our country, is proposed to be in a flexible and open format. The curated topics for ready content reference and the proposed pedagogy with a realistic consideration is expected to deliver positive outcome in connection with adopting IKS in a flexible mode within curricula.

Indian knowledge system, over the ages, embraced holistic learning covering fields of science to philosophy, from moral and ethical inquiry to logic and language, from mathematics to astronomy, and hence Einstein's observation was not only pertinent but is the testimony of its scientific temper. Educators in the country, in some number, perceive it may be useful to include Indian Knowledge System (IKS) into the institutional teaching-learning environment, however, they practically do not have much clue as to what would the content be or what should the be pedagogy for effective adoption. They are mainly those who are from the Science, Technology, Engineering and Mathematics (STEM) disciplines, where the author has first-hand experience in his teaching career including institutes of eminence in the country. Current experience based on interaction with the faculty members of several institutions of national importance, state level government and private institutions is not much different. This article attempts to fill this gap to an appreciable extent by focusing on the common denominator, that is mathematics for actually all science and technology disciplines for optimal dissemination of inspirational knowledge for STEM students. The Indian Knowledge System (IKS) includes mathematics as an integral part of Indian heritage. It emphasizes problem-solving skills, mental calculations, and holistic learning. IKS includes Vedic mathematics and other traditional Indian mathematical approaches extended to astronomical calculations, such as those made by Aryabhata. Mathematics, being known as the queen of all sciences, also promotes critical thinking ability to a significant extent. Indian Knowledge System covers multiple areas of life and studies; however, this article focuses on the mathematical feats in Indian traditional scholastic that can inspire and enable the present-day application and solution-oriented learning, much needed in engineering and technology education, besides higher-level mathematics. To fulfil the objective, a few notable accomplishments of Indian scholars in the science and mathematics domains, also including a couple of utilitarian examples of the algorithmic innovations have been embodied here, that is curated for the students of higher educational institutions, primarily. IKS, notably, trusting on an algorithmic approach can be introduced as a base for engineering and technology curricula by leveraging the rich traditional contributions of Indian mathematicians to provide alternative and innovative approaches to problem-solving, enhance conceptual understanding, and foster cultural relevance within STEM fields,

* *Pro Vice-Chancellor, Seacom Skills University, Kendradangal, Bolpur, Birbhum, West Bengal. E-mail: provcaras@seacomskillsuniversity.org*

aligning with the principles of the National Education Policy. The pedagogy, in order to be suited to a resource-constrained conditions, as prevailing in most institutions in our country, comprising in a large number in the rural and semi-urban regions, is proposed to be in a flexible and open format. And, instead of discipline-specific tutoring a mixing of students form multiple disciplines may be conducted in the form of short-symposiums or colloquiums including discussions on case studies such as application of scientific approaches in temple construction or water management system etc., supported by few interested faculty members from within the institution and few as guest-speakers, who are likely to do on voluntary basis. Such people, though not very large in number, live in our society, who may be tapped in, to deliver a session or two, however, scouting for such experts would be beneficial. It is not unlikely to find competent retired persons in nearby places, and many of them are actually interested in the subjects or topics on accomplishments by Indian Scholars, as curated and compiled in this article.

Curated Topics and Content for Conceptualisation

In this article, education as a means of knowledge-building may duly be considered as legitimate. And, an attempt to establish a judicious relationship between education and knowledge system would be an investigation in academic discourse. Indian Knowledge System (IKS), is built with Indian conventional and non-conventional Education System, which fundamentally is based on raising inquiry, critical analysis and intellectual debate. In Indian education and knowledge building system, deep analysis or meditating on ideas form a distinct part that is a notable feature of Indian Knowledge development system. In one of the most revered Indian Scriptures, 'Upanishad', often considered as the essence of 'Vedas' a well encompassing body of knowledge, which was created a couple of millennia before the Common Era (BCE), exemplifies such treatise in 'Prashna-Upanishad'. Its teaching approach is by raising questions in a subject, instead of providing ready instruction, as it allows the learner to develop a comprehensive understanding, based on deep rumination and creation of insight. This method was followed much later by Socrates that came to be known as Socratic method, but this educational mode for knowledge building much earlier may be cited from Upanishad, and truthfully may be cited as 'Upanishadic method'. This view is not to lessen the credit to 'Socratic' credit's but actually tries to examine any influence the 'Upanishadic' approach has left upon it. This supposition of spreading the influence and knowledge from India to the 'West' through the Middle Eastern route may be reaffirmed, particularly when revisiting Pythagoras theorem for example.

It may be a bit intriguing why Indian 'Rishis', the accomplished and enlightened persons mentioned in various Vedic texts, the embodiment of a scientist and a philosopher, who invented modern number system, that has been acknowledged by one towering scientific personality, no less than a person like Einstein, did not use mathematical symbols but 'Sutras'. One such can be cited as a case for Rishi Baudhayana (800 BCE - 740 BCE), who wrote on the property of right-angled triangle in terms relationship between its base, perpendicular height, and the hypotenuse, in textual composition, styled as 'Sulva-Sutra' in Sanskrit script, and is presented below (Datta, B. 1932) along with its phonetic transcription:

।। दीर्घचतुरस्रस्याक्ष्णया रज्जुः पार्श्वमानी तिर्यग् मानी च यत् पृथग् भूते कुरूतस्तदुभयं करोति ।।

(phonetic transcription in English: *dīrghachatursrasyākṣaṇayā rajjuḥ: pārśvamānī, tiryag mānī cha yat pṛthag bhūte kurutastadubhayāṅ karoti)*

The above means, "*A rope stretched along the length of the diagonal produces an area which the vertical and horizontal sides make together",* that is the diagonal (as hypotenuse) and sides referred to are those of an oblong (rectangle), and the areas are those of the squares having these line segments as their sides, which in other words is: $a^2 = b^2 + c^2$. This statement is equivalent to the Pythagorean Theorem. This is the only mention here in Sanskrit scripts, just to explicate the relationship, in order to not overburden the article minding space economy. The reader, if interested, can find the Sanskrit texts available even on the internet for the most. If assented to for the sake of argument that the mathematical symbols composed in the formula for expounding the theorem in the Pythagorean treatise, or even if it is conjectured that the Pythagorean approach was developed unaware of Baudhayan's work, it still leaves room for contending that the original idea on account of its mathematical trueness was conceived by the latter much before Pythagoras, spaced by a gap of five centuries.

Ancient Indian Mathematics largely embraced algorithmic approach and looked for workable solutions, allowing approximation, to address the

needs of real-world situations, and also espoused what now is referred to as the constructive approach that places emphasis on finding a procedure to solve a problem as against merely looking about foraverments of existence of a solution (Mahadevan et al, 2022). This approach is truly apt for engineering solutions, where more often than not a realistic value of a technical parameter, that can be obtained quickly and easily.

Science and technology has historically been advanced by Indian knowledge systems in areas like mathematics, astronomy, and metallurgy. IKS enriched the world's science throughconcepts like 'zero', the decimal system, and trigonometry, which even now are extensively used in current STEM (Science, Technology, Engineering and Mathematics), demonstrating the impact of Indian knowledge systems in fostering invention and innovation. As stated earlier, a couple of more examples of Indian contribution to mathematics and science, referred to as referred to as 'Ganita' and 'Bijnan' respectively are integral part of Indian-life from ancient times (Datta and Singh 1935) would reinforce the assertion that IKS significantly influenced the seeding of modern scientific accomplishments even in the western world and they are presented here.

Indian mathematicians like Aryabhata and Madhava significantly contributed to the calculation of π (pi). Aryabhata (476 AD) approximated pi as 62,832/20,000, which is correct to four decimal places. He used the term 'asanna' to indicate that the value is an approximation and references to 'pi' is included in his work 'Aryabhatiya'. Madhava (1340 AD) approximated 'pi' as 2827,4333,8823,3 / 9*1011, which is correct to 11 decimal places. Curated Madhava series of Π/4 was rediscovered in Europe by Leibniz in 1673.Other prominent Indian scholars, Varahamihira, Brahmagupta, and Sridhara contributed in the related areas. The value of pi is the ratio of the circumference of any circle to the diameter of that circle. It has many practical applications in modern-day mathematics and engineering. Indian mathematicians' contributions to pi advanced trigonometry and calculus. In 2024, physicists at the Indian Institute of Science (IISc) found a new series representation for 'pi' (Saha and Sinha 2024).

Different approximations to value of π (pi) that were in Indian Knowledge System from the Vedic literature to the work of Ramanujan, which is more recent is presented here to exhibit progressive refinements, compiled by Mahadevan et al (2022) as history of approximations. The calculation approaches and methods vary among scholars (Rishis) and glimpse of those can be found in parentheses against the corresponding value of π (pi). Sulbasutras (around 800 BCE) records the value of π (pi) as 3.08888, which improves in 'Jaina' texts (500 BCE) as 3.16 (√10), both adopting geometrical approach and with accuracy up to one decimal place. Aryabhata (499 CE), worked out the value of π (pi), as 3.1416 (62832/ 20000) and Bhaskarcharya (Lilavati) reported this as 3.1416 (3927/1250), both using Polygon Doubling Method, correct up to 4 decimal places. Madhava (1375 CE) settled the value of π (pi) as 3.141592653592(2827433388233/ 9*1011), based on infinite series and end correction with precisely is for 11 decimal points correct positions, but finally, Ramanujan (1914 CE) using, modular equation could achieve correctness up to 17 million places after decimal points.

Sulbasutras provide information on the layout of the 'vedi' (platform and the altar for '*Yajna'* or '*Yagna'*, and the mandapa (a pillared hall or pavilion fashioned in Indian architecture for public rituals, which also may have a courtyard). '*Sulba*' signifies thread, and with the help of it and a pole or pin, construction methods for various shapes have been characterized in the Sulbasutras as Geometrical Studies. The four Sulbasutras attributed to Baudhayana, Manu, Apastambha, and Katyayana are the predominant ones, alongside others like Maitryana, Varaha, and Vadula. The oldest of them, attributed to *Baudhyana*, is estimated to have been set down prior to 800 BCE. These are manuals for the construction of Vedic altars and, therefore, also discuss the manufacturing of bricks, thus implying of possessing agreeable knowledge of the materials and manufacturing processes prevailing in that period. One wouldn't be wrong to infer this as the precursor for future construction technology and building engineering development.

Aryabhata (5th century) and Brahmagupta (7th century) were both Indian scholars who contributed to the use of zero in mathematics. Aryabhata is credited with establishing zero as an entity in its own right and using it in the decimal system, while Brahmagupta is credited with developing methods for using zero detailing its property in calculations and demonstrated that zero can be reached through computation. The former,as well, explained solar and lunar eclipses in terms of shadows cast by and falling on Earth, using his mathematical prowess, used in 'Jyotisha' (Astronomy) that deals with required mathematical concepts,

measurements, and approximation techniques for studying and predicting certain movements of celestial bodies.

Over the centuries, the contributions of Indian mathematics were extended to wider areas of mathematics, encompassing algebra, trigonometry, geometry, square, cube, and their roots, as well as their series summations, permutation and combinations, numerical methods and approximations, infinite series, indeterminate equations, besides others. The square is one of the most common geometric figures used from ancient times for constructing altars, etc., and for relevant purposes, people needed to calculate the magnitude of its diagonal that brings into fore the issue of ascertaining the value of √2.It has been found that Baudhayana Sulbasutras not only arrives at same value as Newton-Raphson method, but its calculation requirement in each step is less compared to the latter, and is correct up to the fifth decimal places. Even the calculation in each step is less in Baudhayana Sulbasutras than Newton-Raphson method.

Baudhyan's work on constructions include the transformation of a rectangle (square) to a square (rectangle) of equal area and of square (circle)to a circle (square) of approximately equal area. The constructions "doubling the square" and "squaring the circle" lead naturally to thedevising of algorithms for the square root of 2 (presented just above as √2) and other numbers, for implicit estimates of π (Pi) and for constructing similar figures in required proportions of a given figure. Regarding the squaring of a number, Aryabhata identifies the geometric aspect and the mathematical operation of the square in his definition, which in Sanskrit terminology is '*varg*a', representing a geometric object whose sides are equal (Divakaran, 2018). Bhaskara-I (629 CE), in his commentary on Aryabhatya, provides an algorithm for finding the 'square' of any number, and the same is expressed as Sutra styled as verse, as was rather the convention.

Another development in Indian mathematics is Trigonometry, which is called 'jyotpatti', the science of computation of chords. Resemblance, despite phonetic distortion of its terminologies, across regions bears testimony as to how Indian 'Knowledge' reached Europe via Middle East, and an explication with a geometry-related case of a 'circle' would substantiate this assertion.For this purpose, a circle of radius 'R'may be considered with its centre at 'O' and forming an arcon its periphery associating an angular segment at its centre, so that R= 'OA', where A is the point on the arc. Vertical height measured from the point 'A' from the point 'B' on the diameter is AB, which is equal to R x Sin (Angular segment), is called the 'jya' corresponding to the arc. Earlier, it was called 'jyardha' or 'half a bow-string, but later, it was just called jya. OB = R x Cos (Angular segment) is called the kotijya or Kojya or cojya. 'Jiva' was another name for jya, and when this was transmitted to Arab countries (Middle East), 'Jiva' became 'Jiba', which was read as 'jayb' in Arabic. In common parlance, 'jayb' was 'pocket' or 'fold' in Arabic. When many mathematical texts in Arabic were translated into Latin, 'jayb' was translated as 'Sinus, which means pocket' or fold' in Latin. This eventually became Sine. Since the complement of jya is known as cojya, the complement of sine became 'cosine' in Europe (Mahadevan et al, 2022). The same is the case of the development of ten numerals, 0 through 9, and its passage to Europe via Arabian (Middle Eastern) region. 'Arabic numerals' are called such because, although originally developed in India, the system was introduced to Europe primarily through the Arabic world, meaning Europeans adopted the number system from Arabic mathematicians and scholars, hence the name 'Arabic numerals' despite their Indian origins.

Algebra is another major area of contribution by ancient Indian scholars, and the study of which was considered to be of expansive utility, which is called '*bija-ganita'. 'Bija'* in essence is 'element' through 'analysis' and '*ganita*' stands for 'science of calculation'. It embodies the laws of signs, magnitudes like 'zero' and infinity, and also negative quantities, operations with unknown entity values, or the linear indeterminate equation, known as '*Kuttaka'* since ancient time. 'Kuttaka' being an algorithm for finding integer solutions of Linear Diophantine Equations (LDE) that uses integers to connect with the sum of two or more unknowns of the first degree to a constant. Bhaskara simplified Aryabhata's '*Kuttaka* Method' to solve equations of the type ax+c=by. '*Kuttaka* Method' for solving quadratic indeterminate equations was given by him in the 12th century, well before the renaissance. Several important features of algebra in the Indian mathematical body of knowledge can be uniquely recognised, such as, the symbols used for unknowns by Brahmagupta, which is indicated in '*Aryabhatya*' and its commentary by *Bhskara* (600 – 680 CE), while 'operations' with negative numbers were also introduced by the former. It may especially be noted that linear and quadratic equations were solved by Aryabhata and Brahmagupta, besides engaging in the fundamental operations in algebra, namely, addition, subtraction, multiplication, division,

squaring and the extraction of the square-root by the scholars. No discussion on algebra can be completed without mentioning Sridharacharya (Sridhara: 870 - 930 CE), an Indian mathematician who set down on practical applications of algebra and was one of the first to give a formula for solving quadratic equations, famously known as Sridhara method, which for the uninitiated, to find solutions to quadratic equations of the form $ax2 + bx + c = 0$, $a \neq 0$ and is given by; $x = (-b \pm \sqrt{(b2 - 4ac)}) / 2a$.

Indian scholars also paid attention to 'series and progression' mathematics (Joseph, 2009). Aryabhata, by end of 5th century, and Brahmagupta, in the first part of 7th century, considered the cases of the sums, squares and cubes of the natural numbers. Mahavira, in the middle of 9th century, gave a rule for the summation of geometric series. A more generalised method for repeated summation of partial series was propounded by Narayana, in middle of 14th century, as advances in this diversified computational area.

In the field of Arithmetic, Indian scholastic was quite sophisticated, by the time of Aryabhata (5th century) as by then the decimal system, comprising 0 through 9, was in place, and in the 7th century the use of '0' (zero) as a number was established by Brahmagupta, postulating the rules for 'zero' in mathematical operations, namely, multiplication, division, addition, and subtraction. The reputation of the decimal system can be noted from the observations by the Syriac bishop Severus Sebokht (575 - 667 CE) that goes as "Indians possess a method of calculation that no word can praise enough. Their rational system of mathematics, or their method of calculation. I mean the system using nine symbols" (Datta, B., 1932). A sub-branch of Arithmetic is mathematical magic square (known as, Bhadra-ganita) that was known in India since the time of Garga (100 BCE) which is an array of numbers comprising equal number of rows and columns and the summation of the numbers in each column, row and diagonal happens to be the same. Its utilitarian aspect was exploited by Varahamihira in late 6th century CE, where he created 4 x 4 magic square to specify varying proportions of four ingredients that can be mixed to prepare different perfumes.

Last but not the least; the Binary Mathematics is touched upon in this article, briefly, which encompasses different applications and disciplines, particularly having much wider use in computational science and engineering today, for which early studies might have Indian root (Pingala 300 BCE). The study had been in connection with syllabic metre. From a prosody perspective, the 'metres' ('Chandas' in Sanskrit) were analysed by means of two types of syllables, laghu (L), and guru (G). Syllabic metres (varna-vrtta) are therefore characterized as a sequence of L and G, which may be represented as '1' and '0' respectively; consequently, the metrical pattern gets transformed into a binary sequence, composed of 1's or 0's (Ramasubramanian, 2015).

Conclusion

This work address the three main challenges, identified based on interaction and experience gained, that are faced by the higher educational institutions, in incorporating IKS in the learning environment and its successful implementation, as desired in the NEP 2020 guidelines, by (i) providing curated contents for a category or types of disciplines (STEM) programmes, as embodied in this article (ii) recommending pedagogies for delivery, styled in flexible and open format, and (iii) strategizing resource management in fund-constrained conditions faced by a large number of institutions in the country. The above will help the institutions to realize the cherished goal of implementation of the National Education Policy (NEP) 2020, effectively.

References and Readings

1. Datta, B.(1932). Ancient Hindu Geometry: The Science of Sulbus, Calcutta University Press, Reprinted Cosmos Pub., New Delhi.
2. Datta, B. and Singh, A., N (1935). History of Hindu Mathematics: Parts I, Asia Publishing House, 1935
3. Divakaran, P., P. (2018). The Mathematics of India: Concepts, Methods, Connections, Springer, New Delhi.
4. Govt of India (20202). Guidelines for Innovative Pedagogical Approaches & Evaluation Reforms, National Education Policy MHRD, Ministry of Education, Govt of India, New Delhi.
5. Joseph, G.,G.(2009). A Passage to Infinity: Medieval Indian Mathematics from Kerala and Its Impact. Sage, New Delhi, 2009.
6. Mahadevan, B., Bhat, Vinayak Rajat and Pavana, Nagendra (2022). Introduction to Indian Knowledge System: Concepts and Applications, PHI Learning Private Limited, Delhi.
7. Ramasubramanian, K.(2015). 'Ganitanada': Selected Works of Radha Charan Gupta on History of Mathematics, *Indian Society for History of Mathematics*, New Delhi.,
8. Saha, A.,P., and Sinha, A.,(2024). Field Theory Expansions of String Theory Amplitudes, *Phys. Rev.* Lett. 132. ❑

Integrating of Indian Knowledge System in Technical and Higher Education: Challenges and Opportunities

Goutam Sutradhar*

The Indian Knowledge System (IKS) embodies a vast repository of wisdom, scientific advancements, and philosophical insights accumulated over the centuries. The cultural heritage of our country has been immensely rich and incredible and has been influential for the entire world. Our ancient education system produced numerous veteran scholars such as *Charaka, Susruta, Aryabhata, Varahamihira, Bhaskaracharya, Brahmagupta, Chanakya, Madhava, Panini, Patanjali, Nagarjuna, Gautama, Mahavir, Maitreyi, Gargi* and others, who made pioneering legacy to the global knowledge in diverse areas such as mathematics, astronomy, metallurgy, medical science and surgery, civil engineering, architecture, yoga, fine arts, and other areas. The contributions of ancient India have profoundly shaped the fundamental principles of modern science and technology. Kautilya's *Arthashastra,* a comprehensive compendium on governance, administration, and diplomacy, highlights the strategic acumen of Indian intellect. Additionally, Indian philosophy's pluralistic approach allows for the coexistence of multiple truths, fostering an epistemology distinct from Western traditions. Unlike the Western ideology that views knowledge as a means of power, Indian traditions emphasize knowledge as a major aspect of self-liberation and societal well-being. This concept gives rise to diverse worldviews, ontological perspectives, and epistemological frameworks. Furthermore, it is important to note that in India, knowledge has never been confined to a privileged minority; rather, it has traditionally been shared through oral traditions and storytelling, ensuring accessibility to all sections of society. Over time, various disciplines, arts, and crafts evolved into India's formalized knowledge systems. Anchored in the values of truth, virtue, peace, love, and nonviolence, these principles remain integral to intellectual and ethical discourse, resonating across generations. Indian Education System has traversed an extensive journey through the traditional *Gurukul* system where both students and *Acharyas* (teachers) sat together, engaged in the harmonious practice of knowledge and meditation. Education at that time involved three distinct phases like *Shravana, Manana* and *Nididhyasana*. Ancient *Gurukuls* rested upon two study pillars, *Shiksha* and *Diksha. Shiksha* represents *Apara Vidya* or *Avidya*, which could also be attained through self-study, where *Diksha* represents the deeper wisdom, and study means holistic knowledge, an aspect of *Para-Vidya* or *Vidya*. However, the current education system neglects *Para Vidya (Vidya*) and focuses on holistic development only on *Apara-Vidya/Avidya*. This transformation took many decades.

Indian Knowledge Systems, despite their vast intellectual depth, have largely remained overlooked in modern education. The introduction of Western education during the British colonial era redirected academic focus, distancing traditional learning frameworks away from India's rich cultural and philosophical traditions. This separation created a gap between the indigenous wisdom and mainstream pedagogy, diminishing the presence of traditional knowledge in formal curricula. The current education system, predominantly influenced by Western models, often overlooks India's indigenous knowledge base, resulting in a disconnection from the country's own rich philosophical and scientific heritage. In 1834, Macauly introduced the English and Western education system to create bias and prejudice against the rich literary and cultural heritage of India and successfully damaged the educational and cultural legacy of our country. Sanskrit and local languages were shown as outdated languages, and the English language was promoted and orchestrated as an essential and progressive means of intellectual development. Consequently, it damaged the ancient wisdom and knowledge system. Language diversity, local arts and crafts, and indigenous dexterity in different things were ignored, and excessive focus was given on science and technology, ignoring ancient scientific achievements and technology. In the post-independence era, the ancient knowledge system was not significantly promoted. According to Kautilya, Education shall aim at three outcomes as characteristics in graduates - the Creation of New

* *Director, National Institute of Technology, Jamshedpur, Jharkhand- 831014. E-mail: director@nitjsr.ac.in*

Knowledge, Wisdom to use the right knowledge in the right time & place for the right purpose, and the skillsets to get the proper results of knowledge in real life. These multifarious dimensions can be achieved only through the integration of the ancient education system in present curricula towards a holistic education approach and balanced development of human beings. In this direction, during the last decade, for preserving, promoting, and disseminating our ancient cultural capital and making well conversant the future generations, NEP 2020 strongly focuses on the inclusion of various dimensions of IKS in the curricula at various levels in technical and higher education. NEP 2020 attempts to focus on the inclusion of various aspects of ancient cultural and knowledge systems in the curricula of various courses in school and higher education.

Importance of Indian Knowledge System

The Indian knowledge system is highly insightful and has immensely impacted all the dimensions of human beings across the globe with the philosophy of may all be happy and the whole universe is a family. Our ancient sources of *Vedas, Purans, Upnishad, Ramayan, Mahabharat,* and other texts are sources of wisdom, enlighten and emphasize the true significance and goals of human life. *Aryabhata, Brahmagupta, Ramanuja* and other mathematicians have seminal contributions in the field of algebra, trigonometry, astronomy, and others. Our country is home of *Ayurveda* and *Charak, Susrut*, *Vagabhatta* and other *ayurvedacharya* has given natural system of healing various diseases through identifying the imbalance in our '*doshas*', treating the various diseases through naturopathy, ensuring physical and mental well-being through yoga and Meditation.

IKS has huge potential to enrich the modern education fabric through a complete understanding of human life and cultural capital and proving immensely advantageous for the students, teachers, and community. The diverse dimensions of IKS are its interdependence and inter-relationship, which will help the students to analyze and understand in a broader and integrated way. The holistic education through IKS will ensure inter-disciplinary research amongst the academic fraternity, leading harmony in the education system. Inclusion and study of various topics related to ethics, morality, and spirituality will in still a sense of ethical practices amongst the students and enable them to emerge as responsible leaders and citizens, and subsequently, harmony at the family, society, and national level may be ensured. These ethical values will enable them to behave righteously and make ethical decisions in various spheres of their life.

Education of ancient wisdom through the texts of *Ramayana, Mahabharata, Panchatantra*, and *Hitopadesha* will help the students in developing life skills to meet the various challenges in their life. Our ancient wisdom has focused on a sustainable lifestyle, using the optimum natural resources and maintaining the co-existence of nature and human society without causing harm so that the future generation could lead their life with essential natural resources. This philosophy is enshrined towards achieving the modern goals of sustainable development goals adopted by the United Nations. Sustainable farming, organic farming, cow-based agriculture, handicrafts, community-based forest management, community-based water management and irrigation, etc., were successfully practiced in our country a thousand years ago. Making aware with the various aspects of IKS and rich cultural heritage, students and young minds will have sense of pride towards our profound culture, ancient wisdom and consequently it will help in its preservation and promotion to next generations. Integrating ancient wisdom and techniques with modern practices, IKS can solve many problems relating to climate change and mental and physical well-being. IKS encapsulates various facets of knowledge, practices, beliefs, norms, cultures, and heritage that were accumulated and developed by indigenous people and communities during ancient years. It encompasses various innovative techniques to resolve local and social day to problems based on experience and dexterity of long period. Therefore, integrating the various dimensions of IKS in higher education and technical education will provide solutions based on local and indigenous requirements and alternative solutions towards economic, social and environmental issues.

Respecting local languages, culture, and rituals will create a sense of belongingness to the local community amongst the young people and will be able to contribute to the growth and development of the village. The ancient practice of Yoga, meditation, *kirtans*, and other techniques has huge potential and contribution in enhancing the mental well-being, resilience, and overall health. The traditional

arts, crafts, dexterity, agriculture techniques, medicinal plants, grass-root innovation, can be source of sustainable livelihood and enterprises. The holistic and critical thinking based on ancient text, e.g. *Ramayana, Mahabharata, Panchatantra, Hitopadesha*, etc., can be a rich source of making right decisions in tough situations facing ethical dilemmas.

Integrating IKS Knowledge in Higher Education Curricula and its Challenges

Viewing the significance of IKS in curricula, there is a need to introduce a compulsory basic credit course for undergraduate students in IKS. In addition to compulsory portion, elective courses may be offered to the UG and PG in different themes e.g. Vedic literature, *Ramayana, Mahabharata,* Vedic Mathematics, Indian Astronomy, Ayurveda, Naturopathy, Yoga, Meditation, Indian Music, Indian Dance, Indian architecture and Town planning, Indian Fine Arts, Indian Agriculture, Indian Metallurgy, Indian Polity and *Koutilya Arthasastra*, Classical Sanskrit language. The course content must contain the topics and material from ancient times to 18th and 19th century. As far as possible, these courses should be in the initial four semesters. The compulsory course should be a foundational course containing the basics of various aspects of IKS. The institute and university should offer the large number of elective courses relating to IKS. The medium of instruction of the IKS courses should be Hindi and vernacular languages. Centre for Indian Knowledge system has to be created for conducting seminal research in the domains of IKS that will revisit the frontiers of ancient knowledge and its amalgamation with modern knowledge-system. Where seminars, workshops, and faculty development programs can be conducted.

There are several challenges in implementing IKS courses in higher and technical education. Firstly, designing the courses related to IKS needs expertise and background. A large number of qualified and trained faculties are required to design and teach various IKS-related courses for effective delivery and implementation. Therefore, there is an urgent need for capacity building and training of faculty in the various areas and themes of IKS. Integrating IKS in the curriculum as per NEP-2020 needs boosting and making stronger the role of the teachers and enabling them energized and motivated.

The successful implementation of IKS in curricula and imparting knowledge to the students mainly depend on the active role and participation of faculty in institutions. In many cases, there is a lack of well-versed and expert faculty in universities, and they also need specific expertise in the ancient frontiers of the knowledge system. Continuous training and capacity building of faculty in IKS-based subjects are required so that sufficient well-trained faculties can be prepared to design and teach the various subjects related to IKS. In this direction, UGC HRDC and Pandit Madan Mohan Malviya National Mission on Teachers Training (PMMMNMTT) are providing training for creating national resource persons to cater to the requirements of IKS-based courses. However, viewing the requirements in universities and institutions, there is a greater need to provide training to the young faculty in these areas so that they could teach and design the ancient education-based courses. In designing courses relating to IKS, a greater need for verifying the authentic sources and texts is required for the preparation of quality course materials. Compulsory induction and training program is required for newly joined faculty in the areas of traditional knowledge system. Specific refresher courses are required to be conducted continuously for the faculty in universities and institutions.

The second challenge is the availability of sufficient faculties well-versed in the Hindi and Sanskrit languages. NEP-2020, stresses using Hindi and other vernacular languages for imparting education related to the courses of IKS. In technical institutions, e.g., NITs/IITs, there is a lack of sufficient faculty who can use Hindi and vernacular language as a medium to teach IKS-related courses. Therefore, there is a strong need to motivate the faculty to learn these languages and develop requisite language skills so that language is not a barrier in the effective implementation of IKS-related courses in the curricula for UG courses. The students need to have basic knowledge of Indian languages, particularly Hindi and Sanskrit, to better understand the ancient rich literature in the area of philosophy, Yoga, Classical Music, *Gita, Ramayana, Mahabharata*, *Vedas,* Ayurveda, and others. Therefore, audit courses on these languages must be included in the syllabus at the UG and PG levels.

Teachers possessing good knowledge of Hindi, Sanskrit, and other vernacular languages must be duly incentivized so that other faculty

can be motivated to learn and impart knowledge in these languages. Therefore, hundreds of universities, thousands of colleges, and other institutions need huge capacity building of faculty in terms of themes of IKS and requisite languages to teach these subjects effectively. As per the AISHE Report 2019, there is a total of 3.74 crore students in almost 1,000 universities, 40000 colleges, and 10725 autonomous institutions in higher education. Hence, integration of IKS in the curricula for undergraduate, postgraduate, and other programs nationwide is a mega challenge towards implementing the NEP-2020 affecting the multiple stakeholders at multiple levels. The third challenge is that although our ancient knowledge system in various domains has contributed significantly to the globe, it has been undermined due to an excessive westernized attitude. There is a greater need to make a change in this perception through comprehensive awareness programs at different levels. Still, there is the colonial and Western mindset among the present generation that the Western knowledge system is more scientific and rigorous due to two-fold reasons: non-awareness about the importance of various aspects of IKS and biased mind set of undermining our country's rich cultural heritage. It needs to be addressed urgently through comprehensive awareness programs about IKS in the entire country at various levels through various means e.g., Audio-video, seminars, workshops, and free pamphlets containing brief and synoptic ideas about IKS. Another significant challenge is the lack of sufficient written records, texts, and material related to the various themes of IKS. Easy and sufficient access to the reliable and accurate old scriptures to the faculty and student is lacking and consequently proving a barrier in imparting ancient knowledge system. There is a greater need to undertake research and conceptualizing as per the needs of present society and relevance of different areas of IKS aligning and meeting the contemporary issues and challenges. The universities and institutions are lacking permanent faculty having expertise in the areas of IKS. Therefore, for imparting knowledge, the institute can engage more visiting faculty, adjunct faculty, and professors of Practice in the areas of IKS for imparting knowledge and research in these areas. The lack of a structured, unified, and clear syllabus of IKS is another issue that creates confusion amongst the stakeholders.

Our institute, the National Institute of Technology Jamshedpur, has taken several initiatives towards implementing the vision of NEP 2020 to integrate IKS in our education system. As per the guidelines of NEP-2020, the Humanities, Social Science, and Management department has designed a compulsory and basic course on IKS encompassing the various aspects of IKS at UG level B. Tech.

This course will enable the B. Tech students of all branches to grasp the basics of IKS. Our institute focuses on giving opportunities for doing projects at UG and PG levels (minor/research) in the various areas of ancient systems relating to mathematics, Indian architecture, Indian astronomy, Indian metallurgy, yoga, fine arts, Indian philosophy, and others. In addition to compulsory basic course on IKS, we are also offering electives at UG level relating to the areas of IKS e.g. Ancient science and Technology, Vedic mathematics and others so that they could get greater opportunity to study more and more subjects relating to the diverse areas of IKS.

Our institute has set up the 'Centre for Indian Knowledge System' that seeks to conduct inter-disciplinary research for promoting and advancing the varied aspects of Indian Traditional Knowledge Systems. 'Centre for Indian Knowledge System organizes workshops/seminars and other awareness programmes on the various topics relating to IKS e.g. Yoga, Philosophy, Vedic Mathematics, Classical music, folk arts, Astronomy, Meditation, and others. The Centre for Indian Knowledge System' organizes, regularly, lectures/talks/ workshops/FDPs and practical sessions by renowned experts and practitioners on Ayurveda, wellness, stress management, and various aspects of life management skills towards the holistic development of students that is envisioned in NEP-2020. To advance the research in the various areas of IKS, our institute has started interdisciplinary Ph.D. programs in these areas. Our B. Tech. Students will pursue various audit courses relating to IKS, e.g. Music, Dance, Yoga, and Meditation, that will help them in understanding the rich ancient heritage and holistically develop their personality. Language is the rudiment of the human thinking process. For understanding IKS, Indian languages, particularly Hindi and Sanskrit, play a vital role. Therefore, an audit course on Hindi and Sanskrit

languages has been included at the UG level in the new syllabus as per NEP-2020. Next academic session, we will include the basic course on IKS and some elective courses relating to traditional engineering systems at PG level. The students will have the option of interdisciplinary research in the diverse areas of IKS. Recently, an attempt has been made by some of our Faculty Members regarding the integration of Artificial Intelligence (AI) in analysing and validating the *Bhagavat Gita's* teachings, which presents a revolutionary approach for better understanding and applying ancient wisdom in the modern world. It is expected that it will serve as an invaluable tool for individuals seeking ethical guidelines, self-improvement and leadership insights. Additionally, it will contribute to academic research, spiritual studies, and philosophical discourse, providing deeper insights into the timeless relevance of the Gita. Through the power of AI, we could unlock new dimensions of understanding so that Gita's teachings will be more accessible, applicable, and impactful in various domains of life.

Conclusion

The integration of Indian Knowledge Systems (IKS) into curricula and academic framework is a solid and vital tool to enrich the knowledge and learning of students, enhancing and ensuring their all-around and holistic development. Numerous literature and reports affirm and prove that integration and enshrining of IKS in modern education fabric, positively affects students' moral, social, cognitive, and spiritual development, in addition, it also significantly contributes in the cultural, problem solving, conflict management, ethical decision-making skills. IKS provides alternative, integrated, and critical perspectives about human life and managing the various spheres of human life. IKS has huge potential in having a paradigm shift from a rigid and structured pattern of learning to experiential learning that is more relevant to real-life problems.

With all the various challenges in integrating and implementing the IKS as per NEP-2020 namely, capacity building and training of faculty, lack of availability of written accurate and reliable ancient texts, more inclination of younger generation towards western knowledge system, language barrier in imparting knowledge, awareness about the significance of IKS amongst present generation, lack of availability of clear, uniform and structured curricula on IKS, with ongoing training, digitalization of ancient resources, crafting uniform syllabus, IKS awareness program will pave a strong way for the successful implementation and integration of IKS in higher education. This will lead a generation of empowered students and citizens with ancient wisdom and modern knowledge to lead a balanced life and meet successfully the multifarious challenges. Integration of Traditional Indian Knowledge in technical and higher education and adoption of *Bhartiya* approach of solving the problems will surely make our country knowledge and global power. ❑

Attention Contributors!

The University News is committed to maintaining the highest standards of academic integrity and ethical conduct. Plagiarism, in any form, is considered a serious violation of these principles. Authors are responsible for ensuring the originality of their work; properly cite and reference all sources used in the manuscript, and provide appropriate attribution for ideas, concepts, and data that are not their own.

Manuscripts with evidence of plagiarism will be rejected. If plagiarism is detected after publication, the article may be retracted, and the author(s) may face further consequences.

We appreciate your commitment to maintaining the highest ethical standards in scholarly publishing.

Developing Self Consciousness for Self Realization: Ancient Indian Approach

Gouranga Charan Nanda*

The teachers of educational philosophy used to focus on self-realisation as the ultimate goal of education. Self-realisation is possible when self-consciousness is developed. It is, therefore, necessary to operationalize the concept of self and the concept of self-consciousness from different Indian philosophical perspectives to figure out the way for self-realization.

Understanding Consciousness

According to Charvak philosophy, "Consciousness is a function of the body and it is continuous with body. If there is no body there is no consciousness."(Mohanty,2008)

The Jainism interprets consciousness as an essential quality of *Jiva/Soul*. Matter, life and consciousness make a continuum. The matter is also potentially conscious. But the element of consciousness is too dormant in the matter. The soul is co-extensive with body. Here the *Jiva* is the subject and active. The Ajiva which is called as Pudgal, is the object and passive.

According to Buddhism self is *Namarupa*, i.e Body-Mind consciousness complex. As observed by Mohanty(2008), the self is a configuration of five constituents known as *Panchaskandha* such as

a. *Rupa* (Physical body)
b. *Vedana* (Feeling of pleasure and pain)
c. *Sangyan* (Cognition)
d. *Sanskar* (Inclination)
e. *Bigyan* (Consciousness)

Buddha rejects the concept of soul and advocates a stream of consciousness with continuity in its flow.

The *Sankhya* philosophy interprets reality in terms of *Purush*a that is pure consciousness and Prakriti, that is, matter. *Purusha* remains the same substantive subject across the state of waking, dreaming and deep sleeping. There can be many Purushas but there is only one primordial Prakriti. Without consciousness *Prakriti* cannot create anything.

According to *Adwaitya Vedanta, Brahman* is the ultimate reality. The essence of *Brahman* is Sat (Existence), Chit (Consciousness), and Anand (Bliss).

* *Former Professor of Education, Rama Devi Women's University, Bhubaneswar. E-mail: gourangacharannanda@gmail.com*

Sat is the 'being' which seeks expression or manifestation through Chit. So, Chit is instrumental in the becoming of the being. The Man is born to seek the bliss through a process of psychic transformation. Sadhana is required for elevation of self from psychic to spiritual level. Once man reaches spiritual stage, he himself becomes Brahman. In the words of Shree Aurobindo Mind becomes a Super-mind and man becomes a Superman which he calls as a 'gnostic being'.

In order to understand pure consciousness, one has to understand the stages of transformation envisaged in Mandukya Upanishad (Sarva Priyananda, 2021). The first stage is waking stage which is called as *'Viswa'*. The second stage is a dreaming stage which is called *'Tezas'* when experiences are recalled in the mind. The third stage is called deep sleep that is Susupti which is characterized by sleep blankness. At this stage the consciousness is there along with ignorance. This is also called as Prangyanamghanam. The fourth stage is called as *Turya* which is the witness of the first three states, that is, waking, dreaming and deep sleeping.

Turya state is apart from the other three states. It illumines the waker, the dreamer and the deep sleeper. Once you realise that you are not the waker, not the dreamer, not the sleeper, but the witness, you have reached the peak of your consciousness.

Thus, there is a Consciousness in man. This consciousness signs in mind and then it is reflected in all the organs of the body. Consciousness is not a part of your body, mind and intellect. It pervades and illumines your body and mind, enabling you to function. But it is not limited to one's body and mind. This is known/ experienced through the functioning of body and mind. Without the body and mind, consciousness is also still there but it is not experienced. Consciousness is also not limited in time. Experience has a beginning and ending but consciousness has neither beginning nor end.

Understanding the Self

According to Taittiriya Upanishad (Swami Chinmayanand, 2017), there are five sheaths / Layers of self, constituting human personality.

The knowner of *Brahman* attains the highest by transcending the five layers and becomes Brahman himself. These layers are discussed here.

Annamaya Kosha

Your physical body which is the result of food. Your body is not static, it undergoes changes. You sense the body, but your body doesn't sense you.

Your body does not go with you after death, therefore, it can't be your free self.

Pranamaya Kosha

There is life force in you which pervades through the organs of your body. You are healthy not because of your body but because of your energy. You are life itself. But there is fluctuation in your energy level at different points of time.

You are *Drasta (Sentient)* but your *Prana* is (insentient). So, you can't be *Prana*. You are different and more than your *Prana*.

Manomaya Kosha

It refers to your mind. It makes your personality. "I'm aware of mind. I am aware that I'm hungry, sad....." Mind also gets changed with flow of thoughts. How can I have multiple desires when I'm one. Therefore, I'm not the mind. My personality is a mask. I am beyond mind.

Bigyanmay Kosha

It relates to intellect which makes you understand. Intellect also changes with you continuously but you don't change, you remain. This 'you' is also temporal *(Anitya)*.

Anandamaya Kosha

In deep sleep when you forget your body, mind and intellect but awareness of deep sleep was there in you.

This is the sheath of bliss which is the subtlest. All these Sheaths are objects.

Swami Vidyaratna tells a story to illustrate the concept in his Pancha Dashi. 10 friends crossed a river and each of them counted to ensure that all of them have crossed the river without counting him. The result was always nine. If all the sheaths are experienced, there must have been an experiencer which is the *Brahman* or *Atma*n beyond the five layers. *Atman* is the subject of knowledge. The self, the you, and the I are not the objects of knowledge.

To know anything you have to add consciousness. For example when we add sugar in water or milk or in curd, it tastes sweet. Hence, consciousness adds sweetness, internal peace in our lives. You need not have to be conscious of consciousness. In every act of knowledge the consciousness is revealed. When someone is speaking, "I don't have a tongue". It doesn't make any sense because how is one able to speak without tongue? Similarly one cannot deny himself by denying his soul.

Taking cues from the concept of Pancha Kosha, Sri Aurobindo classifies the following five aspects of personality and elaborates his concept of Integral Education.

i. Physical self which infuses Consciousness into body cells.
ii. Vital self that gives power/energy to senses.
iii. Mental self which relates to formative capacity of the mind like development of attention, concentration, intuition and reasoning.
iv. Psychic self which implies a love for the divine power within you.
v. Spiritual self which relates to your life in the infinitude and eternal.

Paths to self-realization

Adi Shankaracharya in his *Vivek Choodamani* (Swami Chinmayananda, 2016), has recommended "*Sadhana Chatustaya*" for realisation of Consciousness which are:

i. *Vivek* (intelligence), which refers to the capacity of discrimination between facts and falsity, eternal and temporal. For example, Karna in the epic of Mahabharat had the intelligence but didn't have the conscience. Therefore, intelligence has to be guided by conscience.
ii. *Vairagya* (detachment), which keeps one away from the expectation of the fruit of *Karma*. *Vairagya* refers to detachment which rejects the path of enjoyment and accepts the path of sacrifice and *karma*. One who doesn't have *Vivek* can never have the sense of detachment.
iii. *Satsampati* (Desire)

Shatsampati includes:

- *Shama* i.e keeping the mind cool and composed.
- *Dama* i.e controlling of the senses.
- *Uparama* i.e withdrawing the mind to your real self.
- *Titikshya* i.e developing the capacity to handle pain and pleasure, victory and defeat with unanimity.
- *Shradha* refers to respect for 'Guru' and 'Scripture'.

शास्त्रस्य गुरुवाक्यस्य सत्यबुद्ध्या अवधारणम्।. However, *this phrase underscores the importance of not merely accepting the words of scriptures or teachers blindly but approaching them with a rational and discerning mind. It reflects a balanced approach to learning in Indian pedagogy, which values both respect for authority (scriptures and teachers) and the role of personal inquiry and critical thinking.*

- *Samadhana* refers to concentration of mind or *Chitta Ekagrata*.

iv. *Mumukshuta* refers to an inner urge for liberation. To pursue *Sadhana Chatusta*y it is required to cleanse the inner apparatus which is called as purification of *Antakaran*, constituting a thinking mind, perceiving mind, subconscious mind (impression and memories) and ego *(Ahamkar)*. One has to be equipped at the cognitive, affective and psychomotor level to undertake a rigorous spiritual journey.

In-order to develop self-consciousness, one has to give up *sadaripus* which are desire, anger, greed, ego, attachment to things, and jealousy. The list is clarified hereunder.

- *Kama:* Lust or desire for sensual pleasure
- *Krodha:* Anger, such as resentment, bitterness, or rage
- *Lobha:* Greed, or an extreme desire to acquire things that others have
- *Mada:* Ego or arrogance
- *Moha:* Want or desire, or an attachment to things that one refuses to let go of
- *Matsarya:* Jealousy, or an extreme desire to possess things that others have

Thus, consciousness is being aware of your own thoughts and feelings and surroundings at any given moment. When the consciousness is awakened, man becomes active and the joy of living follows from within. The deeper the awareness in you, better the quality of work you can do. Therefore, Osho (2001) recommends risk everything for awareness but don't risk awareness for anything. People of awareness are people of soul. Once your awareness is sharp, you can reach a stage of enlightenment where there would be a sense of oneness with all existence and one can transcend the limitation of ego. This is what is called self-realisation/ *Atma Gyan/Atmasakshyatkar* where one realises the Mahavakya *"Aham Brahmashmi." (Brihadaranyaka Upanishad)*. According to *Sadguru* (2016), "If you are doing everything consciously, you are evolving, growing and you can be at the peak of your existence." This is how a teacher can make his students realise "**सा विद्या या विमुक्तये**".

The advocates of Neo-Vedanta like Sri Aurovindo and Swami Vivekananda simplified the concept of Brahman and tried to see the Absolute Brahman in the society and social processes. The self has to be made conscious of *Swadharma* and *Swabhaba* and needs to contribute for the cause of the society for his self-realization. The job of the teacher is to make the students aware of their attribute and nurture them to the best of their abilities for social progress and mankind. This concept has also been spelt out in *Bhagavad Gita* and needs to be incorporated in curriculum and pedagogical process at tertiary level so that everybody can be a part of larger social consciousness and get liberated.

References and Readings

1. Bhagavad Gita. (2010). Translated by Eknath Easwaran, Nilgiri Press.
2. Bṛihadāraṇyaka Upanishad
3. Charvaka Philosophy (2023). In *Indian Philosophical Systems*.
4. Sivaramkrishna, M. (2013). *The Vivekananda Reader*, Ramakrishna Math and Ramakrishna Mission, Belur Math, Howrah, WB.
5. Mahabharata (2014). Translated by Bibek Debroy, Penguin Classics.
6. Mohanty, A., K. (2008). *Concepts and Issues in Indian Philosophy*, Centre of Advanced Study in Philosophy, Utkal University Bhubaneswar.
7. Osho (2001). *Awareness: The Key to Living in Balance*, St. Martin's Griffin.
8. Sadhguru (2016). *Inner Engineering: A Yogi's Guide to Joy* (pp. 123-124), Penguin Random House.
9. Shankaracharya, A. (2019). *Tattvabodha: Knowledge of Reality* (S. Chaturvedi, Trans.). Independently Published.
10. Sarvapriyananda, S. (2021). *What is Vedanta?* [Video], June 10, YouTube.
11. *https://www.youtube.com/watch?v=example*
12. *https://youtu.be/NntbT1SC5A0?si=5rQ9HLViT2iAqT5g*
13. Singh, Sinha, P. (2020). *Charwak* **चार्वाक दर्शन** *PHILOSOPHY* | **लोकायत**
14. *Lokayat (2)* [Video], Jun 25, YouTube. *https://youtu.be/Ep5ngsDHMGA?si=fcPa6WVpzjPPzUtP*
15. Swami, Chinmayananda (2016). *Vivekachoodamani,* Central Chinmaya Mission Trust.
16. Swami, Chinmayananda (2017). *Taittiriya Upanishad,* Central Chinmaya Mission Trust.
17. Swami, Chinmayananda (2018). *Mandukyaupanishad,* Central Chinmaya Mission Trust.
18. Swami, Tejomayananda (2004). *Tattvabodha,* Central Chinmaya Mission Trust.
19. Yogindra, S.(2022), *Vedanta Sara ,* Aum Books, Dolamandapsahi , Puri. ❑

Lokgyanpeeth for *Swaraj* Education as an Evolutionary Process towards Renaissance

Chittaranjan Sarangi*

Steadfastness in wisdom, a heart full of love and compassion for the entire world, and the courage to protect the weak are described as model human characteristics in all world scriptures. History talks about illuminated souls living larger than Earth's life. These exemplary people started imbibing values from their mother's womb. Circumstantial impressions chiselled their thought, speech and action into one magnetic persona. They rose above their weaknesses and became the torchbearers for new ideas. They walked down a path of simple living and high thinking. This evolution process led to a renaissance at times. Those were the golden eras in the history of civilisation.

Today, such characters are found only in films (not in real life), and people look up to them because they have the fascination that somebody with such extraordinary powers will come to emancipate them from their pain and bring peace and prosperity to society. People feel insecure and miserable despite clinging to bombastic political parties, pretentious religious leaders, superficial NGOs and a screeching market.

Scriptures have enjoined three types of pain, i.e., physical, psychological and accidental. Measures are further ascribed to come out of these pains and enjoy bliss in life. But these ancient scriptures could not visualize the fourth type of pain borne out of human arrogance and interference that most of people are undergoing today. No concrete remedial scriptural measures are therefore available. This pain is arising because of shrewd system management. Political and economic powers have polarized the resources - survival and livelihood of the working class, and indigenous communities are made hapless in such a way that a vast majority of the people in the global scenario are subservient to a mighty minority whose decisions control their lives.

An elected government is serving us; the market too is offering every possible facility and comfort for a better living. But the spring of joy and satisfaction has dried up. The inner confidence and self-esteem of communities are simply missing despite numerous welfare schemes, protective laws, and regulations. We all agree that the root cause of this deprivation and marginalization is ignorance about the modern hypocritical and hierarchical system of development. Bereft of knowledge, courage and logical thinking, communities are being swayed away from their primary duties. Lucrative publicity, false promises and mouth-watering temptations are being designed by vested interests existing in the Government, Market, political parties, and religious and social organizations.

Traditional wisdom systems evolved in thousands of years have been consciously sabotaged and at times unconsciously ignored. Before reaching the new generation, their stream has dried up and gone beneath the surface. The British neglected them first, and their obedient ruling class followed suit. Who will now make a herculean effort to reveal this stream of knowledge again? When ignorance in a community can be milked by every stakeholder of development, then who will take the pain to live with them and dispel their ignorance on governance structures and service delivery mechanisms? Our post-independence experience proves that any quantum of preaching, campaigns, sermons or socialistic development measures is window dressing! It makes us believe that the welfare machinery is working and will soon develop the community. The mirage doesn't vanish, no matter how close we get to it. Every successive year, Governments have failed to achieve the targets set by them and by the United Nations. Programs end up with some false statistics and some irresponsible reasons for failure. The project is closed. Then, after some time, new programs are implemented with new employees, and new projects are started with the same objectives. Expropriation of resources, accumulation of wealth and centralization of money power, however, are breaking all records.

For the growth and sustainability of human civilization, a harmonious relationship among Nature, Society, Government and the Market is essential. Today, Nature is devastated, Society is

**Managing Trustee, Tapobhoomi Trust, Hansapal Chhak, Naharkanta, Bhubaneswar, Odisha-752101. Email: tapobhoomi@gmail.com*

stagnated, values are degenerating, Government is growing all-powerful, and the Market has become God, i.e. omnipresent, omnipotent and omniscient. The common man's life is devoid of joy and a sense of security. He is dependent on the mercy of shrewd manipulators conspicuously present within these autocratic power structures.

The learned of yore said that education enables a person to immerse himself in infinite bliss based on inner self-realization, free from all bondages and pains and detached from the outside world. We see the converse happening today. Mainstream education, including all ancillary innovative experiments, is aimed at minting money. We don't mind creating more *Gulams* who do not hesitate to design infrastructure that selfishly narrows human consciousness and further facilitates the process of exploitation of Mother Nature. If they can't become slaves, they become brokers. Such slaves and brokers present themselves for sale in the marketplace. The bosses sitting above determine both their price and work. Simple communities lose the battle as our children's qualifications are used to keep the luxury and authority of the 'Maalik' sacrosanct. It is just unthinkable to lead a life independent of the overbearing Government and intrusive Market forces. Religious and social worlds are largely governed by these forces, leaving no room for the working class to have a self-secured, peaceful and heedfully prosperous existence.

True education enables a person to face the situations that she comes across in day-to-day life efficiently and effectively in one's way. This understanding is the essence of the author's life experiences. He has authentic experience that such a learning process can build individuals enriched with independent thinking and a sense of urgency to save humanity from the looming disaster. But this cannot be an isolated experiment with other factors in the society refusing to accept change. It will be a grand confluence. A degenerating stream is eroding the fertile soil as well as human values at a wild speed. Hence, a holistic transformation process is essential to reverse the trend and bring back trustworthy relationships in Family, Society, Government and Market in harmony with Mother Nature. Education would pioneer this steady evolution process and serve as a subtle and integral part of it - as visualized by Swami Vivekananda, Mahatma Gandhi and Vinoba Bhave.

How can Lokgyanpeeth assist Young Minds?

- To assist a pupil to know thyself with all potentials, weaknesses, opportunities and constraints in the way of making him/her an independent and courageous individual as an indivisible part of the entire creation
- To initiate a process of capacity building to enable the volunteers to take up social reconstruction and development activities in rural India in harmony with indigenous communities, modern society and Nature.
- To ensure the self-sustenance of the volunteer through the productive use of her skill and resource mobilization
- To educate the villages to preserve and promote their indigenous wisdom systems: assert their autonomy and power provisioned in the Constitution of India
- To assist the community in rightful thought and action, i.e. live independently with self-esteem and concern for each other and being the primary partner in the development programmes for a dignified livelihood
- To guide in scientific management of land, water, forest, animal and the human capacity for symbiotic growth
- Promote Inter-sectoral cooperation among Government Departments, research & academic institutions, business & social entrepreneurs, and entertainment agencies for better leverage of resources and institutionalization of the village development process

Volunteers' Learning Centre

'Capacity Building for Behaviour Change will focus on institutionalizing this process as part of the knowledge and skill documentation, sharing, demonstration and learning continuum as an integral component of a Volunteers' Learning Centre devoted to the holistic education on social action. It will create internal expertise facilitated by context-wise external inputs through the institutional process. Volunteers will be promoted as change agents, technology adopters, promoters and social entrepreneurs. They can lead the transformation process while sustaining themselves. They will feel empowered to take the mission ahead with the community as a catalyst to multiply resource invested, preserve the environment, practice human values, and transform life & livelihoods.

This centre, unlike others, would be open for participatory learning, where a fresh youth with a passion for social work can get a welcome, and there is scope for all sorts of imagination, innovation, creative actions and social mobilization. The intended education will address questions of the capacity building aimed at social development activities. Trade and skill-based education aiming at the development of local surroundings for local action will constitute an important component. This education system will extend its activities to ensure self-employment or engagement of the taught pupils. Actual behaviour change can be measured from her approach to life, from her ways and means of living. The impact of the institution can be judged from self-governance and overall contribution to the health and happiness index of the country. It must ensure that the taught has learnt the skill and has the confidence to execute it; initially maybe with some support but little later, she is capable to carry on independently. Such pupils can be a role model for others. This mechanism of promoting actionists can be successful when integrated into a multi-dimensional holistic social transformation process.

Our Children's Ability to Think and Act

Our kids work hard to get good scores on exams. Some of them excel, and others try to catch up. However, if we take a broad perspective, exams are not an end in themselves. They are a means to mastering a subject well. Pupils need to have this mastery to be proficient in solving problems not just around them but also of their own lives. The harsh and painful truth is that they are not truly capable of doing so in real life. Today, even university students are not confident about dealing with complex situations. They are bogged down with loads of data, unhealthy stress and endless preparations for degree/entrance exams. That's why they are in the business of doing slavery, and if they can't do slavery, they choose to be brokers.

Exams can't be wished away, at least in the near future, but parallel tracks can be opened for willing and hard-working young minds. If trained properly, they can aim well, do justice to their regular studies and serve the nation, too.

Prospectus of Capacity Building

Qualification

25 students may be selected yearly from the operational areas of partner community based organizations (CBOs). Instead of formal qualification emphasis will be on a commitment to serve the needy people in remote areas. They should be imbibed with honesty, integrity, sensitivity and above all spirituality. Both male and female students having respect for the community are welcome. All this may help to win the heart of the community and create a conducive atmosphere.

Time Period

The Total course can be a journey spread in the customised time span. Every month 10 days of class and 20 days of practicals can be planned. More than teaching the subjects, the focus will be to build their personality through subtle observation and analysis of their behaviour, ability to receive and practice, style of functioning, assessment of understanding, and evaluation of performance.

Teaching Method

Few teachers may be engaged full-time with one programme manager. Some dignified and experienced teachers will be invited on an honorary basis. More than the subject taught, importance will be on the persona of the teacher. Her dedication, contribution and achievements in the social sector will influence the pupils. Her co-living will help the student to be courageous, to rise above one's weaknesses, face the constraints and utilize her potentialities to live for a greater cause. Truthfulness, confession of faults, love for self, community & Nature, and inspiration to be an unattached missionary will flow from this association with noble teachers. This learning atmosphere will help to learn punctuality, humility, compassion, communication skills, efficiency, self-esteem and dignified relationship with others.

We are keen that training be given out of classrooms through the Socratic method of question and answers. The teachers being a part of the learning process will spend time with the learners. This is essential for the smooth flow of knowledge. The mission here is to build integrated human beings enriched with spiritual realizations ready to be involved in the social transformation process.

Subjects

The curriculum may be divided into 3 parts, i.e.

a. Knowledge about Self
b. Society
c. Work of the volunteer

The most relevant subjects are:

i. Anthropology, Social Science, Social justice, Law and legal aid

ii. Culture, Logic, Philosophy, Spirituality, Religion, Ethics, Epistemology

iii. Nature, Environment, Forest, Wildlife, Disaster management

iv. Holistic health - diseases, causes, prevention and cure- medical aid. Study of present health services

v. Livelihood - sources, constraints, opportunities for artisans, fisher folk, farmers, forest dwellers

vi. Community development - integrated village micro plan, management of natural & human resources

vii. Governance, Administration, Development programmes of the state and central Government

viii. The functioning of Judiciary - the system of justice past, present and future, its pros and cons. Village justice process

ix. Functioning of mainstream media (print and electronic). Community media mechanism

x. Traditional wisdom systems, practices and processes; it selection and scientific validation

xi. Marketing – raw material collection, cultivation, value addition, processing, packaging, storage, selling

xii. Character building, Psychology, Rational attitude, Scientific perception, Logical behaviour

xiii. Public relationship, entrepreneurship (social & business), Organization, Management

xiv. Community Mobilization: Community Convergent Action; Peoples actions for construction and resistance

xv. Accounting, maintaining books of records, Financial transactions

xvi. Process and event documentation. Record maintenance. Presentation and reporting techniques

Pertinent Topics for Training of Volunteers

i. Understand the socio-economic crisis from its depth, magnitude, historical background, future consequence

ii. Understand local issues from a broad perspective and link it with a global context

iii. Activities for actual human resource development, social empowerment and self-reliance of the community at the grass-root level to build community as primary stakeholder (not a beneficiary) in the development paradigm

iv. Process for consolidation, modification and focus of endeavours at village and gram panchayat (GP) level to create a model village

v. Techniques to promote community infrastructure, organizational interaction, institutional access

vi. Steps to install Community Surveillance, monitoring and response system at the village level

vii. Process for inter-sectoral coordination among institutions (academic & research), Departments (Central & state), Organisations (business & social) that will lead to community convergent action and a complete change of attitude

viii. Individual growth, interpersonal relationship and personnel management in a dedicated group

ix. Guidelines for documentation on the following line to develop an integrated village micro plan, consolidated at higher levels, dovetailed with need and potentiality of the locality.

- Social, Ethnic, traditional knowledge and Economic Profile with schemes of the Govt.
- Quantity and quality of land, water and forest, animal, skilled and unskilled labour available
- Potentialities, possibilities and constraints in the community, Government and Market
- Demand and supply position of the agricultural, forest products and services

Broad Activities (in Villages) by Volunteers and Teachers

i. Assessment of strengths, weakness, opportunities and threats in the process of the village development

ii. Mapping of resource needs, indigenous knowledge available for use of the resources

iii. Analysis of gaps in physical and resource needs. Analyse the appropriate technology required

iv. Prioritization of interventions incorporating development support from Govt and NGO sources

v. Skill building and resource mobilization strategies, including community contribution

vi. A mechanism for community budgeting of Land, Water and Forest, integrated with Natural resource management, livelihood promotion, disaster mitigation and sustainable development plans

vii. Wastewater recycling, rainwater harvesting, waste processing and utilization

viii. Strengthen the Community Based Organisations like Van Suraksha Samiti (VSS), Village Forest Committee (VFC), Self-Help Groups (SHG), Youth Clubs, etc.

ix. Training, research, technology development and demonstration to form the seed of 'village as college'

x. Plants, soil and water quality monitoring, sentinel children surveillance, and community response system linked to an empowered committee for necessary negotiation with concerned line departments of the Government

xi. Higher-level quality monitoring, disease control mechanisms through traditional healers and public system accounts committee. Promote holistic health through preventive and curative mechanisms.

xii. Clear Monitoring and evaluation of linkages between inputs, throughputs, outputs and outcomes

xiii. Development of model cottage industries and distribution system marketing mechanisms availing micro credit and entrepreneurial opportunities keeping intact the spontaneity, voluntarism, mutuality and cooperation

xiv. Prove the village to be a model of unity in diversity and assert their power to take decisions independently

Resolutions of Gram Sabhas and regulations/ recommendations of the Government will be taken into consideration to cater to the specific needs like water conservation, horticulture, collection and marketing of forest products.

Indicators

i. No. of Volunteers trained and how many of them are self-sustained while being a catalyst in the community

ii. No. of villages transformed from meager beneficiaries to primary stakeholders and self-sustained

iii. Number of events and processes in which multi-stakeholders are involved with inter-sectoral cooperation

Outcomes

i. The life of a volunteer should blossom like a flower. She should act with conceptual clarity and commitment to the cause. Should be a role model as a Lok Sikshak or Lok Udyogi or a Lok Neta.

ii. They will work in their way with a missionary spirit on people's education or constructive/ resistive actions for social transformation

iii. Trained social volunteers should self-sustain using their own skills and local resources

iv. Operational villages are free from conflicts, blind beliefs, intoxication, exploitation and discrimination

v. Sustainable economic and ecological development is ensured, preventing distress migration, malnutrition

An Introspective Prism

We have accepted a baser and mundane definition of 'knowledge' which we have learnt from our families, society and academics. This has split our personalities, hidden our inner capabilities and made us dwarfs and dependents on external factors. The word 'knowledge' today means an accumulation of a bunch of information. The entire impetus is directed towards memorization of this information and that information, expressing it in examinations and presentations, and ignore the learning when it comes to praxis. This is why we live in an age where thought, speech and action flow in three different directions. Institutionalized hypocrisy and double standards are so evident in our National character. The sensitive young generation notices this and does not respect their seniors. Children tread the same path of deteriorating, demeaning values!

Today, we see famous intellectuals, experts and very important persons hankering after power, prestige, awards and money. They are speaking/ writing opposite to how they act. This false identity originates from extra concerns for our gross existence and lurking fears of losing it. A shallow understanding of Self culminates in our lack of knowledge of the Creator, the act of creation and above all, the laws of Mother Nature. So… the intelligent, educated but ignorant ones are ready to compromise to any level with anybody. These persons fall victim to their

megalomania and insecurity to achieve a transient celebrity status.

The market frenzy uses foul means and successfully creates a craze among youth. They soon become proud fans of celebrities. Monetary gain accrues to the 'service provider'! But the young followers, who pay for these services, grapple with illusion – trying to imitate the 'halo' around people performing in films, sports, music, political or religious arena. A facade of celebritism and fanaticism subsumes them.

This celebrity culture has led us to a low level where a civilization of 7000 years is bowing down to cricket players and movie stars. A performer is raised to the level of God. Cricket and films are sermonized as a religion with as many as 99% of the youth community madly following them – euphoria created by the glittery market and supported by myopic Governments.

Voices of Protest

Why is it so that the annihilation of millions of species and the devastation to Nature is not decelerating? It is because a majority of our scientific innovations, technocratic and technological applications, materialistic advancements and, above all, management expertise has gratified the greed of some and brought more and more miseries in the name of comfort to the society at large. The 'progress' has now reached a plateau, and the common, sensible man feels suffocated and humiliated.

Rebellious souls have raised their voices against this hypocrisy and hierarchy whenever and wherever the crisis loomed large. They chose to work for people's education / constructive reforms/ resistance to the wrongdoings of the greedy market and selfish Governments. These people are dedicated, motivated, emotional and compassionate but sporadic, unilateral and philanthropic. Some of them have been successful in protecting people from the adversity or in addressing developmental issues by successfully breaking the barriers created by complex bureaucracy / political stubbornness / corporate hegemony.

But often they have been crushed by a self-centred Government or a deceitful market or both through legal and illegal means in connivance with secretly promoted anti-social elements. These initiatives have also died down due to over-ambitious actions or division into many subgroups. Isolated protests could not blossom into a fruitful surge because of conflicts, lack of clarity and consistency, and fragile ego boosted in the name of ideology.

We can learn from past mistakes, though. Facilitation, modification and consolidation of ongoing endeavours can pave the way for unifying diverse initiatives. That can be our firsthand knowledge, and basis of progression.

What is Knowledge?

When a person's life and livelihood, career and entertainment, ambition and mission are one and undivided, then her mind gains mastery over her desires and becomes her friend, philosopher and guide. Such a person disseminates the fragrance of love in the true sense. This love preludes knowledge. In the absence of love, there can be no knowledge, whether of the physical or the metaphysical world. Love for anything is the primal to accumulate knowledge about any object or subject. Otherwise, it is all superimposition or surface level impressions gathered for outward gains of prestige, power, money, etc.

Love precedes knowledge, and action succeeds it. A person with abundant love gradually acquires wisdom, living a life of sublimation. Her every action that flows out is interconnected and leads to the evolution of the being. We don't see such persons today, so we are deluded by the folks who have plucked bunch of information from the secondary sources and are presenting it to us like a postman. This flower-bouquet is lifeless because they have not internalized and realized what they utter, only continued to rote like a parrot by spraying perfume on withered flowers for instant applause. Their speech is not reflected in their attitude and behaviour. The closer you go to such people, the more disillusioned you are to feel the difference in their thoughts, speech and actions.

Actions emanate spontaneously from one's being and are shaped cognitively by the surroundings where one lives. This inherently helps in building an integrated personality to a level where one becomes the example for others to emulate.

A restless mind on the contrary, will lack consistency. She can't be successful or stable in her actions. She cannot retain the input, throughput, output and outcomes.

What Does a Master Do?

Every heart needs time and space to discover roots of its own. This base, once found, requires germination. Focus and will power are subsequently needed to grow dreams to reality. A soul thus discovers own definition of life based on righteousness and harmony (*Swa-Dharma).*

The preceptor or master has to wait and watch, cooperate unconditionally, and guide whenever it is necessary. Then a new consciousness, a new personality, will spring up from the same old entity.

The Master should always be unperturbed, cool and in tranquility. God will do HIS work in HIS time, in HIS way. Master is just an instrument in thy hands. Master's steadfastness of wisdom may inculcate extraordinary energy within the co-workers' personality; performance of the co-learners and colleagues. This requires constant prayer and, as much as possible, sustained and integrated action, joyful mind of the preceptor and the pupil.

The blissful attitude of benevolence by the learner and the learned is a prerequisite for Lok Sangrah (any impetus for the emancipation of the masses). The spirit of *Charaivati – Charaivati* (go ahead – go ahead) helps one to find a path amidst darkness.

Conclusion

Human history has always adored 'Masters' - *Saswat Dharma Gopta* - who initiate the transformation process. Today, there is a dearth of them. Society is groping in the dark…, waiting for such learned deliverers, who by their noble deeds can achieve union with the Almighty and be a humble prophet for the present and future generations. Can we, as a collective of redeemers and preceptors, build a people's process with academic rigour and scientific temperament? Genius persons could take an aesthetic rebirth from that process. The civilisation and Mother Nature could be saved from the impending disaster through the warp and weft of this social process. This is the way to be honoured and remembered by our children. ❑

University News

Form IV

(See Rule 8)

1.	Place of Publication	:	New Delhi
2.	Periodicity of Publication	:	Weekly
3.	Printer's Name Whether Citizen of India (in Foreigner, state the country of origin) Address	: : :	Dr. Sistla Rama Devi Pani Yes Association of Indian Universities, AIU House, 16 Comrade Indrajit Gupta March, (Kotla Marg) New Delhi 110 002
4.	Publisher's Name Whether Citizen of India (If Foreigner, state the country of origin) Address	: : :	Dr. Sistla Rama Devi Pani Yes Association of Indian Universities, AIU House, 16 Comrade Indrajit Gupta March, (Kotla Marg) New Delhi 110 002
5.	Editor's Name Whether Citizen of India (If Foreigner, state the country of origin) Address	: : :	Dr. Sistla Rama Devi Pani Yes Association of Indian Universities, AIU House, 16 Comrade Indrajit Gupta March, (Kotla Marg) New Delhi 110 002
6.	Name and addresses of individuals who own the newspapers and partner or shareholders holding more than one per cent of the total capital.	:	Association of Indian Universities, AIU House, 16 Comrade Indrajit Gupta March, (Kotla Marg)

I, Dr. Sistla Rama Devi Pani hereby declare that the particulars given above are true to the best of my knowledge and belief.

Sd/-
Publisher

Origin of Psychology: The Indian Roots

D Srinivas Kumar*

The chief objective of the present paper is to reveal to the world about the origin of psychology. Understanding of behaviour has always been challenging task to human beings. The concepts and contexts of development, perception, learning, emotions, leadership, personality etc., are essential for understanding the behaviour and for providing guidance thereof. It is essential to discover the things that are available in Bharatavarsha (India) either in terms of life or science and technology for leading a better life. An attempt has been made by the author to bring out the aspects relating to the understanding of human beings that have been recorded in Indian texts. Theories of human development, cognition, perception, emotions, leadership, personality, spiritual intelligence, emotional intelligence etc., have been revealed in the text of Bhagavadgita that has been said prior to the CE 1879, so to say that the science of psychology has its origin in India (Bharatavarsha).

Psychology starts at the beginning of life because life and psychology are inseparable. There are two components of living beings, namely, the physical body and the psychological component. Living beings are driven by various needs. It would be of great interest to study the motives that manifest in the shape of different behaviours among living beings. These two processes form the very basis of psychology. Studying and making generalisations about the behaviour patterns of a variety of living beings like human beings, animals, insects, birds, and amphibians, and the application of findings for the cause of welfare of the living beings is of paramount interest to the field of psychology.

It appears that the field of psychology is as old. Psychology is among the oldest subjects in academics. Psychology is an interesting subject because it involves studying living beings, which are dynamic and vibrant in nature. It gathers more importance when it is applied to various contexts of human lives and their environment.

It has been recognised by the field of psychology that there exist individual differences based on two parameters of physical and psychological components. Even though human beings look alike in their body structure and also the psychological dispositions, they differ.

The present author, being a teacher educator, having been specialised in educational psychology, with particular reference to critical thinking and cognitive styles, has always been curious as to whether there is any contribution of India to the field of psychology prior to the CE 1879. An experimental psychology laboratory was established for the first time in Leipzig, Germany by Wilhelm Wundt, which is considered the beginning of modern psychological science. Teaching the subject of applied educational psychology comprising theories and laws formulated by psychologists from America, Switzerland, Austria and other countries has always been interesting to apply to the Indian classrooms. So, he started to explore if any ancient literature pertaining to psychology is available from India while applying the existing modern contemporary psychological concepts and principles.

These aspects have given rise to the thought of contemplating research to identify the ancient contributions of India to psychology. It has been a challenging task to undertake such writing. Leaving the post-1879 period, it could be noticed that many ancient texts of India comprised of the aspects of ways of life towards well-being; these had been categorised as philosophical texts. But However, it could well be discovered that these include the psychological aspects that had formed part of ways of life and well-being as an integral component of the humanity. Against this backdrop, the present work has been taken up and it has yielded positive results. Also, this work gains significance in view of the clarion call given by Sri Narendra Modi, Hon'ble Prime Minister of India, to the citizens of India to work towards *Vikasit Bharat* by 2047 to achieve the status of *Viswa Guru*. Also, the National Education Policy 2020 recommended, inter alia, combining the best from India and the West to provide quality education.

An attempt has been made in this context to bring out the psychological aspects embedded in the *Bhagavad Gita* treatise because it is a popular and

** Professor and Dean, School of Education & HRD, Dravidian University, Srinivasavanam, Kuppam, Chittoor District, Andhra Pradesh–517 426. E-mail: drsrinivas.kumar927@gmail.com*

famous text of life that originated from the Indian Peninsula.

Concept of *Bhagavad Gita*

The '*Bhagavad Gita*' comprises 700 *slokas* spread over 18 chapters. Each s*loka* refers to a couplet of Sanskrit verse. It covers several aspects of human life, behaviour, perception, intelligence, personality, guidance and counselling and so on. It has been studied and interpreted by many scholars in different ways. Psychological aspects that appear in it have been focused on in comparison with modern psychology as a science.

It is important to mention that there are innumerable texts and treatises in India that explain human behaviour and life. Four *Vedas, Ramayana, Mahabharata, Srimad Bhagavatam, Bhartruhari Subhashita,* etc., are a few among many that describe various aspects of divinity, human life, wellness, behaviour, etc., on one side and devotion on another side. The present author felt that an exploration of *Bhagavad Gita* would specifically pave the way towards understanding human life and behaviour.

Context of *Bhagavad Gita*

The text of '*Bhagavad Gita'* has its origin in the Indian subcontinent, which is also known as *'Bhāratavarsa'*. Scholars state that the '*Bhagavad Gita'* forms the essence of 'Upanishads'. The '*Bhagavad Gita*' is very popular in India from all villages to cities. It is considered a text of philosophy, and there is popular belief among common people that it is useful and applicable to their lives.

'*Bhagavad Gita'* has been rendered in dialogue form between a teacher, that is, *Sri Bhagavan;* and a student, that is, Arjuna, in the context of the Kurukshetra war. Bhagavan Sri Krishna is the driver of Arjuna's chariot, and he takes the chariot to the warfield. Arjuna gets depressed soon after his chariot enters the warfield and the sight of all soldiers and chiefs of all kinds on the opposite side in the warfield with whom he is expected to fight and kill, -- the Kauravas, his own cousins, his grandfather Bhishma, his boyhood teacher (*guru*) *Dronacharya* and friends and other relatives. So, he expresses his inability to *Sri Bhagavan* and asks him to take him away from the war-field. *Sri Bhagavan* understands the mental condition and the plight of Arjuna and decides to motivate him to fight and in this course, *Sri Bhagavan* takes the role of Arjuna's mentor. Thus, he starts revealing all aspects of life and universe to Arjuna, which ultimately gets the title, *Bhagavad Gita*, in which *Sri Bhagavan*, the teacher, and Arjuna, the student. Here, it is necessary to mention that *Vedavyasa Muni* and *Sanjaya* (the charioteer of King *Dhritarashtra*) are the exclusive persons who are endowed with the power to see and hear whatever is happening in the warfield even though they are at a distance and not in the battlefield. This power is called *divyadrishti*. *Sanjaya*, just like a running commentator, explains all happenings to king *Dhritarashtra* while sitting in *Dhritarashtra's* chamber at *Hastinapuram*. *Vedavyasa* includes *Bhagavad Gita* in his book of Mahabharata. Mahabharata is considered as the single largest voluminous treatise in the world. *Vedavyasa* is also known as *Bhagavan Vedavyasa*.

It is significant to know the origin of the *Bhagavad Gita*. In this context, *Sri Bhagavan* reveals as follows:

Sri Bhagavan uvaca

imam vivasvate yogam proktavan aham avyayam
vivasvan manave praha manur ikshvakave abravit

(chapter 4; sloka 1)

evam param-para-praptam imam rajarshayo viduh
sa kaleneha mahata yogo nashtah parantapa

(chapter 4; sloka 2)

sa evaayam mayaa te adya yogah proktah puratanah
bhaktosi me sakha ceti rahasyan hyetad uttamam

(chapter 4; sloka 3)

As per the above three slokas, *Bhagavad Gita* has been revealed for the first time to the Sun. Subsequently, it has been revealed further to the Manu (*not the author of Manudharmashastra*) and, after some time, to *Ikshvaku*. And, it appears that this education of *Bhagavad Gita* seems to have stopped at that. Further, Sri Krishna reveals this to Arjuna during the *Kurukshetra* war by showing him the *Viswarupa* in the form of *Sri Bhagavan*. Initially, at the time of starting the discourse of *Bhagavad Gita*, Sri Krishna manifested Himself in the form of the omniscient *Sri Bhagavan* because Arjuna said that he could not understand what He (Sri Krishna) was saying. Hence, He took the form of *Sri Bhagavan*, that is, The *Viswarupa,* that is, all pervading, all occupying form of *Sri Bhagavan,* in which all entities

of the entire Universe – living and non-living beings to the minutest particle level, could be assumed as the '*nano'* or much more smaller than the *'nano'*, in the present day scientific parlance, have been shown to Arjuna; and as a result Arjuna must have believed the sayings of *Sri Bhagavan*, Who is the Source of all energies for the Universe.

It is to be mentioned that the popular tradition in India has been that the Kurukshetra war occurred during the period ranging from 5561 to around 950 BCE (Before the Common Era). But, However, Wikipedia sources view that the period of Kurukshetra War dates back to 3102 BCE, as per some historians, and that it is a matter for scholarly discussions. The present author is of the view that the *Bhagavad Gita* could be as old as the creation of the Sun. However, it is difficult to estimate the origin and birth of the Sun. However, it is felt that the *Bhagavad Gita* is spread out along with Very Important Persons (VIPs) who went abroad from India. Hence, it has its wide dissemination across the world and has reached many human beings in modern times. This outreach includes famous scientists like Albert Einstein*, Robert Oppenheimer and some others.*

The *Bhagavad Gita – Sri Bhagavan's* Theories of Psychology

The present author has taken 35 slokas out of 700 slokas of the *Bhagavad Gita* that directly reveal psychological aspects and have been grouped under different contents pertaining to the subject of psychology. So, these have been named *Sri Bhagavan's theories of psychology*. It is probable that the remaining 665 slokas explain the psychological aspects embedded therein, and the present author admits his limitation in understanding those slokas within the parameters of a scientific theory. These 35 slokas have been categorised into 10 groups (theories) as under, based on the similarity and relevance of the attributes of the contents:

- Human Development.
- Perception and its Processes.
- Cognition.
- Motivation.
- Emotions and their Bases.
- Personality – Trigunas.
- Leader – Person of Excellence.
- Guidance and Counselling.
- Emotional Intelligence.
- Spiritual Intelligence.

Theory of Human Development

Concept of Human Development

Human development refers to quantitative as well as qualitative changes in the body. For instance, growth in the body size in terms of increase in the size of different body parts, namely, hands, legs, trunk, internal organs, bone size etc., and development of intelligence, creativity, interests, attitudes, various personality characteristics etc. 13th sloka under chapter 2 of the *Bhagavad Gita* depicts the aspect of human development.

Sri Bhagavan reveals that:

dehino smin yatha dehe kaumaram yauvanam jaraa

tatha dehaantara praptir dhiras tatra na muhyati

(Chapter 2; Sloka 13)

The dynamics of human development involve the passing of life from one body to another body. There are different stages of life, which include adolescence, youth, and old age between birth and death, and a wise person is not disturbed by the dynamics of human development at different stages.

Dynamics of Human Development

The dynamics of human development has to be considered in two parts, namely, human development stages, passing of life from one body to another body, and the wise persons are not disturbed by the dynamics of human development at different periods of time including life and death.

i. The Human development passes through different stages, namely, birth, childhood to adolescence, adulthood, old age, and death. The wise person is not bewildered at the life cycle. These aspects fulfill the criteria of a scientific theory. Also, these aspects are in conformity with the concepts of growth and development of modern psychology. Citations from Hurlock (2017), and Havighurst (1972) corroborate these stages of development, namely, birth, infancy, childhood, adolescence, adulthood, old age, and death. However, they made micro-

level classification in respect of the stages of infancy, childhood, and adulthood.

ii. The passing of life from one body to another body is scientific. It is evident from the fact that the zygote is formed as a result of the combination of sperm and ovum from a man and a woman, which involves the transfer of life from one body to another body.

Theory of Perception

Concept of Perception and its Processes

Perception refers to the ability of knowing of something through one's senses or intuition. *Sri Bhagavan* affirmed the perceptual processes through 6th and 7th slokas under chapter 13 of *Bhagavad Gita* and these are mentioned below.

Sri Bhagavan reveals that:

maha-bhutany aham-karo buddhir avyaktam eva ca
indriyani dasaikam ca *panca* c*endriya-gocaraah*

(chapter 13; sloka 6)

iccha dvesah sukham duhkham sanghatas cetana dhrtih
etat ksetram samasena sa-vikaramudahrtam

(chapter – 13 sloka – 7)

Sri Bhagavan revealed through the *Bhagavad Gita*, in the above two *slokas,* that there exist 24 elements relating to the field of activity of the body. And, that the field of activity results in different forms, namely, consciousness, firmness, desire, hatred, happiness, and distress (pain). To explain further, the gross elements are five, namely, earth, water, fire, air, and ether (space). There are three more elements, namely, egoism, intelligence, and the one which is un-manifested. Also, there are five senses for acquiring knowledge and they are eyes, ears, nose, tongue, and skin. There are also five working senses, namely, voice, legs, hands, anus, and genitals. In addition to the above, there is the mind, five sense objects of the senses, namely, smell, taste, form, touch, and sound. The scientific / biological base for the above statements is evident from the explanation of Floyd Henry Allport (1924).

Floyd Henry Allport (1924) describes the Adaptive Function of Behavior in the following paragraphs:

Behavior refers to the process of responding to some form of energy in the environment by an activity generally useful to life. The energy, or less exactly the object from which it is derived, is known as the `stimulus,' while the resulting activity is called the 'response.' The response usually has some characteristic relation to the stimulus that evokes it, such as approaching, attacking, answering, consuming, caressing, or fleeing. The bodily structures and functions operating in behavior are of the same general sort whether the stimulus is furnished by a social or a non-social object. The first step, therefore, in the approach to social behavior is the understanding of those physiological processes involved in behavior in general.

The first stage in the adaptive process is the stimulation of the sense organ or receptor; the final stage is the response-activity of the muscle or gland, commonly called the 'effector.' The excitation aroused in the receptor proceeds in the form of a nervous impulse along a chain of fiber-shaped nerve cells, called `neurons,' to the effector. Conduction is therefore, the most elementary function of nervous tissue. The chain of neurons traversed by the impulse consists of three portions: (1) the afferent (or sensory) branch conveying the excitation from the receptor in toward the central nervous system (brain and spinal cord); (2) the central portion lying within the brain or cord and directing the impulse toward the proper outlets; and (3) the efferent (or motor) branch transmitting the impulse outward to the effector. The entire sequence is termed a reflex arc, and is to be considered as the functional unit of behavior. Especial significance attaches to the central region of the reflex arc because it serves not only to connect the afferent and efferent portions of a single arc, but also to cordinate various arcs one with another. The brain and spinal cord have essentially the function of a switchboard. A complex network of millions of central neurons connects functionally each afferent pathway with every efferent and each efferent with every afferent. Thousands of different stimuli are received daily, and are capable of an enormous variety of responses. Yet so remarkable are the central adjustments between our receptors and effectors that, except in unfamiliar situations, a given stimulus almost invariably evokes the biologically correct response. The central adjustments involved in these specific responses are in some cases hereditary and in others the result of learning through experience. In the former case they are termed reflexes, and in the latter, habits.

The Cortex: *The cortex is the chief integrating structure of the nervous system. In it areas may be distinguished having microscopical differences of cell structure which seem to signify differences of function. These areas may be grouped under the three headings — motor, sensory, and association and their location on the external aspect of the left hemisphere. The motor area, which lies in the oblique convolution just in front of the fissure of Rolando, contains the dendrites and cell bodies of some eighty thousand pyramidal neurons whose long axones (descending projection fibers) afford an uninterrupted conduction down the spinal cord to various levels of the trunk and limbs. The origin of the fibers controlling the various bodily regions has been localized with some exactness. The sensory areas situated in the various lobes, contain the axone terminations of the neuron: constituting the final Stage in the conduction of afferent impulses from the receptors. Impulses from the auditory and optic nerves, as well as from the nerves of smell, taste, and the diffused end organs of touch, temperature, pain, and movement, are thus received in fairly distinct portions of the cortex. Each sensory area has a focalized region of pure afferent nerve endings, surrounded by a marginal area in which association fibers, communicating with other parts of the cortex, connect synaptically with the afferent terminations. The association areas comprise extensive and complex regions of neurons lying between the areas of localized function, particularly iii the anterior frontal, parietal, and lower temporal lobes. To these areas are usually ascribed the associative processes involved in learning and thought. Developing, late both in the evolutionary and in the development of the baby, they contain correlation mechanisms of a highly plastic and modifiable character.*

The areas of the cortex must not be considered either as the seat of some special power or faculty, such as vision, speech, or locomotion; or as the locus of the characteristic consciousness which accompanies their excitation. They are merely crucial points in the reflex arcs in which they lie. Thus, the so-called `visual area' is important solely because it mediates between optical stimulations from all sorts of objects and the variety of responses by which we adjust ourselves to those objects. Our notion of mind will be clearest if we regard it neither as faculties nor states of consciousness, but as an organized system of reflex activities. Recent investigation shows that the localization of cortical functions must be accepted with strict qualifications. The cortex probably acts as a whole rather than by specific portions. Reduction of habits, moreover, in cases of paralysis through brain lesion proves that one part of the cortex is capable of acquiring the functions formerly possessed by another portion.

Cortical Activity in Social Behavior: *Those parts of the central nervous system which lie below the cortex as the centers of the primitive reflex activities characteristic of all animals endowed with a nervous system. Such reflexes include respiration, digestive and excretory processes, crying, and simple movements of the appendages in defense and escape. Such reflexes are generally innate, and for the functioning of the spinal cord, medulla, cerebellum, midbrain, and thalamus suffice. The human being, however, has added to this simple repertory a formidable array of activities whose arcs involve and necessitate a cerebral cortex. Person has acquired language, spoken and written, and other habits of skill and has learned the use of tools, and has acquired sagacity through storing up the effects of past experiences and possesses, in short, through the adaptive capacities of the cortex, attained the levels of intelligence and the power of inhibition and control which are requisite for civilized society.*

The chief contributions of the cortex to social behavior may be summarized as follows: (1) It underlies all solutions to human problems, which are also social problems, and makes possible their preservation in language, customs, institutions, and inventions. (2) It enables each new generation to profit by the experience of others in learning this transmitted lore of civilization. (3) It establishes habits of response in the individual for social as well as for individual ends, inhibiting and modifying primitive self-seeking reflexes into activities which adjust the individual to the social as well as to the non-social environment. Socialized behavior is thus the supreme achievement of the cortex. (Source: Floyd Henry Allport, 1924). Thus, the contents in the 6th and 7th slokas of *Bhagavad Gita* explain the physiological bases of behaviour.

Theory of Cognition

Cognition and the Role of Senses

Cognition refers to knowing, which happens through the senses. Senses form part of the body

and their function is to help acquiring information. Examples of senses are eyes, ears, nose, skin, mouth, intelligence, and mind.

Sri Bhagavan reveals that:

indriyani paranyahur indriyebhyah param manah
manasas tu para buddhir yo buddheh paratas tu sah

(chapter – 3; sloka – 42)

Sri Bhagavan reveals through the above *sloka* that the senses are superior to the physical body, and that the status of the mind is higher than the status of the senses; intelligence is still superior to the mind. And that the life (the *prana*) is still superior to the intelligence. This sloka forms the basis for understanding the concepts and processes of cognition and cognitive styles. These aspects are examined in four parts.

i. It is obvious that senses are superior to the physical body because they enable the person to perform various activities like seeing, hearing, etc., and without the senses the person has to rely on external means for performing those activities. So, it is a scientifically based statement.

ii. The mind is higher than the senses. In this context, the mind has to be construed as the power of the brain (Kumar, 2010). Receipt, processing, and retrieval of information occur in the brain. It is, therefore, scientific.

iii. Intelligence is still higher than the mind. Intelligence is the ability to accomplish a task successfully. Hence, it is also scientific.

iv. Soul is a term used in philosophical context. But it is called life in the parlance of science. Hence, life is even higher than intelligence. Life, or in other words, the *prana,* without which a person is declared as dead. Hence, it is scientific.

It is also corroborated by the explanation of Floyd Henry Allport (1924) relating to the functioning of the nervous system of human beings.

Theory of Motivation

Concept of Motivation

Motivation refers to the state of being aroused for an activity, for example, motivation to secure first rank in 10th class public examinations. It is imperative to understand that motives differ from person to person.

Sri Bhagavan reveals that:

catur-vidha bhajante mam janaah sukritino arjuna
arto jijnasur artharthi jnani ca bharata-rcabha

(7; sloka 16)

Sri Bhagavan indicates that the persons work with four types of desires: seeking relief for pains or sufferings, seeking wealth, seeking knowledge, and those who are curious to know the truths.

It could be observed in the world that individuals have several kinds of motives based on their needs. In the field of psychology, these are classified as primary motives relating to bodily needs, and secondary motives come next to the fulfilment of bodily needs.

Theory of Emotions

Concept of Emotion

Emotion refers to any strong feelings of a human being indicative of the strength of feelings. It is an excited state of feeling, for example, love, hatred, anger, etc.

Sri Bhagavan reveals that:

dhyayato vishayan pumsah sangas-tesupajayate
sangnat sanjayate kamah kamaat krodho-bhijayate

(chapter – 2; sloka – 62)

krodhad bhavati sammohah sammohat smriti-vibhramah
smirti-bhramsad buddhi-naso buddhi-nasat pranasyati

(chapter – 2 sloka – 63)

Sri Bhagavan indicates through *Bhagavad Gita* that a person who always indulges in constant thinking about material objects pertaining to gratification of the senses tends to develop attachment for material objects, and such attachment leads to the strengthening of passionate desire, which results in anger. The anger leads to complete delusion and a confused state of memory, which results in loss of memory, leading to destruction and dysfunction of intelligence; and such dysfunction of intelligence leads to the defeat of the person from reaching the goals of normal life.

The above two slokas provide affirmative explanations relating to manifestation of emotions through passionate desires and their ultimate consequences. The basis of the manifestation of

emotions is explained in the above two slokas. It is bipolar in nature, which indicates an emotionally turbulent life on one hand and, on the other hand, leading life with normal emotions without giving any room for destructive emotions. So, to say that on one side, there is a person striving hard to meet the basic needs of life and on the other side there is another person with passionate desires. Both types of persons exist in society in real life. The person who leads a normal life uses intelligence to adjust to the circumstances and the materials that that person possesses.

The person who is addicted to strong desires cannot adjust and is prone to lose physical and mental health besides material wealth.

In this context, it may be apt to refer to the Cannon–Bard theory (also known as the thalamic theory of emotion), which explains that emotional expression results from the function of hypothalamic structures, and emotional feeling results from stimulations of the dorsal thalamus. The physiological changes and subjective feeling of an emotion in response to a stimulus are separate and independent; arousal does not have to occur before the emotion. Thus, the thalamic region is attributed a major role in this theory of emotion (Wikipedia/ Bard_theory).

Further, the structural model of appraisal describes the relationship between appraisals and the emotions they elicit. It involves examination of the appraisal process as well as examination of how different appraisals influence through which emotions are experienced. Appraisal theory describes that emotions are manifested from a person's evaluations (appraisals or estimates) of events that cause specific reactions in other persons. In other words, appraisal of a situation causes an emotional or affective response that is based on that particular appraisal (Scherer, et. al., 2001). According to Lazarus (1991), theories of emotion involve a relational aspect, a motivational aspect, and a cognitive aspect (Lazarus, 1991). The relational aspect involves the relationship between a person and the environment and suggests that emotions always involve an interaction between the two (Lazarus, 1991) (Wikipedia).

The above views match with the explanation of Floyd Henry Allport (1924) relating to the physiological bases of behaviour, especially concerning the pleasure and pain in the context of functioning of the nervous system of human beings.

Theory of Personality - Trigunas

Concept of Personality

Personality refers to the combination of characteristics or qualities that form an individual's distinctive character and it includes both physical and psychological characteristics.

Sri Bhagavan reveals that:

buddhir jnanam sammohah kshamaa satyam damah samah
sukham duhkham bhavo-abhaavo bhayam caa bhayam eva ca

(chapter – 10; sloka – 4)

ahimsaa samataa tushtis-tapo danam yaso-ayasah
bhavanti bhaavaa bhutaanaam matta eva prithag-vidhaah

(chapter – 10; sloka – 5)

Sri Bhagavan reveals through the above slokas that all living beings possess the characteristics of personality like intelligence, knowledge, confidence, tolerance, truth (honesty), senses control, tranquility, happiness and anguish, reality and hallucination, fear and fearlessness, non-violence, equanimity, satisfaction (contentment), austerity, charity, fame and infamy.

Concept of Trigunas

Trigunas refer to three modes of personality qualities, namely, *sattva* (goodness), *rajas* (passion), *tamas* (ignorance), as per *Bhagavad Gita*. These have been stated by *Sri Bhagavan* in 5th, 6th, 7th, and 8th slokas under chapter 14 of *Bhagavad Gita*.

Sri Bhagavan reveals that:

sattvam rajas tama iti gunaah prakriti-sambhavaah
nibadhnanti mahabaho dehe dehinam avyayam

(chapter – 14; sloka – 5)

tatra sattvam nirmalatvaat prakasakam anaamayam
sukha-sangnena badhnaati jnaana-sangena ca anagha

(chapter–14; sloka – 6)

rajo ragatmakam viddhi trishnaa-sanga-samudbhavam
tan nibadhnaati kaunteya karma-sangnena dehinam

(chapter – 14; sloka – 7)

tamastv-ajnanajam viddhi mohanam sarva-dehinaam

pramaadalasya-nidraabhistannibhadnaati bhaarata

(chapter – 14; sloka – 8)

Sri Bhagavan reveals through the Bhagavad Gita that:

a) Material nature consists of three modes, namely, goodness *(satva guna)*, passion *(rajo guna)*, and ignorance *(tamo guna)* and a person gets conditioned to these modes as a result of interaction with the environment or nature. Such development occurs during the course of nurture and its interaction with nature. It relates to the processes of nature versus nurture and the resultant development pattern in the human being, which is corroborated by several studies in modern psychology.

b) The mode of goodness *(satva guna)* is illuminative being transparent than the other two *(rajo guna and tamo guna)*. It frees a person from all negative reactions. A person situated in the mode of goodness feels happy because such a person is knowledgeable.

c) The mode of passion is surrounded by unlimited desires and motives and such a person gets attached to material actions.

d) The mode of ignorance is the consequence of extreme passions, and it leads a person to confused state and further results in dangerous inertia and sleepiness.

The above-mentioned *trigunas*, namely, three traits, form part of human personality. Such traits are explained differently by Gordon Allport (1937) in his trait theory, namely, cardinal trait, central trait, and secondary trait.

i) *Cardinal Trait* – It dominates and shapes a person's behavior. These are the ruling passions/ obsessions, such as, a need for money, fame, etc., and could be compared to *rajo guna*.

ii) *Central Trait* – It is a general characteristic found to some degree in every person. These are the basic building blocks that shape most of our behavior, although they are not as overwhelming as cardinal traits. An example of a central trait would be 'honesty', and it could be relatable to goodness (satva guna).

iii) *Secondary Trait* - These are characteristics seen only in certain circumstances, such as, particular likes or dislikes that a very close friend may know, and it relates to *tamo guna*. They must be included to provide a complete picture of human complexity.

Such personality characteristics may be assessed by using different psychological tests like Thematic Apperception Test (TAT), Children Apperception Test (CAT), Myers Briggs Type Indicator, Cattell's 16 Personality Factors Test, Eysenck Personality Questionnaire (EPQ), Eysenck's personality Inventory (EPI), etc.

Theory of Leadership - Person of Excellence

Concept of Leadership

Leadership refers to leading a group of people or an organization, for instance, it may be a classroom leader, political leader and so on. A leader possesses appropriate skills for team building, develop organizations, and lead a group of persons to achieve the goals formulated for the organization concerned.

Sri Bhagavan reveals that:
yad yadaacarati srestha-statta devetaro janah

sa yat pramaanam kurute lokas tad-anuvartate

(chapter – 3; sloka – 21)

Sri Bhagavan reveals through the Bhagavad Gita that:

Whatever action a great person performs, commoners follow. The exemplary acts set by such a great person are followed by the world.

The five-factor model (FFM), also known as the OCEAN model represents taxonomy for personality traits (*Rothmann Coetzer*, 2003) supports the above sloka from the *Bhagavad Gita*. Those five traits are, namely, Openness (Intellect), Conscientiousness (Dependability), Extraversion (Surgency), Agreeableness, and Neuroticism (Emotional Stability). All these traits point towards excellence that makes a person a leader.

Theory of Guidance and Counselling

Concepts of Guidance and Counselling

Guidance refers to advice or a relevant piece of information provided by a superior so as to solve a problem or to come out of a difficulty. Counselling refers to professional advice given by a counsellor

to an individual to help him/her in overcoming from personal or psychological problems. The processes of guidance and counselling, put together, involves helping individuals discover and develop their educational, vocational, and *psychological* potentialities and thereby to achieve an optimal level of personal happiness and social usefulness. *Sri Bhagavan* has provided a series of slokas that provide guidance and counselling for leading a happy and contented life. The path has been established and revealed through 1st, 2nd , 3rd, 4th; 7th , 9th, 12th, 13th, 14th, 15th slokas under chapter 16; and 8th and 9th slokas under chapter 17 of *Bhagavad Gita.*

Sri Bhagavan reveals that:

abhayam sattva-samsuddhir jnana-yoga-vyavasthitih
daanam damas ca yajnas ca svaadhyaayas tapa aarjavam

(chapter – 16; sloka – 1)

ahimsa satyam akrodhas tyagah santir apaisunam
daya bhutesva-loluptvam mardavam hrir-acaapalam

(chapter – 16; sloka – 2)

tejah kshamaa dhrtih saucham adroho naati-manita
bhavanti sampadam daivim abhijatasya bhaarata

(chapter – 16; sloka – 3)

dambho darpo abhimanas ca krodhah parushyameva ca
ajnanaam cabhijaatasya partha sampadam asurim

(chapter – 16; sloka – 4)

pravrttim ca nivrttim ca janaa na vidu-raasurah
na saucam naapi caacaro na satyam teshu vidyate

(chapter-16; sloka – 7)

etam dristim avastabhya nashtaatmano alpa-buddhayah
prabhavanty ugra-karmaanah kshayaaya jagato ahitah

(chapter - 16 sloka – 9)

aasaa-paasa-satair baddhaah kaama-krodha-parayanaah
ihante kaama-bhogaartham anyaayenartha-sanchayan

(chapter – 16 sloka – 12)

idamadya mayaa labdham-imam praapssye mano-ratham
idam astidam-api me bhavisyati punar-dhanam

(chapter – 16; sloka – 13)

asau mayaa hatam satrur hanisye caparaanapi
isvaro aha-maham bhogi siddho aham balavaan sukhi

(chapter – 16 sloka – 14)

adhyo abhijanavaanasmi ko-anyo asti sadriso mayaa
yakshye dasyami modishya ity-ajnana-vimohitah

(chapter – 16 sloka – 15)

ayuh-sattva-balaarogya-sukha-priti-vivardhanaah
rasyaah snigdhaah sthiraa hridyaa aahaaraah saattvika-priyaah

(chapter–17; sloka–8)

katv-amla-lavanaaty-ushna-tikshna-ruksha-vidaahinah
aharaa rajasasyestaa duhkha-sokaamaya-pradaah

(chapter-17 sloka–9)

Sri Bhagavan reveals through the Bhagavad Gita Acceptable traits in a person are: Non-violence, truth, absence of anger, renouncement, tranquility, dignity, compassion, altruism, gentleness, modestly, absence of fickleness, vigour, tolerance, firmness, purity, un-harmful, normal disposition are acceptable traits and they are seen in great personalities and are to be imbibed by everyone.

Unacceptable traits are: pride, arrogance, conceit, anger, harshness, ignorance about what is to be done and what is not to be done, no cleanliness, improper behaviour, speaking lies, destructive behaviour, no concern for the welfare of other beings, a strong desire for enjoying worldly pleasures, indulgence in the gratification of senses, bound by a network of hundreds and thousands of desires and absorbed in lust and anger, desire to earn money by illegal means for sense gratification, greediness for money and wealth, involvement in anti-social activities, etc.

A person deluded by ignorance thinks that so much wealth possessed today would gain more and more according to his schemes and would further increase in the future. Elimination of his opponents is his trait. He feels that he is the lord of everything and can enjoy anything and feels perfect and powerful. He also feels that he is the richest person, surrounded by aristocratic relatives and friends. However, he sometimes likes to give to charities for his pleasure. He is thus deluded by his ignorance.

Do's and don'ts are explained, including what to eat and what not to eat. Foods dear to those in the

mode of goodness increase the duration of life, purify one's existence, and give strength, health, happiness, and satisfaction. Such foods are soft, juicy, non-fatty, wholesome, and pleasing to the heart. It is mentioned that foods that are too bitter, too sour, salty, hot, pungent, dry, and burning are dear to those in the mode of passion, and such foods are sure to produce disease, distress, and misery.

The above propositions relate to guidance and counselling for the persons by *Sri Bhagavan* in *Bhagavad Gita* are very useful for maintaining good mental health and hygiene and adjustment; which is the need of the day.

Theory of Spiritual Intelligence

Concept of Spiritual Intelligence

Spiritual intelligence refers to the awareness of a person about the Supreme Power of the Universe and for leading a contented with humble life. Such a person performs the worldly activities for and on behalf of the Supreme Power and makes all efforts to reach the ultimate goal of life without being affected by worldly matters. These are affirmed by *Sri Bhagavan* in the following verses.

Sri Bhagavan reveals that:

naiva kim-cit karomiti yukto manyeta tattva-vit
pasyan srinvan sprsan jighran nasnan gacchan svapan svasan

(chapter–5 sloka–8)

pralapan visrijan grhnan-nunmishan-nimihsann-api indriyanindriyarthesu vartanta iti dhaarayan

(chapter–5 sloka–9)

brahmanyaadhaaya karmami sangam tyaktva karoti yah lipyate na sa papena padma-patram ivambhasa

(chapter–5 sloka–10)

amanitvam adambhitvam ahimsa kshantir arjavam acaryopasanam saucam sthairyam atma-vinigrahah

(chapter–13 sloka–8)

indriyarthecu vairagyam anaham-kara eva ca janma-mrityu-jara-vyadhi-duhkha-dosanudarsanam

(chapter–13 sloka–9)

asaktir anabhisvangah putra-dara-grhaadishu nityam ca sama-cittatvam istanistopapattisu

(chapter–13 sloka–10)

mayi cananya-yogena bhaktir avyabhicarini
vivikta-desa-sevitvam aratir jana-samsadi

(chapter–13 sloka–11)

adhy-atma-jnana-nityatvamtattva-jnanartha-darsanam etaj jnanam iti proktam ajnanam yad ato anyatha

(chapter–13 sloka–12)

Sri Bhagavan reveals through the Bhagavad Gita that:

Broadly, there are two parts relating to psychology, namely, divine consciousness and two, functions relating to the physical body. Physical functions of a human being include - seeing, hearing, touching, smelling, eating, moving about, sleeping, and breathing, including speaking, evacuating, receiving, or opening or closing the eyes. Divine consciousness is entirely different from the aforementioned physical functions. A person with divine consciousness, though aware of his material body and its functions, thinks and behaves differently in the application of his mind in regard to divine consciousness. Hence, it reveals that there are two types of persons in this regard. The type of person is an ordinary person who is always interested in material functions relating to the body and society. The second type of person is extraordinary, as this type of person possesses divine consciousness in addition to performing all material functions and such a person can be compared to the floating water drop on a lotus leaf in the water pond. Just like the water drop on the lotus leaf, such a person is unaffected by bodily/material functions.

The person rooted in divine consciousness possesses qualities, such as, humility; prideless-ness; non-violence; tolerance; simplicity; approaching a bonafide spiritual master; cleanliness; steadiness; self-control; renunciation of objects of sense gratification; absence of false ego; the perception of the pains of birth, death, old age and disease; detachment; lack of intense affection to children, spouse, home and the rest; even-mindedness amid pleasant and unpleasant events; constant and unalloyed devotion to Supreme Spirit; aspiring to live in a solitary place; detachment from the general mass of people; accepting the importance of self-realisation; and search for the Absolute Truth; – all these are declared to be spiritual knowledge or spiritual intelligence.

In the contemporary modern world, the theories of Abraham Maslow (1954), and Howard Gardner

(1983) discuss these matters. Further studies are in progress about spiritual intelligence.

Theory of Emotional Intelligence

Concept of Emotional Intelligence

Goleman (1995) defines emotional intelligence as the capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and in relationships. In other words, it could be felt as the ability to perceive emotions, integrate emotions to facilitate thoughts, understand emotions, and regulate emotions to promote personal growth. Emotional intelligence involves the application of self-awareness, self-discipline, internal motivation, empathy, and a few social skills. 18th sloka in the 5th chapter of *Bhagavad Gita* explains this aspect of emotional intelligence.

Sri Bhagavan reveals that:
vidya-vinaya-sampanne brahmane gavi hastini
suni caiva sva-pake ca panditah sama-darsinah
(chapter–5; sloka–18)

The humble sage, by virtue of the acquisition of true knowledge, perceives with equal vision or equanimity towards the learned and soft person and other living beings like animals, etc.

In other words, a person with equanimity does not make any distinction between species or social identity, such as, a dog, or a cow, or an elephant. It may be different from the point of view of species, but these differences of body are meaningless from the viewpoint of a person with equanimity. Such a person has awareness about the source of life and death as the single destination point, and therefore, such a person is truly the learned person and maintains equanimity in life, indicating the application of self-awareness, self-discipline, internal motivation, empathy, and a few social skills.

Conclusion

The *Bhagavad Gita* is a complete text of universal psychology. There is no doubt in emphasizing that the *Bhagavad Gita* is a text comprising theory and practices relating to various constructs in the Universe. *Sri Bhagavan* has clearly narrated about the occurrence of various components in the Universe, with a specific focus on human beings and their qualities, including the origination point of life. Guidance has been provided by Him to human beings in the Universe for leading a good and peaceful life. Although the *Bhagavad Gita* is construed as a philosophical text, in fact, it is a complete text of psychology that describes the beginning and completion of human life and the methodology of leading life in an appropriate manner in the Universe. It is a prescription for the lifetime of human beings from the Supreme Bhagavan Sri Krishna. He is the Physician of and to physicians and the Supreme Physicist of Physics scientists and students. It is evident from the *Bhagavad Gita* that life and psychology are inseparable entities in all living beings. But, many times, the psychological impressions go beyond the realm of physical body, and exist in the Universe, for example, remembering the cherished moments from the lives of persons after their death in terms of their motives, perceptions, emotions, personality and so on these processes are invisible, but yet get manifested through their behaviour. It is needless to say anything about the dynamic influence of a person over other persons; person to person; leader to followers *vice-versa*, and so on.

The present author wishes to categorically mention that it is essential to rely on the text of *Bhagavad Gita* for a complete understanding of the behaviour. Though the experiments were started in the experimental psychology laboratory in CE 1879 in Leipzig, Germany and later extended to different parts of the West, for understanding the behaviour; the aspects of cognition, perception, emotion, leadership, emotional intelligence, personality, peace, spiritual intelligence, etc., have been described in the *Bhagavad Gita* much earlier to CE 1879.

Acknowledgment

The Author is grateful to all sources and authors of papers, articles, books, websites, etc., that have been referred for preparation of the present paper, and specifically to my Chief Mentor, the Supreme God Sri Krishna Bhagavan.

References and Readings

Wikipedia Sources

1. Baker, Alan (2010) [2004]. "Simplicity" *(http://plato.stanford.edu/entries/simplicity/). Stanford Encyclopedia of Philosophy. California: Stanford University. ISSN 1095-5054 (https://www.worldcat.org/issn/1095-5054).*
2. Allport, Gordon: *Pattern and Growth in Personality*; Harcourt College Pub.,

3. *Bhagavad Gita as It Is. (1986). India: Bhaktivedanta Book Trust.*
4. *Bhagavad Gita (2006). Gorakhpur (India): Geetha Press.*
5. *Cannon, Walter (1927). "The James-Lange Theory of Emotions: A Critical Examination and an Alternative Theory", December. The American Journal of Psychology. 39: 106–124.*
6. Courtney, A., Courtney, M. (2008). "Comments Regarding" "On the Nature of Science" (*https://arxiv.org/ftp/arxiv/papers/0812/0812.4932.pdf) (PDF)*. Physics in Canada. 64 (3): 7–8. Retrieved on 1st August 2012.
7. Elizabeth, B., Hurlock. (2017). Developmental Psychology: A Life-Span Approach.
8. McGraw-Hill Education Publishers, India.
9. Elizabeth, B., Hurlock (2017). Child Development, McGraw-Hill Education Publishers, India.
10. Elliott Sober, Let's Razor Occam's Razor, pp. 73–93, from Dudley Knowles (ed.) Explanation and Its Limits, Cambridge University Press (1994).
11. Allport, G., W. (1937). *The American Journal of Psychology, 50*, pp. 141-156.
12. Allport, Floyd Henry (1924). "The Physiological Basis of Human Behavior," Chapter 2 in *Social Psychology,* Boston: Houghton Mifflin Company. pp. 17-41.
13. *Gardner, Howard (1983). Frames of Mind: The Theory of Multiple Intelligences, New York: Basic Books*
14. Goleman, D. (1995). *Emotional Intelligence: Why it can matter more than IQ*. New York: Bantam Books.
15. Eysenck, Hans, Jürgen *and Eysenck,* Sybil, B., G. *(1975). Manual of the Eysenck Personality Questionnaire, London:* Hodder and Stoughton*. (Source from https://en.wikipedia.org/wiki/Eysenck_Personality_Questionnaire)*
16. Havighurst, Robert J. (1972). *Developmental Tasks and Education*. McKay.
17. Howard, Don, A. (2018). Zalta, Edward N., ed. *The Stanford Encyclopedia of Philosophy,* 23 June *(https://plato.stanford.edu/archives/fall2017/entries/einstein-philscience/)*. Metaphysics Research Lab, Stanford University – via Stanford Encyclopedia of Philosophy.
18. *Roeckelein, J., E. (2006). Elsevier's Dictionary of Psychological Theories. Elsevier. p. 85.*
19. Lazarus, Richard S. (1991). Progress on a Cognitive-motivational-relational Theory of Emotion, *American Psychologist, 46(8), 819-834*.
20. Maslow, Abraham, H. (1954). Motivation and Personality, New York: Harper & Row, Publishers.
21. Murray, H., A. (1943). Thematic Apperception Test Manual. Cambridge, MA: Harvard University Press. *(https://en.wikipedia.org/wiki/Thematic_apperception_test*)
22. Piaget, J. (1963). The Origins of Intelligence in Children. Norton.
23. *Rothmann, S., Coetzer, E., P. (2003).* "The Big Five Personality Dimensions and Job Performance", *24 October, SA Journal of Industrial Psychology, 29.*
24. Scherer, K., R., and Shorr, A., and Johnstone, T. (Ed.). (2001). Appraisal Processes in Emotion: Theory, Methods, Research, Canary, NC: Oxford University Press.
25. Sri Krishna (Volumes-1,2,3). Kolkata (India): Bhaktivedanta Book Trust.
26. Kumar, D. Srinivas (2010). Elements of Critical Thinking, Bengaluru (India): Dhaatri Pushtaka.
27. Sybil, B., G., Eysenck*,* Hans, Jürgen Eysenck *and Barrett, Paul (1985).* "A Revised Version of the Psychoticism Scale" (PDF)*. Personality and Individual Differences. 6 (1): 21–29. (Source from https://en.wikipedia.org/wiki/Eysenck_Personality_Questionnaire)*

Web Sources

1. *http://www.valmikiramayan.net*
2. *https://brocku.ca/MeadProject/Allport/1924/1924_02.html* (Source for Floyd Henry Allport. *Social Psychology*: Chapter 2: The Physiological Basis of Human Behavior) (Originally published as Floyd Henry Allport. "The Physiological Basis of Human Behavior." Chapter 2 in *Social Psychology.* Boston: Houghton Mifflin Company (1924): 17-41.)
3. *http://ncert.nic.in/ncerts/l/kepy103.pdf (Biological Bases of Behaviour).*
4. *https://en.wikipedia.org/wiki/Cannon%E2%80%93Bard_theory (for Cannon-Bard theory of Emotions).*
5. *https://en.wikipedia.org/wiki/Appraisal_theory*
6. *https://en.wikipedia.org/wiki/On the Soul - Wikipedia*
7. *https://en.wikipedia.org/wiki/Scientific_theory*
8. *https://www.britannica.com/topic/guidance-counseling*
9. *https://en.wikipedia.org/wiki/Tirukku%E1%B9%9Ba%E1%B8%B7*
10. *https://english.manoramaonline.com/news/columns/straight-talk/the-essence-of-ramayana-is-dharma.html*
11. *http://www.sathyasai.org/discour/2001/d010402.html*
12. *http://www.saidarshan.org/baba//docs/d990325.html*
13. *http://www.dlshq.org/religions/mahabharata.htm*
14. *https://msu.edu/~puhek/miem/Vedas.html*
15. *https://keydifferences.com/difference-between-guidance-and-counseling.html*
16. *www.Bhagavad Gita.eu/en*
17. *https://shlokam.org/sadashivasamarambam/*

❑

Creating Green and Sustainable Campuses: A Vision for Indian Universities

Pramod Kumar Naik*

"Let us cultivate campuses where green trees and bright minds grow together—nurturing not just education, but a sustainable future for generations to come."

Imagine a campus where the air is crisp, the buildings blend harmoniously with nature, and every individual takes pride in preserving the environment. Green and sustainable campuses are not just about reducing environmental footprints; they are about fostering a culture of respect for nature, innovation, and shared responsibility. These spaces inspire a generation to dream of a future where development and sustainability walk hand in hand. As custodians of education and leaders of change, universities have the power to set this vision in motion, leaving an enduring legacy of care for our planet.

Today, our universities stand at a crossroads where education must extend beyond academics to address one of the most pressing challenges of our time—environmental sustainability. Creating green and sustainable campuses is not just a noble ambition; it is an urgent necessity. Universities in India have a unique opportunity to lead this charge, setting benchmarks for environmental responsibility and inspiring a generation of environmentally conscious citizens.

As institutions of higher learning, universities are the bedrock of innovation, knowledge, and social transformation. But today, we face a challenge that transcends academic excellence: the urgent need to address environmental degradation and climate change. This is not merely a global issue; it is deeply local and immediate, impacting our air, water, and overall quality of life. The responsibility to mitigate these effects lies heavily upon all sectors, but especially on educational institutions, which mould the leaders of tomorrow.

India, with its diverse ecosystems and cultural heritage, stands at the crossroads of rapid development and ecological preservation. Our campuses, as microcosms of society, have the unique opportunity to lead by example—demonstrating how sustainable living and academic pursuits can coexist harmoniously. By integrating green practices into campus design, operations, and daily life, universities can not only reduce their ecological footprint but also inspire students, faculty, and the community to embrace sustainability as a way of life.

Moreover, universities serve as incubators for innovation. By fostering research and development in sustainable technologies, they can contribute significantly to global efforts against climate change. Whether it is through renewable energy solutions, waste management systems, or community outreach programs, educational institutions can pioneer transformative changes that ripple far beyond campus boundaries.

In addressing sustainability, universities also fulfil a deeper moral obligation. They stand as stewards of knowledge and wisdom, entrusted with the well-being of future generations. By committing to green and sustainable practices, we not only honour this trust but also ensure that our campuses become thriving examples of harmony between human progress and environmental stewardship.

UGC and NEP–2020 on Green and Sustainable Campuses

UGC's Role in Promoting Sustainability

The University Grants Commission (UGC) plays a pivotal role in embedding sustainability within higher education. It emphasizes the integration of environmental education and sustainable practices into both academic curricula and campus operations. The UGC encourages universities to:

- Develop green infrastructure to minimize environmental impact.
- Optimize resource use, including energy, water, and waste management.
- Engage in community outreach programs to spread awareness about sustainability.

By setting clear guidelines and providing a framework for sustainability, the UGC empowers institutions to align their operations with ecological

* *Vice Chancellor, AISECT University, Hazaribagh, Jharkhand-825303. E-mail- pramodnaik678@gmail.com*

priorities while inspiring students and faculty to adopt environmentally responsible practices.

NEP 2020's Vision for Green Campuses

The National Education Policy (NEP) 2020 takes the vision of sustainable campuses a step further by incorporating sustainability into the very fabric of education. The NEP–2020 advocates for:

- Environmentally conscious policies that guide university governance.
- Adoption of green infrastructure, such as energy-efficient buildings and renewable energy systems.
- Integration of sustainability into academic curricula to ensure students graduate with a deep understanding of ecological issues.
- Encouragement of interdisciplinary research focused on tackling climate change and promoting ecological preservation.

Both the UGC and NEP 2020 underscore the importance of aligning university initiatives with the United Nations Sustainable Development Goals (SDGs). These policies highlight the critical role of higher education in addressing pressing global challenges, such as climate change, biodiversity loss, and resource depletion. By fostering a culture of sustainability, Indian universities can significantly contribute to achieving these global targets while setting benchmarks for excellence in environmental stewardship.

Why Green and Sustainable Campuses Matter

The concept of a green campus transcends physical infrastructure; it fosters a culture of sustainability that permeates every aspect of university life. Here is why this vision is crucial:

Championing Environmental Responsibility

Universities are microcosms of society, and their collective actions have a profound impact on the environment. By adopting sustainable practices, institutions can significantly reduce their carbon footprint, conserve valuable natural resources, and play a pivotal role in combating climate change. This commitment reflects a university's responsibility as a steward of the environment.

Cultivating Environmental Awareness through Education

Incorporating sustainability into academic curricula equips students with the knowledge, skills, and values needed to address pressing global environmental challenges. By fostering environmental awareness and problem-solving capabilities, universities empower students to become effective ambassadors of change in their personal and professional lives.

Inspiring Community Transformation

Universities hold the potential to influence the communities they serve. A green campus acts as a beacon of sustainability, inspiring local neighbourhoods and other institutions to adopt environmentally friendly practices. This ripple effect amplifies the impact of a university's green initiatives beyond its boundaries.

Unlocking Economic Advantages

Investing in sustainability is cost-effective in the long run. Green campuses benefit from reduced operational costs through energy efficiency, waste management systems, and water conservation practices. These savings can be reinvested into academic and extracurricular initiatives, enhancing the overall student experience.

Promoting Wellness and Inspiring Innovation

Green spaces on campuses contribute to improved mental health and overall well-being for students, faculty, and staff. They provide areas for relaxation, reflection, and collaboration, fostering creativity and a sense of harmony. These environments enhance productivity and cultivate a positive campus culture.

Embodying Cultural and Educational Responsibility

India's rich cultural traditions provide a robust foundation for sustainability. From ancient practices of water conservation and organic farming to a deep-rooted reverence for nature, these traditions offer timeless lessons for addressing modern environmental challenges. Here's how we can harness this heritage on our campuses:

Preserving and Integrating Cultural Heritage

India's time-honoured sustainability practices can inspire modern solutions. By drawing on ancient wisdom, such as rainwater harvesting and sustainable agriculture, universities can promote innovative yet culturally rooted approaches to environmental conservation. This integration not only preserves

our heritage but also demonstrates its relevance in today's world.

Infusing Sustainability into Curriculum Design

Academic institutions have a critical role in shaping future leaders. By embedding sustainability principles into curricula across disciplines, universities can prepare students to tackle environmental challenges with knowledge and creativity. Courses on renewable energy, sustainable development, and environmental ethics should become central to academic programs.

Transforming Campuses into Living Laboratories

Campuses must not only teach sustainability but embody it. By adopting green infrastructure, energy-efficient buildings, and waste management systems, universities can turn their campuses into models of sustainable living. These initiatives serve as practical examples for students, staff, and the surrounding community.

Bridging Heritage and Innovation

Universities have the unique ability to blend tradition with technology. By leveraging cutting-edge advancements such as smart grids, solar panels, and water recycling alongside traditional ecological wisdom, campuses can create scalable, impactful solutions to global sustainability challenges.

Fostering a Sustainability Ethos

Sustainability should permeate all aspects of campus life, from daily operations to organizational culture. By promoting eco-friendly practices, celebrating environmental awareness days, and encouraging sustainable choices, universities can instil a lifelong ethos of environmental stewardship in their students and faculty.

A Vision Inspired by India's Timeless Values

India's cultural and spiritual heritage offers profound lessons on living in harmony with nature. By drawing on these values and integrating them into modern practices, universities can lead the way in creating sustainable campuses. Here's how this vision can be realized:

Reviving Ancient Wisdom for Modern Challenges

India's traditions, such as ancient water harvesting systems like stepwells and techniques of organic farming, are exemplary models of sustainable living. Universities can incorporate these practices into campus operations, demonstrating their relevance and effectiveness in addressing contemporary environmental issues.

Embracing the Reverence for Nature

The cultural reverence for trees, rivers, and natural ecosystems has been a cornerstone of Indian heritage. By preserving green spaces, planting native flora, and protecting natural resources, campuses can embody this respect for nature while fostering biodiversity.

Fusing Tradition with Innovation

Universities must blend traditional ecological knowledge with cutting-edge scientific advancements. This fusion can lead to the development of innovative solutions, such as renewable energy projects inspired by indigenous practices or water management systems enhanced by modern technology.

Creating a Uniquely Indian Model of Sustainability

By rooting sustainability initiatives in cultural values, universities can establish an approach that feels authentic and resonates deeply with the community. This model can include eco-friendly infrastructure, traditional architectural elements, and programs that celebrate India's environmental heritage.

Building a Culturally Connected Sustainability Movement

When sustainability is aligned with cultural ethos, it gains greater acceptance and commitment. Universities can organize awareness campaigns, workshops, and events that highlight the synergy between Indian traditions and environmental stewardship, inspiring stakeholders to embrace this vision wholeheartedly.

Leading by Example

By embodying these principles in campus design, operations, and education, universities can set benchmarks for others to follow. A culturally rooted, scientifically informed approach to sustainability can position Indian universities as global leaders in the movement for green campuses.

Strategies for Building a Green Campus

Creating a sustainable campus requires a multi-faceted approach that integrates technology, policy, and human behaviour:

Energy Efficiency

i. Install solar panels and wind turbines.
ii. Use energy-efficient appliances and smart systems to monitor and reduce consumption.

Water Conservation

i. Implement rainwater harvesting and greywater recycling.
ii. Promote water-saving technologies and practices among the campus community.

Waste Management

i. Introduce comprehensive waste segregation and recycling programs.
ii. Minimize single-use plastics and encourage composting organic waste.

Sustainable Transport

i. Develop cycling tracks, promote carpooling, and provide electric vehicle charging stations.
ii. Encourage the use of public transportation.

Biodiversity and Green Spaces

i. Create eco-parks, botanical gardens, and biodiversity zones.
ii. Plant native species and involve students in tree-planting drives.

Education and Awareness

i. Incorporate sustainability principles into curricula.
ii. Conduct workshops, seminars, and sustainability challenges to engage students and staff.

Leveraging Technology

i. Utilize smart campus solutions to monitor energy, water, and waste metrics in real time.
ii. Encourage innovation in sustainable design and practices.

Inclusive Sustainability

i. Ensure that sustainability initiatives address the needs of all stakeholders, including differently-abled individuals.

Best Practices by Indian Universities

Several Indian universities have already set exemplary benchmarks in sustainability:

TERI School of Advanced Studies, New Delhi

The campus operates on renewable energy, including solar power, and integrates rainwater harvesting systems. Its green building design minimizes energy consumption while maximizing natural lighting.

Amrita Vishwa Vidyapeetham, Kerala

Known for its zero-waste policy, this university recycles over 90% of its waste and has implemented large-scale organic farming initiatives.

Indian Institute of Science (IISc), Bengaluru

IISc has adopted a comprehensive waste management system and water recycling processes, ensuring minimal environmental impact.

Jawaharlal Nehru University (JNU), New Delhi

JNU has implemented extensive afforestation drives, solar energy projects, and an integrated waste management system that includes composting.

Manipal Academy of Higher Education (MAHE), Manipal

MAHE has set up a unique energy park and focuses on renewable energy research, water recycling, and maintaining biodiversity through green corridors.

Roles and Responsibilities

***University Leadership and Administration*:** leadership and administration play a pivotal role in fostering a culture of sustainability. Their responsibilities include:

- *Championing Sustainability*: Leading by example and prioritizing sustainability initiatives at all levels.
- *Policy Development*: Formulating and enforcing clear policies to promote sustainable practices across the campus.
- *Resource Allocation*: Ensuring the availability of financial, technical, and human resources to support green initiatives.
- *Strategic Integration*: Embedding sustainability goals into the university's strategic vision and operational plans.
- *Collaboration and Partnerships*: Partnering with government bodies, NGOs, and industries for technical expertise, funding, and innovative solutions.

- *Capacity Building:* Organizing training programs for administrative staff to enhance skills in energy management, waste reduction, and sustainable resource optimization.

***Faculty and Academic Perspective*:** Faculty is instrumental in integrating sustainability into the academic fabric of the university. Their roles include:

- *Curriculum Design*: Embedding sustainability concepts into curricula across various disciplines and promoting interdisciplinary learning.
- *Research Contributions:* Conducting and publishing research addressing both local and global environmental challenges.
- *Community Engagement*: Guiding students in organizing and participating in community outreach programs to promote sustainable living.
- *Green Labs*: Establishing laboratories that focus on resource efficiency, renewable energy, and minimizing hazardous waste.
- *Setting Examples*: Practicing and promoting eco-friendly habits within classrooms, offices, and beyond.
- ***Students*:** Students, as the future leaders of change, have a critical role in advancing sustainability. Their responsibilities include:
- *Active Participation*: Engaging wholeheartedly in university-led sustainability initiatives and programs.
- *Leadership in Green Clubs*: Forming and leading student-driven green clubs to design and execute innovative environmental projects.
- *Advocacy*: Advocating for sustainable practices both within the campus and in their broader communities.
- *Outreach Volunteering*: Participating in volunteer programs that educate and inspire local communities about sustainable living.
- *Innovation and Creativity*: Proposing and implementing novel ideas for waste management, energy conservation, and resource optimization.

By aligning the efforts of leadership, faculty, and students, universities can transform into thriving models of sustainability, setting a precedent for other institutions to follow.

Challenges and the Way Forward

Transforming campuses into sustainable ecosystems is a noble goal, but it comes with its share of challenges. Addressing these hurdles requires strategic planning, commitment, and a collaborative mindset. Here's a closer look at the obstacles and potential solutions:

Key Challenges

- *Resistance to Change:* Transitioning to sustainable practices often encounters reluctance due to ingrained habits and skepticism about new approaches.
- *Funding Constraints*: Implementing green infrastructure and initiatives can require significant initial investment, which may be difficult for many institutions to allocate.
- *Limited Awareness*: A lack of understanding among stakeholders—students, faculty, and staff—about the importance of sustainability can delay adoption.
- *Operational Complexities*: Coordinating large-scale sustainability initiatives across diverse departments and stakeholders poses logistical challenges.
- *Lack of Expertise*: Insufficient technical knowledge or access to sustainable solutions can hinder effective implementation.

The Way Forward

- *Phased Implementation:* Universities should start with small, achievable goals—such as installing energy-efficient lighting or initiating waste segregation—and gradually scale up to more comprehensive projects.
- *Strong Leadership*: Effective leadership is essential to drive the sustainability agenda. Leaders must act as advocates, ensuring that sustainability remains a priority in strategic decisions.
- *Collaborative Efforts*: Partnering with government agencies, industry experts, and NGOs can provide the financial, technical, and logistical support needed to overcome challenges.
- *Awareness and Training Programs:* Conducting workshops, seminars, and campaigns can educate stakeholders about the benefits of sustainability and encourage active participation.

- *Innovative Funding Models*: Exploring grants, public-private partnerships, and alumni contributions can help secure the necessary resources for green initiatives.
- *Monitoring and Feedback*: Regular audits, performance evaluations, and feedback mechanisms can identify gaps, measure progress, and sustain momentum.
- *Showcasing Success*: Sharing success stories and recognizing contributors can inspire others to adopt similar practices and strengthen the commitment to sustainability.

By addressing these challenges through a structured and collaborative approach, universities can create vibrant, sustainable campuses that set benchmarks for others to follow. The journey may be demanding, but the rewards—for the environment, the institution, and society—are well worth the effort.

Conclusion

Creating green and sustainable campuses is more than an environmental necessity; it is a moral obligation and a testament to our commitment to future generations. Universities, as hubs of innovation and social transformation, hold immense potential to spearhead this movement. Indian universities are uniquely positioned to set benchmarks for sustainability, inspiring not just our nation but the global academic community.

This is a call to action for every stakeholder—leaders, faculty, students, and community members—to unite in this endeavour. By fostering green campuses, we not only nurture knowledge but also instill a profound respect for our planet. Sustainable campuses serve as living laboratories where students learn the values of conservation, innovation, and responsibility.

Let us embrace this vision with passion and determination. Together, we can create a legacy of hope, harmony, and sustainability. By building campuses that exemplify environmental stewardship, we ensure a better, brighter future for generations to come. This is our opportunity to lead, to inspire, and to leave an indelible mark on the world—one that resonates with the principles of sustainability and care for our shared home.

References and Readings

1. Amrita Vishwa Vidyapeetham. (n.d.). *Preventing Water System Pollution through Zero Pit Toilets*. Retrieved from *https://www.amrita.edu/unsdg/sdg6/preventing-water-system-pollution/*
2. Edwin, G., and Muthu, N. (2021). Sustainability and Climate Action in the Higher education system, *Universities Facing Climate Change and Sustainability*, 72.
3. Goel, A., et. al., (2023). Student Perceptions of Environmental Education in India. *Sustainability*, *15*(21), 15346.
4. Indian Institute of Science. (n.d.). *Sustainable Practices at IISc*. Retrieved from *https://iisc.ac.in*
5. Jawaharlal Nehru University (n.d.). *Green Initiatives at JNU*. Retrieved from *https://www.jnu.ac.in*
6. Manipal Academy of Higher Education. (n.d.). *Energy Park and Biodiversity Corridors at MAHE*. Retrieved from *https://manipal.edu*
7. MD, P., and Aithal, P., S. (2022). Institutional Values and Social Responsibilities towards Sustainability–A Case Study of Srinivas University, India, *International Journal of Management, Technology, and Social Sciences (IJMTS)*, *7*(1), 50-69.
8. Mohanty, A., and Dash, D. (2018). Education for Sustainable Development: A Conceptual Model of Sustainable Education for India, *International Journal of Development and Sustainability*, *7*(9), 2242-2255.
9. Shishakly, R., Almaiah, M., Lutfi, A., and Alrawad, M. (2024). The Influence of Using Smart Technologies for Sustainable Development in Higher Education Institutions, *International Journal of Data and Network Science*, *8*(1), 77-90.
10. TERI School of Advanced Studies. (n.d.). *Sustainable campus practices*. Retrieved from *https://www.terisas.ac.in* ❑

Green and Sustainable Campuses for Promoting Sustainability

Trilok Kumar Jain*

Universities are at the forefront of promoting sustainability by transforming their campuses into green, eco-friendly environments. A 'green campus' integrates sustainable practices into its infrastructure, operations, and policies, fostering an environmentally responsible community. This helps the universities in promoting the values for sustainability which are not part of the curriculum also. Students observe these practices, and they implement these practices in their own lives.

Why Green and Sustainable Campuses?

- ***Reduce Environmental Footprint***: Lower carbon emissions, reduce waste, and conserve resources.
- ***Cost Savings***: Long-term reductions in energy and water costs.
- ***Education and Awareness***: Instill sustainability principles in students and staff.
- ***Health Benefits***: Cleaner air, green spaces, and healthier indoor environments.
- ***Leadership***: Set an example for society and other institutions that everyone should contribute towards sustainable development goals and these initiatives drive the message across the society for similar initiatives.

To study contemporary practices, the author conducted a study on 10 campuses of private universities in Jaipur City. All these campuses have been developed during the last two decades. All these universities claim that their campuses are green.

Findings: Strategies for Green and Sustainable Campuses

Based on the study, the following are the significant findings regarding strategies and practices of the universities towards creating green campuses. These findings uniformly applicable in all the campuses.

Sustainable Infrastructure

- Energy-efficient buildings with smart technologies.
- Use of renewable energy sources (all are using solar energy).
- Green building certifications.

Energy Management

- Smart lighting systems and LED fixtures.
- Efficient heating, ventilation, and air conditioning (HVAC).
- Installation of solar panels.

Water Conservation

- Rainwater harvesting systems.
- Water-efficient fixtures (low-flow taps, dual-flush toilets).
- Reuse of greywater for gardening.

Waste Management

- Composting organic waste.
- Recycling / reuse programs and emphasis on electronic submission of assignments to minimize paper waste.
- Waste segregation bins across the campus.

Green Spaces and Biodiversity

- Development of gardens.
- Preservation of natural ecosystems within the campus.
- Planting native and drought-tolerant species.

Sustainable Transportation

- Promotion of cycling and walking paths.
- Electric vehicle charging stations.
- Shuttle services powered by clean energy.

Sustainable Food Systems

- On-campus organic farms and gardens.
- Locally sourced and organic food in cafeterias.
- Reduction of single-use plastics.

Eco-Friendly Procurement

- Buying sustainable and eco-friendly products.
- Encouraging suppliers with green certifications.
- Reducing paper use with digital solutions.

Awareness and Community Engagement

- Sustainability-focused academic programs and research.

* *Professor and Director, Centre for Distance and Open Education, Suresh Gyan Vihar University Jaipur, Rajasthan-302017. E-mail: trilokkr.jain@mygyanvihar.com*

Green and Sustainable Campus Initiatives Observed

Parameter	Description	Examples/Practices
Sustainable Infrastructure	Energy-efficient, eco-friendly buildings.	Buildings having natural lights and ventilation, smart infrastructure
Energy Efficiency	Renewable energy and smart consumption systems.	Solar panels, LED lighting, smart HVAC systems
Water Conservation	Reduction and reuse of water resources.	Rainwater harvesting, greywater recycling
Waste Management	Proper disposal, recycling, and composting systems.	Waste segregation, recycling stations, composting
Green Spaces & Biodiversity	Green areas, eco-restoration, and biodiversity promotion.	gardens, native plants, urban forestry, plantations by student clubs
Sustainable Transportation	Low-emission and alternative transport options.	Bicycle lanes, EV charging stations, public transport
Sustainable Food Systems	Healthy, local, and eco-friendly food practices.	Organic farming, local suppliers, plastic-free campuses
Eco-Friendly Procurement	Environmentally conscious purchasing decisions.	Minimize use of paper, Recycled paper, digital solutions, green suppliers
Community Awareness & Education	Engagement of students and staff in sustainability.	Courses, green clubs, sustainability drives
Policy & Governance	Institutional framework supporting green practices.	Sustainability policies, carbon neutrality goals

- Student-led environmental clubs and events.
- Workshops, seminars, and green challenges.

Policy and Governance

- Campus-wide sustainability policies.
- Carbon neutrality and net-zero targets.
- Regular audits and sustainability reporting.

Areas of Improvement

Based on the observations, it was found that none of the universities is implementing wind energy, geothermal energy or hydrogen-based energy as yet. In the future, they will probably adopt these practices also. All these universities have some community clubs to promote sustainability; however, these community clubs are not involved in university-level sustainability planning and review of sustainability practices. They should also be part of the planning and review team also. This will enable the students to learn more about how to implement sustainability. Although public transport is encouraged and it is available - but most of the people use their personal vehicles - which is also not on a shared basis - thus causing pollution. There is a need for strict enforcement of the norms and initiatives so that these practices are implemented as per the spirit.

Limitations

This study is based on a small sample - a bigger study would generate better results, and a comparative study would bring actionable results.

Conclusion

Green and sustainable campuses represent the future of education. Universities adopting these practices not only reduce their environmental impact but also cultivate responsible future citizens. By integrating green policies into daily campus operations, they contribute significantly to global sustainability goals.

References and Readings

1. Abdullah, S., N., F., et. al., (2024). Enhancing Quality of Life in the Campus Community: The Effectiveness of the Green Campus Initiative, *Planning Malaysia*, 22.
2. Frizon, J., A., Eugénio, T., and Frizon, N., N. (2024). Green Campus and Student Proactivity Initiatives: The Importance of a Participatory Approach, *International Journal of Sustainability in Higher Education*.
3. Dagiliūtė, R., Liobikienė, G., and Minelgaitė, A. (2018). Sustainability at Universities: Students' Perceptions from Green and Non-green Universities, *Journal of Cleaner Production*, 181, 473-482.
4. Tiyarattanachai, R., and Hollmann, N., M. (2016). Green Campus Initiative and its Impacts on Quality of Life of Stakeholders in Green and Non-green Campus Universities, *SpringerPlus*, 5, 1-17.

❑

Creating Green and Sustainable Campuses

S Geethalakshmi*

The concept of a green campus serves as a strategic approach to integrating community engagement, education, and research in environmental management. This study aims to: (1) evaluate the impact of green campus initiatives on the development of sustainable campuses in Indian universities and (2) identify the challenges faced in implementing these initiatives. The research follows a qualitative methodology, incorporating a literature review and analysis of green campus practices. Findings indicate that the green campus concept is highly effective in enhancing campus sustainability, particularly in environmental management and resource conservation. However, major challenges include a lack of awareness, institutional readiness, and commitment to environmental policies. Ensuring that both university administrations and students recognize the importance of sustainability is essential for successful green campus implementation.

Agents of change can be found on campus. Programs that promote sustainable development are necessary to support the growth of Indian campuses. Campuses have made numerous efforts to achieve sustainable development. Numerous universities, including the green campus, have started using different approaches for protecting the environment. A program that incorporates environmental management and protection into postsecondary educational institutions is known as a "green campus" [1]. A "green campus" is one that integrates campus life and the environment in its administration. The environmental idea that encompasses greening, the front of the workplace, and the 3Rs (reduce, reuse, recycle) are integrated with the campus idea, which includes the campus's location, physical state, and operational characteristics.

Campus management policies focused on environmental management, such as initiatives to conserve electricity, water, and paper, greening to reach the optimal percentage of green open space (RTH), and the availability of waste management services on campus that follow the 3R principle (reduce, reuse, recycle) are some signs that a campus has become green [3]. The goal of the green campus concept is to encourage sustainable growth in higher education. Environmental Protection and Management provide the legal foundation for teaching for sustainable development at postsecondary institutions.

Because every campus has different environmental circumstances, topography, and habits, the implementation of the green campus idea in Indonesia has produced a range of outcomes. A number of factors make it difficult for the campus to lead the way in environmental preservation and the development of a sustainable campus. According to the above description, the goal of this study is to learn more about how green campuses are being used in India through research that these campuses have conducted. The goal of sustainable development is to use resources as efficiently as possible to satisfy present and future demands.

Comprehending the Green Campus

The idea of sustainable development is based on critical thinking to assist us comprehend our environment and all of the major, intricate issues we have caused so that we can find solutions [5]. He believes that in order to create sustainable development, many conceptual shifts are required, most notably the application of the idea of returning to nature.

Campus can be read as an educational institution or campus, and green can be interpreted as green. It is possible to understand the phrase "green campus" literally. Green refers to the surroundings rather than the structure. The idea of a "green campus" combines the university environment with the natural world [2]. A campus featuring subtle green elements, such as trees, grasses, and lush flora, might be referred to as a "green campus" [4]. According to the description given above, a green campus is an all-encompassing environmental management initiative aimed at building a sustainable campus.

In the context of environmental preservation, an eco campus, also known as a "green campus," refers to more than just a campus with green trees or green paint or because the campus's alma mater jacket is green. It also refers to how well and efficiently campus residents use the resources available on campus, such as paper, writing stationery, electricity, water, land, waste management, and others [6].

* *Vice Chancellor, Dr. M.G.R. Educational and Research Institute, Former Vice Chancellor, The Tamil Nadu Dr. M.G.R. Medical University, Chennai. E-mail: vc@drmgrdu.ac.in*

India's Green Campus Development

In India, the green campus initiative is not new. This program has been widely used in a number of Indian Institutions. To enhance Green and Sustainable Campuses:

Role of Higher Education in Sustainability: Universities play a crucial role in shaping environmentally responsible citizens by integrating sustainability into education, research, and campus operations.

Government and Institutional Policies : National policies like India's National Education Policy (NEP) 2020 and global frameworks such as the UN Sustainable Development Goals (SDGs) encourage higher education institutions to adopt sustainable practices.

Technological Integration for Sustainability*:* The use of IoT, AI, and data analytics in energy management, water conservation, and waste reduction contributes to efficient resource utilization on campuses.

Renewable Energy Adoption: Many campuses are investing in solar panels, wind energy, and biogas plants to reduce dependency on conventional energy sources and lower their carbon footprint.

Sustainable Campus Infrastructure: Green building designs with eco-friendly materials, natural lighting, ventilation, and smart water management systems are being implemented to enhance sustainability.

Water and Waste Management Systems: Advanced water conservation techniques like rainwater harvesting, wastewater recycling, and smart irrigation, along with zero-waste initiatives, are being adopted.

Biodiversity Conservation Efforts: Creating green spaces, botanical gardens, and preserving native plant species on campuses enhances biodiversity while improving air quality.

Sustainable Transportation Initiatives: Promotion of bicycle-sharing programs, electric vehicles, pedestrian-friendly zones, and public transportation reduces the environmental impact of commuting.

Behavioral and Cultural Shifts : Encouraging students and staff to adopt sustainable habits through awareness programs, green clubs, and reward-based eco-friendly practices.

Green Certifications and Ratings : Universities are striving to achieve certifications such as IGBC (Indian Green Building Council), LEED (Leadership in Energy and Environmental Design), and UI GreenMetric rankings for global recognition of sustainability efforts.

Interdisciplinary Research and Collaboration : Green campuses foster research in sustainability, energy efficiency, climate change adaptation, and environmental policies through collaboration with industries, NGOs, and government agencies.

Economic and Social Benefits: Sustainable campus initiatives not only reduce costs but also create a healthier learning environment, improve student well-being, and enhance institutional reputation.

Challenges and Future Directions: While many campuses are making progress, financial constraints, lack of awareness, and infrastructural limitations remain key challenges. The future of sustainable campuses depends on innovative solutions and stronger policy implementation.

Methods

The study looked at the Green Campus journal's applicability in India using qualitative methods and a literary study approach. Literature study is the process of gathering information by looking through books and materials about the foundations of research [8]. Research Design The study employs a qualitative research approach, focusing on the analysis of existing literature, policies, and case studies related to Green Campus initiatives in India.

Data Collection Methods

Literature Review: The research gathers data from books, journal articles, government reports, sustainability guidelines, and university case studies.

Document Analysis: University policies, sustainability reports, and green campus frameworks are examined to understand their implementation and effectiveness.

Case Study Analysis–Selected Indian universities with green campus initiatives are analyzed based on their sustainability strategies, infrastructure, and environmental policies.

Thematic Analysis: Key themes such as energy conservation, waste management, water sustainability, and carbon footprint reduction are identified and evaluated.

Comparative Study : A comparison of Green Campus practices in India with global best practices helps identify strengths, gaps, and areas for improvement.

Interviews/Expert Opinions (if applicable) : Qualitative insights may be gathered through interviews with sustainability officers, faculty members, or policymakers involved in green campus initiatives.

Framework Analysis **:** The study examines relevant sustainability frameworks such as the UI GreenMetric Rankings, LEED certification, IGBC (Indian Green Building Council) norms, and the role of the National Education Policy (NEP) 2020 in promoting sustainability in higher education institutions.

Challenges and Limitations**:** The study acknowledges potential limitations such as data availability, institutional differences, and varying levels of implementation across campuses.

Results and Discussion

The concept of a Green Campus has been widely adopted in universities across the world, contributing to sustainable development and environmental conservation. However, in Indonesia, this concept is still emerging and has yet to gain widespread recognition among the general public.

This study analyzed the implementation of the Green Campus concept in selected Indonesian universities, assessing its impact on sustainability. The findings indicate that:

Adoption and Awareness: While some universities have integrated sustainability measures into their policies and infrastructure, awareness about the Green Campus concept remains limited among students and faculty. Educational campaigns and institutional policies are necessary to strengthen engagement.

Environmental Management Practices: Universities implementing Green Campus initiatives have shown improvements in waste management, energy efficiency, and water conservation. However, the level of implementation varies significantly across institutions.

Infrastructure and Renewable Energy : Some universities have adopted eco-friendly buildings, solar panels, and rainwater harvesting systems, demonstrating positive progress toward sustainability. However, financial and logistical challenges have hindered widespread adoption.

Challenges in Implementation : Key challenges include a lack of funding, insufficient institutional commitment, and varying campus policies. Additionally, some universities face difficulties in integrating sustainability principles into their academic curricula.

Impact on Sustainability : Despite challenges, universities that have embraced the Green Campus concept have reported reduced carbon footprints, improved campus biodiversity, and increased environmental awareness among students. This suggests that the concept, when effectively implemented, contributes to creating a sustainable campus environment.

Future Prospects : Strengthening collaboration between universities, government bodies, and private organizations can accelerate the adoption of Green Campus initiatives. Policy support and investment in sustainable technologies are crucial for long-term success.

The Green Campus Concept in India

The Green Campus concept in India is no longer entirely new; however, its adoption is still primarily seen in large and well-funded universities. While some institutions have begun implementing sustainability initiatives, the concept needs broader support from not only campus leaders but also students, faculty, staff, and surrounding communities. A truly sustainable campus requires collaborative efforts to integrate environmental responsibility into daily operations, academic curricula, and campus infrastructure.

Table-1 evaluates how Indian universities implement the Green Campus Concept, focusing on three key criteria: Vision and Mission, Activities, and Online Resources. The scores reflect the universities' commitment to sustainability, environmental protection, and green initiatives.

Assessment Criteria Explanation

Vision and Mission of the University, Including Environmental Protection Efforts (95/100)

- Many Indian universities have integrated environmental sustainability into their mission statements.
- Institutions such as IITs, IISc, and central

Table 1: Evaluation Results of the Implementation of the Green Campus Concept in Indian Universities

Assessment Criteria	Total Value
Vision and Mission of the University, including Environmental Protection Efforts	95
University Activities Related to Sustainability and Green Campus Initiatives	90
Website and Online Resources Related to Green Campus Programs	70
Average	**85.00**

universities emphasize sustainability goals, climate action, and green policies.

- Universities align their academic and research programs with Sustainable Development Goals (SDGs) and environmental conservation policies.

University Activities Related to Sustainability and Green Campus Initiatives (90/100)

- Universities implement various initiatives, such as rainwater harvesting, solar energy usage, waste management, and biodiversity conservation.
- Green Audit and Energy Conservation Policies are adopted by institutions like IIT Delhi, JNU, and Anna University.
- Many campuses promote eco-friendly transport, tree plantations, and carbon footprint reduction programs.

Website and Online Resources Related to Green Campus Programs (70/100)

- While many universities have sustainability-related information available online, the accessibility and depth of content vary.
- Some universities maintain dedicated web pages for green initiatives, while others lack transparency in showcasing their efforts.
- Improved digital documentation and interactive platforms could enhance public awareness and engagement.

Final Evaluation

- The average score of 85.00 indicates that Indian universities are making significant progress toward sustainable campuses.

Table 2: Evaluation Results of the Implementation of the Green Campus Concept in Green Facilities and Infrastructure at Indian Universities

Assessment Criteria	Total Value
Campus facilities and infrastructure to overcome environmental problems	75
Campus facilities and infrastructure support environmental learning	90
Average	**82.5**

- However, there is room for improvement in online transparency, digital resources, and public engagement regarding sustainability efforts.

The table 2 evaluates the green facilities and infrastructure of Indian universities in two key areas:

Campus Facilities for Environmental Issues (75/100)–Universities have implemented waste management, rainwater harvesting, solar energy, and eco-friendly buildings, but some still face challenges in pollution control and sustainable transport.

Infrastructure Supporting Environmental Learning (90/100) – Many institutions promote **green research, eco-l**abs, and sustainability-focused education, with leading universities like IISc, IITs, and TERI University excelling in this area.

Final Verdict (Average Score: 82.5/100): Indian universities have made strong progress in sustainability efforts, though further improvements in pollution management and infrastructure are needed.

Table 3: Results of the Evaluation of the Implementation of the Green Campus Concept in Waste Management at Indian Universities

Assessment Criteria	Total Value
Plastic waste management	40
Organic waste management	35
Inorganic waste management	38
Liquid waste management	30
Average	**35.75**

The table 3 evaluates waste management practices in Indian universities:

- ***Plastic Waste Management (40/100)*:** Some universities have implemented plastic bans, recycling programs, and awareness campaigns, but plastic pollution remains a challenge.
- **Organic Waste Management (35/100):** Many institutions have composting units and biodegradable waste initiatives, but large-scale management needs improvement.

- **Inorganic Waste Management (38/100):** E-waste and non-biodegradable waste disposal is improving, with recycling and disposal programs in place.
- **Liquid Waste Management (30/100):** Some universities have sewage treatment plants and wastewater recycling, but adoption is inconsistent.

Final Verdict (Average Score: 35.75/100): Indian universities are making progress, but better waste segregation, recycling, and liquid waste management are needed to achieve sustainable waste practices.

Several key indicators must be met for a university to be recognized as a Green Campus. These assessments are often guided by green campus rating systems, such as UI GreenMetric, which is widely used in India. However, many universities do not implement the full framework immediately but rather adopt sustainability measures gradually, one indicator at a time.

Challenges in Implementing the Green Campus Concept

Despite its benefits, the implementation of a Green Campus faces several obstacles, including:

Lack of Infrastructure : Many campuses lack the essential eco-friendly infrastructure, such as green buildings, renewable energy systems, and waste management facilities. Retrofitting existing structures requires significant investment and planning.

Financial Constraints : One of the biggest challenges is the high cost of implementing sustainable technologies, including solar energy systems, smart water management, and efficient waste disposal mechanisms. Many universities, especially public institutions with limited budgets, struggle to allocate sufficient funds.

Limited Awareness and Engagement : While campus leaders may initiate sustainability projects, student and faculty participation is often inconsistent. Strong awareness programs and incentives are needed to promote eco-friendly behaviors.

Regulatory Compliance and Policy Implementation : While the Indian government has introduced sustainability guidelines for educational institutions, enforcement and monitoring remain inconsistent across different universities.

Urbanization and Space Constraints : In densely populated cities, campuses often lack the open green spaces needed for biodiversity conservation and environmental balance. The utilization of available open spaces through vertical gardens, rooftop greenery, and community parks is a solution to be explored.

Strategies for Strengthening Green Campus Initiatives in India

To enhance the adoption and effectiveness of Green Campus initiatives in India, the following strategies should be considered:

Integration of Sustainability in University Policies: Campuses should develop long-term sustainability plans, incorporating energy conservation, water recycling, and waste management into official policies.

Increased Government and Private Sector Support: Universities can seek government grants, corporate sponsorships, and public-private partnerships to fund sustainability projects.

Student and Faculty Involvement: Green Campus programs should encourage student-led sustainability projects, environmental clubs, and interdisciplinary research on climate change and ecological conservation.

Adoption of Renewable Energy Solutions: Investing in solar power, wind energy, and biogas systems can significantly reduce the carbon footprint of campuses.

Smart Waste and Water Management: The use of waste segregation, composting units, rainwater harvesting, and efficient water recycling systems should be expanded.

Incorporating Sustainability into Curriculum: Universities should introduce sustainability courses, encouraging students from various disciplines to engage in green research and innovation.

Conclusion

Given its strong connection with environmental preservation, the Green Campus

concept is highly relevant and should be widely implemented in Indian universities. With structured policies, stakeholder engagement, and technological advancements, universities can overcome existing challenges and make meaningful progress toward sustainable development. A truly green campus is not just about infrastructure but also about creating a culture of environmental responsibility, preparing students to become leaders in sustainability.

References and Readings

1. Pedoman Green Campus. (2012). Pedoman Green Campus. Kerjasama Kementrian Lingkungan Hidup Republik Indonesia dengan Pusat Penelitian Sumber Daya Manusia dan Lingkungan (PPSML) Universitas Indonesia.
2. Zulkifli, A. (2018). Green Campus. Retrieved from *https://bangazul.com/greencampus/*
3. Oktiawan, W., Istikhoroh, T., and Sudomo, N. F. S. (2012). Optimalisasi Sister Pengelolaan Sampah di Lingkungan Kampus Universitas Diponegoro: Upaya Menuju Eco-Campus. Jurnal Teknik Lingkungan, 3(2), 82–86.
4. Unesco. UN Decade of Education for Sustainable Development (DESD). Education for Sustainable Development, Division for the Promotion of Quality Education. (2005), Paris. DOI *10.18502/kss.v4i14.7853 Page 8 IC-HEDS 2019*
5. Patel, B., and Patel, P. (2012). Sustainable Campus of Claris Lifesciences through Green Initiatives, Renewable and Sustainable Energy Reviews, 16(7), 4901– 4907. *https: //doi.org/10.1016/j.rser.2012.03.062*
6. Nasution, P. (2009). Green Campus Vs. Pemanasan Global. Retrieved from *http: //www.gogreenindonesiaku.com/green_opinion2.php*
7. Prabowo, D. (2019). 10 Kampus Terhijau Dunia versi UI GreenMetric. Retrieved from *https://properti.kompas.com/read/2018/12/19/161625521/10-kampusterhijau-dunia-versi-ui-greenmetric*
8. Dunn, William. (2003) Introduction to Public Policy Analysis Second Edition, Yogyakarta: Gajah Mada University Press
9. Tolley, R. (1996). Green Campuses: Cutting the Environmental Cost of Commuting, 4(3), 213–217.
10. Marrone, P., Orsini, F., Asdrubali, F., and Guattari, C. (2018). Environmental Performance of Universities: Proposal for Implementing Campus Urban Morphology as an Evaluation Parameter in Green Metric. Sustainable Cities and Society, 42(January), 226–239. *https://doi.org/10.1016/j.scs.2018.07.012*
11. Mahendra, Saam, Z., & Nasution, S. (2017). Implementasi Konsep Green Campus Pada Perguruan. Jurnal Ilmu Lingkungan, 11(2), 164–177
12. Santoso, N., U., R., D., et, al. (2017). Implementasi Konsep Green Campus di Kampus Itenas Bandung Berdasarkan Kategori Tata Letak dan Infrastruktur. Jurnal Reka Racana, 3(4), 139–150.
13. Lau, S., S., Y., Gou, Z., and Liu, Y. (2014). Healthy Campus by Open Space Design: Approaches and Guidelines, *Frontiers of Architectural Research*, 3(4), 452–467. *https://doi.org/10.1016/j.foar.2014.06.006*
14. Lozano, R., et, al., (2013). Declarations for sustainability in higher education: Becoming better Leaders, Through Addressing the University System, *Journal of Cleaner Production, 48*, 10–19. *https://doi.org/10.1016/j.jclepro.2011.10.006*
15. Alshuwaikhat, H., M., and Abubakar, I. (2008). An Integrated Approach to Achieving Campus Sustainability: Assessment of the Current Campus Environmental Management Practices, *Journal of Cleaner Production, 16(16)*, 1777–1785. *https://doi.org/10.1016/j.jclepro.2007.12.002*
16. Ragazzi, M., and Ghidini, F. (2017). Environmental Sustainability of Universities: Critical Analysis of a Green Ranking, *Energy Procedia, 119*, 111–120. *https://doi.org/10.1016/j.egypro.2017.07.074*
17. Filho, W. L., Manolas, E., and Pace, P. (2015). The Future We Want: Key Issues on Sustainable Development in Higher Education after Rio and the UN Decade of Education for Sustainable Development, *International Journal of Sustainability in Higher Education, 16(2)*, 112–129. *https://doi.org/10.1108/IJSHE-03-2014-0036*
18. Wu, Y., and Shen, J. (2016). Higher Education Sustainability in China: An Overview of Policies and Practices. *Journal of Cleaner Production, 133*, 135–143. *https://doi.org/10.1016/j.jclepro.2016.05.005*
19. Velazquez, L., Munguia, N., Platt, A., and Taddei, J. (2006). Sustainable University: What can be the Matter? *Journal of Cleaner Production, 14(9-11)*, 810–819. *https://doi.org/10.1016/j.jclepro.2005.12.008*
20. Saadatian, O., Sopian, K., Salleh, E., and Lim, C. H. (2013). Adaptation of sustainability community indicators for Malaysian campuses as small cities. *Sustainable Cities and Society, 6*, 40–50. *https://doi.org/10.1016/j.scs.2012.08.002*
21. Arias-Chalico, T., García-Sánchez, I. M., and Rodríguez-Domínguez, L. (2020). Measuring sustainable development goals in university sustainability reports. *Sustainable Development, 28(5)*, 1181–1192. *https://doi.org/10.1002/sd.2094*
22. Ahmed, S., and Murtaza, G. (2021). Green Campus Initiatives: A Comparative Study of Environmental Sustainability Practices in Higher Education Institutions, *Environmental Challenges, 4*, 100159. *https://doi.org/10.1016/j.envc.2021.100159*
23. Geng, Y., Liu, K., Xue, B., and Fujita, T. (2013). Creating a "Green University" in China: A Case of Shenyang University, *Journal of Cleaner Production, 61*, 13–19. *https://doi.org/10.1016/j.jclepro.2013.01.006*

❑

A Roadmap for Evenhandedness, Assortment, and Sustainability in Indian Higher Education: Blueprint for Next-Generation Universities

Murari Lal Gaur*

The Indian higher education system is witnessing a paradigm shift under the new National Education Policy–2020 with the focus on equity, sustainability, and inclusivity, which are the guiding pillars of this policy. This paper propositions how equity, diversity, and sustainability can be incorporated and truly embedded in the vision of Nextgen Indian Universities. It briefly analyzes the amalgamation of Indigenous Knowledge Systems (IKS) into the curriculum and pedagogy to fetch equity and diversity in higher education and also the inclusive development of green sustainable campuses. As it does so, the scrutiny of regional and international best practice is done both through the lens of alignment to contemporary and emergent Indian educational systems and to bring about a positive holistic learning experience. It is here, as the Vice Chancellor of Dr. C.V. Raman University based in Vaishali, Bihar, one of the most revered areas of Buddhist and Jain traditions and the birthplace of Nalanda; where the author's rich past 41 years of experience/understanding of R&D and higher education in different parts of India is well reflected. The arguments made herein integrate recent studies and policy frameworks to make Indian higher education institutions' considerations more inclusive.

One of India's biggest transformations lies in its education policy. It calls for new approaches to be more inclusive, flexible, and robust in meeting the goals set forth for the 21st century. The futuristic educational strategy must aim to address longstanding inequities by enabling accessibility, diverse learning, and environmentally sound practices in order to foster a holistic approach toward education. However, to be "*Viksit Bharat*-2027" the nation has to begin with realigning its institutional goals, policies, and approaches towards better pedagogy. It is important to note that India has been one of those nations that had some of the world's best learning centers (Nalanda, Takshashila), known for multi-disciplinary approaches/systems of knowledge. Regrettably, contemporary educational institutions are often branded by isolationist pedagogies, inflexible curricula, and unequal distribution of resources, which undermine the possibilities of a truly equitable and multi-faceted academic environment. The increasing importance of climate action and resource conservation also raises the call for sustainability to be addressed in higher education with regard to curricula, research, and infrastructure.

Such a new framework must be inevitably devised to help the Higher Educational Institutions (HEIs) in India to move towards a more inclusionary, diverse, and sustainable future. It demands prompt actions towards a newly designed framework by integrating current challenges, best practices, and policies to Indigenize IKS, via sustained pedagogy practices and campuses as well. One of the core focuses happens to be the tension between tradition & modernity, where contemporary institutions of learning are becoming increasingly innovative but the instructions and education are still culturally pertinent. Over and above academic work, the responsibility of universities is to facilitate socioeconomic mobility, preserve culture, and protect the environment.

Universities are leading the way in creating inclusive, sustainable, and culturally diverse learning environments under NEP–2020. In light of over four decades of working in education, research, and serving at an institution's leadership or governance, the author shares a few insights with university administrators, policymakers, educators, and other stakeholders to build a more inclusive and responsive competitive global higher education system. Three main concepts are herein explored in this article: establishing sustainable campuses, guaranteeing diversity and equity, and integrating IKS.

Best Practices to Embed IKS in a Pedagogy of Curriculum Design

IKS and Its Role in Holistic Education

Schools of ancient Nalanda & Takshashila understood education as a combination of philosophy, science, and ethics and practiced holistic education, fostering all-around tilling of intellects. NEP- 2020 formulation proposes to return to such practices and

**Vice Chancellor, Dr. C V Raman University, Vaishali, Bihar-844114. Formerly, Principal Scientist/Head/Dean, ICAR-Govt of India and AAU-Govt of Gujarat. E-mail : mlgaur@yahoo.com, vc@cvrubihar.ac.in*

advocates for the better & intensive use of IKS to deepen modern curricula.

Using IKS in Teaching and Curriculum

NEP–2020 emphasizes the bringing back of conventional teaching methods by incorporating India's extensive IKS into contemporary academics. As per many researchers (Dasgupta and Pawar, 2024), it very well encourages students to have a pro-sustainability mindset and could be effectually incorporated into curricula by HEIs once the due revival of traditional Indian wisdom is properly looked upon. A few sample ways through which traditional IKS can be implemented in contemporary education are recited below.

Using IKS As Step Toward New Ways of Teaching

The concept of IKS has also brought about new and innovative teaching approaches, which include pioneering concepts like "*Learning by Doing*" where the use of a structured training system and resembling *Gurukuls* could greatly facilitate teacher-students interaction; and thus, the scholars can learn by doing. At this juncture, bringing traditional wisdom up to date becomes most vital. There exists a plethora of ways to attain it, moreover, one nice example to incorporate IKS into modern teaching could be thought of as adopting "*Ayurveda & Sustainability*", where the use of ayurvedic concepts in medical research greatly supports sustainable health practices and ecological harmony. There could be many other examples too like; (1) Vedic Mathematics & Computational Thinking, where applying vedic mathematical methods can greatly improve the computer science and engineering problem-solving abilities; and (2) Ancient Water Management Systems may be taken as an effectual way of teaching contemporary ecological management courses by researching historic water-saving techniques, such as those described in the Arthashastra. This altogether reinforce the innovative teaching methods, where even the modern time AI-enabled learning could be better utilized to provide interactive learning environments for classical languages like Sanskrit and ancient literature to study and understand them more deeply.

Addressing Diversity and Equity in University Campuses

Meeting the needs of equity and diversity on campuses is emerging as one of the new rations, which requires multiple efforts to shift into newer demands for futuristic university systems.

Bridging the Educational Gap between Rural & Urban

While India has a huge higher education system, it has inequalities, too. The GER in higher education often remains low and thus has a long way to go upward. To do so, policy needs to emphasize improving access for both rural and underserved populations. Dealing with socioeconomic inequalities remains a big concern, where the ultimate access to high-quality education for students from diverse backgrounds is still to be guaranteed by equity in higher education. Hegde and Mulimani (2023) advocate the significance of university infrastructure that is accessible to people with disabilities via features like wheelchair accessibility, support for sign language & braille, and other smart tools for online assistive learning. The snags with equity, internationalization, and access in Indian HEIs are emphasized, well illustrated, and analyzed by Joshi and Ahir (2019), which puts emphasis on many issues (2 are mentioned below).

Influence of Policies

It may reflect many portfolios like "*Reservation Systems*" where demanding quotas for underserved groups is a vital issue, "*Financial Aids*" where fee exemptions & scholarships for those in less fortunate financial situations is common concern, and "*Gender Inclusion*" where efforts to promote female participation in STEM professions has its own gravity.

Digital Transformation & Inclusive Education

The function of digital platforms in closing educational gaps is nicely covered by Oza (2019), reflecting the fact that diverse learning experiences are now very much possible owing to the growth of online learning platforms (SWAYAM, DIKSHA), which serve both urban & rural students.

Helping Communities That Have Been Left Behind

Strategies for enhancing inclusivity must include the levelling effect of technology. by offering individualized learning experiences that take into account different learning needs and styles, digital platforms and artificial intelligence have the potential to democratize education. It must provide added focus towards (1) Scholarships/Financial aid to socio-economically deprived weaker sections, (2) Inclusive Curriculum ensuring course content that reflects diverse cultural perspectives represent various communities, (3) Diverse Faculty Recruitment with hiring practices to maintain diversity and expose students of every background to role models, (4)

Promoting multilingualism in higher education to ensure relevance of mother tongue instruction to achieve cultural inclusion and cognitive growth, and (5) Ensuring Gender-Equity to promote female involvement in leadership positions in STEM fields, with adequate mentorship programs, gender-neutral campus amenities, and regulations that promote their work-life balance.

Establishing Sustainable and Green Campuses

Academic institutions are going to serve as centers for climate action, hence, HEIs must take the lead in sustainability projects and provide an example for environmental responsibility.

Development of Sustainable Campuses

It may necessitate vital tactics like; (1) '*Green Buildings'* for putting together energy-efficient structures that meet LEED certification requirements, (2) '*Conserving Water'* by installing rainwater collection devices modelled after conventional techniques, like stepwells, etc., (3) '*Adoption of Renewable Energy'* to become carbon neutral by investing in solar panels and other renewable energy sources. Establishing sustainable and green campuses requires a plethora of policy level ingredients where conceiving/ adopting green practices & sustainable infrastructure will play a leading role. Looking towards India's commitment to SDGs (Dasgupta and Pawar, 2024), the added basics like institution-based green practices, student awareness and their active immersions are another due initiative.

Student Engagement and Environmental Education

Sustainability projects conceived and run by students can play an anchoring role where the culture of ecological responsibility can be highly promoted in university campuses by assisting student-led sustainability research and encouraging the establishment of environmental clubs. According to Skariah (2024), incorporating sustainability into curricula raises students' awareness of ecological issues. Eco-friendly technology, trash management, and climate change education ought to be required.

Institutional Framework and Policies

Numerous HEIs have already initiated embracing eco-certification initiatives like LEED Certification and Green Audit. These regulations guarantee a sustained dedication to environmental ethics and sustainability. Moreover, policy suggestions and the greener roadmap for the future must incorporate (1) Ensuring provisions for NEP- 2020 implementation at the local level, (2) Industry-Academia Partnerships to encourage cooperation to advance sustainable technology via R&D and CSR implementations, (3) Establishing model IKS Research Centers to research advanced IKS, (4) Global Benchmarking to improve competitiveness by adopting smart systems in terms of solar power installations (e.g. e-solar campus model at IIT Bombay), rainwater harvesting (e.g. TERI model) and zero-waste campuses etc.

Conclusion

In order to create inclusive, creative, and ecologically sensitive institutions, Indian higher education must include fairness, diversity, and sustainability into its very fabric. Through the integration of current innovations and India's rich legacy, academic institutions can develop leaders who are capable of handling the challenges of the contemporary world. Integrating sustainability, diversity, and equity into university structures is essential to the future of higher education in India. Next-generation colleges may equip students for a sustainable and comprehensive future by incorporating Indigenous Knowledge Systems, encouraging diversity, and supporting environmentally friendly campuses.

References and Readings

1. Government of India (2020). National Education Policy 2020, Ministry of Education, Government of India, New Delhi. Retrieved from https*://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf*
2. Dasgupta, H., and Pawar, S., K. (2024). Impact of Higher Education Imparted by Indian Universities on the Pro-sustainability Orientation of Students*, Journal of Applied Research in Higher Education*, 12(3), 456-478*. https://doi.org/10.1108/JARHE-11-2019-0284*
3. Hegde, S., and Mulimani, M. (2023). From Policy to Practice: Study of Institutional Role in Advancing Equity and Access in Higher Education under NEP 2020 in India, In *National Education Policy (NEP) 2020 The Role of Librarian in Digital Era* (pp. 49-56), Discount Group of Publication.
4. Joshi, K., M., and Ahir, K., V. (2019). Higher Education in India: Issues Related to Access, Equity, Efficiency, Quality, and Internationalization*, Academia*, 14, 1-23. *https://doi.org/10.26220*
5. Oza, P. (2019). Equity and Equality in Higher Education: India Calling, *International Journal of Social Sciences and Management*, 6(2), 75-81. *https://doi.org/10.3126/ijssm.v6i2.23315*
6. Skariah, A. (2024). Reimagining Future of Higher Education Institutions in India: Quality Assurance and Sustainable Transformation, *AIDASCO Reviews*, 2(2), 48-57. *https://doi.org/10.59783* ❑

Crafting Sustainable Campuses for Generations Ahead: The Green Blueprint

Uma Sekar*

Higher Education Institutions (HEIs) contribute a primary role in shaping the future of society by nurturing education, research, and innovation. The world faces many environmental adversities and challenges such as the depletion of resources, loss of biodiversity, changes in climate, etc., and the HEIs are responsible for encouraging sustainability. The current article reconnoiters the amalgamation of diversity and sustainability within higher education institutions, focusing on the development of green and sustainable campuses. It observes the commandability for such initiatives, key approaches for enactment, the role of diversity in encouraging sustainability, and the challenges and blessings associated with these attempts. By highlighting the best practices, the article aims to provide a comprehensive consideration of how campuses can become models of environmental possession and inclusivity. Also, this article hopefully provides an aspiration to the HEIs to make plans and frameworks for sustainable campuses to meet the United Nations's Decade of Education for Sustainable Development.

Higher education institutions are recognised for their synergistic role in contributing to sustainability and sustainable development goals (Abo-Khalil, 2024), due to the diverse impact of their activities. The integration of sustainability can range from formulations of policy statements to integration into curricula and green campus activities (Lozano, et. al., 2013b; Sammalisto and Lindhqvist, 2008). Greening the operation on campus is one of the strategies in HEIs worldwide for attaining sustainability other than education and research (Cortese, 2003 Velazquez, et al.,2004). The growth and development of green and sustainable campuses not only curtail ecological marks but also promote a culture of inclusivity and social responsibility (Hawkins,2018). Higher education institutions contribute to environmental conservation through their commitments to developing sustainable campuses, as proved by many studies focusing on these efforts (Alshuwaikhat and Abubakar, 2008).

Vice Chancellor, Sri Ramachandra Institute of Higher Education and Research (DU) Porur, Chennai. E-mail: vc@sriramachandra.edu.in

Review of Literature on Sustainability in Higher Education

The pivotal role of higher education institutions in promoting sustainability has been widely documented. According to Leal Filho et al., 2019, successful sustainable campus initiatives often involve well-planned, ongoing assessment to measure the impact. A sustainable campus symbolises the integration of environmental science into all aspects and the best practices of sustainable development (Puspadi, et. al., 2016). Most of the universities across the world have shown their interest and contribution to implementing the sustainable campus concept Tiyarattanachai R., et al., 2016). A green campus minimises the environmental trail, ensuring economic possibility while developing a sense of sustainability among its investors (Velazquez, et. al., 2006).

In India, the NEP–2020 highlights the essentiality of sustainability in higher education, there is a huge call for incorporating environmental education into curricula and the preferment of green campuses (Government of India, 2020).

Essential Approaches for Developing a Sustainable Campus

To lessen their carbon impact, several universities are adopting renewable energy sources including wind and solar (Zhang, et. al., 2011). Integration of renewable energy through the installation of solar panels, and other renewable energy systems can help colleges generate clean energy on-site (PUPN Magazine,2024). HEIs can also motivate the reduction of single-use plastics and promote the use of reusable materials, this can be attained by comprehensive waste management techniques, including recycling and composting programmes. Similarly, HEIs can make promising contributions toward water conservation, transportation, and integrating environmental literacy among students through curriculum.

Sustainable architecture is the backbone of developing environmentally friendly campuses. The use of materials with lower environmental impact, along with designs enhancing the natural light and ventilation, contributes toward better quality of air and occupants' well-being, along with the conservation of energy (Kats, 2010). A sustainable campus requires a multidimensional approach encircling renewable energy, waste management, water conservation, green infrastructure, and community engagement (Shriberg, 2022).

Best Practices at SRIHER towards Sustainability

Sri Ramachandra Institute of Higher Education and Research is a well-known medical institution that has created a sustainable environment, making the campus friendly. The institution has laid its foundation by setting standards incorporating sustainable operations into curricula and community service. In connection with the world's need for the hour circumstances, SRIHER has implemented several energy-saving initiatives that have resulted in the reliance on non-renewable energy sources that have dramatically lowered and dropped electricity costs. The institution has replaced the lighting with LED lights, which consume less energy and possess a longer working span. The institution also has a well-planned waste management system. The disposal of waste and the recycling of waste materials are carried out by placing separate containers for collecting biodegradable, non-biodegradable, and hazardous wastes. Organic waste from the kitchen and the garden is composted and used as fertiliser for the green spaces around the campus.

The National Service Scheme programme of the Government of India functions intending to nurture the personality and character of the students through community service. SRIHER's NSS unit plays a significant role in promoting environmental awareness and sustainability. One such significant event that is actively marked is World Environment Day, observed annually on the 5th of June. Tree plantation is the key activity organised by the unit on Environment Day. Planting saplings helps fight climate change, improve air quality, and enhance biodiversity.

Besides, the unit conducts cleanliness drives to promote waste management and reduce littering on campus and in the surrounding areas, the unit organises Swachh Bharath Abhiyan which involves students' participation in clean public spaces, segregation of waste, and promotion of recycling, reducing the use of single-use plastics where students distribute cloth bags and encourage the community to adopt eco-friendly alternatives. The Swachh Bharat Mission (SBM) has played a key role in integrating waste management practices within educational institutions (MoHUA,2022). These collaborative projects allow students to participate in real-world sustainability enhancing their learning experiences while benefiting the community (Baker, et. al., 2014).

National Action Plan on Climate Change

The NAPCC outlines the strategy that states the adaptability to climate change and enhances the ecological sustainability of India's growth. India's National Action Plan on Climate Change emphasises green campus initiatives to help environmental sustainability (MoEFCC,2023). There are eight "National Missions" which form the core of the NAPCC. To list them they are the National Solar Mission, the National Mission for Enhanced Energy Efficiency, the National Mission on Sustainable Habitat, the National Water Mission, the National Mission for Sustaining the Himalayan Ecosystem, the Green India Mission, the National Mission for Sustainable Agriculture, the National Mission on Strategic Knowledge for Climate Change. All these focus on encouraging the understanding of climate change, adaptation and mitigation, energy efficiency, and natural resource conservation. The National Mission for a Green India presents that the Cabinet Committee on Economic Affairs approved a proposal of the Ministry of Environment and Forests for a GIM as a Central-sponsored Scheme. GIM has put "greening" in the context of climate change adaptation and mitigation.

SRIHER's Climate Action Plan

The institution has framed the climate action policy aiming at investing in national and global initiatives through mobilising the resources I channelised in reducing greenhouse gas emissions. This is not new to the institution, as it has contributed by developing a thick green plantation since its inception in 1985. Over the years, the institution has created committees to address the responsibilities for maintaining the campus's environment, health, and safety standards. The institution has been concerned with activating good practices on

energy conservation, biodiversity management, waste management, water management, sanitation and hygiene, and green belts on the campus for decades.

The institution has framed a policy to attain and divided the policy into two phases, the first being reducing emissions (2020-2024) and the second phase (2025-2029), thus driving SRIHER to take track of achieving a carbon-neutral campus. The mitigation strategies will cover the following things Inventory of carbon footprint and management, Building, energy systems infrastructure, Equipment purchasing, and waste management. Greenbelt management, Air Pollution Control, Education, Research and Community outreach. Flowchart of action plan is given in Figure 1.

Inventory of Carbon Footprint and Management

The first phase of eliminating was to make a thorough inventory and footprint of greenhouse gas from direct and indirect sources within the campus. This helped in identifying the gaps and allowed for the development policy and plan towards climate actions. This plan helped target controlling the emissions in parallel from both the direct and indirect sources.

Building, Energy Systems, and Infrastructure

As per the Phase II plan, the immediate focus was on building and energy systems. Use of energy-efficient cooling systems (VRV/VRF) installed in the new buildings. Installation of VRV systems intended to reduce energy consumption between 10 and 40 percent depending upon the application. The new building design allows natural light; thus the need for purchased energy was reduced. The ongoing efforts on focusing lighting retrofits continued in a phased manner, with energy-efficient lighting systems, such as the use of LED to replace the worn-out ones.

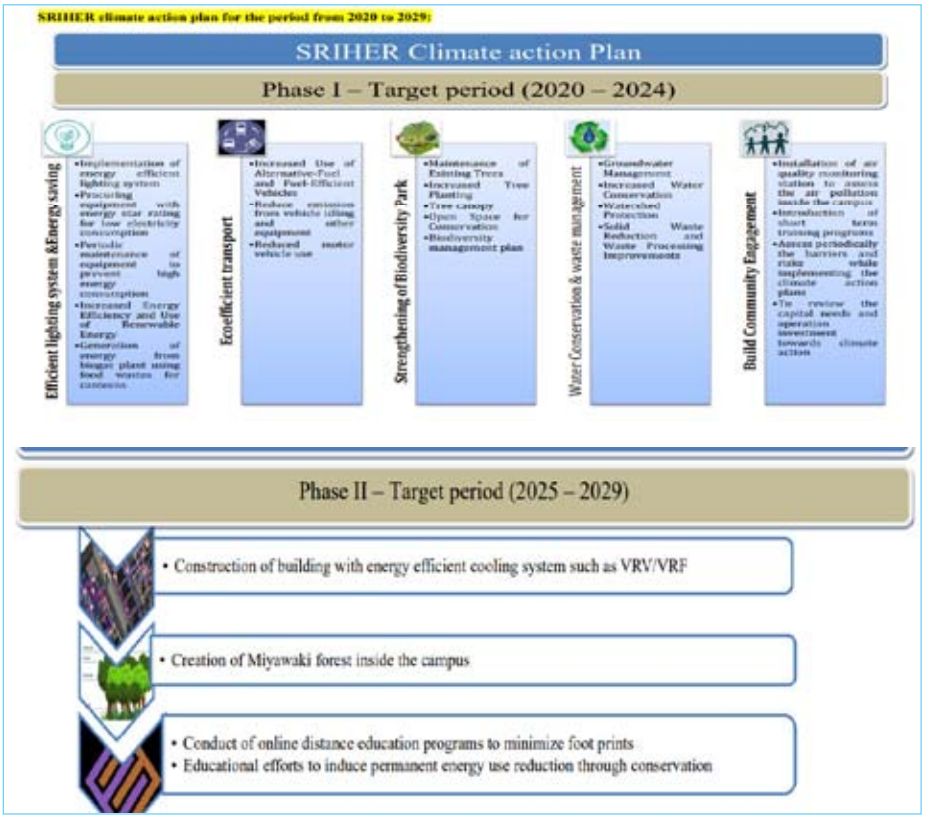
Equipment Purchasing

The ongoing use of energy-efficiency pumps in the wastewater treatment plant was scaled up when the existing motors elsewhere on the campus were worn out. Poor and improper maintenance of equipment will consume high electricity. The ongoing efforts of the institution in performing planned preventive maintenance of equipment are carried out for all types of equipment that use energy and are rectified early to prevent high energy consumption.

Transport and Commuting

The institution has a transportation system in place to facilitate pool travel, thereby reducing the individual-level carbon footprint. According to the feasibility, programmes are conducted online to minimise travel. The institution is located in a zone close to the bus stops and the bus depot where the commutation can cover public transportation. The institution encourages carpooling among the students, staff, and faculty members besides the existing system of public, and college transportation.

Figure-1: Flow Chart of SRIHER Climate Action Plan



Waste Management

Effective waste management comprises waste segregation, composting, and recycling programmes (Gupta & Rao,2022). All the wastes like biomedical, electrical electronic, solid, wastewater, and hazardous wastes are disposed of and discharged as per the local regulations. Installing a Biogas plant helps generate gas from food waste and distributes the energy to the Canteens for boiling water. The institution has a policy of separating wastes at the source and handled at the dedicated solid waste management facility. The recyclable wastes are handed over to the state Pollution Control Board authorised recyclers.

Water Management

Water conservation includes rainwater harvesting, wastewater treatment, and efficient plumbing systems (Sharma & Desai, 2023). SRIHER has a conventional wastewater treatment plant with a capacity to treat 2500KL per day, which aims to conserve the quality of the treated water as per the Tamil Nadu Pollution Control Board guidelines. The waste water is treated using sand and carbon filters, which again is chlorinated and treated using UV radiation before reuse. The cooling towers of the AC chiller plant and toilet flushing operations in the hostel consume around 1100KL per day. The balance water is preserved in the artificial pond, of 12.5 acres from where the pumping is done. The pond serves as a groundwater recharge system. The quality of the water is monitored periodically to provide safe water for drinking and utility purposes including trees and plantations (SRIHER, 2024).

Greenbelt Management

The esteemed institution is distinguished for having 53.7% of the green belt area on the campus. The institution has set up a Miyawaki forest on the campus. This green belt area increases every year through the tree plantation drive done on the Campus on Environment Day organised by SRCWA (Sri Ramachandra Centre for Women's Advancement) every year on 8th March in commemoration of the birth anniversary of Smt. Kamalam Ramaswamy Udayar, wife of the founder Chancellor. The institution is home to diverse fauna and flora. The environment serves as a habitat for migratory birds that help in pollination, and other related cycles of nature.

Air Pollution Control

The green belts not only reduce carbon dioxide but also reduce air pollution on the campus. 20-30 percent of air pollution caused by the highways in the vicinity is minimised within the campus.

Education, Research, and Community Outreach

Implementing sustainability into curricula and organising awareness programmes instills long-term eco-conscious behaviours (UGC, 2022). Following this SRIHER has made the Environmental Science course mandatory for the paramedical programmes. Integrated short-term programmes on climate change and actions with experiential learning provided to the students make them understand their active participation in social-related responsibilities. The institution not only continues the research training efforts in the country but also extends its services in Southeast Asian Countries' capacity building in Occupational and Environmental Health.

Barriers to Implementing a Sustainable Environment

Eco-Green Campus creation is a challenge, but still, an opportunity to contribute to and promote sustainability. The challenges include Financial Constraints, reluctance to transition, insufficient expertise, poor infrastructure, physical space limitations, policy, and regulations, monitoring sustainability, involvement of students, faculties, and staff, and environmental impact of new technologies. Addressing these challenges needs a well-planned holistic approach so that HEIs can become the place of ever receiving.

Discussion and Conclusion

The implementation of sustainable elements in higher education institutions is significantly dependent on commitments, policy support, and stakeholder involvement. Some universities have made commendable progress in incorporating renewable energy and green infrastructure, whereas some face challenges such as financial restraints, lack of awareness, and reluctance to change (Mukherjee, 2024). Still, a more holistic and standardised framework is essential to confirm widespread adoption.

Government policies like NAPCC and its various missions complement the strategies framed, yet their effectiveness depends on good, well-planned execution and constant monitoring. Besides,

collaboration between industries and academic institutions can quicken the change toward green campuses by nurturing innovation and rendering financial resources for large-scale sustainability (Verma, et. al., 2023). The participation of students, faculty members, and staff in driving this effort cannot be unheeded, as grassroots movements within the institution lead to a meaningful policy change.

To conclude, a comprehensive, multi-pronged step is essential for developing a sustainable campus. Moving forth, improved collaboration, raised funding, and strengthened institutional leadership will be the key to ascertaining that higher education campuses in India serve as models of environmental responsibility and sustainability.

References and Readings

1. Ahmed, G. Abo-Khalil (2024). Integrating Sustainability into Higher Education Challenges and Opportunities for Universities Worldwide, Heliyon, Volume 10, Issue 9, 2024, e29946, ISSN 2405-8440, *https://doi.org/10.1016/j.heliyon.e29946.* (https://www.sciencedirect.com/science/article/pii/S2405844024059772)
2. Lozano, R., et. al., (2013b) Declarations for Sustainability in Higher Education: Becoming Better Leaders, through Addressing the University System, *Journal of Cleaner Production*, 48, 10–19.
3. Sammalisto, K., and Lindhqvist, T., (2008). Integration of Sustainability in Higher Education: A Study with International Perspectives, *Innovative Higher Education*, 32, 221–233.
4. Cortese, A., D. (2003). "The Critical Role of Higher Education in Creating a Sustainable Future", Planning for Higher Education, Vol. 31, No. 3, pp. 15-22.
5. Velazquez, L., Munguia, N.,P., A. and Taddei, J. (2004). "A Sustainable University: What can the Matter be?", Environmental Management Sustainable Universities, Monterrey.
6. Hawkins Christopher. V. (2018). "Planning for City Sustainability: GreenWorks Orlando Case Study," In Brinkmann R., Garren S. J. *The Palgrave Handbook of Sustainability: Case Studies and Practical Solutions,* New York City, NY: Springer Publishing, 757–69.
7. Alshuwaikhat, H., M. and Abubakar, I. (2008). "An Integrated Approach to Achieving Campus Sustainability: Assessment of the Current Campus Environmental Management Practices", *Journal of Cleaner Production*, Vol. 16, pp. 1777-1785.
8. Leal, Filho, W. and Pallant, E. (2019). Dimensions of Sustainability in Higher Education, In *Encyclopedia of Sustainability in Higher Education*; Springer: Berlin/Heidelberg, Germany, pp. 408–414.
9. Puspadi, N., A., et. al. (2016) Comparison of Obstacles and Challenges in Implementing Green Campus Concepts at Itenas and Unpar. J. Reka Racana.2:1–13. doi: 10.26760/rekaracana.v2i2.23.
10. Tiyarattanachai, R., Hollmann N., M. (2016). Green Campus Initiative and Its Impacts on Quality of Life of Stakeholders in Green and Non-Green Campus Universities, Springer Plus. 5:84. doi: 10.1186/s40064-016-1697-4.
11. Xiaoling Zhang, Andrew Platten, Liyin Shen, (2011) Green property development practice in China: Costs and barriers, Building and Environment, Volume 46, Issue 11, Pages 2153-2160, ISSN 0360-1323, *https://doi.org/10.1016/j.buildenv.2011.04.031.*
12. Kats, G., Braman, J., and James, M., R. (2010). Greening Our Built World: Costs, Benefits, and Strategies.
13. Shriberg, M. (2002). Toward Sustainable Management: The University of Michigan Housing Division's Approach, *Journal of Cleaner Production*, 10, 41-45. *http://dx.doi.org/10.1016/S0959-6526(01)00021-X*
14. Ministry of Housing and Urban Affairs (MoHUA). (2022). *Swachh Bharat Mission Annual Report*.
15. Baker, S., Smith, T., and Johnson, M. (2014). *Sustainability and community engagement: A study of collaborative projects in higher education*. Journal of Environmental Education, 45(3), 189-203.
16. Ministry of Environment, Forest and Climate Change (MoEFCC). (2023). *National Action Plan on Climate Change and Green Campus Initiatives*.
17. Gupta, A., and Rao, M. (2022). *Sustainability in Higher Education: Challenges and Strategies,* Springer.
18. Mehta, R., Sharma, D., and Verma, K. (2022). Renewable Energy Implementation in Indian Universities, *Renewable Energy Review, 30*(1), 85-102.
19. Mukherjee, S. (2024). *India's Path to Sustainable Higher Education,* Cambridge University Press.
20. SRIHER (2024). Sustainable Water Management Practices at SRIHER, *SRIHER Environmental Reports*.
21. UGC (2022). *Curriculum Framework for Environmental Education*, University Grants Commission.
22. Verma, K., Sharma, D., and Mehta, R. (2023). Community Engagement in Sustainable Campus Development, *Journal of Higher Education Policy and Management, 37*(3), 200-215. ❑

Environmental Health and Ecosystem Vitality: A Case Study

Neelima Gupta*

Green campuses greatly enhance the growth and overall development of students and currently, sustainable university campuses have become a pressing concern worldwide. As institutions of higher learning, universities play a significant role in shaping the minds of future generations and promoting sustainable practices. According to NEP-2020, sustainable environments promote better learning environments for students. At this stage, it becomes imperative to understand the importance of sustainability in university campuses, the initiatives and programs of the government, what can be the key areas for sustainability in university campuses, best practices and initiatives adopted by universities, innovative solutions and technologies, collaborations and partnerships, green buildings and infrastructure, some examples of sustainable campuses in India and abroad, the challenges faced and the opportunities. In this context, the example of Dr. Harisingh Gour University (A Central University), Sagar has been taken to study the environmental health and ecosystem vitality in the university campus.

Importance of Sustainability in University Campuses

All universities consume significant resources, including energy, water and land, leading to substantial environmental footprint and impact. They have the responsibility to model sustainable behaviours and practices for their students, staff, and the broader community. Sustainable campuses provide hands-on learning experiences, research opportunities and chances to develop innovative solutions, thereby providing academic and research opportunities. Students increasingly expect their institutions to prioritize sustainability, and engaging them in sustainability efforts can foster a sense of community and shared responsibility.

If the campuses are sustainable, the universities can save costs in maintenance of the university and it results in enhanced reputation, improved student experience and increased property value of the institution.

* *Vice Chancellor, Dr. Harisingh Gour Sagar University, Sagar, Madhya Pradesh- 470003. E-mail: guptagrawal@rediffmail.com*

Cost Savings: Energy-efficient buildings, renewable energy sources, and reduced water consumption can lead to significant cost savings.

Enhanced Reputation: Sustainable campuses can enhance a university's reputation, attracting students, faculty, and staff who share sustainability values.

Improved Student Experience: Sustainable campuses can provide students with hands-on learning experiences, research opportunities, and a sense of community and shared responsibility.

Increased Property Value: Sustainable buildings and green spaces can increase property value and attract businesses and organizations that share sustainability values.

Initiatives and Programmes

National Assessment and Accreditation Council, University Grants Commission (UGC) and Ministry of Human Resource Development (MHRD) have taken initiatives to promote sustainable campuses in universities.

National Assessment and Accreditation Council (NAAC): NAAC has introduced a sustainability assessment framework to evaluate universities' environmental, social, and economic performance.

University Grants Commission (UGC) : UGC has launched initiatives like the "*Swachh Bharat Abhiyan*" and "*Unnat Bharat Abhiyan*" to promote cleanliness, sanitation, and sustainable development in universities.

Ministry of Human Resource Development (MHRD)*:* MHRD has introduced the "Smart Campus" initiative to promote the use of technology and innovation in universities.

Key areas for Sustainability in University Campuses

Energy Efficiency and Renewable Energy: Transitioning to renewable energy sources, improving energy efficiency, and reducing consumption.

Water Conservation: Implementing rainwater harvesting, greywater reuse, and efficient irrigation systems.

Waste Reduction and Management: Reducing waste generation, increasing recycling rates, and implementing composting programs.

Green Spaces and Biodiversity: Creating and maintaining green spaces, promoting biodiversity, and protecting ecosystems.

Sustainable Transportation: Encouraging the use of public transport, carpooling, cycling, and electric or hybrid vehicles.

Sustainable Food Systems: Promoting sustainable food production, reducing food waste, and supporting local and organic food systems.

Green Buildings and Infrastructure : Designing and constructing energy-efficient, sustainable buildings that incorporate green roofs, rain gardens, and other innovative features.

Best Practices and Initiatives

The universities can adopt the following best practices for developing sustainable campuses:

i. Conduct sustainability assessments and develop strategic plans.
ii. Establish sustainability offices or departments.
iii. Engage students, staff, and faculty in sustainability efforts.
iv. Develop and offer sustainability-focused courses and programs.
v. Partner with local communities and organizations to promote sustainability.
vi. Invest in renewable energy and energy-efficient technologies.
vii. Implement sustainable transportation options and promote alternative modes of transportation.
viii. Vegetated roofs and walls can reduce energy consumption, improve air quality, and provide habitats for wildlife.
ix. On-campus renewable energy systems can reduce dependence on fossil fuels and lower greenhouse gas emissions by using solar and wind power.
x. Collecting and storing rainwater for non-potable uses can reduce storm water runoff and decrease water consumption.
xi. Advanced technologies using smart grids and energy management systems can optimize energy use, predict energy demand, and detect energy waste.

By prioritizing sustainability, universities can reduce their environmental impact, promote social responsibility, and provide students with valuable learning experiences that prepare them for a sustainable future.

Innovative Solutions and Technologies

Innovative Solutions and Technologies are increasingly being adopted by universities to enhance sustainability.

Collaborations and Partnerships

Interdisciplinary Research: Collaborations between faculty, students, and staff from various disciplines can drive innovation and solve complex sustainability challenges.

Community Engagement: Partnerships with local communities, businesses, and organizations can promote sustainability, support economic development, and enhance quality of life.

Industry Partnerships: Collaborations with industry leaders can provide funding, expertise, and resources to support sustainability initiatives and research projects.

Green Buildings and Infrastructure

Green Building Certification*:* Many Indian universities are adopting green building certifications like LEED (Leadership in Energy and Environmental Design) and GRIHA (Green Rating for Integrated Habitat Assessment).

Solar Power: Universities like IIT Madras, IIM Bangalore, and Amrita Vishwa Vidyapeetham have installed solar power plants to reduce their carbon footprint.

Rainwater Harvesting: Universities like University of Delhi and TERI University have implemented rainwater harvesting systems to conserve water.

Sustainable Campuses

International

University of California, Berkeley: UC Berkeley has made significant strides in sustainability,

including reducing greenhouse gas emissions by 50% since 2008.

Harvard University: Harvard has set ambitious sustainability goals, including reducing greenhouse gas emissions by 50% by 2025 and achieving carbon neutrality by 2050.

University of British Columbia: UBC has implemented a range of sustainability initiatives, including a district energy system that uses waste heat to warm buildings.

These are just a few examples of the many exciting initiatives and innovations happening on university campuses around the world.

National

India has been actively promoting sustainable campuses, with many universities and institutions adopting eco-friendly practices and green technologies. Some notable examples are:

IIT Madras: IIT Madras has implemented various sustainable initiatives, including a 1 MW solar power plant, rainwater harvesting, and a green campus certification.

IIM Bangalore: IIM Bangalore has adopted sustainable practices like energy-efficient lighting, solar water heating, and waste management.

University of Delhi: The University of Delhi has implemented initiatives like solar power generation, rainwater harvesting, and a green campus certification.

Amrita Vishwa Vidyapeetham: Amrita Vishwa Vidyapeetham has been recognized as one of the greenest universities in India, with initiatives like solar power, rainwater harvesting, and organic farming.

TERI University: TERI University has implemented sustainable initiatives like energy-efficient buildings, solar power, and waste management.

Suzlon One Earth, Pune: This corporate campus is LEED platinum and GRIHA 5-star certified, with features like solar PV systems, rainwater harvesting, and energy-efficient lighting[1].

Patni (i-GATE) Knowledge Center, Noida: This building is LEED platinum certified and features a drip water irrigation system, passive cooling, and natural ventilation[1].

ITC Maurya Hotel, New Delhi: This hotel is LEED certified and features sustainable components like HVAC systems, thermal systems, and water management systems[1].

CII Godrej Green Business Centre, Hyderabad: This building is LEED platinum certified and features a passive cooling system with wind towers, artistic roof gardens, and rainwater harvesting.

MRCAS Campus: This campus has implemented sustainable initiatives like research on renewable energy, eco-friendly art projects, and campus-wide recycling programs.

These examples demonstrate the growing commitment to sustainability in Indian campuses and buildings.

Challenges and Opportunities

Funding and Resource Constraints: Securing funding and resources can be a significant challenge for sustainability initiatives.

Behavioral Change: Encouraging behavioral change among students, faculty, and staff can be difficult, but also presents an opportunity for education and engagement.

Infrastructure and Aging Buildings: Upgrading infrastructure and retrofitting aging buildings can be costly but also presents an opportunity for innovation and improvement.

Policy Support: Strong policy support from the government and regulatory bodies can help promote sustainability in Indian universities.

Case Study: Dr. Harisingh Gour University, Sagar (A Central University)

Dr. Harisingh Gour University, Sagar situated at 23.8259^{O}N, 78.7712^{O} is strongly committed to environment-friendly waste management. It advocates the conservation of resources, especially natural resources, to generate minimal waste and manage it from its inception to its final disposal. It segregates waste into solid, liquid and e-waste.

Solid Waste Management

The University has taken several important initiatives for waste management. Routine waste is collected daily in dustbins at different locations, which are emptied in movable containers and carts, segregated into different types of bio and non-bio degradable waste and subsequently treated

accordingly to reduce the adverse effects of waste on health, environment, or aesthetics of select areas adjoining the university campus. The university has a dedicated Health and Sanitation department, which looks after the work of cleaning and solid waste management. The university regularly organizes Swachata Abhiyaan where university teachers & staff members, officers, and students take active part in maintaining a clean campus. Initiatives have been taken to recycle biodegradable waste into manure.

Liquid Waste Management

The entire University is designed in such a way, that the waste liquid is collected through the water disposal line to the main disposal line and is finally disposed into soak pits. The University adheres to a strict protocol of liquid waste disposal in its laboratories. Any glassware used in the laboratory is rinsed with minimum water and the effluent is placed in the liquid waste container.

Biomedical Waste Management

Biomedical waste management is done through common biomedical waste facilities of Govt. Bundelkhand Medical College, Sagar as per biomedical waste management rules.

Routine sanitation works for dry waste are done through the team of internal and out sourced workers.

e-Waste Management

The old computers are upgraded to make them operational and are used in providing training to the employees and interns of the University. The e-wastes which are not usable are collected and stored in a place for further disposal. The University takes extreme care for disposing e-wastes and is in the process of installing e-waste bins at strategic locations within the campus.

Waste Recycling System

The University is in process of implementing waste recycling system to recycle the wastes produced from various departments. Under this initiative, waste materials will be converted into new materials and objects.

Hazardous Chemicals Management

Bio-hazardous wastes are aseptically disposed by the generating departments as per guidelines of regulating authorities. A separate and exclusive space is provided in different departments where hazardous chemicals are handled.

***Water Conservation Facilities Available in the Institution*:** Water conservation facilities available in the Institution are Rain water harvesting, Borewell /Open well recharge, Construction of tanks and bunds, Waste water recycling and Maintenance of water bodies and distribution system in the campus.

***Green Campus Initiatives*:** Green campus initiatives include Restricted entry of automobiles, Use of Bicycles/ Battery powered vehicles, Pedestrian Friendly pathways, Ban on use of Plastic, landscaping with trees and plants.

Quality audits on environment and energy are regularly undertaken by the Institution

The Practice: Environmental Health and Ecosystem Vitality

Objectives of the Practice

To create a "Clean and green" campus spreading the message about environmental care, environmental sustainability and biodiversity conservation.

- To promote the use of solar power, transfer the surplus power to grid to conserve energy and reduce electricity consumption, thereby contributing to National Sustainable Development goals.
- To monitor environmental practices by performing an internal green audit.

The Context

Dr. Harisingh Gour Vishwavidyalaya, Sagar, the oldest University of Madhya Pradesh has a large residential campus of 1312 acres. Situated on the hilly Patharia hills of Vindhya Range, the University is home to more than 8200 students from different parts of the country. The University can play a very important role in creating awareness on environmental care and protection in order to save it for the future generation.

The Practice

- Dr. Harisingh Gour Vishwavidyalaya, Sagar strives hard to protect the environment and promote environmental care measures spreading the message to all stake-holders.
- Environmental Awareness Week: An Environmental Awareness Week was celebrated by the University where environment friendly activities (tree-plantation, cleanliness drives, poster competitions, awareness programs)

were conducted in which the students actively participated.

- The Vice-Chancellor personally interacts with the students and publishes articles on "World Environment Day Towards Creating one Earth" to spread the message far and vide which attracts a wide audience.
- The relevant provisions of the Environment Protection Act, 1986 are implemented so that the wastes are disposed as per the prescribed guidelines.
- Differently coloured bins are placed across the campus and the wastes are disposed off effectively. The rainwater harvesting facilities have been expanded resulting in rise in the ground water level.
- Solar panels installed in the hostels generate electricity, conserve energy and reduce the amount paid for electricity.
- Green and clean campus is maintained by regular tree-plantation. The forest department and NGO's come forward in promoting this initiative.
- Waste Management: The sanitation department has a waste treatment plant where the wastes of the campus are collected and treated. An observatory report on University Waste Management has been prepared and the types of wastes (wastes from academic departments, non-academic departments, residential areas, public places, drainage water) have been categorized. A Scheme of Sustainable Waste Management (SSWM) has been designed (source reduction, reuse, recycle, repairing, composting, waste to energy, treatment, landfills).

To maintain environmental health and ecosystem vitality, the following initiatives are practiced:

- Support on the ground restoration project
- Making smart choices like buying only sustainable products and changing diets Raising voice in support of ecosystem conservation and restoration
- Save water
- Follow 3 'R' - Reduce, Reuse, Recycle Save electricity
- Promote plantation
- Formation of Environment clubs/Eco-clubs to conserve the environment
- Four NSS Wings continuously conduct cleanliness drives and other activities.

Evidence of Success

The University has a forest area of around 100 acres and is rich in sandalwood trees. The green campus is enriched with perennial plants. The botanical garden of the University (adjudged to be the richest by Botanical Survey of India) and the Medicinal garden (maintained by Pharmaceutical Sciences Department) are bio-assets for the University. The students are encouraged to plant saplings, adopt them and nurture them to grow into trees.

- The rainwater harvesting system has raised the groundwater level.
- The solar panels installed have reduced electricity consumption.

Green Audit Report

A 5 year of Green Audit Report has been prepared indigenously by the Department of Botany. The objectives of the audit are:

- To examine the current practices that can impact the environment, such as resource utilization, waste management, etc.
- To identify and analyze significant environmental issues.
- To set up goal, vision and mission for Green practices on the campus.
- To establish and implement Environmental Management in various departments.
- Continuous assessment for betterment in the performance of green practices and its evaluation.
- To prepare an Environmental Statement Report on green practices followed by different departments, support services and administrative building.

Outcomes of Green Audit

It helps in protecting the environment in and around the campus. It recognizes the cost-saving methods through waste minimization and energy conservation, it detects the prevailing and forthcoming complications, it empowers the organization to frame a better environmental performance and it portrays a good image of the university through its clean and green campus. The audit report also proposes methods for reducing the carbon footprints.

The plant diversity including 480 species are enlisted, sacred plants (57 species) associated to Tirthankaras (24 species) with Buddha's (29 species), plants mentioned in Quran (22 species) are listed in the Green Audit.

Other aspects included in the audit are:

- Plant-animal interaction
- Soil & Soil microflora
- Water & waste water audit
- Energy audit
- Solid waste audit
- e-waste management
- Ambient air-quality status audit
- Carbon sequestration and green cover audit
- Health and sensitization

Green Initiatives

Green initiatives undertaken by the University are :

- Mushroom cultivation
- Production of biochar
- Preparation of leaf compost
- Preparation of biosolid (animal manure)
- Plantation & nursery drive
- Environmental awareness program
- Handling social environmental issues
- Roof farming

The Environmental Management Plan (EMP) proposed protocol for environmental management.

- Introduction of Groasis Waterbox in gardens
- Bioconversion of garden waste through mushroom production
- Conversion of biomass of garden waste into biochar
- Artificial Intelligence in green Audit (AI-e-system)

Conclusion

Steps taken from the green audit to improve the campus:

i. Reducing carbon footprints: University makes efforts to dispose of the majority of waste by proper methods. Green computing, i.e. online payment systems, online circulars, and examination procedures help to reduce paper use and ultimately reduce carbon footprint.

ii. Reducing the use of one-time-use plastic bottles, cups, folders, pens, bouquets, decorative items to solve the problem of plastic pollution.

iii. Biodegradable waste is used efficiently for composting and vermicomposting.

iv. Installation of solar panels provides an ample amount of electricity.

v. The use of LED lamps is encouraged to save energy.

vi. A Continuous Counter Trench (CCT) has given good results on water percolation and filling up of lakes on campus. Rooftop rainwater harvesting has proved beneficial.

vii. Replacement of old taps in toilets is beneficial for saving water due to leakage.

viii. Use of RO drinking water in all departments, hostels, guesthouses, quarters, etc.

ix. Although the overall ambient air quality on the campus is good, nevertheless, the university addresses air quality issues arising due to developmental activities on the campus.

x. The sound level on the campus is good except due to some transportation and construction activities.

xi. E-waste and biomedical waste segregation, handling, and disposal are appropriately done as per the rules.

xii. Science departments follow the principles of Green Chemistry to reduce chemical wastes.

Problems Encountered and Resources Required

Environmental care is a sustained and continuous endeavour. As Sagar is an area of heavy rainfall, continuous weeding and maintaining the campus is cumbersome. Due to its vast area (1312 acres), a lot of manpower is required to maintain it. Moreover, the safety of sandalwood trees is also challenging. As the University is very old, the old buildings pose a problem for maintenance. In order to maintain such a huge campus, both manpower and financial resources are required so that the University may boost a still better healthy environment and a vitally active ecosystem. ❑

Creating Green and Sustainable Campus: Tumkur University Case-in-point

M Venkateshwarlu* and Nahida Zam Zam**

Man has adapted well to nature along with human settlements by forming colonies, which led to the agricultural, industrial, and prevailing information eras. The progress of mankind is multi-fold and the development of lifestyle has taken a front seat in the way (Karve, 2023). Civilization has led to an increase in globalization, the use of fossil fuels, a huge release of waste, alarming pollution, depletion of ozone, and so on, contributing a lot to degradation and decline in life on earth (Aliyu and Amadu, 2017).

The term "sustainability in higher education" was first used in the Stockholm Declaration, 1972 for bridging humanity and the environment to achieve environmental sustainability (Alshuwaikhat and Abubakar, 2008). Green and sustainable university campuses are campuses that have reduced their environmental impact and are committed to sustainability. These campuses may have programs to reduce waste, conserve water, and use renewable energy (Dawodu, et. al., 2022). Some of the examples of green and sustainable university campuses are

- University of California: Known for its green building projects, waste diversion programs, and renewable energy initiatives. It has a student farm where students learn sustainable growing practices and an Olive center that sells oil from olives grown on campus.
- American University: Got the gold rating from "Association for the Advancement of Sustainability in Higher Education (AASHE)".
- Environmental Campus Birkenfeld: Established in 1996, this campus in Southwest Germany is considered a "Zero Emission University campus".

Sustainable Initiatives on Environment, Energy, Water and Waste Management

Universities consume vast amounts of energy, water, and raw materials which generate a significant amount of waste ranging from laboratory chemicals to food waste in cafeterias at a substantial rate, contributing to the ecological footprint (Lin, et. al., 2013), (Abdelaal, et. al., 2019). Addressing these challenges requires a multi-pronged strategy that integrates sustainable infrastructure, renewable energy sources, waste management, and environmental education. Some of the worldwide Green campus initiatives are;

- Installing composting facilities for organic waste (Samadhan, 2024). This requires regular turning; Worm Farm; Waste Collection and Sorting; Moisture Level Maintenance; Harvesting Compost; and End-Use of Compost (Hu, 2020).
- Reducing single-use plastics: to reduce the plastic use, one can carry a reusable water bottle (India alone generates 26,000 tonnes of plastic waste every day) (Kikken, 2023); Carry a reusable coffee cup (India has used 23.2 billion paper cups in 2024 alone) (IMARC, 2024); Use paper bags, containers, and glass jars; No disposable plastic cutlery (consider carrying a spoon), Get the milk delivered than in plastic sachet (In Bengaluru alone 5.5 tons of milk and curd plastic packets collected daily for recycling in Mar 2022) (Saamuhika, 2022), Carry reusable shopping bags, Use microplastic-free tea Teabags, Give up gum, No Glitter use, No Balloons and other single-use plastic party decorations, Refuse disposable razors, Tampons and pads (India generates approx. 113000 tonnes of menstrual waste annually) (Staff, 2021).
- According to Indian standards, a typical household in India uses around 135 litres of water per person per day, with a significant portion of around 30 litres being used for toilet flushing alone.
- Implementing a rainwater harvesting system (Rainy Filters, 2025)
  i. 163 million people in India don't have access to safe drinking water.
  ii. 210 million people in India have no access to improved sanitation.
  iii. In India unsafe water is the reason for spreading 21% of communicable diseases.

** Vice Chancellor, Tumkur University, B H Road, Tumakuru, Karnataka-572103. E- mail:tumkuruniversityvc@gmail.com*
***Registrar, Tumkur University, B H Road, Tumakuru, Karnataka and Assistant Commissioner, Government of Karnataka-572103.*

iv. Each day, 500 underage children below 5 years in India die from diarrhea.

- Installing water-efficient landscaping
  i. It is estimated that the typical suburban lawn consumes 25,000 liters of water above and beyond rainwater each year (Vickers, 2001).
  ii. Sustaining air quality by enhancing classroom ventilation, using environment-friendly building materials, and encouraging planting and vegetation on campus (Resync, 2024).
- Implementing an overall water reuse system, including warding-off water quality, stopping water-loss, and enhancing water management techniques to boost the best use of water (Rao, et. al., 2024).

Review of Related Literature

A better public policy and doing all that is required to create a sustainable environment on a university campus is the need of the hour (Dovers and Hussey, 2013). Fresh water is necessary for agriculture, livestock, industries and all forms of life depend on it (Baron et al., 2002) and Rao et al., (2024) feels that it is a serious threat to the water and water sources due to population explosion, industrialization, urbanization, climate change, nature disasters, and overuse. Fresh water is the foundation for life and benefits to humans for drinking, irrigation, and industrial uses, for production of fish and waterfowl, transportation, and waste disposal (Jackson, et. al., 2001).

Sonetti, et. al., (2016) introduced a critical perspective on campus sustainability assessments (CSA), adoption of Green Metrics in the Politecnico di Torino, in Italy, and the Hokkaido University, In Japan by proposing a new CSA that encompasses clusters of homogeneous campus typologies. The sustainability management systems oriented to universities pay special attention to the use of energy resources, on-campus buildings; the social responsibility of the institution; and educational and research sustainability activities (Amaral et al., 2015). The 6-P framework of psychological needs, physical facilities, personal motivations, public perception, price mechanisms, and policies (Too & Bajracharya, 2015) helps to take practical steps towards building a sustainable campus. Implementation of circular economy (CE) strategies facilitates an approach to waste management (WM) in university campuses by mitigating negative environmental impacts and found no statistically significant differences in the generated biowaste (Jakimiuk, et. al., 2023) and the role of education in creating awareness about sustainable campus management and the green campus concept is highlighted by Rusli et al., (2023). Transitioning to a sustainable campus presents challenges such as financial constraints, resistance to change, and infrastructural limitations, the long-term benefits far outweigh the obstacles (Velenturf and Purnell, 2021).

Need for the Study

The world is experiencing fast-moving developments to increase the comfort for human beings. United Nations (UN) organisation has come out with 17 Sustainable Developmental Goals (SDGs) (Nations, 2015) in Sep 2015. Among these 17 goals, the fourth goal is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all; the fifth goal is to achieve gender equality and empower all women and girls; the sixth goal is to ensure availability and sustainable management of water and sanitation for all; the thirteenth goal is to take urgent action to combat climate change and its impacts; fourteenth goal to conserve and sustainably use water; and the fifteenth goal is to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss; are directly related to our higher education system and sustainable goals for building an environmentally friendly campus. Tumkur University is in the transition phase with the new campus of 240 acres allotted and 50% of the departments have already moved into the new campus. It is felt that the need for creating a Green and sustainable campus is the need of the hour. Hence, the present study is on creating a Green and sustainable campus in light of the 17 SDGs proposed by UNO. Objectives of the Study are to:

- To assess the possibilities of establishing an environmentally sustainable university campus
- To create a green and sustainable campus for Tumkur University.

Sustainability Initiatives at Tumkur University Campus

At Tumkur University, we are dedicated to implementing a robust sustainability framework that encompasses all aspects of campus life. Our initiatives include:

- The installation of solar panels;
- Waste segregation programs;
- Tree-planting drives with the support of Wipro initiative to develop and maintain local indigenous plantations;
- Integrating sustainability education into our academic curricula;
- Working towards achieving a carbon-neutral campus by adopting innovative technologies and fostering collaborations with sustainability experts.

Sustainability Initiatives Implemented in the Tumkur University Campus

- Renewable Energy Initiative
  i. TUT Rooftop Solar
  ii. TUT Hostel Rooftop Solar
- Wipro Initiatives
  i. Local Indigenous Plantation
- Plastic/ Smoking/ Litter Free Campus

Sustainability Initiatives and Future Plans for the Tumkur University Campus

- Water Conservation/ Harvesting
  i. Recycling Water (Primary, Secondary, and Tertiary Treatment)
  ii. Creating Water Bodies
  iii. Water Preservation Within the Campus
- Sustainability Initiatives
  i. Wind/ Turbine Energy
  ii. Campus Connectivity (use of non-motorized vehicles, bicycles)
- Medicinal Garden
- Green Fencing / Live Bamboo Fencing
- Biodiversity Farming
- Bio-Compost Management
  i. Waste Reduction
- Effective Utilisation of Alternative Resources

Conclusion

In an era marked by climate change, environmental degradation, and diminishing natural resources, the role of higher education institutions in fostering sustainability has never been more critical (Husic, 2024). The environmental challenges we face today necessitate a paradigm shift in the way universities operate. Traditional methods of campus management, which often result in high carbon footprints and resource depletion, must be reimagined to align with the principles of sustainability (Helmers, et. al., 2021). Green campuses not only reduce environmental impact but also create healthier learning environments, lower operational costs, and instill a culture of responsibility among students and faculty.

Universities are uniquely positioned in society as hubs of knowledge, research, and community engagement, making them well-equipped to lead the charge in sustainable development. Sitting at the helm of the university, this has to be strongly advocated for a comprehensive approach to creating green and sustainable campuses that serve as ecological responsibility and innovation models.

References and Readings

1. Abdelaal, A., H., McKay, G., and Mackey, H., R. (2019). Food Waste From A University Campus in the Middle East: Drivers, Composition, and Resource Recovery Potential, *Waste Management*, *98*, 14–20. *https://doi.org/10.1016/j.wasman.2019.08.007*
2. Aliyu, A., A., and Amadu, L. (2017). Urbanization, Cities, and Health: The Challenges to Nigeria – A Review, *Annals of African Medicine*, *16*(4), 149–158. *https://doi.org/10.4103/aam.aam_1_17*
3. Alshuwaikhat, H., M., and Abubakar, I. (2008). An Integrated Approach to Achieving Campus Sustainability: Assessment of the Current Campus Environmental Management Practices, *Journal of Cleaner Production*, *16*(16), 1777–1785. h*ttps://doi.org/10.1016/j.jclepro.2007.12.002*
4. Amaral, L., P., Martins, N., and Gouveia, J., B. (2015). Quest for a Sustainable University: A Review, *International Journal of Sustainability in Higher Education*, *16*(2), 155–172. h*ttps://doi.org/10.1108/IJSHE-02-2013-0017*
5. Baron, J., S., et. al., (2002). Meeting Ecological and Societal Needs for Freshwater, *Ecological Applications*, *12*(5), 1247–1260. *https://doi.org/10.1890/1051-0761(2002)012[1247:MEASNF]2.0.CO;2*

6. Dawodu, A., et. al., (2022). Campus Sustainability Research: Indicators and Dimensions to Consider for the Design and Assessment of a Sustainable Campus, *Heliyon*, *8*(12), e11864. *https://doi.org/10.1016/j.heliyon.2022.e11864*

7. Dovers, S., and Hussey, K. (2013). *Environment and Sustainability: A Policy Handbook,* Federation Press.

8. Helmers, E., Chang, C., C., and Dauwels, J. (2021). Carbon Footprinting of Universities Worldwide: Part I—Objective Comparison by Standardized Metrics, *Environmental Sciences Europe*, *33*(1), 30. *https://doi.org/10.1186/s12302-021-00454-6*

9. Hu, S. (2020). *Composting 101,* July 20. *https://Www.Nrdc.Org/Stories/Composting-101. https://www.nrdc.org/stories/composting-101*

10. Husic, D. W. (2024). Reframing Sustainability Initiatives in Higher Education, *Sustainable Earth Reviews*, *7*(1), 5. *https://doi.org/10.1186/s42055-024-00076-9*

11. IMARC, I. (2024). *India Paper Cups Market Size, Trends, Analysis, Report 2025-2033*. *https://www.imarcgroup.com/indian-paper-cups-market*

12. Jackson, R., B., et. al., (2001). Water in a Changing World, *Ecological Applications*, *11*(4), 1027–1045. *https://doi.org/10.1890/1051-0761(2001)011[1027:WIACW]2.0.CO;2*

13. Jakimiuk, A., et.al., (2023). Closing the Loop: A Case Study on Pathways for Promoting Sustainable Waste Management on University Campuses, *Science of The Total Environment*, *892*, 164349. *https://doi.org/10.1016/j.scitotenv.2023.164349*

14. Karve, P. (2023). Big-Historical Environmentalism for the 21st Century*, Journal of Big History*. *https://jche.journals.villanova.edu/index.php/JBH/article/view/2903*

15. Kikken, N. (2023). *India Generates 26,000 Tonnes of Plastic Waste Every Day, This is How We Reduce That Number. - CSIRO*. *https://www.csiro.au/en/news/all/articles/2023/december/circular-economy-roadmap-india*

16. Lin, C., S., K., et. al., (2013). Food Waste as a Valuable Resource for the Production of Chemicals, Materials and Fuels, Current Situation and Global Perspective, *Energy & Environmental Science*, *6*(2), 426–464. *https://doi.org/10.1039/C2EE23440H*

17. Nations, U. (2015). *Sustainable Development Goals: 17 Goals to Transform our World,* United Nations; United Nations. *https://www.un.org/en/exhibits/page/sdgs-17-goals-transform-world*

18. Rainy Filters, R. F. (2025). *Rainwater Harvesting in India*.

19. Rao, A., Laura, J., S., and Dhania, G. (2024). Chapter 4—Water Conservation for Environmental Sustainability. In M. H. Dehghani, R. R. Karri, I. Tyagi, & M. Scholz (Eds.), *Water, The Environment, and the Sustainable Development Goals* (pp. 85–106). Elsevier. *https://doi.org/10.1016/B978-0-443-15354-9.00012-8*

20. Resync, R. (2024). *Navigating Sustainability: Challenges Faced by University Campus Buildings | LinkedIn*. *https://www.linkedin.com/pulse/navigating-sustainability-challenges-faced-university-campus-7b2lc/*

21. Rusli, N., et. al., (2023). Roles of Education in Creating Awareness of Sustainability Campus Management for Green Campus Concept, *International Journal of Advanced Research in Education and Society*, *5*(4), Article 4. *https://myjms.mohe.gov.my/index.php/ijares/article/view/25278*

22. Saamuhika, S. (2022). *One Small Step, One Mighty Difference*.

23. Samadhan, S. (2024). *Organic Waste Compost*.

24. Sonetti, G., Lombardi, P., and Chelleri, L. (2016). True Green and Sustainable University Campuses? Toward a Clusters Approach, *Sustainability*, *8*(1), Article 1. *https://doi.org/10.3390/su8010083*

25. Staff, D., T., E. (2021). *India's Landfills add 113k Tonnes of Menstrual Waste Each Year: Report*, Down To Earth, June 3. *https://www.downtoearth.org.in/waste/india-s-landfills-add-113k-tonnes-of-menstrual-waste-each-year-report-77247*

26. Too, L., and Bajracharya, B. (2015). Sustainable Campus: Engaging the Community in Sustainability, *International Journal of Sustainability in Higher Education*, *16*(1), 57–71. *https://doi.org/10.1108/IJSHE-07-2013-0080*

27. Velenturf, A., P., M., and Purnell, P. (2021). Principles for a Sustainable Circular Economy, *Sustainable Production and Consumption*, *27*, 1437–1457. *https://doi.org/10.1016/j.spc.2021.02.018*

28. Vickers, A. (2001). *Handbook of Water Use and Conservation,* Waterplow Press.

❑

Universities as Catalysts for Sustainability: Gujarat Technological University's Green Campus Approach

Rajul K Gajjar*, Jignesh Aminb and Neelam Nathanic*****

Universities, as centres of learning and innovation, bear a significant responsibility in shaping a sustainable future. This paper proposes a comprehensive framework for developing green and sustainable campuses, addressing critical elements such as energy efficiency through solar power integration, LED fixtures, and smart automation systems, significantly reducing carbon emissions and operational costs; water conservation via rainwater harvesting and efficient plumbing; comprehensive waste management encompassing reduction, reuse, and recycling; preservation of natural resources through green landscaping and eco-friendly materials; promotion of sustainable transportation with cycling infrastructure and shuttle services; integration of sustainability and climate change education into curricula; and active community engagement in environmental initiatives. Recognizing the increasing urgency of sustainability within higher education, the paper examines the practical application of this framework through a detailed case study of Gujarat Technological University's (GTU) initiatives across its Lekawada and Chandkheda campuses. GTU's diverse programs, including solar installations, rainwater harvesting systems, waste segregation and composting, green mobility plans, and community outreach, provide valuable insights and best practices for other institutions. The case study showcases the tangible benefits, including a reduced carbon footprint, cost savings through resource optimization, enhanced environmental awareness among students and staff, and a positive impact on the surrounding community. Ultimately, this research aims to inspire and guide universities in creating environmentally responsible and sustainable learning environments that contribute to a more sustainable future for all.

*Vice Chancellor, Gujarat Technological University, Chandkheda Campus, Ahmedabad – 382424, Gujarat. E-mail: vc@gtu.ac.in

** Professor, School of Engineering and Technology, Gujarat Technological University, Chandkheda Campus, Ahmedabad – 382424, Gujarat. E-mail: prof_jignesh@gtu.edu.in.

***School of Applied Sciences and Technology, Gujarat Technological University, Chandkheda Campus, Ahmedabad – 382424, Gujarat. E-mail: ap_neelam@gtu.edu.in

Sustainable Development (SD) relies on effective communication, with Higher Education Institutions (HEIs) playing a crucial role in bridging scientific knowledge and practical application (de Andrade Guerra et al., 2018; Pereira Ribeiro et al., 2021). As centres of learning and innovation, HEIs are instrumental in fostering sustainability by integrating environmental, economic, and social considerations into their operations and curricula. Green Campus Initiatives (GCIs) are an essential strategy for promoting SD, as they focus on sustainable infrastructure, minimizing environmental impact, and educating students on sustainability principles (Alshuwaikhat & Abubakar, 2008; Patel & Patel, 2012). These initiatives align with the UN Sustainable Development Goals (SDGs) and require a holistic approach that integrates People, Places, and Processes to ensure sustainability is embedded within academic institutions at multiple levels (Freidenfelds et al., 2018; Hooi et al., 2012; Leal Filho et al., 2017). The Talloires Declaration provides a structured framework for integrating sustainability in HEIs, emphasizing leadership in policy implementation, the use of green technologies, transdisciplinary research, ecosystem conservation, and collaborative approaches. Universities serve as incubators for future leaders, equipping students with the necessary knowledge and skills to drive sustainable solutions in various fields (Lozano et al., 2013). By engaging students and faculty in sustainability initiatives, HEIs embed long-term institutional strategies that encourage responsible environmental behavior, empowering individuals to become change agents who advocate for sustainability in their professional and personal lives.

This paper explores the role of universities in advancing sustainability, focusing on Gujarat Technological University (GTU) and its initiatives at the Lekawada and Chandkheda campuses. GTU has implemented various sustainability measures, including solar power integration, rainwater harvesting, sustainable transportation, and waste management. The university also emphasizes upcycling, resource recovery, and efficient water and

energy use. Beyond infrastructure, GTU integrates sustainability into academic programs, research, and community outreach, ensuring students are equipped to address environmental challenges. Eco-friendly campus policies, student-led projects, and industry collaborations further reinforce its commitment to sustainability.

By embedding sustainability into its operations, GTU fosters environmental responsibility among students, faculty, and staff, setting an example for other institutions. These efforts contribute to a greener campus and inspire broader societal change by preparing future leaders to implement sustainable practices. Through continuous innovation, policy integration, and community engagement, GTU demonstrates how universities can drive sustainable development and ecological stewardship.

Advancing Energy Efficiency in University Campuses

Energy efficiency is essential for sustainable campus development, optimizing energy use while maintaining high standards. Universities must adopt efficiency-driven strategies to reduce environmental impact, lower costs, and minimize reliance on fossil fuels. Beyond reducing electricity consumption, energy-efficient campuses integrate smart infrastructure, renewable energy, and sustainable building practices. Since energy use correlates with carbon emissions, prioritizing efficiency helps mitigate climate change and promotes environmental sustainability.

Key Strategies for Energy Efficiency

Several measures can enhance energy efficiency on university campuses, including:

- Installing solar panels to harness renewable energy and reduce dependence on conventional power grids.
- Replacing traditional lighting with LED fixtures to lower energy consumption.
- Implementing sensor-based lighting and smart automation to optimize usage.
- Designing buildings to maximize natural daylight and minimize artificial lighting needs.
- Using energy-efficient equipment in laboratories, hostels, and administrative buildings to reduce power consumption.

Energy Efficiency Initiatives at GTU

Gujarat Technological University (GTU) has undertaken significant energy efficiency initiatives to establish environmentally sustainable campuses at Chandkheda and Lekawada.

- *Chandkheda Campus* has installed a 200 KW solar power system across its administrative and academic buildings, along with a 10 KW rooftop solar system at the Boys' Hostel. These systems collectively generate 25,000 units of electricity per month, reducing reliance on the traditional power grid and leading to huge amount of annual savings.
- *The Lekawada Campus*, currently under development, is planned with an integrated solar power generation system, LED lighting, sensor-based automation, and astronomic timers for streetlights. Additionally, it will feature low-loss distribution transformers designed as per Energy Conservation Building Code (ECBC) guidelines, further optimizing power distribution.

Through these initiatives, GTU exemplifies how universities can integrate energy-efficient solutions into their infrastructure, fostering an eco-conscious campus while reinforcing sustainability as a core academic and operational principle.

Rainwater Harvesting: Enhancing Water Conservation for a Sustainable Campus

Rainwater harvesting (RWH) is a fundamental strategy for water conservation in green and sustainable campuses. As universities expand, their water consumption increases due to academic, residential, and research activities, as well as landscaping and sanitation requirements. Implementing RWH systems helps reduce dependence on external water sources, replenishes groundwater reserves, and ensures long-term water security. By integrating rainwater collection, filtration, storage, and recharge systems, Universities can optimize water use while minimizing environmental impact.

Significance of Rainwater Harvesting in Universities

With increasing water demand, universities must adopt proactive measures to reduce wastage and enhance water self-sufficiency. RWH enables institutions to:

- **Collect and Store Rainwater:** Capturing runoff from rooftops and directing it into storage tanks for later use in irrigation, sanitation, and non-potable applications.
- **Recharge Groundwater:** Utilizing percolation wells and borewells to channel excess rainwater into underground reservoirs, helping to maintain and restore groundwater levels.
- **Reduce Water Scarcity:** Less reliance on municipal water supplies and borewell extraction leads to long-term water availability.
- **Lower Operational Costs:** Reducing energy consumption for water extraction translates into significant cost savings for institutions.
- **Improve Environmental Sustainability:** Effective RWH minimizes runoff, prevents urban flooding, and enhances water conservation efforts on campus.

Best Practices in Rainwater Harvesting

Several universities worldwide have implemented rainwater harvesting to promote water conservation.

University of Melbourne integrates stormwater harvesting with green infrastructure to enhance urban water management and landscape irrigation.

Duke University in the United States utilizes a campus-wide stormwater management system that collects and reuses rainwater for cooling and irrigation. (Source)

These examples demonstrate that rainwater harvesting is a globally recognized practice for achieving long-term sustainability goals in higher education institutions.

GTU Rainwater Harvesting Initiatives

Gujarat Technological University (GTU) has implemented comprehensive RWH systems across its campuses to support water conservation and improve groundwater recharge.

Chandkheda Campus - The administrative building has an RWH system covering 1,125 sqm, collecting 374,000 liters of rainwater annually. This water is stored in two 5,000-liter tanks and gradually percolated into borewells. The Boys' Hostel utilizes a 650 sqm terrace for rainwater harvesting, accumulating 325,000 liters per year for groundwater recharge. Three recharge wells, each 150 meters deep, help percolate 2 million liters of rainwater annually. This reduces water scarcity and minimizes energy consumption for water extraction. The 23.11-acre campus consists of 20% built-up area and 80% open space, allowing logged rainwater during the monsoon season to naturally infiltrate the subsoil through recharge wells. This process raises the groundwater table, thereby decreasing the energy required for water pumping and leading to substantial electricity savings.

Lekawada Campus is also designed with 52 percolation wells, recharging more than 60% of groundwater, ensuring long-term water sustainability.

By implementing these initiatives, GTU actively contributes to water conservation, reduces its environmental footprint, and promotes sustainable resource management. The integration of rainwater harvesting not only secures water availability for future generations but also aligns with global sustainability goals.

Efficient Waste Disposal and Recycling

Effective waste management is a crucial aspect of building a sustainable campus. Universities generate a significant amount of waste, including organic, recyclable, hazardous, and electronic waste. Implementing a structured waste management system ensures proper disposal, promotes recycling, minimizes landfill contributions, and supports environmental conservation. By integrating waste reduction strategies, universities not only uphold their responsibility toward sustainability but also educate students and staff on responsible consumption and disposal practices.

Significance of Sustainable Waste Management in Universities

Higher education institutions must adopt a multi-pronged waste management approach that focuses on:

- ***Segregation at Source*****:** Ensuring waste is classified into biodegradable, recyclable, and hazardous categories at the point of disposal.
- ***Composting and Organic Waste Recycling*****:** Converting food and garden waste into compost for campus landscaping and agricultural use.
- ***Plastic and E-Waste Recycling*****:** Establishing collection points for plastic waste and electronic

items, ensuring they are processed through certified recyclers.

- ***Biohazard Waste Management*:** Proper disposal of biomedical waste, such as laboratory chemicals and biological samples, to prevent environmental contamination.
- ***Encouraging Waste Reduction*:** Promoting reusable materials, digital documentation, and eco-friendly alternatives to single-use plastics

Global Best Practices in University Waste Management

Several leading universities have implemented effective waste management programs:

- **Massachusetts Institute of Technology (MIT), USA**, operates a zero-waste program that includes composting, recycling, and hazardous waste treatment.
- **The University of British Columbia (UBC), Canada**, has a closed-loop composting system that processes food waste from dining halls and returns it as compost for campus gardens.
- **The Indian Institute of Science (IISc), Bangalore**, has a decentralized waste management system that includes organic waste composting and e-waste recycling.

These initiatives highlight the importance of a well-structured waste management system in achieving long-term sustainability goals.

GTU Waste Management Initiatives

Gujarat Technological University (GTU) has implemented a structured waste management system at its campuses to ensure responsible waste disposal and environmental protection. GTU has received the **"**District Green Champions Award**"** for its meticulous waste management and sustainability initiatives.

- ***Segregation and Recycling***
  - Waste bins are strategically placed across campus for organic, recyclable, and non-recyclable waste collection.
  - A structured plastic waste collection and recycling initiative ensures minimal plastic footprint.
  - Paper recycling programs encourage reduced paper consumption and digital documentation.
- ***Composting and Organic Waste Management***
  - Attempts are under consideration for food and garden waste conversion into compost to be reused for campus greenery and landscaping.
- ***Biomedical and Hazardous Waste Management***
  - GTU ensures the proper disposal of biohazardous waste, including laboratory chemicals and biological waste, through an authorized waste disposal agency.
  - **E. coli waste management services** regularly collect and dispose of biohazardous waste from laboratories on a weekly basis, ensuring compliance with environmental and health safety regulations.
- ***Lekawada Campus Sustainable Waste Initiatives***
  - The upcoming campus will incorporate a dedicated waste management facility, including composting pits, waste segregation stations, and an e-waste recycling unit.
  - Smart waste disposal systems, including sensor-based waste bins, will be installed to improve collection efficiency.

Natural Resource Conservation: Sustainable Practices for Campus Development

As institutions dedicated to education, research, and innovation, universities play a pivotal role in the conservation of natural resources. With growing environmental concerns, higher education institutions must adopt strategies that minimize resource depletion while fostering a culture of sustainability. Conservation efforts not only benefit the environment but also ensure that future generations inherit a habitable planet.

Key Strategies for Natural Resource Conservation

To build a sustainable campus, universities must integrate conservation practices into infrastructure, operations, and student engagement. Some key strategies include:

- ***Green Landscaping***: Planting native and drought-resistant trees to reduce water consumption while enhancing biodiversity.
- ***Water-Efficient Fixtures*:** Installing low-flow taps, dual-flush toilets, and sensor-based water dispensers to optimize water usage.
- ***Eco-Friendly Infrastructure***: Constructing buildings with sustainable materials, energy-efficient designs, and proper ventilation to reduce environmental impact.

- ***Digital Documentation*:** Encouraging paperless operations and minimizing the use of printed materials to conserve trees and reduce waste.
- ***Sustainable Mobility*:** Promoting cycling, shuttle services, and pedestrian-friendly infrastructure to reduce reliance on fossil fuels.

GTU's Natural Resource Conservation Initiatives

Gujarat Technological University (GTU) has adopted a structured approach to natural resource conservation across its campuses, integrating green technologies and sustainable practices.

- ***Optimized Land Use and Green Cover***
  - GTU Chandkheda Campus spans 23.11 acres (93,500 sqm), with 80% open space dedicated to green areas and ecological preservation.
  - Lekawada Campus is designed with 84% open space, ensuring minimal disruption to natural resources and promoting ecological balance.
- ***Green Building and Sustainable Infrastructure***
  - The Lekawada campus is planned and constructed following the Green Rating for Integrated Habitat Assessment (GRIHA) guidelines, as recommended by the Ministry of New & Renewable Energy, Govt. of India.
  - The campus incorporates natural ventilation, energy-efficient lighting, and eco-friendly construction materials to reduce its carbon footprint.
- ***Sustainable Water Management***
  - Rainwater harvesting systems at GTU campuses ensure water conservation and groundwater recharge.
  - The use of sensor-based water dispensers, dual-flush toilets, and water-efficient irrigation systems helps minimize water wastage.
- ***Eco-Friendly Transportation and Mobility***
  - GTU encourages cycling, electric vehicle usage, and shuttle services to promote green mobility solutions and reduce carbon emissions.

Green Mobility on Campus

Sustainable transportation is a critical component of an environmentally responsible university campus. With thousands of students, faculty, and staff commuting daily, universities must implement eco-friendly mobility solutions to reduce carbon emissions, minimize energy consumption, and promote sustainable urban planning. A well-structured transportation system not only enhances mobility but also improves air quality, reduces traffic congestion, and promotes a healthier lifestyle among campus residents.

Key Strategies for Sustainable Transportation

To achieve a sustainable and efficient campus mobility plan, universities should adopt the following approaches:

- ***Cycling Infrastructure*:** Developing dedicated cycling lanes, bike-sharing programs, and secure bike parking to encourage non-motorized transport.
- ***Pedestrian-Friendly Pathways:*** Designing safe, accessible, and green pedestrian routes to reduce the need for motorized travel within the campus.
- ***Electric Vehicles (EVs) & Shuttle Services:*** Introducing EV fleets, electric buses, and campus shuttles to provide low-carbon commuting options.
- ***Public Transit Integration*:** Partnering with local transport agencies to offer subsidized travel passes for students and staff, encouraging the use of public transportation.
- ***Smart Transportation Planning*:** Implementing traffic management solutions, ride-sharing platforms, and digital scheduling tools to optimize campus mobility

Global Best Practices in Sustainable Campus Transportation

- University of California, Davis, USA is known for its extensive bike-friendly infrastructure, with over 20,000 cyclists commuting daily.
- National University of Singapore (NUS), Singapore, has integrated an autonomous electric shuttle system and a comprehensive public transit connectivity plan.

GTU's Sustainable Transportation Initiatives

Gujarat Technological University (GTU) has taken significant steps to promote sustainable transportation and reduce its environmental impact.

- ***Green Mobility Plan at Lekawada Campus***

- Dedicated cycling networks to encourage non-motorized commuting.
- Campus shuttle services to provide eco-friendly transit options for students and staff.
- Pedestrian-friendly pathways to reduce vehicle dependency and enhance safety.

- ***Future Plans for Sustainable Commuting:***
  - Electric vehicle charging stations to support EV adoption among faculty and students.
  - Public transport partnerships to facilitate seamless connectivity between GTU campuses and city centers.
  - Shared mobility services, including carpooling and ride-hailing options, to optimize transport efficiency.

Integrating Sustainability and Climate Change into the Curriculum

Sustainability and climate change represent some of the most pressing global challenges of the 21st century. Universities play a pivotal role in equipping students with the knowledge and skills necessary to address these challenges by embedding sustainability principles into academic curricula, research endeavors, and campus initiatives. By integrating climate education across disciplines, institutions can foster a generation of responsible global citizens, innovative problem-solvers, and sustainability advocates.

Key Strategies for Sustainability Education

To prepare students for the complexities of climate change and environmental stewardship, universities should adopt a multidisciplinary approach that combines theoretical knowledge, practical applications, and research-driven solutions.

- ***Curriculum Integration*:** Embedding sustainability-related courses such as environmental science, sustainable engineering, climate policy, and renewable energy across various academic programs.
- ***Experiential Learning*:** Encouraging hands-on projects, field research, and internships that focus on real-world sustainability solutions, such as waste management, green building design, and energy conservation.
- ***Interdisciplinary Research*:** Promoting collaborative research on climate resilience, carbon footprint reduction, and sustainable technologies through dedicated research centers and funding initiatives.
- ***Community Engagement & Awareness*:** Organizing workshops, seminars, and outreach programs to engage students, faculty, and the community in sustainability-driven discussions and actions.
- ***Green Campus Initiatives*:** Aligning academic learning with campus sustainability programs, such as solar energy adoption, water conservation projects, and biodiversity preservation efforts.

GTU's Sustainability-Focused Educational Initiatives

Gujarat Technological University (GTU) has been at the forefront of sustainability education, integrating climate-focused learning into its curriculum and research activities.

- ***Curriculum Enhancement***
  - GTU actively promotes sustainability education by incorporating renewable energy, environmental management, and climate change subjects into various undergraduate and postgraduate programs.
  - Students across disciplines are encouraged to explore sustainability concepts in engineering, management, and applied sciences.
- ***Hands-on Learning & Research***
  - The university fosters practical learning experiences by involving students in solar energy applications, water conservation projects, and sustainable infrastructure development.
  - Research on sustainability innovations, energy efficiency, and waste reduction strategies is encouraged.

GTU is at the forefront of sustainability-driven research, actively developing innovative solutions that align with the Sustainable Development Goals (SDGs). The university focuses on key areas such as sustainable agriculture, water conservation, renewable energy, waste management, and green mobility. Studies on natural farming techniques and microbiome-based soil health assessments promote eco-friendly agriculture, while phage isolation for antimicrobial resistance (AMR) mitigation supports public health and biotechnology. Water

conservation initiatives, including rainwater harvesting and wastewater treatment technologies, enhance resource efficiency, while investments in solar power integration and energy-efficient infrastructure significantly reduce the campus's carbon footprint.

GTU also advances waste management and circular economy solutions, such as upcycling and biodegradable material development, minimizing landfill waste. Research on electric vehicle (EV) infrastructure and smart transportation enhances sustainable urban mobility. Digital innovations like AI-driven environmental monitoring and blockchain-based sustainability tracking improve data-driven sustainability planning. A prime example of bridging theory with practice is the Paludarium learning model, allowing students to study ecosystem interactions, biodiversity conservation, and climate adaptation.

The university's structured approach is reflected in the number of projects dedicated to each sustainability focus area, reinforcing its commitment to research and applied learning (Table 1).

Table-1 Projects Dedicated to Each Sustainability Focus Area

Sustainability Focus Area	No. of Research Projects
Energy Efficiency & Renewable Energy	12
Water Conservation & Management	8
Waste Management & Circular Economy	10
Sustainable Agriculture & Biodiversity	9
Green Transportation & Smart Mobility	7
Digital & Smart Sustainability Solutions	11

By embedding sustainability principles into academic programs and hands-on training in renewable energy, waste recycling, and green infrastructure, GTU equips students with practical skills for real-world challenges. These initiatives create long-term ecological impact, ensuring scalable, innovative solutions for a greener future. Through continuous research, technological advancements, and sustainability-driven education, GTU remains a leading institution in sustainable development and environmental stewardship.

Paludarium: A Unique Learning Model for Sustainability and Innovation

As part of its commitment to sustainability and hands-on learning, Gujarat Technological University (GTU) has established the first-ever paludarium in a university setting in Gujarat—a groundbreaking initiative that blends real-time ecosystem observation with academic research and environmental education. This unique setup provides students and researchers with an unparalleled opportunity to study semi-aquatic ecosystems, biodiversity conservation, and sustainable habitat design in a controlled yet naturalistic environment.

A paludarium (Fig-1) is a hybrid vivarium that integrates terrestrial and aquatic environments, simulating wetlands, marshes, and mangrove ecosystems. It supports diverse life forms, including amphibians, reptiles, fish, and aquatic plants, making it an ideal model for understanding ecological interactions and sustainable ecosystem management.

Overall, the establishment of a green campus represents a holistic approach to sustainability that goes beyond energy-efficient buildings and water conservation. It embodies the integration of eco-friendly practices across various aspects of university life, from sustainable transportation systems to waste management, and even the innovative use of green technologies like solar power and rainwater harvesting. By embracing sustainability within its infrastructure and curriculum, a green campus not only minimizes its environmental footprint but also fosters a culture of responsibility and awareness among students, staff, and faculty. These initiatives help create an academic environment where learning is enhanced through practical, real-world sustainability applications, shaping future leaders equipped to address global environmental challenges.

Future Perspectives

The future of green campuses looks promising as institutions continue to innovate in response to environmental and climate challenges. Future goals may include expanding green building certifications, increasing renewable energy installations, and adopting circular economy principles for waste management. Green campuses may also explore advanced smart technologies

Fig-1: Paludarium

to monitor and optimize energy and water use, creating more efficient, sustainable environments. Beyond physical infrastructure, there will likely be a growing emphasis on community engagement through sustainability programs that empower students and local communities to become active participants in climate action. As campuses evolve into living laboratories for sustainability, they will play a pivotal role in shaping environmentally conscious citizens and leaders who are equipped to tackle pressing ecological issues in a rapidly changing world.

References and Readings

1. Alshuwaikhat, H., M., and Abubakar, I. (2008). An Integrated Approach to Achieving Campus Sustainability: Assessment of the Current Campus Environmental Management Practices, *Journal of Cleaner Production*, *16*(16), 1777–1785. *https://doi.org/10.1016/j.jclepro.2007.12.002*

2. de Andrade Guerra, J., B., S., O., et al. (2018). A Proposal of a Balanced Scorecard for an Environmental Education Program at Universities, *Journal of Cleaner Production*, *172*, 1674–1690. *https://doi.org/10.1016/j.jclepro.2016.11.179*

3. Freidenfelds, D., Kalnins, S., N., and Gusca, J. (2018). What does Environmentally Sustainable Higher Education Institution Mean? *Energy Procedia*, *147*, 42–47. *https://doi.org/10.1016/j.egypro.2018.07.031*

4. Hooi, K., K., Hassan, F., and Mat, M., C. (2012). An Exploratory Study of Readiness and Development of Green University Framework in Malaysia, *Procedia - Social and Behavioral Sciences*, *50*, 525–536. *https://doi.org/10.1016/j.sbspro.2012.08.056*

5. Leal Filho, W., et al., (2017). IdentifyingandovercomingObstaclestotheImplementation of Sustainable Development at Universities, *Journal of Integrative Environmental Sciences*, *14*(1), 93–108. *https://doi.org/10.1080/1943815X.2017.1362007*

6. Lozano, R., et al., (2013). Declarations for Sustainability in Higher Education: Becoming Better Leaders, through Addressing The University System, *Journal of Cleaner Production*, *48*, 10–19. *https://doi.org/10.1016/j.jclepro.2011.10.006*

7. Patel, B., and Patel, P. (2012). Sustainable Campus of Claris Lifesciences through Green Initiatives, *Renewable and Sustainable Energy Reviews*, *16*(7), 4901–4907. *https://doi.org/10.1016/j.rser.2012.03.062*

8. Pereira Ribeiro, J., M., et al., (2021). Green Campus Initiatives as Sustainable Development Dissemination at Higher Education Institutions: Students' Perceptions, *Journal of Cleaner Production*, *312*, 127671. *https://doi.org/10.1016/J.JCLEPRO.2021.127671* ❑

To Our Readers

Knowledgeable and perceptive as they are, our contributors must not necessarily be allowed to have the last word. It is for you, the readers, to join issues with them. Our columns are as much open to you as to our contributors. Your communications should, however, be brief and to the point.

Technology for a Change in Higher Education: A New Age Voyage

Vijayakumar Manavalan* and Aswini Dutt Raghavendra**

Technology integrated into Higher Education has revolutionized the teaching-learning assessment processes involved. The innovative and flexible digital environment has effectively impacted all forms of education. The paradigm shift from the traditional mode of instruction to the digital /hybrid mode has had a more significant impact across the world. The increased accessibility is the efficiency of digital tools, and E-learning modules are now a part of the Higher Education system.

Following the COVID-19 pandemic, technological integrations have enhanced the learner's educational experience, interconnecting with multiple resources and establishing academic collaborations resulting in globally networked learning environments. Various strategies need to be adopted in establishing digital-friendly curricular transactions in resource mobilization, customization, validation, implementation, faculty training, periodic review, and overcoming obstacles for its effectiveness.

This article explains how digital technology has contributed to educational outcomes, the challenges involved, and the adaptation of Higher Education Institutions (HEIs) to implement the strategies effectively.

Transition of Technology Use in Education

The history of technology entry in higher education institutions dates back to the early 20th century when radio broadcasts were used for distance learning (Saettler, 1990), overhead projectors in 1930, personal computers in 1930, the internet in 1980, videotapes in 1950, PLATO (Programmed Logic for Automatic Teaching Operations), computer assistance instructions in 1960, and Learning Management System (LMS) in 1990. (Weller, 2018)

Role of COVID-19 in Digitization of Higher Education

Following the COVID-19 pandemic, technological advancements have accelerated the utilization of technology even in remote areas, training the teaching faculty and equipping institutions worldwide to invest in supporting and developing digital infrastructure and essential digital education tools (Ngoc, et. al., 2025). Establishing a virtual culture for Universities, setting up Information and Communication Technology Cells/Centers, enhancing multimedia production, development of digital modules, recognition for Massive Open Online Courses (MOOC), restructuring the course structure with credit weightage (Talagala and Talagala, 2021), changes in evaluation methods and support system (Mishra, et. al., 2020; Krishnamurthy, 2020) have become the norms in higher educational arena.

The pandemic has changed the educational expectations of students and teachers. The importance of adopting and updating with technology through various models of virtual learning, engagement, and shifting of focuses on necessary skills led to the restructuring of the teaching-learning and assessment methods (Mishra, et. al., 2020). Academic collaborations and partnerships with industry have played an essential role in strengthening the concept of community of practice.

The Higher Educational Institutions are collaborating with ED-Tech companies for digital transformation through customization by developing advanced, effective methods based on the needs and requirements of various stakeholders. The transformative change in educational processes is in the production of new knowledge development in virtual reality (VR), augmented reality (AR), gamification, animated video generation, and big data analytics.

Digital Initiatives of UGC and Ministry of Education during COVID-19

e-GyanKosh (National Digital Repository), *Gyandarshan, Gyandhara* (internet audio counseling service), SWAYAM (Study Webs of Active Learning for Young Aspiring Minds)-MOOC (Ministry of Education, Government of India, n.d.), *e-Adhyayan* (e-Books), National Digital Library (National Digital Library of India [NDLI], n.d.), *e-Yantra,* FOSSEE -Free and Open Source Software for Education, *Shodhganga*, *e-ShodhSindhu*, *SAKSHAT*, *VIDWAN*, etc. (Xu & Shang, 2025; Sudrajat, 2025) are being

** Vice Chancellor, Professor of Surgical Oncology, Yenepoya (Deemed to be University), Mangalore, Karnataka. E-mail: vicechancellor@yenepoya.edu.in*

***Dean, Academics, Professor of Physiology, Yenepoya (Deemed to be University), Mangalore, Karnataka. E-mail: deanofacademics@yenepoya.edu.in*

used by the HEIs, which have strengthened the institutions in implementing the digital services.

Institutions have adopted technology through total campus management software. Starting from calling online applications, conducting online entrance examinations, online admissions, virtual campus tours, student admission, faculty recruitment, providing campus facilities, the conduct of online classes, webinars, use of learning management systems, technology-assisted teaching learning portals, digital resources in curricular transactions, learning outcomes attainment, feedback collection and analysis, career counseling, e-portfolios, and stakeholders connect (students, teachers, professionals, alumni, employers, society), technology is being used effectively.

With the advancement of Artificial Intelligence (AI) in education, scenarios have enhanced student engagement by providing immersive learning experiences.

Modalities of Integrated Technology in Higher Education

Various modalities need to be adopted in the digital learning approach, like problem-solving exercises, flipped learning approaches, online learning, distance learning, blended learning, and collaborative learning. Digitalized learning can include the Learning Management System (LMS), digital resources, courseware, synchronous and asynchronous content, digital assistance simulators (AR/VR), smart classrooms, video recording, lecture capturing facilities, mobile learning, and ubiquitous learning.

Learning Management System

The learning management system provides a platform for delivering the course material, sharing relevant resources and information with the learner, involving learners in discussion forums, accessing their day-to-day learning, conducting formative assessments, providing constructive feedback, and monitoring the overall academic progression of the students is widely used by the Institutions at different levels leading to the creations of smart classrooms and personalized learning experience. The interaction facility provided in the LMS through quizzes, web links, blogs, reflections, calendars, workspaces, news, and events through the cloud-based learning management systems provides seamless access to relevant educational resources from any location, and students can access them at any time, making them flexible and convenient options for the learners. (Mtebe, 2015).

Artificial Intelligence

AI-powered tools through personalized learning paths and AI-driven assessment tools are personalizing the learning experience through various adaptive learning platforms in which the content is customized to the needs of the students. Immediate response to the student query and predictive analysis can quickly identify the students who are not performing well in academics and identify such groups of students to take appropriate preventive measures to avoid dropping out. The targeted feedback recommendations provided to the learners and the resources shared with them to outsmart their learning abilities are targeting the advanced learners to platform effectively with their capabilities and interests. (Hetmanenko, et. al., 2025; Bulatovic, 2025)

Virtual and Augmented Reality

Virtual Reality and Augmented Reality enhance the learners' educational experiences by creating immersive simulating environments. The 21st century has seen unprecedented growth and VR and AR. The modalities assist students in visualizing complex concepts, interacting with 3D modules, and acquiring engaging and interactive real-life experiences. Combining physical and virtual information strengthens augmented reality, enhancing the stimulatory procedures for better learning outcomes (Bulatovic, 2025). VR and AR simulators provide opportunities for the learner to acquire the requisite skills and procedures under different controlled and risk-free environments and levels of difficulty without involving ethical issues. (Nannim, et. al., 2025).

Learning Analytics

Learning Analytics helps the teachers review the learners' performance, support the needs of the students, modify teaching learning modalities, and provide them with customized support. Tracking student attendance, analysis of their involvement and assisting the slow performers help the educational institution review the student progression and support the learners having difficulties (Viberg et al., 2018). Analytics help educational institutions review the effectiveness of their offered curricula and modify the course contents based on real-time statistics.

Online Learning

The introduction of massive open online courses (MOOC) has enhanced access to various subject topics in different disciplines of study. Various platforms like SWAYAM, SWAYAM plus,

Coursera, EDX, Stanford online, etc., provide learners with the knowledge and necessary skills offered by acclaimed reputed institutions worldwide. MOOCs provide flexible learning modules that are of high quality in nature and are being increasingly accessed by students of diverse backgrounds. Higher Educational Institutions are adopting their MOOCs into their curricula with due credit weightage. The Ministry of Education has launched platforms like SWAYAM (2017) and SWAYAM plus (2023), which provide various courses to enhance student learning engagement, resulting in over 7.2 million enrollments by the year 2023 (Press Information Bureau [PIB], 2023). These platforms provide various courses across disciplines from multiple institutions and organizations that make the learning resource accessible to everyone, keeping in mind the industry needs and learner employability. Innovative features like multilingual content, AI assistant guidance, and credit recognition are highly helpful for the employability of learners of various age groups who utilize this platform, enabling even working professionals to skill and re-skill through flexible learning opportunities at individual places.

Technology in Health Science Education

Technology plays a crucial role in health science education by providing various advanced tools that enhance learning, facilitate skill acquisition and clinical practice, and assist in healthcare research. Healthcare trackers and variable sensor technologies empower patients and their caretakers to monitor their health. The technology assists in drug development, nano-practical and nano-devices for drug delivery systems, robotics to assist the nurses, helping the patient with injury to monitor the medication and vital parameters, bio tissue printing through 3D printing technology, ECG monitor, microscope, ultrasound, automated with the devices assist patients and the treating consultant (Mansoori, et. al., 2007; Murphy and Atala, 2014; Yang, et. al., 2022)

Machine Learning assists in reviewing large amounts of clinical data, scientific information, varied treatment methods, and updated guidelines to develop clinical protocols that could help treat various diseases in health sciences (Jahan, et. al., 2022; Rahman, et. al., 2023). Comparing previous findings of radiological diagnosis with the existing images in the database can assist the radiologist in identifying the pattern specific to the device and diagnosis without any error. Hence, AI assists the trainer and clinicians in developing advanced diagnosis skills. The health science students' critical thinking and problem-solving capabilities can be enhanced by AI procedures in virtual patients. (Karn, et. al., 2025)

Multiple simulators like high fidelity, low fidelity, task trainers, laparoscopic simulators, telementoring, AR glasses, 3D dimensional anatomy applications, AR blended mobile learning platforms, AR assistant dentistry software, tablet-based AR-enabled simulators for training nurses, AR assistant CT/MRI data visualization, remote surgical expertise through virtual interaction presence are the benefits of AR/VR in Health Sciences.

Remote Training and Telemedicine

The introduction of telemedicine in health science practice assists trainers in observing and managing patients in a remote environment, providing different ways to explore medical cases and overcoming physical barriers. Virtual mentorship programs, online webinars, remote access to lifestyle and surgical products, and online health conferences help students acquire information from experienced practitioners worldwide. (Arora, et. al., 2012, Waseh and Dicker, 2019, Davis, et. al., 2018)

Electronic Health Record Training

Health science students need training in using electronic health records so that they are able to handle patient-related information digitally, which is an essential skill required in the healthcare setting. AI-based analytics incorporated in electronic health records help the student review the trends in patient data, science and symptoms, socio-economic profile, disease factor pattern, and treatment modality that assist in better patient care outcomes. (Davis, et. al., 2021)

Role of Teaching Faculty in Planning Digital Educational Content

The mere presence of technology without adequate faculty training creates a waste of resources. There are multiple challenges that need to be overcome in handling synchronous and asynchronous teaching processes.

- Clear planning and delivering the content to the learner-specific skills and training is the cornerstone for effective utilization.
- Adequate faculty training simulates the learners and facilitates the learning process with motivation.
- Teachers need to identify the relevant resources and standardize them as per the needs of the topics

and create relevant assessment methods customized to the individual or group of students.

- Teachers need to be trained to provide realistic visualization through various case studies, scenarios, and examples to enhance learning.

Challenges (Lubanga, et. al., 2025; Shlieina, et. al., 2025; Yadav and Bhatt, 2025; Chhibber, et. al., 2024)

- Lack of strategic planning hinders the implementation and learning outcome attainments and wastes resources.
- Resistance to change among the teachers due to lack of awareness, resources, motivation, support, or adaptability to learn newer techniques.
- Appropriate use of relevant technology in specific programs may not be feasible as they are bound by the Statutory body guidelines that impede implementation.
- Adequate Faculty training with resource mobilization and periodic upskilling due to ever-changing trends in the IT industry.
- Budget allocation for the provision of adequate resources.
- The growing use of technology across the fields worldwide has its own threats involving cyber security risk, data breaches, and protection of vital information.

Implementation of digital technologies in higher educational institutions needs strategic planning with a clear vision and mission involving all the stakeholders with appropriate resource allocation and faculty training, as summarized in Fig. 1

Fig. 1: Implementation Strategies of Technology in Higher Education

Trends of the Utility of Digital Technology in Higher Education

With the adoption of Artificial Intelligence, Machine Learning in higher educational institutions, learner-centric personalized supports, AI Avatars for interaction, automated assessment tools, enhanced online learning participation through gamification of learning experiences, adaptive learning, bias-free grading, data analytics, early course correction, and timely interventions for the desired students for improved academic outcomes are becoming easily approachable paths.

The institutions are moving towards virtual Universities, AI-supported campus management, and establishing global real-time collaborations. Blockchain for credential verifications and maintenance of tamper-proof records with data privacy strategies (Li, 2024). Cloud computing for scalability of accessing educational resources, data processing, and digital badges through micro-credentials are the newer trending features in higher education.

Hence, digital technologies are reshaping the higher education scenario. HEIs need to invest, adapt, and stay ahead with cutting-edge digital tools to create a globally networked learning environment for our meaningful future.

References and Readings

1. Arora, S., et. al. (2012). Expanding Access to Hepatitis C Virus Treatment—Extension for Community Healthcare Outcomes (Project ECHO): A Decentralized Model of Care Delivery, *Hepatology, 58*(1), 23-32. h*ttps://doi.org/10.1002/hep.26759*
2. Bulatovic, J. (2025). The Role of Educational Social Networks in Teaching Information Technology During a Pandemic: A Case Study, *Scientific Electronic Archives*. Retrieved from *https://sea.ufr.edu.br/index.php/SEA/article/download/2055/2053*
3. Chhibber, S., and Rajkumar, S., R. (2024). Will Artificial Intelligence Reshape the Global Workforce by 2030?, *Journal of Future Intelligence and AI*. Retrieved from *https://journal.wiseedu.co.id/index.php/bafrjournal/article/view/178*
4. Davis, J., S., et. al. (2018). Use of Mobile Learning Module Improves Skills in Chest Tube Insertion: A Randomized Controlled Trial, *Journal of Surgical Education, 75*(5), 1233-1245. *https://doi.org/10.1016/j.jsurg.2018.01.019*
5. Hetmanenko, L., Barbashova, I., and Kukhniuk, O. (2025).

Next-generation Educational Technologies in University Settings, *Salud, Ciencia y Tecnología*. Retrieved from *https://dialnet.unirioja.es/descarga/articulo/10004306.pdf*

6. Jahan, M., Sohail, S., and Zahra, S., J. (2025). Transforming University-level ESL Teaching in Pakistan: Integrating AI-powered Tools into Existing Second Language Instructional Systems, *Journal of Social Education*. Retrieved from *https://journal-of-social-education.org/index.php/Jorunal/article/download/141/160*
7. Karn, A., L., Ali, H., M., and Deivasigamani, A. (2025). The Influence of Direct Market Access on Profit Margins, Supply Chain Efficiency, and Economic Resilience for Small-Scale Dairy Farmers, *Research on Agriculture and Economic Resilience*. Retrieved from *https://journals.nasspublishing.com/index.php/rwae/article/view/1530*
8. Krishnamurthy, S. (2020). The Future of Business Education: A Commentary in the Shadow of the COVID-19 Pandemic, *Journal of Business Research, 117*, 1-5. *https://doi.org/10.1016/j.jbusres.2020.05.034*
9. Li, L. (2024). Digital Transformation in Bioinformatics Education: Leveraging AI And Blockchain, *Journal of Commercial Biotechnology*. Retrieved from *https://www.commercialbiotechnology.com/menuscript/index.php/jcb/article/view/1828*
10. Lubanga, A., et. al., (2025). Exploring the Role of Digital Technologies and Accelerators in Promoting Community Oral Health, *Frontiers in Oral Health*. Retrieved from *https://www.frontiersin.org/journals/oral-health/articles/10.3389/froh.2025.1443313/full*
11. Mansoori, G., A., Mohazzabi, P., McCormack, P., and Jabbari, S. (2007). Nanotechnology in Cancer Prevention, Detection, and Treatment: Bright Future Lies ahead, *World Review of Science, Technology and Sustainable Development, 4*(2-3), 226-257. *https://doi.org/10.1504/WRSTSD.2007.014151*
12. Government of India (n.d.). SWAYAM: Study Webs of Active-Learning for Young Aspiring Minds, Ministry of Education, Government of India, New Delhi. Retrieved from *https://swayam.gov.in/*
13. Mishra, L., Gupta, T., and Shree, A. (2020). Online Teaching-learning in Higher Education During Lockdown Period of COVID-19 Pandemic, *International Journal of Educational Research Open, 1*, 100012. *https://doi.org/10.1016/j.ijedro.2020.100012*
14. Mtebe, J., S. (2015). Learning Management System Success: Increasing Learning Management System Usage in Higher Education in Sub-Saharan Africa, *International Journal of Education and Development using Information and Communication Technology, 11*(2), 51–64. Retrieved from *https://files.eric.ed.gov/fulltext/EJ1074158.pdf*
15. Murphy, S., V., and Atala, A. (2014). 3D Bioprinting of Tissues and Organs, *Nature Biotechnology, 32*(8), 773-785. *https://doi.org/10.1038/nbt.2958*
16. Nannim, F., A., Ibezim, N., E., Agbo, G., C., and Mgboji, C. (2025). Project-based Arduino Learning App: Fostering Robotics Programming Competence among Preservice Teachers, *ACM Computing Education*. Retrieved from *https://dl.acm.org/doi/abs/10.1145/3719016*
17. National Digital Library of India (NDLI). (n.d.). *National Digital Library of India*. Retrieved from *https://ndl.iitkgp.ac.in/*
18. Ngoc, L., T., M., Mai, N., P., and Hien, V., T., M. (2025). Digital Maturity Assessment in Higher Education: A Case Study of Public Universities in Hanoi, *VNU Journal of Education*. Retrieved from *https://jebvn.ueb.edu.vn/index.php/jeb/article/view/468*
19. Press Information Bureau (2023, July 20). SWAYAM Plus offers employability & professional development courses. Retrieved from *https://pib.gov.in/PressReleasePage.aspx?PRID=2009610*
20. Rahman, H., and Sumon, M., I. (2023). AI and Machine Learning in Higher Education: A Review of Applications and Future Prospects, *Journal of Advanced Computing*.
21. Saettler, P. (1990). *The Evolution of American Educational Technology,* Libraries Unlimited.
22. Shlieina, L., Tkachenko, N., and Kurok, R. (2025). Adapting Pedagogy in the Post-Pandemic Era: The Role of Hybrid Learning in Shaping Educational Quality, *Salud, Cienciay Tecnología*. Retrieved from *https://dialnet.unirioja.es/descarga/articulo/10004307.pdf*
23. Sudrajat, S. (2025). The smart classroom: Exploring the impact of IoT on teaching dynamics using SVM algorithm. *Indonesian Journal of Smart Learning*. Retrieved from *https://ijoms.internationaljournallabs.com/index.php/ijoms/article/view/1101*
24. Talagala, P., D., and Talagala, T., S. (2021). COVID-19 and Online Learning Tools, *arXiv preprint arXiv:2201.06927*. h*ttps://arxiv.org/abs/2201.06927*
25. Viberg, O., Hatakka, M., Bälter, O., and Mavroudi, A. (2018). The Current Landscape of Learning Analytics in Higher Education, *Computers in Human Behavior, 89*, 98–110. *https://doi.org/10.1016/j.chb.2018.07.027*
26. Waseh, S., and Dicker, A., P. (2019). Telemedicine Training in Undergraduate Medical Education: Mixed-Methods Review, *JMIR Medical Education, 5*(1), e12515. *https://doi.org/10.2196/12515*
27. Weller, M. (2018,). Twenty Years of edtech, *EDUCAUSE Review,* July 25.
28. Xu, W., and Shang, Y. (2025). Integrating University English Education and Digital Supply Chains: A Pathway to Strengthening the Green Economy, *Advances in Continuous and Discrete Models*. Retrieved from *https://advancesincontinuousanddiscretemodels.springeropen.com/articles/10.1186/s13662-025-03918-8*
29. Yadav, S., V., and Bhatt, S. (2025). Enhancing Student Engagement with AI-adaptive Learning, *Contemporary Challenges in Multidisciplinary Research*.
30. Yang, G., Z., et. al., (2022). Combating COVID-19—The Role of Robotics in Managing Public Health and Infectious Diseases, *Science Robotics, 5*(40), eabb5589. *https://doi.org/10.1126/scirobotics.abb5589* ❑

Indian Knowledge Tradition and Knowledge in Indian Traditions

Acharya Arun Diwaker Nath Bajpai, Vice Chancellor, Atal Bihari Vajpayee University, Bilaspur, Chhattisgarh delivered the Convocation Address at the 4th Convocation Ceremony at the Pandit Shambhunath Shukla University, Shahdol, Madhya Pradesh on February 25, 2025. He said, "We should all feel proud that India is the nation that introduced the concept of the university to the world. Ancient Indian universities like Nalanda, Takshashila, Avantika, and Ujjaini were global centers of knowledge. India was once the *Vishwaguru* (Teacher of the World) and is now on the path to reclaiming that position." Excerpts

It is a matter of great pride and fortune for me to be invited to deliver the convocation address at the fourth convocation ceremony of *Pandit Shambhunath Shukla University, Shahdol*, a second significant university in the Vindhya region of Madhya Pradesh. The first University is *Awadhesh Pratap University, Rewa,* of which too I had the privilege of serving as the vice-chancellor during 2003-2007.

I extend my heartfelt congratulations and best wishes to all the students who are being awarded *degrees and gold medals* today as a result of their hard work. I also pay my respects to their *parents and teachers,* without whose blessings such success would be difficult to achieve.

The Tradition of Convocations in India

Dear students! India has a long and rich tradition of *convocation ceremonies.* In ancient times, when students completed their education in *Gurukuls, mastering 16 fields of knowledge and 64 arts,* they were given a uniform convocation address by their *Guru* before stepping into public life. This address was filled with the fundamental truths of life, values, and practical wisdom, such as:

Speak the truth: Satyam Vad

Follow righteousness: Dharmam Char

Do not neglect self-study: Swadhyan ma pramadah

Consider your mother, father, teacher, and guest as divine: *matri devo bhav, pitri devo bhav, acharey devo bhav, atithi devo bhav*

Never disregard your duties, social welfare, self-improvement, or the acquisition and dissemination of knowledge: *Satyanna pramaditavyam, dharmanna pramaditavyam, kushalanna pramaditavyam, bhutyainna pramaditavyam, swadyayya pravachanbyam na pramaditavyam.*

Engage only in noble actions: *Yanynavadyani karmani taani sevitavyam no itarani.*

This type of guidance and discipline was imparted by the *Gurus* to all students, regardless of their fields of study, as the primary goal of education is to build virtuous individuals. The *Taittiriya Upanishad* provides a detailed exposition of this tradition.

India: The Birthplace of Universities

Dear students! We should all feel proud that India is the nation that introduced the concept of the university to the world. Ancient Indian universities like Nalanda, Takshashila, Avantika, and Ujjaini were global centers of knowledge. India was once the *Vishwaguru* (Teacher of the World) and is now on the path to *reclaiming that position.*

Today, I have deliberately chosen the topic of my address: *"Indian Knowledge Tradition and the Knowledge in Indian Traditions."*

The Meaning of Knowledge

Before discussing traditions, it is essential to understand what *"knowledge"* truly means.

Most scholars attempt to define knowledge through its attributes. A knowledgeable person is one who:

Treats everyone with equality
Loves all beings
Is wise and insightful
Has compassion for all living beings
Is selfless and patient
Practices forgiveness

However, such attributes only distinguish between the *knowledgeable and the ignorant;* they do not define knowledge itself.

In simple terms, knowledge means *'to know' or 'to realize.'* But does simply acquiring information constitute knowledge? Does knowing everything about the world, utilizing artificial intelligence, or mastering data systems equate to knowledge? The answer is no.

True knowledge is *self-realization*. Knowledge means to *know the soul*. When *Lord Krishna* stated in the *Shrimadbhagavadgita (4:38) that "There is nothing as pure as knowledge,*" (na hi gyanen sadrisham pavitrimih vidyate),. Complete shloka is like this:

Na hi gyanene sadrasham paviramih vidyate
Tatswayam yog sansiddhih kalenatmani vindyati. (Shrimadbhagwatgita 4.38).

From this shloka two things become very clear:

1. *There is nothing as pure as knowledge*
2. True knowledge is attained through self-discipline, fully empowering Yoga and realization of soul over time.

Indian Knowledge and Traditions: A Legacy of Self-Realization

Code Words of Soul

Indian tradition is rooted in the deep explorations of sages who, through rigorous research and meditation, conceptualized fundamental principles such as *darshan, (philosophy), Satya (truth,) Tatwa (essence), and Prem (love)*. When *Kabir* said, *"Dhai Akhar Prem ke Padhe so Pandit Hoye "*(One who understands the essence of love is a true scholar)," he referred to a profound realization of the soul itself. These are the two aand half letters of *Atma* which one realises with complete devotion and love becomes a scholar, a pandit. People have grossly misunderstood the meaning of *Prem* of *Kabir.*

There was a great scientist *Archimedes.* He was busy in discovering the principle of displacement.Once while bathing i n the tub his body got lifted above the water and he exclaimed "Eureka!" (got it, discovered) in excitement. Similarly, our sages, upon realizing the nature of the soul, declared *"Darshan!"* (I have seen it), *"Gyaan!"* (I have known it), and *"Tatva!*" (I have understood the essence). Like wise who found unconditional love with soul he statrted calling *Prem, Prem. Actually, darshan,truth,gyan,tattwa,prem are the code words, synonyms of Soul.*

Indian knowledge as well as Tradtions Originated from Soul

Dear Students Indian knowledge systems as well as Indian traditions are originated from *the soul* itself. The *traditions* are the eterna*l carrier of Indian knowledge* and exist in contemporary world.

Spiritual knowldge is directly originated from soul and *spirituality means to observe the characteristics of soul in day to day life.*

The Characteristics of Indian Knowledge

Indian knowledge tradition is defined by three core principles:

1. *Continuity:* Since the soul is eternal, true knowledge remains continuous and unbroken.
2. *Universality:* Since the soul exists throughout the universe, Indian knowledge is universal.
3. *Inclusivity:* Since the soul resides harmoniously in all beings, Indian knowledge embraces all, which means all inclusiveness.

In brief, the *eternality, universality and all inclusiveness* are the three main characteristics of Indian Knowledge System. These are applicable to Indian Traditions as well.

Indian Knowledge: A Flow, Not a Stock

Unlike Western traditions that treats knowledge as *stock*, Indian knowledge is a *continuous flow*. The western philosopheres think knowledge as something to be owned or stored by some individuals but Indian tradition considers *knowledge a divine property* that should be shared selflessly. That is why in India, there has not been any concept of *Intellectual Property Rights* as such in ancient times.

Streams of Indian Knowledge

There are *two distcint streams* of Indian Knowledge: one, the *academic stream* which includes writings, books, lierature, manuscripts and other publications, two, the *Traditions* which keep on trafering the value systems, knowledge from generation to generations.

The Role of Traditions in Preserving Knowledge

Indian sages knew that if *knowledge were confined to books or temples,* it could be destroyed by invaders lik*e Bakhtiyar Khilji or Aurangzeb.* Hence, they *embedded knowledge into traditions,* ensuring its survival through generations.

The Laboratory of Knowledge Creation

In this context, it is also essential to understand which "laboratory" was responsible for the creation of Indian knowledge, meaning what *methodology* was used. *Lord Patanjali* composed the *"Yoga Sutras"* much later. Our sages were aware of the science o*f transforming their gross physical bodies into subtle spiritual bodies.* This enabled them to travel across the *entire cosmos* in their spiritual form, gather knowledge, return to their physical bodies, and pass on their wisdom to their disciples through oral transmission. This tradition o*f Rishi-Guru-Shishya Parampara* has kept Indian knowledge alive for thousands of years and continues to do so today. We are all inheritors of this vast knowledge. Indian wisdom is embedded within us *it is in our DNA*; we only need to *decode, rediscover and refine it*.

The Academic Repository of Indian Knowledge

As mentioned earlier, Bakhtiyar Khilji burned down the *Nalanda University library.* Historians claim that the library continued to burn for nearly six months. However, even after this devastating loss, millions of books and manuscripts containing authentic Indian knowledge remained available. The *academic lineage of Indian knowledge* is vast and unbroken. A brief outline is as follows:

1. Vedas,
2. Upanishads,
3. Puranas,
4. Historical texts (Itihasas),
5. Smritis,
6. Brahmanas,
7. Rich Sanskrit literature, including works by Kalidasa, Bhasa, Bharati, Bhavabhuti, Magha, Bhartrihari, Banabhatta and many,
8. Scientific and technical knowledge in fields such as mathematics, astronomy, economics, agriculture, meteorology, physics, chemistry, medicine, geology, engineering, architecture, sculpture, grammar, time calculation, and various other disciplines,
9. The Bhakti and literary traditions, spanning from poets like Kabir, Nanak, Meera, Tulsidas, Rahim, and Raskhan to modern literary figures such as Maithili Sharan Gupt, Suryakant Tripathi Nirala, Pant, Prasad, Mahadevi Verma, Dinkar, Premchand and many,
10. Indian knowledge is preserved in regional languages, including Kannada, Malayalam, Tamil, Telugu, Bengali, Marathi, Gujarati, Rajasthani, Odia, and the languages of the north easter and Himalayan regions.
11. Indian wisdom in Urdu literature, particularly through translations and original works by authors like Brijnarayan Chakbast.
12. Indian influence in Persian, Arabic, and even Greek literature, showcasing the widespread impact of Indian knowledge.

Indian Wisdom in Traditions

The second aspect of my speech is *'Indian knowledge in Indian traditions'.* Indian traditions have developed as a *heritage of Indian knowledge*.

For example, the main focus of *Rigveda is hymns,* hence the tradition of hymns developed. The *tradition of praising and worshipping all natural elements, rivers, mountains, trees, animals, Sun, Moon, stars etc., Panch-Bhootas, Agni, Bhumi, Vayu, Jal, Gagan etc.* developed which is still in practice. *The tribal community of India is dedicated to this nature worship and protection.*

The central point of *Yajurveda is 'Yagya'*, hence it developed in the tradition of Yagya. Yagya has a special role in the establishment of *Arya Samaj.*

Music is the focus of the Samaveda and so it developed into musical traditions that are still continuing.

The *principles of all the physical sciences are given in Atharva Veda* and various types of traditions have developed from them.

Tradition of Worshiping Nature

When *natural elements or Panchambhutas* are praised, the knowledge of the related *mantras and hymns* is automatically obtained. It is possible that we may not know the meaning of the hymn but we start getting its benefit through the hymn. The sages knew the *science hidden in the hymns but the common people made it practical by popularizing it in tradition.*

Tradition of Rivers

The tradition of rivers is a *natural communicator of Indian knowledge.* The knowledge of India is flowing in every river like *Ganga, Yamuna, Saraswati, Kaveri, Godavari, Brahmaputra, Sutlej, Kshipra, Narmada etc.*

Tradition of Mountains

Similarly, *mountain ranges* are related to our gods and the knowledge related to them.

Tradition of Kumbh

This year the *Maha Kumbh of India* has created world history. Maha Kumbh has taken place in Prayagraj after 144 years. About 54 crore devotees have taken a dip in the *Sangam Tirtha*. Kumbhs are held in *Nasik, Ujjain, Haridwar and Prayagraj*. They have their own purpose and Indian knowledge is included in them. But its meaning has expanded. Wherever special Satvik large events are being held, they are often called Kumbh. For example, *Kumbh of writers, Kumbh of scientists, Kumbh of sportspersons, etc.*

Tradition of Festivals/Celebrations

India is a land of *festivals and celebrations*. Their purpose is not only to celebrate them but also to convey the knowledge hidden in them to the people. For example, *Holi is related to the Narasimha avatar, the devotion of devotee Prahlad and the complete knowledge related to it. Diwali is related to the knowledge of Lord Ram returning to Ayodhya after 14 years of exile, Lakshmi Pujan etc. Basant Panchami is related to the incarnation of Saraswati, Makar Sankranti, Pongal are related to the knowledge of constellations, knowledge of change of seasons. Ram Leela, Krishna Leela, Durgashtami, Ganesh Utsav, Garba, etc.* All the festivals that are celebrated, all work to convey the invaluable knowledge of India to the people in an easy way.

Tradition of Rituals (Sanskars)

Indian knowledge has also been presented in the *tradition of rituals*. The knowledge of the *continuity of the soul* before birth and after death is present in these rituals.

The Tradition of Personification of Nature

In Indian traditions, there is a wonderful use of *personification of nature. Simple like a cow, powerful like a horse, pure like the Ganges, steadfast like a mountain, benevolent like a tree, detached like a lotus, generous like the sky, etc. are worth citing.* Lord Patanjali has also named various *asanas taking inspiration from aquatic, terrestrial, aerial creatures, such as Mandukasana, Ushtrasana, Matsyasana, Titli Asana, Parvatasana, Tadasana, etc.* Poets like *Bihari* have made an important use of *personification of nature in the depiction of heroines (Nayikas)*

Tradition of Folk Tales, Dances, Songs

Indian knowledge has been beautifully woven into *folk tales, folk dances and folk songs*. For example, there is a tradition of *Nacha in Chhattisgarh* whose subject matter is from *Mahabharata, Ramayana or Bhatrihari*. Similarly, stories, songs and dances are popular in every region whose aim is to spread the basic knowledge of India to the common people.

Tradition of *Avatars*/Legendary Persons

Even a common man remembers *Ram for dignity, Sita for purity, Bharat for brotherly devotion and sacrifice, Laxman for cooperation, Parashuram for anger, Durvasa for anger, Krishna for love and knowledge, Rana Pratap for valour, Rani Lakshmibai for feminine valour, Harishchandra for truth, Arjun for manliness, Chanakya for diplomacy, Savitri for pativrata dharma, Dadhichi for sacrifice, Shabari for unconditional love, Anusuiya for protecting womanhood etc.* but these are directly related to Indian knowledge.

In this context, it is also worth mentioning that those who have betrayed the values of life like Ravan, Kash, Vibhishan, Duryodhan, Jaichand, Mir Jafar, Jayadrath are also remembered in the Indian knowledge tradition so that their behavior can be despised and ostracized by the common people so that it does not recur.

Tradition of Sermons

India has a long tradition of *storytellers and preachers* which has now reached every country of the world from rural areas. The main centers of these sermons are mostly *Ramcharit Manas, Shrimad Bhagwat and Shrimad Bhagavad Gita.* It is through these that Indian knowledge is easily conveyed to the masses.

The Tradition of Mocking Great Models

The passage of time and foreign invaders had conspired to keep the enlightened persons of India and some of its scriptures away from the public consciousness. For example, *Narad Muni*, who is the son of Lord Vishnu, travels to Trilok at the speed of his mind and does well to the people, was presented as a *gossiper,* a person who talks here and there, but due to this, *Narad and his sutras* are alive and have become the guides of modern mass communication subjects. Similarly, examples of *Birbal and Tenali Rama* can also be presented.

Ridicule/Constriction of History Book

It is well known that a conspiracy was hatched to keep a great epic like *"Mahabharata"* which contains the entire knowledge of the world, away from the public. Wherever there is Mahabharata, there will be fights, reading Mahabharata is prohibited, if you want to read it, do not read it in sequence. If there is *a fight somewhere, say that*

'Mahabharata' is happening. All this is proof of the same conspiracy, yet everyone knows the great book like *Mahabharata* and the Indian knowledge filled in it.

There are traditions of *pilgrimages, peeths, dhams and parikramas* in India whose aim is also to keep Indian knowledge alive.

In short, Indian traditions are the *nerves of Indian knowledge* which have been spreading Indian knowledge in all directions since time immemorial. Their main characteristic is that on one hand it keeps itself alive and on the other hand it also keeps Indian knowledge alive. Here it is also necessary to clarify that there is a difference between *traditions and orthodox.* Western philosophers have criticized the sublime traditions of India by calling them orthodox.

Dear students!

I wish you a very good luck *for your bright future.*

Vande Mataram. ❑

UNIVERSITIES HANDBOOK – 35th EDITION (2024)

(Set of Four Volumes): (ISBN 81-7520-164-9)

PRICE: Rs. 18000/- (+ Postage/Courier Charge Rs. 1250/-)

(10% Discount for Universities / Colleges / Institutions &
20% Trade Discount for Publishers / Booksellers on MRP)

The 35th Edition of the Universities Handbook (2024) is a compendium which contains information of 969 Indian Universities and 16 Associate Member Universities from countries like Bangladesh, Thailand; Nepal, Malaysia, Bhutan, Kazakhstan, Mauritius, Russia, Singapore, Zambia, Germany, USA and Uganda.

The Handbook provides information relating to : Courses of Studies; Minimum Requirements for admission; duration and the subjects of study for each course; Library and Research Facilities; Scholarship and Fellowships; Academic year – date for admission and the approximate dates of examinations; Names of Faculties; Deans of Faculties, Names of Professors and Readers/Associate Professors with their specialization (department-wise); Staff, Officers and Name of Affiliated Constituent Colleges, Heads of Postgraduate Departments in the Colleges, etc.

The Handbook also includes a synopsis of the higher education system of the country and information on the structure of higher education, the categories of academic institutions, the coordinating bodies operating in the domain of higher education and other related issues.

The payable amount is required to be remitted **in advance** and the proof of payment / NEFT / **UTR Number with date and amount** may be communicated IMMEDIATELY BY E-MAIL for linking and crediting of the same against the respective Order.

- **The Handbook will be available from the sales counter of this office on payment through NEFT/RTGS/Net Banking / UPI / Demand Draft / Pay Order etc. For collecting the UHB, each order must accompany an official letter with the payment instrument / transaction details.**

Please send Pre-paid Orders to:

Publication & Sales Division
ASSOCIATION OF INDIAN UNIVERSITIES
16, Comrade Indrajit Gupta Marg,New Delhi 110 002
Phones: 23230059/Extn. 208, Direct Line: 011 23213481, Email: publicationsales@aiu.ac.in

CAMPUS NEWS

International Seminar on Achievements, Challenges and Revitalization Opportunities

A two-day International Seminar on 'Achievements, Challenges and Revitalization Opportunities for Micro, Small and Medium Enterprises Sector in Vision *Viksit Bharat* @2047' was organised by the New College, Chennai, Tamil Nadu from February 18-19, 2025. The event was sponsored by the Indian Council of Social Science Research (ICSSR), Ministry of Education, Govt. of India. Dr. S Kareemulla Basha, Head of the Department delivered the welcome address and asserted that the context of Vision *Viksit Bharat*@2047 presents a unique opportunity for scholars throughout India, especially those associated with academic institutions, to showcase their research findings and engage in meaningful academic discourse on critical economic issues related to employment and poverty alleviation. Dr. M Asrar Sheriff, Principal, The New College, delivered his introductory remarks. Briefed on the research themes related to national development through research and innovation. Dr. B Sudhakar Reddy, Director, ICSSR-Southern Regional Centre, Hyderabad delivered the inaugural address. In his address, he mentioned that the theme of the event is highly relevant today; this is the appropriate time to revitalize opportunities for MSMEs in achieving the vision of *Viksit Bharat*@2047. He also appreciated that the event got a wide range of attraction among the young scholars and delegates in India and abroad, where the event received more than 230 research papers. He firmly believes that the deliberations of the event would be useful for the policy making for both central as well as the state governments.

Dr. B Sudhakar Reddy, Director, ICSSR-Southern Regional Centre, Hyderabad released the Abstract Book-cum-Souvenir of the event. A special address was delivered by Prof. Himachalam Dasaraju, Commonwealth Visiting Fellow, United Kingdom, Co-founder, Global Association for MSMEs and SDGs Research in Developing Countries, Indonesia.

Prof. A M M Mustafa, Dean and Business Economics, South Eastern University, Sri Lanka and Prof. M A C Salfiya Ummah, Head and Professor, Business Studies, Department of Management, Faculty of Management and Commerce, South Eastern University, Sri Lanka delivered the keynote address. Prof. A M M Mustafa insisted that the dream of a *Viksit Bharat* by 2047 requires collaboration between governments, academia, industries, and communities to support MSMEs. By adopting Industry 5.0, India's MSMEs can play a key role in a globalized and sustainable economy. Prof. M A C Salfiya Ummah explored the Indian MSME sector, which is expected to grow significantly by 2030, driven by initiatives like 'Digital India' and 'Make in India'. With opportunities in industries such as fintech, renewable energy, and IT, MSMEs are essential to India's economic future. Their resilience and innovation make them a key driver of India's entrepreneurial spirit and economic progress. The Vote of Thanks was proposed by Dr. A Abdul Raheem, Associate Professor and Coordinator of Department of Business Economics.

The Plenary Session was chaired by Dr. P Anbalagan, Associate Professor of Economics, Presidency College (University of Madras), Chennai, Tamil Nadu. The speaker, Prof. Dr A. Jahfer, Professor in Commerce, Department of Accountancy and Finance, South Eastern University of Sri Lanka, Sri Lanka outlined that the MSME sector is crucial to India's economy, contributing to GDP, employment, and exports, but it faces challenges in accessing timely and adequate finance. Limited credit access, high borrowing costs, and low financial literacy hinder growth. Startups and fintech companies are stepping in to bridge this financing gap with innovative, tech-driven solutions. These emerging players are reshaping the financial landscape and promoting inclusion for underserved MSMEs.

Prof. Jeyapraba Suresh, Professor in Economics, Department of Economics, Faculty of Commerce and Management, Eastern University, Sri Lanka stressed that empowering women and youth in the MSME sector is both an economic necessity and a moral imperative, offering untapped potential for innovation, job creation, and sustainable development. These groups often lead in digital transformation, eco-friendly practices, and social entrepreneurship. Overcoming barriers like limited access to finance and education through targeted interventions and policies is essential. Initiatives like India's Mudra Yojana

and Rwanda's gender-sensitive policies highlight effective solutions for empowerment. Collaborative efforts from governments, private sectors, NGOs, and academic institutions are key to creating an inclusive ecosystem for women and youth in MSMEs.

Prof. Ravinder Rena, Professor of Economics, Durban University of Technology, South Africa, explained that the MSMEs in Africa provide vital opportunities for marginalized communities and those with limited access to formal employment. By offering affordable goods and services, they improve living standards, particularly in low-income areas. These businesses also diversify household income sources, empowering entrepreneurs from historically disadvantaged groups. Many MSME owners, including women, youth, and black South Africans, use their businesses to create wealth and uplift their families. Ultimately, MSMEs play a crucial role in fostering social and economic development within local communities.

Dr. L Venkatachalam, RBI Chair Professor, Madras Institute of Development Studies, Adyar, Chennai chaired the next session. Dr. Mohamed Ismail Mohamed Riyath, Senior Lecturer, Department of Accountancy & Finance, Faculty of Management and Commerce, South Eastern University of Sri Lanka elaborated the plan for MSME transformation includes clear milestones: digital integration of one million MSMEs by 2025, 75% digital adoption by 2030, and a 300% increase in turnover by 2035. Institutional coordination will be key, with a National MSME Mission, real-time monitoring, and State-Level Implementation Units to address sector-specific needs. District-level facilitation Centers will provide grassroots support, technology access, and training. This comprehensive framework aims to make MSMEs global leaders by 2035. Collaborative efforts across government and industry will turn this vision into reality.

Mr. A L Sarifudeen, Senior Lecturer, Department of Accountancy and Finance, Faculty of Management and Commerce, South Eastern University of Sri Lanka explained the Role of Financial Inclusion in Enhancing MSME Competitiveness in India by 2047. As we look toward the centenary of India's independence, empowering MSMEs through financial inclusion is not just a necessity but an imperative. By addressing credit gaps, embracing digital tools, and fostering sustainability, we can unlock their potential to achieve a *Viksit Bharat* by 2047.

Mr. M. Farwis, Lecturer in Accountancy, Department of Accountancy and Finance, South Eastern University of Sri Lanka, Sri Lanka described the journey toward Vision *Viksit Bharat* @2047 presents an opportunity to transform the MSME sector into a resilient, innovative, and inclusive growth engine. By learning from the past and adopting strategic solutions, we can unlock MSMEs' full potential. Bold policies, collaboration, and sustainable development are key to success. For Sri Lanka, overcoming the economic crisis and collaborating with India will be vital. Strengthening MSMEs goes beyond economic growth; it empowers communities and fosters innovation for a more inclusive future. Dr. A Thaha Sahad, Associate Professor, Department of Economics, Presidency College, Chennai summarised the session.

Dr. S Chandrachud, Professor and Head, Department of Economics, Vels University, Pallavaram, Chennai chaired the technical session. Dr. V Mohanasundaram, Associate Professor and Former Head, Adjunct Professor, Department of Economics, PSG College of Arts and Science, Coimbatore delivered his keynote address on 'Small (MSMEs) is Beautiful: Always / At Times / Seldom. He suggested that the productivity of labour and remunerative wages and social security measures to improve the welfare of the workers in the MSME sector should be given adequate importance not only in policy but also in practice and the rapporteurs for the session were Dr. I Chitra, Assistant Professor, Department of Economics, Thiagarajar College, Madurai and Dr. S Jaber Asan, Assistant Professor, Department of Economics, The New College, Chennai.

The next parallel session was chaired by Dr. H Yasmeen Sultana, Assistant Professor, Department of Economics, Pondicherry University, Puducherry, through virtual mode. Prof. Salah Koubaa, Professor and Vice Dean, Head of Entrepreneurship and SMEs Research Center, University Hassan II of Casablanca, Morocco delivered a keynote address on 'MSME and Entrepreneurial Development Model in Developing Countries'. There were eighteen papers presented by the academicians and research scholars, mostly focusing on the 'Performance of MSMEs: Challenges and Opportunities in India'.

The next technical session was chaired by Dr. G Karunamoorthy, Associate Professor and Head, Department of Economics, Pachaiyappa's College,

Chennai, Tamil Nadu. The keynote address was delivered by Dr. D B Usha Rani, Associate Professor and Head, Department of Economics, Ethiraj College for Women, Chennai and the rapporteurs for the session were Dr. K. Suresh, Assistant Professor, RKM Vivekananda College, Chennai and Dr. S Mohamed Nazeer, Assistant Professor, Department of Economics, The New College, Chennai. Mr. AGM. Shamil, Managing Director, Savings Supermarket, Kattankudy, Sri Lanka spoke on 'Navigating the Complex Landscape: A Comprehensive Analysis of MSMEs Challenges and Opportunities in Kattankudy, Sri Lanka'. There were sixteen papers presented by the delegates and research scholars on the role of 'FinTech in Empowering India's MSMEs'.

The second parallel session on virtual mode was chaired by Prof. Supaprawat Siripipatthanakul, Senior Faculty, Bangkok Thonburi University, Thailand. Dr. Mehak Majeed, Assistant Professor, Islamic University of Science and Technology, Jammu & Kashmir delivered a keynote address on 'An Endorsement of the Rural Industry in India' and the rapporteurs for the session was Dr. Subaida Begum, Assistant Professor, Department of Economics, JBAS College for Women, Chennai and Mr. R Mohammed Ali, Assistant Professor, Department of Economics, The New College, Chennai. There were twelve papers presented by the delegates and research scholars focusing on the role of FinTech in Empowering India's MSMEs.

Dr. S Chinnammai, Professor and Head, Department of Economics, University of Madras, Chennai chaired the next plenary session. Prof. M H Thowfeek, Professor of Management and IT, Department of Management and IT, Faculty of Management and Commerce, South Eastern University of Sri Lanka discoursed the 'Empowering the Future: The Role of Technopreneurship in Shaping Innovation'.

Prof. Samsudeen Sabraz Nawaz, Head and Professor in Management and Information Technology, Department of Management and Information Technology, South Eastern University of Sri Lanka enlightened the Revolutionizing Business with Artificial Intelligence: Empowering MSMEs for Growth. Artificial Intelligence represents a transformative opportunity for MSMEs, enabling them to innovate, compete, and grow in previously unimaginable ways. By starting small, leveraging affordable AI tools and focusing on gradual integration, MSMEs can overcome barriers to adoption and unlock the full potential of AI.

Dr. Akhilesh Kumar Sharma, Assistant Professor, Institute for Studies in Industrial Development, New Delhi highlighted that promoting the development of the MSME sector is essential for India's Vision of *Viksit Bharat* 2047, as it stimulates innovation, generates employment, and enhances economic empowerment. Enhancing policies, financial accessibility, and technological integration will enable MSMEs to expand and compete on a global scale. He said that this expansion would substantially enhance a self-sufficient, robust, and inclusive economy.

Dr. R Sendhil, Associate Professor, Department of Economics, School of Management, Pondicherry University, Puducherry spoke on 'Agriculture and Micro, Small, and Medium Enterprises (MSMEs) in India: Implications for *Viksit Bharat@*2047'. Agriculture and MSMEs drive regional development and are vital sectors in India's journey toward '*Viksit Bharat@* 2047' i.e., becoming a developed nation by 2047. To underpin this synergy and capitalize on their business and trade potential in the context of economic development, actionable strategies have to be framed. These include integrating agri-based MSME clusters, increasing access to digital and financial instruments, and fostering smart business practices like circular economy models.

Dr. N Malathi, Associate Professor and Head, Department of Economics, Guru Nanak College, Chennai, Tamil Nadu chaired the session for which the rapporteurs were Dr. D Gopi, Assistant Professor, Department of Economics, SRM Institute of Science and Technology, Tamil Nadu, India and Mr. M Shahul Hameed, Assistant Professor, Department of Economics, The New College, Chenna. There were sixteen papers presented by the delegates and research scholars on 'The Role of FinTech in Empowering India's MSMEs'.

The second parallel session was chaired by Prof. Dhiresh Kulshrestha, Professor and Dean, Faculty of Economics Chitkara Business School, Chitkara University, Punjab, through virtual mode. Prof. Siham El-Kafafi, New Zealand Vice Chancellor, Vision for Excellence International University, Deputy Editor-in-Chief, African Journal of Economics, Politics and Social Studies, Professor, Te Wananga o Aotearoa, New Zealand delivered

a keynote address on 'Sustainability Champions: MSMEs Leading the Way in the Green Revolution'.

There were twenty-one papers presented by the delegates and research scholars focusing on Small Business Startups, Evaluating the Effect of ICT Investment on Profitability in Indian Manufacturing MSMEs, MSMEs as Catalysts for *Viksit Bharat*@2047: Unlocking Potential through Policy and Innovation.

Dr. X Vincent Jayakumar, Associate Professor and Head, Department of Economics, Ramakrishna Mission Vivekananda College, Chennai chaired the session and Dr. J V Arun, Assistant Professor, Department of Economics, Government Arts College, Nandanam, Chennai delivered the keynote address on 'Micro, Small, and Medium Enterprises (MSMEs) in India: Catalysts for Sustainable Development Goals'. The rapporteurs for the session were Dr. C Prabu, Assistant Professor, Department of Economics, Sir Theagaraya College, Chennai and Mr. R Sadique Ahmed and Mr. A Ahamed Jakith, Assistant Professors, Department of Business Economics, The New College, Chennai. There were fifteen papers presented by the delegates and research scholars focusing on 'Economic Growth and Employment through MSMEs in India and Socio-economic Conditions and Problems of Labourers'.

The next session was chaired by Prof. Susela Devi Suppiah, Honorary Professor, Universiti Selangor (UNISEL), Malaysia, through virtual mode. Keynote address on 'Role of MSMEs in Achieving SDGs 'was delivered by Prof. Md. Zahir Uddin Arif, Professor, Department of Marketing, Faculty of Business Studies, Jagannath University, Dhaka, Bangladesh and the rapporteurs for the session were Dr. B Mahammad Rafee and Mr. J Yunus Basha, Assistant Professors, Department of Business Economics, The New College, Chennai. There were fifteen papers presented by the delegates and research scholars focusing on 'Envisioning the Future of MSMEs in India: A Study of Opportunities and Challenges in Vision *Viksit Bharat*@2047'. After each technical session, there was an interactive Question and Answer session where participants had the opportunity to engage with the speakers and share their views. These discussions were valuable for deepening the understanding of the challenges faced by farmers and how stakeholders can work together to address them to find meaningful solutions.

During Valedictory Function, Dr. S Kareemulla Basha, Head, Department of Economics, The New College, Chennai delivered the welcome address. Dr. M Asrar Sheriff, Principal, The New College, Chennai, Tamil Nadu presided over the function and delivered the Presidential Address. Dr. M Abdul Jamal, Associate Professor of Economics and Convener of the event, submitted the event report. Prof. Srinivasan Ramachandran, Full Time Member, State Planning Commission, Government of Tamil Nadu delivered the Valedictory Address. Finally, the Co-convenor, Dr. M Fakir Ismail, Associate Professor of Economics, The New College proposed the Vote of Thanks. Dr. M Abdul Jamal was the Organising Secretary of the event.

The event concluded that the MSMEs are the backbone of India's economy and will be key to realizing the vision of 'Viksit Bharat 2047'. MSMEs can play a central role in achieving the Sustainable Development Goals by driving innovation, creating jobs, and fostering inclusive growth. To attain the Sustainable Development Goals, micro, small, and medium enterprises necessitate enhanced policy support, technological access, and capacity-building programs. Promoting sustainable practices, financial inclusion, and collaboration can enable MSMEs to significantly contribute to a greener, inclusive economy. By focusing on these sectors, India can harness the transformative potential of MSMEs for enduring sustainable development.

International Conference on Transformative Reforms in Higher Education

A two-day International Conference on 'Transformative Reforms in Higher Education: Best Practices in Implementation of NEP- 2020' is being organized by the ICFAI Foundation for Higher Education (Deemed-to-be-University), Hyderabad, Telangana, from April 29-30, 2025. The university and college administrators, faculty members and educators, policymakers and government officials, researchers and scholars, industry experts and practitioners, educational technology providers, non-profit organizations, and students and education enthusiasts may participate in the event.

Higher education is undergoing a churn all over the world. Many countries, including developed countries, are evaluating and reforming their higher education eco-system. Hence, this conference is not only relevant but also timely. The overarching

theme of the conference remains to be the National Education Policy-2020 in India, as it is in its fourth year of implementation. Four years is too short a time for a transformative policy to be implemented. But in this period, several higher education institutions have evolved their practices that have worked very well for them. The number of such institutions is small, yet their practices are important for their scalability and their impact. The event aims to reflect on the practices adopted by institutions implementing reforms in higher education and to provide a platform to leaders in higher education to share, deliberate on, and refine the practices that will accelerate the implementation of reforms with the desired outcomes. The conference encourages Conceptual Papers/Empirical Papers/Theoretical Papers/Case Studies/White Papers/Practice Papers in the higher education space for promoting reforms, driving scholarship and transferring best practices to other institutions. The Themes of the event are:

Curriculum Revamp and Interdisciplinary Learning

- Integrating flexibility and multidisciplinary approaches;
- Designing outcome-based and experiential curricula;
- Emphasising liberal arts and vocational skills; and
- Incorporating technology in curriculum delivery.

Multidisciplinary Education

- Utility of Academic Bank of Credits (ABC);
- Introduction and impact of Multiple entry and exit in academic programs;
- Transforming HEIs into multidisciplinary institutions; and
- Pursuing two academic programs simultaneously.

Student-Centric and Holistic Education

- Implementing student-centric pedagogies;
- Promoting mental health and well-being on campuses;
- Offering flexibility and choice in academic pathways; and
- Developing soft skills, life skills, and ethical values.

Inclusivity and Diversity in Education

- Promoting equitable access to higher education for all;
- Supporting economically disadvantaged, marginalized, and rural students;
- Implementing gender-sensitive policies in educational institutions;
- Creating an inclusive campus environment for diverse student groups;
- Creating and nurturing a safe and secure environment for women;
- Implementing and improving accessibility standards;
- Promoting social responsibility and community engagement;
- Making physical fitness, sports, students' health, welfare, psychological and emotional well-being a way of campus life;
- Promoting and innovating pedagogies for teaching *Divyangjan* and specific learning disabilities (SLDs);
- Inculcating universal human values and professional ethics; and
- Integrating socio-economically disadvantaged groups (SEDGs) in the HEIs.

Digital and Online Learning: Future of Education

- Effectiveness and innovations in blended learning models and digital pedagogy;
- Expanding digital infrastructure in rural areas;
- Adopting adaptive learning technologies; and
- Addressing challenges of online assessments and evaluations.

Skill Development and Employability

- Enhancing employability through skill-based education;
- Promoting industry-academia collaborations for curriculum design;
- Promoting vocational education alongside academic education;
- Integrating internships, apprenticeships, and real-world experiences in academic Programmes;
- Implementation of Professor of Practice; and
- Nurturing sustainable and vibrant university-industry linkages.

Research, Innovation and Entrepreneurship in Higher Education

- Building research ecosystems and research-focused institutions;

- Strategies for fostering a culture of innovation;
- Facilitating funding for research initiatives;
- Enhancing international collaborations for research;
- Establishing Research and Development Centres in HEIs;
- Quality and Standards of PhD programs; and
- Integrating internship/research internship in undergraduate programs.

Assessment and Evaluation Reforms

- Moving beyond traditional exams: continuous and comprehensive evaluation;
- Emphasizing conceptual understanding and critical thinking in assessments;
- Leveraging AI for adaptive and personalized assessments; and
- Assessing the impact of assessment reforms on student outcomes.

Teacher Training and Professional Development for Quality Education

- Faculty training for updated pedagogy and curriculum;
- Developing teacher education centres;
- Creating sustainable faculty development programs;
- Recognizing and rewarding teaching excellence;
- Capacity building of faculty members;
- Teacher Competencies Framework; and
- Impact of Malaviya Mission Teachers Training Programs.

Governance, Leadership, Autonomy and Regulation

- Creating autonomous institutions for academic and administrative flexibility;
- Strengthening institutional governance models;
- Promoting transparency and accountability in higher education;
- Role of leadership in implementing NEP initiatives;
- Maintenance of standards by autonomous/ affiliated Colleges;
- Academic Freedom;
- Institutional Development Plans and their Effectiveness; and
- Impact of regulatory framework on HEI's performance.

Accreditation and Excellence

- Excellence in Higher Education;
- Impact of Accreditation on quality and performance of HEIs; and
- Relevance and impact of International Accreditation.

Integrating Indian Knowledge Systems and Promotion of Indian Languages in Higher Education

- Integrating traditional knowledge systems and cultural heritage in curricula;
- Integrating local knowledge, languages, and arts in education;
- Documenting and promoting indigenous knowledge in research;
- Best practices for teaching Indian Knowledge Systems; and
- Teaching in mother tongue/local languages.

Internationalization and Global Outreach

- Enhancing partnerships with foreign universities;
- Creating pathways for student and faculty exchange programs;
- Promoting India as a global education hub;
- Organizing for International Affairs;
- Fostering cross-border research collaborations;
- Academic collaboration with foreign HEIs for Joint and Dual Degree Programs;
- Role and contribution of Alumni in promoting HEIs;
- Setting up Campuses of Foreign Higher Educational Institutions in India; and
- Framework for Global Citizenship in Higher Education.

Sustainable Development Goals (SDGs)

- Integrating SDGs into the curriculum; and
- Implementing SDG based projects.

Implementation Challenges and Policy Implications

- Addressing financial and logistical constraints in implementation of educational reforms;
- Coordinating with state governments and regulatory bodies;
- Developing metrics for evaluating educational policy reforms and their impact; and
- Sharing best practices and overcoming challenges at institutional levels.

For further details, contact Conference Chair, Prof. M Bhaskara Rao, ICFAI Business School, Survey No. 156/157, IFHE-IBS Campus, Donthanapally, Shankarapalli Road, Hyderabad, Telangana-501203, Mobile No: 099081 02340/ 077991 68111, E-mail: *ictrhe@ifhe.org.* For updates, log on to: *www.icmrindia.org/nepconference_2025/*

Short-term Training Programme on Advances in Material Processing and Design

A five-day Short-term Training Programme on 'Advances in Material Processing and Design' is being organised by the Department of Mechanical Engineering Sardar Vallbhbhai National Institute of Technology, Surat, Gujarat from April 28 – May 02, 2025 through online mode. The aim is to provide a platform in which participants get knowledge about the advanced materials & design of machine elements as well as its industrial applications. It will help to bridge the gap between theory and its real application in industry. The faculty members, young scientists, research scholars, and postgraduate students from all backgrounds of engineering, mathematics, and basic sciences may participate in the event. Scientists who are working in the R&D organizations/ Industry persons can also attend this event. The topics of the event are:

- Advanced Material Processing Techniques. l Stir Casting Process for Composites.
- Tribological Behaviour of Composites.
- Advanced Materials.
- Advanced Coating Materials.
- Composite Materials.
- Advanced Material Characterization Techniques.
- Theories on Friction and Wear.
- Hydrodynamic and Hydrostatic Bearing Design.
- Rolling Element Bearing.
- Bearing Failure Analysis.
- Vibration Analysis.
- Nanolubricants.

For further details, contact Chairman of the event Dr. A A Shaikh, Head, Department of Mechanical Engineering, Sardar Vallbhbhai National Institute of Technology, Surat -395007, Gujarat. Contact details are: 097273 37702/ 094289 71929 / 097234 55853, E-mail: *s.soni@med.svnit.ac.in* / *jvm@med.svnit.ac.in* / *s.pandya@med.svnit.ac.in*. For updates, log on to: *www.svnit.ac.in/event.*

Jamia International Conference on NEP–2020 and Transformative Teacher Education Trajectories

A three-day International Conference on 'NEP–2020 and Transformative Teacher Education Trajectories, is being organized by the Department of Teacher Training and Non-Formal Education (IASE), Jamia Millia Islamia, Jamia Nagar, New Delhi-110025 from 22-24 April 2025 through hybrid mode.

National Educational Policy–2020, the first policy of the 21st century, aims to transform India's education system by 2030. The policy has proposed many aspirational goals and path-breaking reforms, particularly in teacher education. Teachers play a critical role in ensuring quality education and building a just, equitable, progressive, and prosperous society. The NEP–2020 emphasises multidisciplinary and holistic education, which calls for teacher education reforms in pre-service and in-service sectors. The Themes of the event are:

Theme 1: Diversified Teacher Education Curriculum under NEP–2020

- Integrating interdisciplinary approaches into teacher education,
- Practical school internships: Extensive teaching experience in real classrooms and monitoring,
- Teacher Education reforms: National vs Global Standards,
- Pedagogical Shifts in Teacher Education,
- Competency-based Teacher Education Programme,
- Various State Government's Initiatives for Implementing NEP-2020 in Teacher Education,

- Foregrounding higher-order thinking skills in teacher education,
- Teacher Education for 21st Century Skills and the 21st Century Learners,
- Fostering creativity, communication, and collaboration among future educators, and
- Integrating sustainability and global citizenship into teacher education.

Theme 2: Inclusivity and Equity in Teacher Education

- Diversity and inclusion in teacher preparation,
- Inclusive classrooms and diverse learner needs,
- Gender-sensitive approaches in teacher education,
- Marginalized communities in teacher education,
- Mentor guided learning and professional support systems,
- Inclusive practices in teacher education, and
- Stakeholder collaboration for improving teacher education programmes.

Theme 3: Professional Development and Lifelong Learning for Teachers

- Continuous professional development for teachers,
- Mentorship and peer support systems in teacher education,
- Teacher autonomy and leadership in professional development,
- Quality Assurance and Regulatory Mechanism, and
- National Professional Standards for Teachers (NPST)-2021.

Theme 4: Integration of Technology in Teacher Education

- Online and hybrid models in teacher education,
- Digital tools and platforms for enhancing teacher education,
- Technology integration in future classrooms,
- Technology, AI and Metaverse in teacher education,
- Digital assessment tools in teacher education, and
- Digital competence and Digital citizenship in teacher education.

Theme 5: Assessment and Evaluation in Teacher Education

- Comprehensive assessment strategies,
- Competency-based evaluation in teacher education,
- Aligning assessment practices with NEP 2020's vision, and
- Redefining Assessment in Teacher Education.

Theme 6: Governance and Policy Framework for Teacher Education

- Strengthening the regulatory framework of teacher education,
- Role of NCTE and other Apex bodies in shaping teacher education programme,
- Implementing NEP 2020 policies at the institutional level,
- Teacher recruitment/appointment related issues and concerns,
- Monitoring and evaluating the quality of teacher education programs,
- National Common Entrance Test (NCET) and future prospects, and
- Indian Knowledge system in teacher education.

For further details, contact Convener, Prof. Jasim Ahmad, Professor, IASE and Director, Director, Academy for Professional Development of Urdu Medium Teachers (APDUMT), Jamia Millia Islamia, Jamia Nagar, New Delhi-110025, E-mail: *jahmad@jmi.ac.in* and *iase.events@jmi.ac.in.* For updates, log on to*: https://www.jmi.ac.in/* ❑

Announcement

Special Issue of 'University News'

A **Special Number of University News** on the theme ***'Envisioning Future Higher Education: The Pivotal Role of India'*** is being brought out on the occasion of the **AIU Centenary Celebrations** and **AIU Annual General Meet and National Conference of Vice Chancellors'-2025 in April 2025.**

The **Special Issue** will cover the articles of eminent educationists on the afore-mentioned theme. Readers of the University News are also invited to contribute to the Special Number by submitting papers/articles on the above theme by **March 30, 2025**. The papers will be published in the Issue subject to the approval of the Editorial Committee of the University News. The contributions are invited on the following Subthemes:

Technological Integration in Higher Education

- Blended Learning Models.
- Integrating Emerging Technologies like AI, Virtual and Augmented Reality in the Learning Process.
- Cyber Security and Data Privacy in Higher Education Institutions.

Leadership and Governance in Higher Education

- Developing Academic Leadership.
- Governance of Public and Private Universities.
- Autonomy and Accountability in HEIs.

Rethinking Assessment and Evaluation

- Innovative Assessment Methods and Experiential Learning.
- Viability of One Nation One Exam System.
- Continuous Comprehensive Assessment.

Globalisation and Internationalisation

- Strategies for International Collaboration.
- Global Classrooms (Attracting International Faculty and Students).
- Challenges and Opportunities in Internationalisation of Higher Education.

Equity, Diversity and Sustainability

- Incorporating IKS in Curriculum and Pedagogy.
- Catering to Equity and Diversity on Campuses.
- Creating Green and Sustainable Campuses.

Any Other Relevant Subthemes

The final decision on the acceptance or otherwise of the article rests with the Editorial Committee. The manuscripts submitted for the Special Issue may be considered for general issues, if not published in the Special Issue. The detailed guidelines for contributors are placed on the AIU Website. Manuscripts may be sent to Dr Sistla Rama Devi Pani Editor, University News, Association of Indian Universities, AIU House, 16 Comrade Indrajit Gupta Marg (Kotla Marg), New Delhi- 110 002 through E-mail: ***ramapani.universitynews@gmail.com*** with a copy to: ***universitynews@aiu.ac.in*** on or before **March 30, 2025**.

THESES OF THE MONTH

SCIENCE & TECHNOLOGY
A List of doctoral theses accepted by Indian Universities
(Notifications received in AIU during the month of January-February, 2025)

AGRICULTURAL & VETERINARY SCIENCES

Agronomy

1. Hetta, Gaytri. **Studies on rice establishment methods and crop management practices in red rice-wheat cropping system**. (Dr. G D Sharma), Department of Agronomy, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur.

2. Sharma, Tarun. **Enhancement of productivity and bio-fuel production potential of sweet sorghum-mustard cropping system under different nutrient management systems**. (Dr. Naveen Kumar), Department of Agronomy, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur.

Biotechnology

1. Sharma, Atul. **Development of consolidated microbial strategy for sustainable management of paddy crop residues**. (Dr. Raj Singh), Department of Biotechnology, Maharishi Markandeshwar University, Ambala.

Genetics & Plant Breeding

1. Nareshkumar, V. **Heterosis and combining ability for grain yield along with genetic assessment of blast resistance in rice (*Oryza sative* L)**. (Dr. Neelam Bhardwaj), Department of Genetics and Plant Breeding, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur.

Soil Science

1. Rattan, Varsha. **Effect of drip line placement, organic layering and fertigation on productivity of tomato and cucumber under protected conditions**. (Dr. Sanjeev K Sandal), Department of Soil Science and Agricultural Chemistry, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur.

Veterinary Science

1. Kaushal, Sara. **Clinical application of CO_2 laser and electrosurgery in the management of soft tissue affections in animals**. (Dr. Adarsh Kumar), Department of Veterinary Surgery and Radiology, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur.

BIOLOGICAL SCIENCES

Biochemistry

1. Megha, G T. **Molecular characterization and biological assessment of bioactive peptide(s) from Solanumvirginianum plant**. (Dr. Rajeshwara Achur and Prof. S Nagaraju), Department of Biochemistry, Kuvempu University, Shankaraghatta.

2. Patoliya, Jaimini Vasantbhai. **Isolation, characterization and mode of action of harpin protein from plant pathogenic bacteria**. (Dr. Nayan K Jain and Dr.Rushikesh Joshi), Department of Biochemistry, Gujarat University, Ahmedabad.

3. Prajapati, Jignesh Bhikhabhai. **Assessing secondary metabolites of selected medicinal plants as bioactive agents**. (Dr. Rakesh M Rawal and Dr.Dweipayan Goswami), Department of Biochemistry, Gujarat University, Ahmedabad.

Biotechnology

1. Das, Runima. **Exploring the aromagenic potential of fungi to augment the flavour and fragrance diversity**. (Dr. Supriyo Sen), Department of Biotechnology, Assam Don Bosco University, Guwahati, Assam.

2. Pachuau, Lallianmawii. **Mutational study of AKTI gene and its expression associated with oral squamous cell carcinoma in Mizo population**. (Dr. H Lalhruaitluanga), Department of Biotechnology, Mizoram University, Aizawl.

3. Prashanth, N. **Elucidation of molecular events and evaluation of the therapeutic potential of bioactive molecules in nicotine treated pancreatic cancer cell lines**. (Dr. Kumaraswamy H M), Department of Biotechnology & Bioinformatics, Kuvempu University, Shankaraghatta.

Life Sciences

1. Gopal, T D. **Phytochemical analysis of blechnum Orientole L and anagiopteris evecta (G frost) hoffm of Shivamogga District, Karnataka**. (Dr. S Nataraja and Dr. M Krishnappa), Department of Botany, Kuvempu University, Shankaraghatta.

2. Lalawmpuia. **Ecological impact of oil palm (*Elaeis guineensis jacq*) plantation in Kolasib District, Mizoram**. (Prof. F Lalnunmawia and Prof. H Lalruatsanga), Department of Botany, Mizoram University, Aizawl.

3. Lalbiaknii, P C. **Study of non timber forest products: Phenological and phytochemical analysis of selected plant species within Lunglei District Mizoram**. (Prof. F Lalnunmawia and Dr. Vanlalhruaii Ralte), Department of Botany, Mizoram University, Aizawl.

4. Parmar, Nilam Keshubhai. **Characterization of curcumin nano-formulation and its role in cell proliferation, migration and differentiation**. (Dr. D D Jhala), Department of Life Science, Gujarat University, Ahmedabad.

5. Patel, Hitarth Vijaykumar. **Deciphering the role of hedgehog signalling pathway in oral cancer**. (Dr. Franky D Shah), Department of Life Science, Gujarat University, Ahmedabad.

6. Phairong, M Michael. **Effect of organic nutrient supplement on growth, productivity and capsaicin content of capsicum frutescens**. (Prof.F Lalnunmawia), Department of Botany, Mizoram University, Aizawl.

Microbiology

1. Khakhlari, Arup. **Studies on the role of insect-plant interaction in the formation of fragrant agarwood in Aquilaria malaccensis**. (Dr.Supriyo Sen), Department of Microbiology, Assam Don Bosco University, Guwahati, Assam.

2. Saha, Sumedha. **Biochemical and molecular characterization of phosphate solubilizing microorganisms isolated from tea plantation soil of Darjeeling Hills**. (Dr. Malay Bhattacharya), Department of Tea Science, University of North Bengal, Darjeeling.

3. Sanghani, Anjanaben Dhirubhai. **Community and functional microbial diversity study from mine habitat and bioprospecting of its microbiome**. (Dr. D R Tipre and Dr. Rajesh Patel), Department of Microbiology, Gujarat University, Ahmedabad.

EARTH SYSTEM SCIENCES

Geology

1. Mishra, Sameeksha. **Rapid estimation of carbon content and ash yield in Indian coal using mid-infrared FTIR spectroscopy**. (Prof. Anup Krishna Prasad), Department of Applied Geology, Indian Institute of Technology, Dhanbad.

ENGINEERING SCIENCES

Civil Engineering

1. Juneja, Gaurav. **Behavior of shallow foundations on geocell reinforced base layer overlying clayey soil**. (Prof. Ravi Kumar Sharma), Department of Civil Engineering, National Institute of Technology, Hamirpur.

2. Mandeep Kaur. **Bond behavior of FRP retrofitted and old/ new concrete using graphene derivative modified epoxy**. (Dr. Naveen Kwatra and Dr. Himanshu Chawla), Department of Civil Engineering, Thapar Institute of Engineering and Technology, Patiala.

3. Naveena, Kanaboyana. **Strength and durability studies on geopolymer concrete produced with recycled aggregates**. (Dr. H Sudarsana Rao), Department of Civil Engineering, Jawaharlal Nehru Technological University Anantapur, Ananthapuramu.

Computer Science & Engineering

1. Barman, Moushumi. **Addressing Malware issues in IoT devices using deep learning**. (Dr. Bobby Sharma), Department of Computer Science & Engineering, Assam Don Bosco University, Guwahati, Assam.

2. Boro, Lal Omega. **Exploring breast cancer segmentation with deep learning: A focus on ultrasound images**. (Dr. Gypsy Nandi), Department of Computer Science & Engineering, Assam Don Bosco University, Guwahati, Assam.

3. Dixit, Ankit. **Intuitionistic fuzzy set based non-stationary time series forecasting**. (Dr. Shikha Jain), Department of Computer Science & Engineering, Jaypee Institute of Information Technology, Noida.

4. Gour, Lokendra. **Increasing fault tolerance in distributed computing by using deep learning approach**. (Dr. Akhilesh A Waoo), Faculty of Computer Application and IT, AKS University, Satna.

5. Sanjeev Kumar. **An analytical study on data mining with ant colony optimization using genetics**. (Dr. Rajeev Kumar and Dr. Amitabh Wahi), Department of Computer Science, Bhagwant University, Ajmer.

6. Shah, Maulik Bharatbhai. **Fake profile identification on social media**. (Dr. Hiren Joshi), Department of Computer Science, Gujarat University, Ahmedabad.

Electrical & Electronics Engineering

1. Bhagabati, Chayanika. **Design, development and implementation of an automated monitoring and control system for Muga cocoon dryers**. (Dr.Shakuntala Laskar), Department of Electrical & Electronics Engineering, Assam Don Bosco University, Guwahati, Assam.
2. Kundu, Sumanta. **Z-domain modelling and performance analysis of photonic integrated ring resonator as logic circuit**. (Prof. Sanjoy Mandal), Department of Electrical Engineering, Indian Institute of Technology, Dhanbad.
3. Manoj Kumar. **Evaluation of energy utilization and conservation strategies in an Indian underground coal mine**. (Prof. Tanmoy Maity and Prof. Mukesh Kumar Kirar), Department of Electrical & Engineering, Indian Institute of Technology, Dhanbad.
4. Oza, Parul Dhavalkumar. **Artificial Neural Network (ANN) based selective harmonics elimination in proposed 7 levels and 9 levels reduced switched multilevel inverter**. (Dr. Sweta Shah), Faculty of Electrical Engineering, Indus University, Ahmedabad.

Electronics & Communication Engineering

1. Nisha. **Design and analysis of mem-elements emulator using analog building blocks**. (Dr. Shireesh Kumar Rai and Dr. Rishikesh Pandey), Department of Electronics & Communication Engineering, Thapar Institute of Engineering and Technology, Patiala.

Material Science and Engineering

1. Avasthi, Gaurav Ramashankar. **Synthesis, characterization, and applications of high-quality graphene by electrochemical exfoliation of graphite**. (Dr. Sujoy Chaudhury and Dr. Nirav Jamnapara), Faculty of Materials and Metallurgical Engineering, Indus University, Ahmedabad.
2. Salot, Monil Nileshbhai. **Synthesis, characterization, and applications of high-purity tungsten oxide quantum dots from tungsten carbide-cobalt scrap**. (Dr. Sujoy Chaudhury and Dr. K Santhy), Faculty of Materials and Metallurgical Engineering, Indus University, Ahmedabad.

Mechanical Engineering

1. Choudhary, Amit. **Investigations on solar dryer for the drying of edible mushroom**. (Dr. Munna Verma), Department of Mechanical Engineering, Bhagwant University, Ajmer.
2. Ghosh, Partha Sarathi. **Experimental studies of the mechanical characteristics and predictive thermal modelling for laser welding of dissimilar materials**. (Prof. Somnath Chattopadhyaya), Department of Mechanical Engineering, Indian Institute of Technology, Dhanbad.
3. Mahendru, Piyush. **Development of non-equi atomic high entropy alloy on SS316L using laser cladding technique for hydro turbine blades**. (Prof. I K Bhat and Dr. Sujata Nayak), School of Engineering, Manav Rachna International Institute of Research and Studies, Faridabad.

MATHEMATICAL SCIENCES

Mathematics

1. Sinha, Sweta. **Numerical analysis of mathematical models originating in biological and physical applications**. (Dr. Paramjeet Singh), Department of Mathematics, Thapar Institute of Engineering and Technology, Patiala.

MEDICAL SCIENCES

Ayurveda

1. Mungra, Pratik Ravjibhai. **An open labelled randomized comparative clinical trial of virechana Karma, Kostha-shudhdhi and matra-basti in the management of pakshaghata (Hemiplegia)**. (Dr. A B Thakar), Department of Ayurvidyavaridhi, Gujarat Ayurved University, Jamnagar.

Biotechnology

1. Chauhan, Anjali. **Studies on removal of selected pharmaceutical contaminants using TiO_2 bionanocomposite**. (Dr. M Vasundhara and Dr. Shekhar Agnihotri), Department of Biotechnology, Thapar Institute of Engineering and Technology, Patiala.
2. Malik, Chandan Kumar. **Identification and characterization of homoserine dehydrogenase from *Leishmania Donovani***. (Prof. Sushma Singh), Department of Biotechnology, National Institute of Pharmaceutical Education and Research, Mohali, Punjab.

Pharmaceutical Science

1. Amardeep Kaur. **Synthesis of biotin camptothecin conjugates as selective colon tumor targeting agents**. (Dr. Manu Sharma), Department of Pharmaceutical Sciences, Maharishi Markandeshwar University, Ambala.

2. Mohd Rihan. **Evaluation of cardioprotective potential of pharmacological interventions targeting pyruvate kinase M2 (PKM2) in myocardial infarction and cardiac hypertrophy models**. (Prof. Shyam Sunder Sharma), Department of Pharmacology & Toxicology, National Institute of Pharmaceutical Education and Research, Mohali, Punjab.

PHYSICAL SCIENCES

Chemistry

1. Bansal, Mehak. **Tuning the photocatalytic and adsorption properties of biopolymer-layered double hydroxide composites**. (Dr. Bonamali Pal), Department of Chemistry & Biochemistry, Thapar Institute of Engineering and Technology, Patiala.
2. Chethan. **Synthesis, characterization biological studies of AZO dyes and their metal complexes**. (Dr. J Keshavayya), Department of Chemistry, Kuvempu University, Shankaraghatta.
3. Dwivedi, Durgeshkumar Jagdishprasad. **Study of the effect of structural variation on mesomorphic characteristics in thermotropic mesogenes and biological reactivity of substances**. (Dr. R R Shah and Dr.Unnati Naik), Department of Chemistry, Gujarat University, Ahmedabad.
4. Megha, G V. **Synthesis and biological evaluation of some heterocyclic compounds**. (Dr. Yadav D Bodke), Department of Chemistry, Kuvempu University, Shankaraghatta.
5. Thakor, Akshay Rasikbhai. **Design and synthesis of Azo-based liquid crystals, tailoring molecular structures for advanced applications**. (Dr. R R Shah and Dr .Unnati Naik), Department of Chemistry, Gujarat University, Ahmedabad.
6. Sonkar, Sankatha Prasad. **Synthesis, spectral, structural characterization and biological activity of novel transition metal complexes of azoles derivatives**. (Dr. Shailendra Yadav), Department of Chemistry, AKS University, Satna.

Physics

1. Beant Kaur. **Assessment of radiological and chemical risk due to natural radionuclides and heavy metals in water, soil and food**. (Dr. Sunil Devi and Dr.Rohit Mehra), Department of Physics and Material Sciences, Thapar Institute of Engineering and Technology, Patiala.
2. Dey, Zannatun Firdowzy. **Exploring new physics possibilities at long baseline neutrino experiments**. (Dr. Debajyoti Dutta), Department of Physics, Assam Don Bosco University, Guwahati, Assam.
3. Dongre, Sandeep. **A comprehensive study on effects of environmental parameters on radon exhalation rate-in soil, building materials, and its concentration in the environment of Shankaraghatta**. (Dr. J Sannappa), Department of Physics, Kuvempu University, Shankaraghatta.
4. Hirpara, Bharavi Atul. **Optimization and characterizations of oxide based thin film devices**. (Dr. Nikesh A Shah), Department of Physics, Saurashtra University, Rajkot.
5. Rana, Shilpa. **Dynamics of nuclear fusion reactions within the relativistic effective interaction**. (Dr. Raj Kumar and Dr. Mrutunjaya Bhuyan), Department of Physics and Material Sciences, Thapar Institute of Engineering and Technology, Patiala.
6. Sunil Kumar. **A study on Hadron Colider and its significance**. (Dr.Ravindra Singh Chandok), Department of Physics, Bhagwant University, Ajmer. ❑

Opinions expressed in the articles published in the University News are those of the contributors and do not necessarily reflect the views and policies of the Association.

Concept Since 1974

Books on Gorakhas

ROLE OF GORKHAS IN CONSOLIDATION OF BRITISH RULE IN THE NORTH-EAST FRONTIERS
Anjalee Muktan Shangpliang
2022 | 978-93-5439-068-5 | 158 pp. | ₹ 750

GORKHAS IN THE WILDERNESS
A Study in North East India
Khemraj Sharma
2013 | 978-81-8069-984-9 | 266 pp. | ₹ 750

THE GORKHAS IN THE FREEDOM STRUGGLE OF INDIA
K.K. Muktan
2015 | 978-93-5125-146-0 | 174 pp. | ₹ 650

THAPA POLITICS IN NEPAL WITH SPECIAL REFERENCE TO BHEEM SEN THAPA (1806-1839)
K.L. Pradhan
2012 | 978-81-8069-813-2 | 294 pp. | ₹ 850

CONCEPT PUBLISHING COMPANY (P) LTD.
A/15&16, Commercial Block, Mohan Garden, New Delhi-110 059
Ph. : +91-11-41101460 *Email:* publishing@conceptpub.com *Website :* www.conceptpub.com
Showroom: Building No. 4788-90, Street No. 23, Ansari Road, Darya Ganj, New Delhi-110 002 *Ph.* 23272187

MEMBERSHIP FEE (ANNUAL SUBSCRIPTION) OF AIU

Member Universities of AIU are requested to remit Annual Subscription using online link: https://payment.aiu.ac.in

In case Annual Subscription is remitted through ECS/RTGS/NEFT, **kindly share the remittance particulars/UTR details on email IDs: aiu_finance@rediffmail.com & accounts@aiu.ac.in** so that subscription is promptly linked and Tax Invoice-cum-Receipt is issued without any delay from AIU's end.

For any queries regarding Annual Subscription, please write to The Joint Secretary on the emails mentioned above or on Phone Numbers: 011-23230059 (6 Lines) & Direct Number 011-23213480.

NATIONAL INSTITUTE OF EDUCATIONAL PLANNING AND ADMINISTRATION (NIEPA)

(Deemed to be University u/s 3 of UGC Act, 1956)

17-B, Sri Aurobindo Marg, New Delhi-110016

ADMISSION NOTICE 2025-26

(i) Ph.D. (Full-Time) Programme
(ii) Ph.D. (Part-Time) Programme

Applications are invited for admission to the Ph.D. programmes in areas related to Educational Policy, Planning and Administration from a broad inter and multi disciplinary Social Science perspective. The last date for the submission of application is 30th April, 2025.

For further information and details, please visit www.niepa.ac.in.

Registrar

AL-SABAH EDUCATION & WELFARE SOCIETY AURANGABADS
Dr. A.P.J. Abdul Kalam College of Education (Urdu Medium)
YOUSUFIYA COLONY, PARBHANI- 431401

Approved by Govt. of Maharashtra & N.C.T.E, Bhopal, Affiliated to S.R.T.M. University, Nanded.

WANTED

(Permanent Non Grant/Minority Institution)

Applications are invited for the following posts in Dr. A.P.J Abdul Kalam College of Education, Parbhani, on permanent non grant-in-aid basis. Eligible candidates should submit their application alongwith all necessary documents with photograph **within fifteen days** from the date of the advertisement by registered post:

Sr No.	Post	No of Posts	Subjects	Qualification
1	**Assistant Professor** (Perspectives in Education)	02	Sociology/Psychology /Social Science)	M.A (55%) + M.Ed. (55%)+ SET/NET/Ph.D (Education)
2	**Assistant Professor** (Pedagogy Subjects)	04	Maths/Science/Social Science (History, Geography) Urdu/English	M.Sc/M.A. (55%) + M.Ed. (55%) + SET/NET/ Ph.D (Education)
3	**Lecturer** Health & Physical Education	01 Part Time	Physical Education	M.P.Ed (55%) SET/NET/ Ph.D (Education)
4	**Lecturer** Performing Arts (Music/Dance/ Theatre) Fine Arts	01 Part Time	Fine Arts	Post Graduate degree in Fine Arts with 55% marks

1. Pay Scales as per U.G.C State Government & Swami Ramanand Teerth Marathwada University rules from time to time.
2. No. T.A/D.A will be paid to attend the interview.
3. Relaxation of 5% may be provided from 55% to 50% of the marks at the master's level of the SC/ST categories.
4. All attested Xerox copies of certificate and other relevant documents should be attached with the application form.

Address for Correspondence.
In charge Principal,
Dr. A.P.J Abdul Kalam College of Education,
Yousuf Colony, Parbhani, M.S

Shaikh Mansoor Mustafa
President
Al Sabha Education & Welfare Society, Aurangabad
Mobile No. 8668621965

Wanted

(Permanent Non Granted)

Applications are invited for the post of Principal to be filed in **Dr. APJ Abdul Kalam College of Education (Urdu Medium),** Parbhani (Permanent Non Granted) run by Al Saba Education & Welfare Society, Aurangabad, Maharashtra, a Minority Institution. Eligible candidates should submit their applications along with all necessary documents **within Fifteen Days** from the date of the advertisement by registered post only.

Sr. No	Name of Post	Number of Post	Reservation
01	**PRINCIPAL**	01	UNRESERVED

Educational Qualification:-
1. Postgraduate degree in Arts/Science/Social Sciences/Humanities/Commerce with minimum 55% marks.
2. M.Ed with minimum 55% marks.
3. Ph.D in Education or any pedagogic subject offered in the institution.
4. Ten years teaching experience in a secondary Teachers Education Institution. Provided that, in the event of non availability of eligible and suitable candidates for appointments as Principal/ head as per above eligibility criteria, it would be permissible to appoint retired professor/ Head in Education on contract basis for period not exceeding one year at time. Till such time the candidates complete sixty five years of age. The term of appointment of the college principal shall be tenure with eligibility for reappointment for one more term only after a similar selection committee process.

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

Note:-
1. No T.A/D.A will be paid to attend the interview.
2. Eligible candidates those who are already in services should submit their application through proper channel.
3. All attested Xerox copies of certificate and other relevant documents should be attached with the application form.

Address for Correspondence.
Principal
Dr. APJ Abdul Kalam College of Education,
Yousufiya Colony, Parbhani, M.S

Shaikh Mansoor Mustafa,
President,
Al Saba Education & Welfare Society, Aurangabad

The Bombay Salesian Society's
DON BOSCO COLLEGE
Premier Automobiles Road, Kurla (W), Mumbai - 400 070
MINORITY
APPLICATIONS ARE INVITED FOR THE FOLLOWING POSTS
FROM THE ACADEMIC YEAR 2025-2026
UNAIDED

Sr. No.	Cadre	Subject	Total No. of Posts	Category
1.	Principal	-	01	01-OPEN

The above posts are **open to all**, however candidates from any category can apply for the post.
Reservation for women will be as per **University Circular No. BCC/16/74/1998 dated 10th March 1998.4% reservations shall be for persons with disability will be as per University Circular No. Special Cell/ICC/2019-20/05 dated 5th July, 2019.**
Candidates having knowledge of Marathi will be preferred.
"Qualification, Pay Scales and other requirement are as prescribed by the UGC Notification dated18th July, 2018, The Government of Maharashtra Resolution No. Misc/ 2018/ C.R.56/18/ UNI-I dated 8th March, 2019 and University Circular No. TAAS/ (CT)/ICD/2018-19/1241 dated 26th March, 2019 and revised from time to time." The Government Resolution and Circular are available on the website mu.ac.in.
Applicants who are already employed must send their application through proper channel. Applicants are required to account for breaks, if any in their academic career.
Application with full details should reach the **Rector Director, The Bombay Salesian Society's, DON BOSCO COLLEGE, Premier Automobiles Road, Kurla (W), Mumbai-400 070** within 15 days from the date of publication of this advertisement. This is University approved advertisement.

Sd/-
Rector/Director

The Bombay Salesian Society's
DON BOSCO COLLEGE
Premier Automobiles Road, Kurla (W), Mumbai - 400 070
MINORITY
APPLICATIONS ARE INVITED FOR THE FOLLOWING POSTS
FROM THE ACADEMIC YEAR 2025-2026
UNAIDED

Sr. No.	Cadre	Subject	Total No. of Posts	Category
1.	Assistant Professor	Management Studies	02	02-OPEN
2.	Assistant Professor	Multimedia and Mass Communication	03	03-OPEN
3.	Assistant Professor	Accounting & Finance	01	01-OPEN

The above posts are **open to all**, however candidates from any category can apply for the post.
Reservation for women will be as per **University Circular No. BCC/16/74/1998 dated 10th March 1998.4% reservations shall be for persons with disability will be as per University Circular No. Special Cell/ICC/2019-20/05 dated 5th July, 2019.**
Candidates having knowledge of Marathi will be preferred.
"Qualification, Pay Scales and other requirement are as prescribed by the UGC Notification dated18th July, 2018, The Government of Maharashtra Resolution No. Misc/ 2018/ C.R.56/18/ UNI-I dated 8th March, 2019 and University Circular No. TAAS/ (CT)/ICD/2018-19/1241 dated 26th March, 2019 and revised from time to time." The Government Resolution and Circular are available on the website mu.ac.in.
Applicants who are already employed must send their application through proper channel. Applicants are required to account for breaks, if any in their academic career.
Application with full details should reach the **Rector Director, The Bombay Salesian Society's, DON BOSCO COLLEGE, Premier Automobiles Road, Kurla (W), Mumbai-400 070** within 15 days from the date of publication of this advertisement. This is University approved advertisement.

Sd/-
Rector/Director

Shri Tuljabhavani Bahuuddeshiya Samajsevi Sanstha, Vetalwadi's
Shikshanshastra Mahavidyalaya Madha

Address – Shetphal Road Madha, Tal–Madha, Dist- Solapur (Maharashtra)
Email ID – bedcollegemadha@gmail.com ● Mob. No.- 9850179402/9921845999
Website - http://www.tuljabhawani.org.in
(Affiliated to Punyashlok Ahilyadevi Holkar Solapur University Solapur)

WANTED

(Permanent Non- Grantable)

Applications are in invited from eligble candidates for the following permanent Non- Grantable posts:

Sr. No.	Subject/ Designation	Total Vacant Posts	Reserved category Posts
	Assistant Professor		
1	Perspective in Education	01	SC- 01, ST- 01, VJ(A) - 01, OPEN - 01, SEBC - 01
2	Pedgagogy subject & Maths, Science)	03	
3	Health & Physical Education Performing Arrts (Music/ Theatre) Fine Art	01	

Instructions :-

1. Open Post is open to all, however, candidates from any category can apply for the post.
2. Educational Qualification and other requirements are as prescribed by, the UGC notification, Dtd. 18th July, 2018 Govt. of Maharashtra Resolution No. Misc 2018/ C.R.56/18 UNI-1 Dtd. 8th March, 2019 and University circular No. PAHSUSE / Estt/7th pay/2019/2285/Dtd. 25th March, 2019.
3. For detailed information about post, qualification and other terms and conditions, please visit university **website: www.su.digitaluniveristy.ac.in**
4. Please note that the recruitment procedure initiated by this advertisement is subject to the decision by Hon. Bombay High-court, Aurangabad Bench in writ petition No. 12051/2015.
5. Apply giving full particulars **within 30 days** from the date of publication of this advertisement to the undersigned.

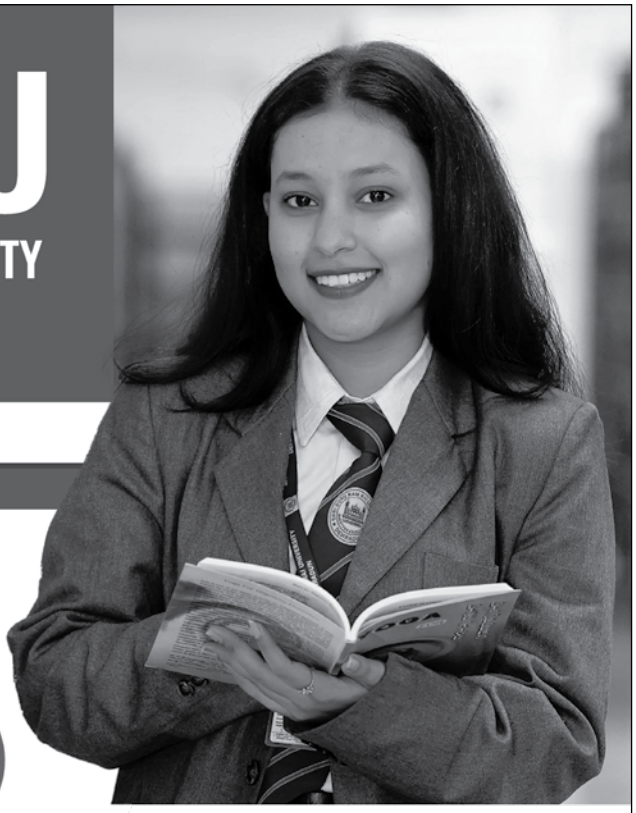
Place - Madha **Secretary**

SGRRU

SHRI GURU RAM RAI UNIVERSITY
DEHRADUN, UTTARAKHAND

Recognized by UGC u/s 2(f)of UGC Act, 1956

Legacy of Excellence Since 1952



PROUD TO BE ACCREDITED BY

ICAR INDIAN COUNCIL OF AGRICULTURAL RESEARCH

NABH ACCREDITED

NABL

DSIR RECOGNIZED SIRO

ACADEMIC & RESEARCH EXCELLENCE IN

- Engineering & Technology
- Pharmaceutical Science
- Medical & Health Sciences
- Basic & Applied Sciences
- Paramedical & Allied Health Sciences
- Nursing
- Agricultural Sciences
- Yogic Science & Naturopathy
- Management & Commerce Studies
- Humanities & Social Sciences

100+ Laboratories

2000+ Research Publication

100+ Patents

70+ Years of Excellence

Offering NCC & NSS

1 Lakh+ Alumni

500+ Recruiters

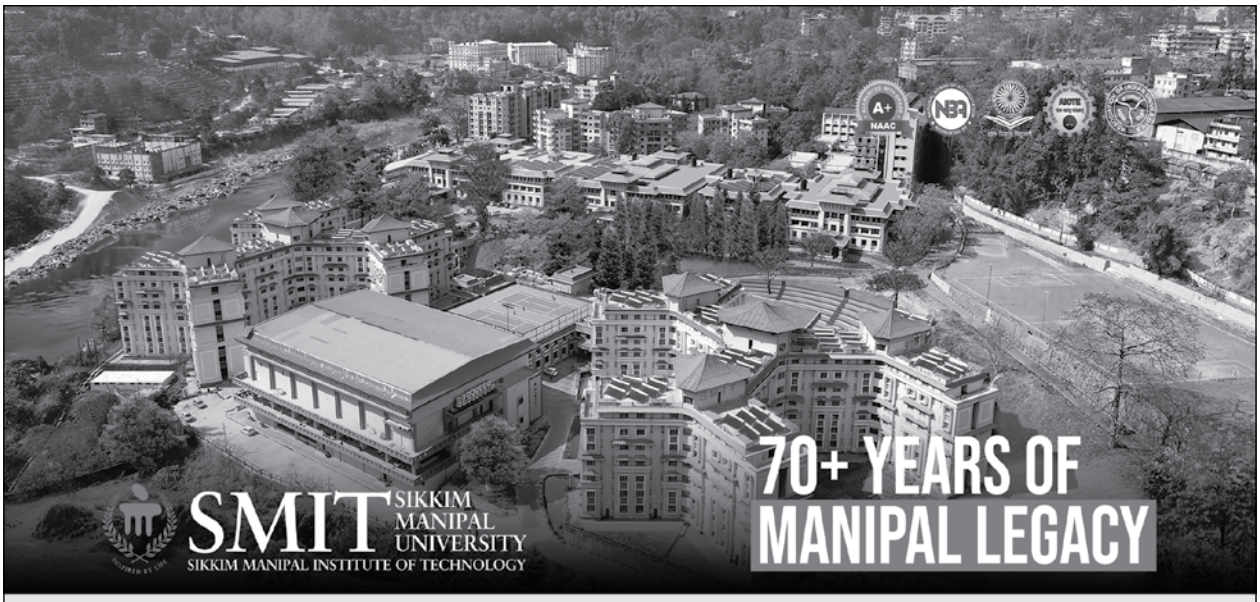
125+ Courses

RANKED AMONG TOP UNIVERSITIES IN UTTARAKHAND

SCHOLARSHIP UPTO 100%

SCAN HERE TO REGISTER

1800-120-102-102 admission@sgrru.ac.in www.sgrru.ac.in Patelnagar/Pathribagh, Dehradun



AVAIL SCHOLARSHIP UPTO 40% | 12 CR+ WORTH SCHOLARSHIP

Engineering (B.Tech)

1. Civil Engineering (CE)
2. Computer Science and Technology (CST)
3. Computer Science Engineering (CSE)
4. Computer Science & Information Tech. (CS&IT)
5. CSE (Artificial Intelligence & Machine Learning)
6. CSE (Data Science)
7. CSE (IoT & Cyber Security incl. Blockchain Tech.)
8. Electrical and Electronics Engg. (EEE)
9. Electronics and Communication Engg. (ECE)
10. Electronics Engineering (VLSI Design and Tech.)
11. Mechanical Engineering (ME)

Engineering (M.Tech)

1. Computer Science and Engg.
2. Structural Engineering
3. Hydrology and Water Resources Engineering

Science

1. Mathematics (B.Sc & M.Sc)
2. Physics (B.Sc & M.Sc)
3. Chemistry (B.Sc & M.Sc)
4. Applied Psychology (B.Sc.)

Management

1. Bachelor of Business Administration
2. Master of Business Administration

Applied Science

1. Bachelor of Computer Application
2. Master of Computer Application

Humanities

1. B.A Psychology
2. Bachelor of Physical Edu. and Sports (B.P.E.S.)

UG Courses With Hons. and Hons. with Research Offered

Our Recruiters

Mercedes-Benz · Google · Microsoft · amazon · pwc · accenture · BOSCH · JSW · TCS TATA CONSULTANCY SERVICES · Boston Scientific · VISA · salesforce · STATE STREET. and many more...

Advantage of SMIT

6 CENTER OF EXCELLENCE | **45+ ADVANCE CUTTING EDGE SPECIALIZATION**

EVT - L&T, 5G Labs, IDS - Blockchain, WIPRO,
Cyber Physical Systems - IIT Roorkee, Cisco - Network Academy

Sikkim Manipal Institute of Technology
Majhitar, 737136 (East Sikkim), India
Mob: +91-9732947000 / 9083254144/45

SCAN TO APPLY

The West Bengal National University of Juridical Sciences (NUJS)

Dr. Ambedkar Bhavan 12, L.B Block, Sector 111, Salt Lake City Kolkata - 700 106
Tel : +91-33-25694700 - 30 / 23357379
E-mail: vc@nujs.edu; ***Website***: www.nujs.edu
NAAC Accreditation "A+" Grade (2024)
NIRF India Ranking (Law Category) 4th Rank (2024)

The West Bengal National University of Juridical Sciences was established under the WBNUJS Act, 1999 (West Bengal Act IX of 1999) adopted by the West Bengal Legislature in July, 1999. The University was notified under Clause (f) of Section 2 of the UGC Act and has been granted affiliation by the Bar Council of India. Hon'ble Chief Justice of India is the Chancellor of the University and Chairman of its highest governing body - the General Council.

VICE CHANCELLOR

Prof. (Dr.) Nirmal Kanti Chakrabarti

LOCATION

NUJS is located in the city of Kolkata, a major metropolis of India.

FACILITIES

The NUJS campus provides all modern amenities—air-conditioned classrooms of varying sizes, seminar halls, conference rooms, moot court hall and an air-conditioned auditorium, doctors room, and other facilities. The NUJS campus also includes a bank, a canteen, state of the-art kitchens at the hostel, health care including health insurance, sports facilities including airconditioned Gym, Yoga room and various other recreational facilities. Campus WIFI enabled. The University also has a Computer Centre, Digital Lab and Media Centre for students. NUJS has a Language Lab designed for English learning and soft skill development for both B.A. and B.Sc. LL.B. first-year students. NUJS joined hands with IDIA to establish the Prof. (Dr.) Shamnad Basheer Accessibility Lab at NUJS to foster greater inclusion of students with Disabilities.

LIBRARY & INFORMATION CENTRE

The highlight of NUJS is a well-stocked, digitized, air-conditioned Library & Information Centre, with access to over 45,000 volumes on law, economics, politics, etc., national and international journals and all major online internet resources for Law, Forensic Science, Data Science and other related social science subjects, as well as the facility to download, print and photocopy any materials. Remote access facility is available for students, faculty and researchers for ease of access to library e-books and online databases. Assisting students and faculty with research by offering guidance on information retrieval, citation management, and research methodologies. Offering quiet areas, group study rooms, and computer labs for academic work.

PROGRAMMES OFFERED

- **Undergraduate**: i) BA LLB(HONS) (5 Years)* & ii) BSc LL. B in Criminology and Forensic Science (5 Years)*
- **Postgraduate**: i) LLM (1 year)*, ii) LL.M in Data Science and Data Protection Law (2 Years) & iii) MSc Forensic Science (2 Years)
- **PhD** in Law, History, Forensic Science, Economics, Political Science
- **LLD** Law
- **Certificate Courses:** Certificate Course on – i) Cyber Crime and Cyber Forensic, ii) The Protection of Children from Sexual Offences Act (POSCO), 2012, iii) Narcotic- Drugs and Psychotropic Substance Act, 1985 & iv) Prosecution and Investigation for Prosecutors.

ICFAI®
UNIVERSITY

The ICFAI University, Meghalaya

ADMISSIONS OPEN-2025

Programs Offered

FEE Concession to Domicile Students of the State of Meghalaya

BA (Eco. | Pol.Sc. | Eng. | Edu.) | **BBA** | **BCA** | **B.Com** | **BTTM**

MA (Pol.Sc. | Eng. | Edu | Garo# | Khasi* | Music*) | **MBA**

MCA | **M.Com** | **MSW** | **MTTM***

Offered only at ICFAI University, Tura Campus

* Offered only at ICFAI University, Shillong Campus

HIGHLIGHTS

▸ Spacious classrooms with audio visual equipment and Wi-Fi facility ▸ State-of-the-art library, computing and laboratory facilities ▸ Modern and quality education ▸ Contemporary curriculum Internal and continuous evaluation ▸ Extra curricular and co-curricular activities ▸ Committed and experienced faculty ▸ Extra curricular and co-curricular activities ▸ Locational advantage to study within the North-east states ▸ No CUET required

For eligibility and admission criteria please visit: www.iumeghalaya.edu.in

Tura Campus: Danakgre, (Near BSF Camp), P O Araimile, Meghalaya.
Ph: 9612885981,8014241976,7005778183, 6009403889

Shillong Campus: Phawa Ville, Near Shillong Law College, Dhankheti, Meghalaya.
Ph: 0364-2220057, 9485158603, 8794250646.

ICFAI®
GROUP

● 11 Universities ● 9 B-Schools ● 9 Law Schools ● 7 Tech Schools ● 3 Pharma Schools ● 3 Decades in Flexible Learning

MIZORAM UNIVERSITY

mzu.edu.in

COURSES OFFERED

School of Social Sciences

Psychology	-----	M.A./ M.Sc., Ph.D.
Public Administration	-----	M.A., Ph.D.
Social Work	-----	MSW, Ph.D.
Political Science	-----	M.A., Ph.D.
History & Ethnography	-----	M.A., Ph.D.
Sociology	-----	M.A., Ph.D.

School of Humanities & Languages

English & Culture Studies	-----	M.A., Ph.D.
Mizo	-----	M.A., Ph.D.
Hindi	-----	M.A., Ph.D.

School of Education

Education	-----	M.A., B.Ed., M.Ed., Ph.D.

School of Life Sciences

Botany	-----	M.Sc., Ph.D.
Zoology	-----	M.Sc., Ph.D.
BioTechnology	-----	M.Sc., Ph.D.

School of Physical Sciences

Physics	-----	M.Sc., Ph.D.
Chemistry	-----	M.Sc., Ph.D.
Mathematics & Computer Science	-----	M.Sc., Ph.D.
Industrial Chemistry	-----	M.Sc., Ph.D.

School of Earth Sciences and Natural Resources Management

Forestry	-----	M.Sc., Ph.D.
Environmental Science	-----	M.Sc., Ph.D.
Geology	-----	M.Sc., Ph.D.
Geography & Resource Management	-----	M.Sc., Ph.D.
Horticulture, Aromatics & Medicinal Plants	-----	M.Sc., Ph.D.
Disaster Management	-----	M.Sc., Ph.D.
Petroleum Geosciences	-----	M.Sc., Ph.D.

School of Economics, Management & Information Sciences

Economics	-----	M.A., Ph.D.
Commerce	-----	M.Com., Ph.D.
Library and Information Science	-----	M.LIS., Ph.D.
Management	-----	M.B.A., Ph.D.
Mass Communication	-----	MJMC., Ph.D.
Tourism and Hospitality Management	-----	M.B.A (T&HM)., Ph.D.

School of Engineering & Technology

Information Technology	-----	B.Tech, M.Tech., Ph.D.
Electronics & Communication Engineering	-----	B.Tech, M.Tech, Ph.D.
Electrical Engineering	-----	B.Tech, M.Tech., Ph.D.
Computer Engineering	-----	B.Tech, Ph.D.
Civil Engineering	-----	B.Tech, Ph.D.
Food Technology	-----	M.Sc., Ph.D.

School of Medical & Paramedical Sciences

Clinical Psychology	-----	M.Sc, M.Phil, Ph.D.

School of Fine Arts, Architecture & Fashion Technology

Planning and Architecture	-----	B.Arch., Ph.D.

Integrated Teacher Education Programme (ITEP) offering dual degrees B.Sc B.Ed, B.Com B.Ed, & B.A B.Ed

x/mizoramuniversity facebook/mizoramuniversity youtube/mizoramuniversity instagram/mizoramuniversity

Association of Indian Universities
University News Journal

A Weekly Chronicle of Higher Education & Research
(Published every Monday)

Revision of Subscription Rates of "University News" effective from April 01, 2025:

University News with ordinary post:

Period of Subscription	Rates for Hard Copy of University News for Institutions	Rates for Hard Copy of University News for Teacher/ Students/ individuals (at residential address only)	Single Issue
1 year	Rs. 2500.00	Rs. 1000.00	Rs. 50.00
2 years	Rs. 4400.00	Rs. 1800.00	

Subscription of University News with Registered Post

Period of Subscription	Rates for Hard Copy of University News for Institutions with Registered Postal charges	Rates for Hard copy of University News for Teacher/students/ individuals (at residential address only) with Registered Postal charges	Single Issue
1 year	Rs.2500+500=Rs.3000	Rs.1000+500=Rs.1500	Rs. 50.00
2 years	Rs.4400+1000=Rs.5400	Rs.1800+1000=Rs.2800	

The payable amount is required to be remitted in advance by any of the following modes of payments:

A. AIU Web Portal

Using Debit/Credit Card, Net Banking and Paytm Wallet clicking the Payment Link **(http://payment.aiu.ac.in)**. This link can also be accessed through AIU Web Portal **(www.aiu.ac.in)**, by clicking **Payment** Tab available at the top of the Home Page – Select **University News Journal**-Fill in the required details.

B. NEFT/RTGS/Net Banking/G-Pay/Bhim App etc.:

The requisite amount could also be transferred for its direct/online remittance to our Savings Bank Account via **NEFT/RTGS/Net Banking/G-Pay/Bhim App etc.** using the following details:

1	**Bank Account No.**	**0158101000975 (Saving)**
2	Beneficiary Name	**ASSOCIATION OF INDIAN UNIVERSITIES**
3	Address	16, Comrade Indrajit Gupta Marg New Delhi – 110 002
4	Bank & Branch Name	CANARA BANK, DDU MARG
5	Bank's Address	"URDU GHAR", 212, Deen Dayal Upadhyaya Marg New Delhi – 110 002
6	Branch Code	0158
8	IFSC Code	CNRB 0000158
9	PAN NO.	AAATA0407F
10	Contact No.& E-mail ID	(011) 23230059 Extn. 208/213 (M) 09818608651 E-Mail ID(s): **subsun@aiu.ac.in / publicationsales@aiu.ac.in**

For further information/enquiries to:

Publication & Sales Division
Association of Indian Universities
AIU House, 16 Comrade Indrajit Gupta Marg,
New Delhi-110002
EPABX: 011-23230059 (Extn.208/213)/
Direct Line:011-23213481,
Fax: 011- 23232131
E-mail IDs : subsun@aiu.ac.in /
publicationsales@aiu.ac.in

C. In case, the above modes of payment are not feasible, you may remit the payment through CASH DEPOSIT/ DEMAND DRAFT ONLY in the name of "**Association of Indian Universities**" (payable at New Delhi).
DD of Gramin, cooperative Shahkari Bank and CHEQUES OF ANY KIND ARE NOT ACCEPTABLE FOR PAYMENT.

NOTE: In case of **Cash Deposit** and Online **Transfer via NEFT/RTGS, etc.**, the proof of payment in the form of **Counterfoil of the Cash Deposit Slip** and the NEFT **UTR Number or Transaction Number for Online payment** may be communicated IMMEDIATELY BY MAIL with **Complete Mailing Address & Pin Code** for linking and its settlement at our end.

Association of Indian Universities: Your Partner in Higher Education

ISSN-0566-2257

UNIVERSITY NEWS

A Weekly Journal of Higher Education

Association of Indian Universities

AIU

- Association of Indian Universities, a century old premium organization and the world's largest Universities network dedicated to fostering academic excellence and quality of enhancing higher education in India.
- Provides voluntary service to Higher Education Sector with a Non-Profit initiative.
- At the forefront of shaping higher education policy since its establishment in 1925.
- Plays proactive role in the areas of Equivalence Degrees/ qualification of Indian and Foreign Universities, Research, Sports and Youth Affairs.
- Membership of 1022 universities including 16 international universities.
- Rich legacy is adorned with visionary leaders like Dr Sarvepalli Radhakrishna, Dr. Shyama Prasad Mookerjee, Dr. Zakir Hussain, and Dr AL. Mudaliar, who have served as Presidents of AIU.

"University News"

- Boasts a circulation of 5,000 plus.
- Available in print and e-copy.
- Unique opportunity to connect with a rapidly growing and engaged audience across higher education in India and abroad.
- Has a large readership from Universities and colleges.
- Sought after Journal by all academicians.

WHY ADVERTISE WITH AIU?

WIDE REACH AND INFLUENCE

COMPREHENSIVE CONTENT WITH RICH ARTICLES ON HIGHER EDUCATION

TARGETED AUDIENCE OF EDUCATORS, LEADERS, GOVERNMENT, EDUCATIONAL RESEARCHERS AND FACULTY OF HIGHER EDUCATION

HIGHER ENGAGEMENT THROUGH PRINT AND E-COPY

COST EFFECTIVE ADVERTISING COMES AT EXTREMELY COMPETITIVE RATES COMPARED TO OTHER FORMS OF ADVERTISEMENT

WHAT CAN WE ADVERTISE?

- ADMISSION NOTICES
- PUBLICATIONS
- RECRUITMENT NOTICES
- FACULTY PROGRAMMES
- WORKSHOPS
- INTERNATIONAL CONFERENCES
- FDPs
- SPORTS PROGRAMMES

Your Call to Action

- Spotlight your University's events, faculty programs, publications, or services through advertisements in a publication that directly reaches decision-makers and influencers within India's leading universities and educational institutions.
- Can gain maximum visibility at minimal costs

For any assistance with your advertisement needs, please feel free to contact the undersigned:

Ranjana Parihar
Joint Secretary, Association of Indian Universities
16, Comrade Indrajit Gupta Marg New Delhi- 110 002
Telephone: 011-23230059 (Ext. 208, 213)
Mobile: 9818608651
Emails: publicationsales@aiu.ac.in,
advtun@aiu.ac.in(for advertisements),
subsun@aiu.ac.in(for University News Subscription)

List of Advertisers

S. No.	Name of Advertisers	Page No.
1	Somaiya Vidyavihar University, Mumbai	**Cover Inside (Second)**
2	Concept Publishing Company (P) Ltd., New Delhi	175
3	National Institute of Educational Planning and Administration (NIEPA), New Delhi	175
4	Dr. A.P.J. Abdul Kalam College of Education, Parbhani	176
5	Don Bosco College, Mumbai	177
6	STBSS, Shikshanshastra Mahavidyalaya, Madha, Solapur	178
7	India Exposition Mart Ltd., Gautam Budh Nagar, U.P.	178
8	Shri Guru Ram Rai University, Dehradun	179
9	Sikkim Manipal Institute of Technology, Sikkim	180
10	The West Bengal National University of Juridical Sciences (NUJS), Kolkata	181
11	The ICFAI University Meghalaya, Meghalaya	182
12	Mizoram University, Mizoram	183
13	Sarala Birla University, Ranchi	**Cover Inside (Third)**
14	Om Sterling Global University, Hisar	**Cover Back**

Faculty of Engineering & Computer Sciences

Ph.D Engineering & Computer Sciences
M.Tech CSE I ME I CE I EEE I ECE
With Specialization in Computer Science I
VLSI Design I Power Systems I
Construction Technology Management I
Structural Engineering
MCA
B.Tech CSE I ME I CE I EEE I ECE
BCA
Diploma CSE I ME I CE I EEE I ECE

Faculty of Applied Sciences

M.Sc Data Science
B.Sc Mathematics (Hons.)

Faculty of Pharmacy

Ph.D Pharmacy I B.Pharm I D.Pharm

Faculty of Business Management

Ph.D Business Management
MBA
BBA I BBA in Stock Broking &
Portfolio Management

Faculty of Commerce

Ph.D Commerce
M.Com
B.Com (Hons.) Accounts I
E-Commerce I Taxation

Faculty of Legal Studies

Ph.D Law I LL.M I LL.B
B.A. LLB (Hons.) I BBA LL.B (Hons.) I
B.Com LL.B (Hons.)

Faculty of Social Sciences

M.A. Economics
B.A. Economics (Hons.)

Faculty of Journalism & Mass Communication

Ph.D Journalism & Mass Communication
M.A. Journalism & Mass Communication
B.A. Journalism & Mass Communication

Faculty of Humanities & Linguistics

Ph.D Humanities & Linguistics
M.A. English I M.A. Sanskrit
B.A. English (Hons.) I B.A. Sanskrit (Hons.)
Diploma In French I Certificate In French

Faculty of Yogic Science & Naturopathy

M.Sc. Yogic Science
B.Sc. Yogic Science
Diploma Yoga & Fitness Trainer
Certificate in Yoga

Faculty of Art, Culture & Sports

M.A. Performing Arts (Music I Dance I Drama)
M.A. Visual Arts (Fine Art)
B.A. Performing Arts (Music I Dance I Drama)
B.A. Visual Arts (Fine Art)
Certificate in Music I Dance I Fine Arts

Highlights

5000+ Students	65+ Programs	11 Disciplines	200+ Teaching Staff	Hostel Facility For Boys & Girls
60 Acre World Class Infrastructure	100% Placement Support	100+ Companies Visited For Placement	50+ Skill Enhancement Certifications	

Placement Highlights

100% Placement Support

Training & Placement Supported By

ADITYA BIRLA GROUP

B. K. BIRLA GROUP OF COMPANIES

SCAN TO REGISTER

Affiliations & Recognitions

University Grants Commission · Pharmacy Council of India · Bar Council of India · Association of Indian Universities

International Academic Collaborations

University Of Minnesota · University of Vermont · University Of California, Berkeley

& 20+ National MoUs

SARALA BIRLA UNIVERSITY, RANCHI

Birla Knowledge City, P.O. Mahilong, Purulia Road, Ranchi, Jharkhand-835103

Toll Free No. : 1800 890 6077

admissions@sbu.ac.in www.sbu.ac.in

Licensed to post without prepayment under WPP No. U(C)-109/2024-26
Postal Regd. No. DL (C)-05/1241/2024-26
UNIVERSITY NEWS 63 (11) March 17-23, 2025
Regd. No. RNI-7180/1963
Published on Monday: 17-03-2025 No. of Pag 188 including Covers
Posted at LPC Delhi RMS, Delhi-6 on Tuesday/Wednesday every week

OSGU
OM STERLING GLOBAL UNIVERSITY
(APPROVED BY UGC, MINISTRY OF EDUCATION, GOVT. OF INDIA)
EXCELLENCE IN EDUCATION 17 Years
Discover more at
www.osgu.ac.in
info@osgu.ac.in
/OSGUHISAR

14 Schools
22K+ Students
30+ Foreign Partnership
250+ Courses
400+ Industrial Partner
World Class Infrastructure

92% Overall Placement
Nearly 400 Industrial Recruiters
32LPA Highest Package Offered

OUR SCHOOLS

- PHARMACEUTICAL SCIENCES
- HEALTH SCIENCES
- ENGINEERING & TECHNOLOGY
- AGRICULTURE
- LEGAL STUDIES
- APPLIED SCIENCES
- ARCHITECTURE & PLANNING
- COMMERCE & MANAGEMENT
- TEACHER EDUCATION
- SOCIAL SCIENCES & HUMANITIES
- HOSPITALITY MANAGEMENT
- YOGA & NATUROPATHY
- PERFORMING & FINE ARTS
- VOCATIONAL STUDIES

EMINENT PERSONALITIES

Sh. Anurag Singh Thakur
Chairman Parliamentary Standing Committee on Coal, Mines & Steel | Former Cabinet Minister, GOI

Shri Bandaru Dattatreya
Hon'ble Governor, Haryana

Smt. Savitri Devi Jindal
MLA HISAR & PRESIDENT MAMC, AGROHA

Shri Ranbir Gangwa
Hon'ble Cabinet Minister, PWD and Public Health,Govt. of Haryana

Campus : NH-52, Hisar-Chandigarh Road, Hisar-125001, Haryana (India)
8607899999, 8255099999

Edited, Printed and Published by Dr Sistla Rama Devi Pani, on behalf of the Association of Indian Universities, AIU House, 16 Comrade Indrajit Gupta Marg (Kotla Marg), New Delhi-110 002. Phones: 23230059 (6 Lines). Fax: 011-23232131, E-Mail : sgoffice@aiu.ac.in, advtun@aiu.ac.in, publicationsales@aiu.ac.in, subsun@aiu.ac.in (for subscription), unaiu89@gmail.com, universitynews@aiu.ac.in, Website: http://www.aiu.ac.in
Printed by Chandu Press, D-97, Shakarpur, Delhi-110 092 Phone: 42448841, chandupress@gmail.com